E-Chain Systems®

igus.com ... E-Chains® and E-Chain Systems® ... 2016 ... Plastics for longer life®

Pol. Ind. de Guarnizo, Parcela 207
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www.edfluidos.com

Estudio de Fluidos

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fast...

Improve technology and reduce costs

For years the igus® motto has been “Plastics for longer life®”. By this we mean the production of innovative plastic products which reduce maintenance work, achieve technical improvements, at the same time as reducing costs and increasing service life, everything shipped from stock.

Available from stock.
Shipped from stock in 24 hours!

No minimum order value!
No surchages!
You can find our prices online at www.igus.com

Guarantee
System warranty for all igus components.
With a warranty certificate!

8 to 8 service
Monday till Friday 8:00 am to 8:00 pm and

Hotline
Phone 800-521-2747
Fax 401-438-7270

Online shop www.igus.com
Product finder, configurator, online catalogs, CAD models and much more. Order around-the-clock!

Do you have any questions?
For questions and more information call us or use our online productfinder at www.igus.com

Legal Information:
The information in this catalog, and the data in the Design section in particular, is based on our current knowledge of the products described. No legally binding assurance in respect of characteristics or suitability for a specific intended application can be derived from it. igus® is unable to assume liability of any damages, loss or injury resulting from application of the products. We recommend that you always check the suitability of the products for a specific intended application in a practical-oriented test (please consult igus®). For reasons relating to ongoing technical developments, we reserve the right to implement technical modifications and improvement of the products at any time. Subject to printing errors.

The terms “igus”, “ReadyChain”, “Chainflex”, “E-Chain”, “Energy Chain”, “Energy Chain System”, “E-Chain System” “TwisterChain”, “igubal”, “iglide”, “DryLin”, “Polysorb” and “Plastics for longer life” are legally protected trademarks for igus® GmbH/Cologne in the Federal Republic of Germany and, where applicable, in some foreign countries.

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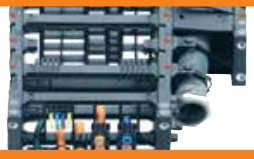
Design and calculation information, Applications, Diagrams
Designing with igus®, igus® ReadyChain®, igus® Installation services
1

Low-priced Easy to fill E-Chains®
E-Z Chain, System E1, SnapChain
2

Zip-open, easy to fill E-Chains® and E-Tubes
Zipper-design E-Chains® and E-Tubes
3

General Purpose E-Chains® and E-Tubes, snap-open, micro, mini and medium sizes
E2 Micro, E2 Mini, E2/000 Medium, Classic E2 Medium
4

Dirt- and chip protection, fully enclosed, snap-open E-Tubes
E2 E-Tubes, Series R100, Series R and Series RX
5



Standard E4 modular system, E-Chains® and E-Tubes for nearly all applications
Series E4-1, E4/Light, E4-1 Light, Classic E4/4 and E4/00
6

Cleanroom E-Chains® and E-Tubes, low noise, low vibration
System E3, T3, E6 and E6-1
7

Multi axis E-Chains® for Robots or 3-D movements Triflex® R, E-Z Triflex®, Triflex®, TwisterChain®, TwisterBand
8

Guide Troughs & Long Travel Solutions
Aluminum SuperTrough, Steel guide trough, Support Tray, Guidefast, Guidelite, E4/4HD, P4, Rol E-Chains®, AUTO-GLIDE, Guidelok horizontal, Basic Flizz®, Micro Flizz®, PPDS, modular projects,
Special Solutions - Guidelok slimline F, LiftBand, E-Spool
9

Strain relief clamps, tiewrap plates, clips, strain relief separators
Chainfix Strain Relief
10

Cable protection for static applications
PMA
11

General Index
Worldwide locations
12

igus® headquarters in Cologne - development, production and marketing from a single location

Shipping	Fill weight	Acceleration	Cycles	Noise	Rotation	Temperature	Ordering	Bend Radius
24 hours	67 lbs/ft	2,572 ft/s²	1.8 billion	33 dB(A)	7000 degrees	1,562° °F	10 seconds	3.8 x od

the-chain
Supplying energy made easy. For any industry.

For any application and any type of motion, in any industry: igus® **the-chain** greatly simplifies supplying energy and media! More than 100,000 products from stock help finding the right solution for your specific needs. From individual components from stock to complete, ready-to-install ReadyChain® energy supply systems within days - igus® **the-chain** follows your production.

the-chain initiative combines a constantly growing range of new energy supply solutions for any motion with simplified product selection.

Millions of different energy supply system versions are available world-wide, a number that is growing daily. But many of you only need a few, or possibly only one of these. We are therefore pursuing the objective of reducing product selection complexity to a previously unknown level. **the-chain** means configuring and ordering within minutes, shipment within hours, and reliability for many years. We are constantly upgrading our product range - with the intent of supplying any customer with the best energy supply system solution on the basis of our E-Chain® construction kit within hours - fully matching the customer needs, as individual components or a complete system, even locally installed.

Available from stock.
Shipped from stock in 24 hours!

No minimum order! No surcharges!
You can find our prices online at:
www.igus.com

Guarantee
System warranty for all igus components.
With a warranty certificate!

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Monday till Friday 8:00 am to 8:00 pm

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Phone: 800-521-2747
Fax: 401-438-7270

Shop online at: **www.igus.com**
Product finder, configurator, online catalogs, CAD models and much more.
Order around-the-clock!

Plastics for longer life® -

Increase the service-life of your machines with E-Chains® from igus®

Reducing maintenance work, while cutting costs and extending the service-life, everything delivered from stock immediately - this is the core idea and the objective behind all igus® products. This catalog contains more than 100,000 products available from stock or at short delivery times, and starting at a “lot size of one”. We look forward to your call or email.

Orders can be placed until 8:00 pm local time.
Phone: 800-521-2747
Emergency-Service around the clock.
100,000 products from stock.
No minimum order, no surcharges.

igus® is certified in accordance with DIN EN ISO 9001:2008 and ISO/TS 16949:2009 in the field of E-Chains® with cables and harnessing, as well as plastic plain bearings.

igus® inc.
PO Box 14349
East Providence, RI 02914
401-438-2200
1-800-521-2747
www.igus.com
e-mail: sales@igus.com

ISO 9001:2008 Certified

E-Chains® are lifelines to automated systems

E-Chains® are the umbilical cord of modern machines. igus® has been developing, producing and testing polymer E-Chains® since 1971. Our expert knowledge is being refined continuously with the help of our customers, and is then incorporated into our product line.

Universal applications for igus® E-Chains®

- Multitude of possibilities in terms of movement and length
- Carry sensitive bus, data cables and fibre optics cables and energy sources such as electricity, gas, air and liquids
- Accommodate very high dynamic loads and stringent service life requirements
- Handle very different environments and climatic zones
- Space-saving installation
- High levels of acceleration can be achieved
- Simple assembly of modular system on site and rapid retrofitting of cables possible

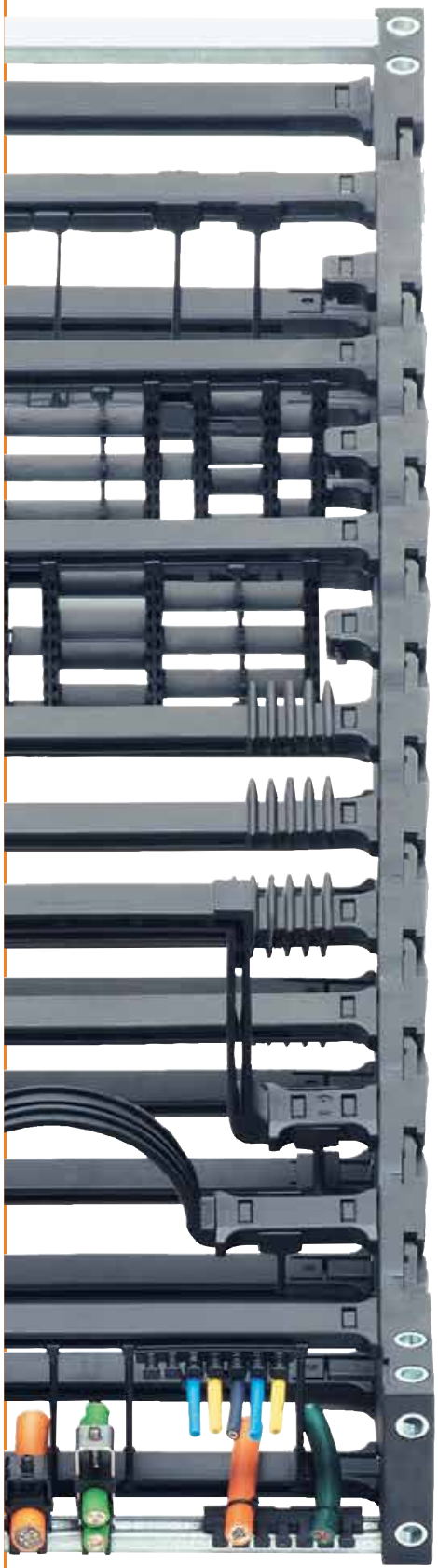
Save time and money when purchasing and utilizing E-Chains®!

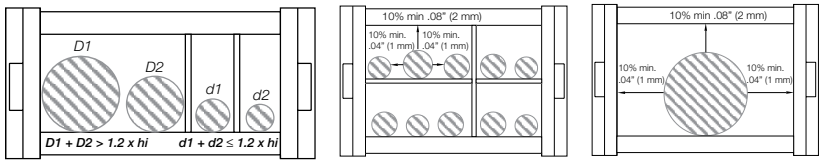
To achieve this, our focus is as follows:

- Innovative products that can be assembled quickly
- Rapid delivery time – saves you storage costs
- Large range of products – find the right solution immediately
- System quotes, including made-to-measure production and “turnkey” assembly
- Rapid system design and support with an ever-growing close-knit network of local sales engineers in Germany and worldwide

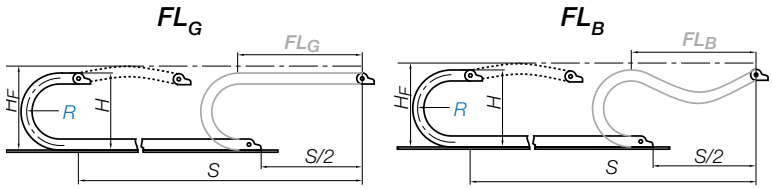
The award-winning igus® E-Chain Systems® are certified and tested

Assembled, just as your design requires

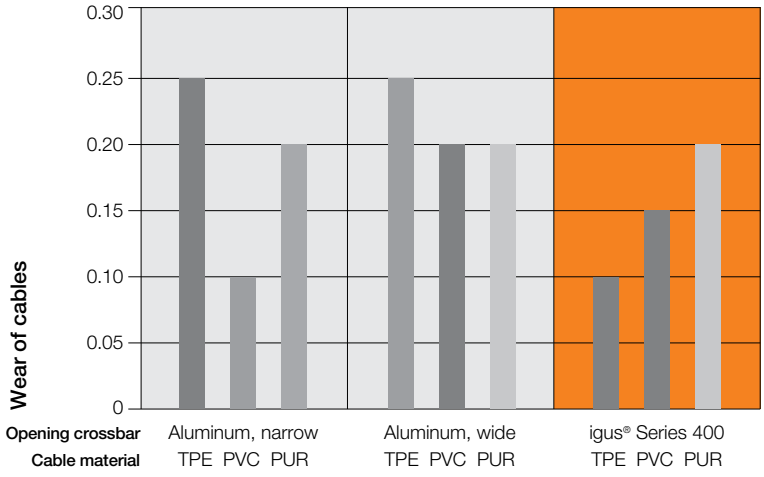




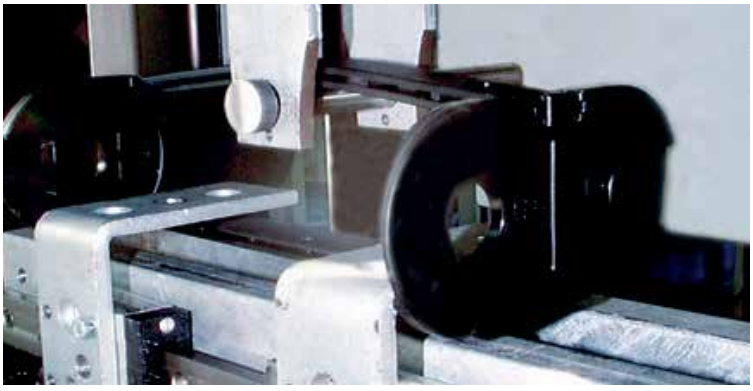
igus® interior separation systems significantly lengthen the life cycle of cables and enable neat separation of E-Chains®.
Filling standards are described ➤ Design, Chapter 1



Large unsupported lengths with igus® E-Chains®.
Notes, calculations and load diagrams are provided ➤ Design, Chapter 1



Optimum service life for cables
Reduce cable wear with igus® plastic separators



Proven toughness – strength tests during fabrication in the igus® laboratory

Chainflex® lasts. Or your money back.

Customers' production processes must remain trouble-free, which includes reliable operation by related energy supply systems, including cables too. igus® was the first company to develop complete E-Chain Systems®. Chainflex® cables and E-Chains® are offered together from a single source with a system guarantee depending on the application involved – our "Chain, Cable, Guarantee" Design principles are based on our knowledge of cables and exhaustive testing used to prevent machine downtimes at plants all over the world since 1989.

7 rules for making a good cable

1. **Strain-relieving Core**
   Clear space is created in the center of a cable depending on the number of conductors and cross sections. The center should be filled with a genuine center core (not dummy cores of waste materials) to protect the stranded structure above and prevent the conductors from falling into the center.

2. **Conductor Structure**
   The copper stranding in Chainflex® is chosen in accordance with tested and proven designs. igus®' test results indicate that a medium to fine strand diameter is preferable. Most typical flexing cable designs will employ an extra-fine conductor strand, and have a tendency to kink when subjected to high-duty cycles. As a result of long-term testing, igus® uses a combination of single-wire diameter, pitch length and pitch direction to achieve the best flex life performance in even the most demanding applications.

3. **Core Insulation**
   Insulation materials must be adhesion-resistant to one another within the cable. The insulation must also support the stranded individual wires of the conductor. Only the highest-quality, high-pressure-extruded PVC or TPE materials should be used.

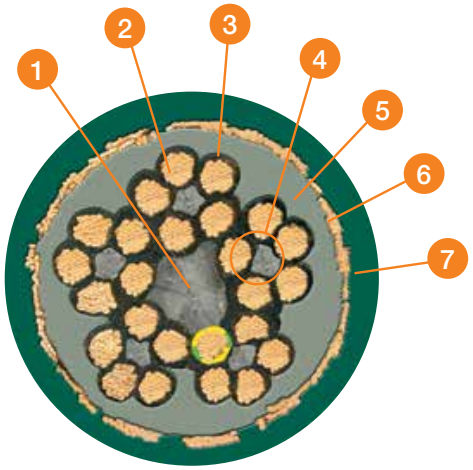
4. **Cable Core**
Individual conductors are bundled in groups. These bundles are cabled together in a single layer around the core. This design enables the pulling and compressing forces of the bending motion to balance and cancels torsional forces. Special attention is given to pitch length and pitch direction. Cables that are not bundled are not suitable for long-travel applications.

5. **Inner Jacket**
A gusset-filling extruded inner jacket should be used instead of inexpensive fleece wrap or filler to ensure that the structure is efficiently guided in longitudinal direction. The inner jacket will also maintain the integrity of the cable core and provide a continuous base for the shield.

6. **Shield Design**
A high-quality braided shield protects cables from external interference and shields any interference before it is transmitted to the outside environment. An optimized braid angle prevents the shield strands from breaking over the linear axis and increases torsional stability. The shield has an optical coverage of approximately 90%, providing maximum shield effectiveness.

7. **Outer Jacket**
The outer jacket material must be UV-resistant, abrasion-resistant and resistant to oils and chemicals, as well as cost-effective. However, it must not adhere to anything and be flexible while providing support. It should also be extruded under pressure (gusset-filled).

Conventional
"chain suitable" cable



igus® Chainflex® – special cable

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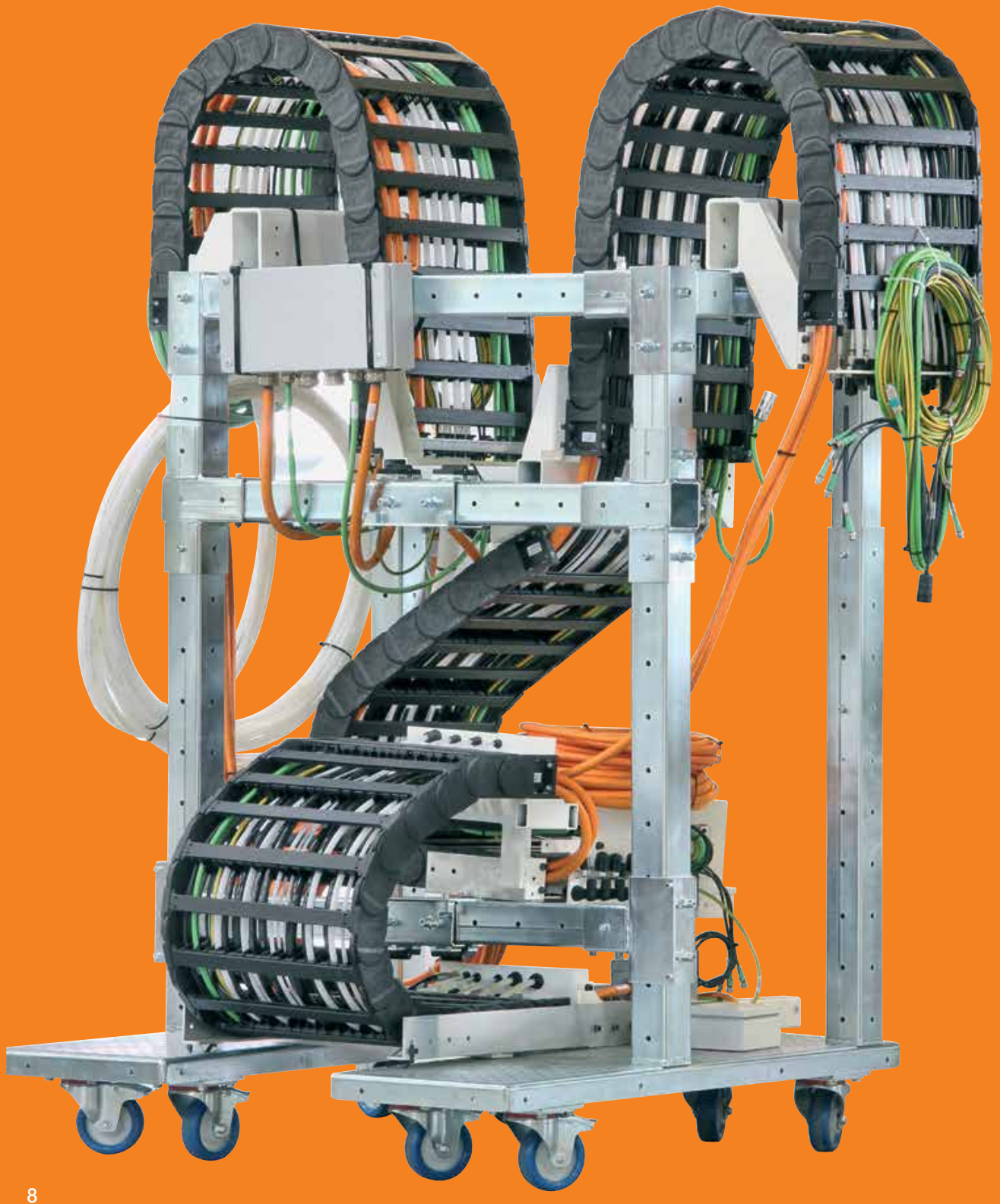
ReadyChain® - ready made E-Chain Systems®



Eliminate storage costs for cables, E-Chains® and plugs

Our short and guaranteed delivery periods enable you to dispense entirely with a storage of ultra-flexible cables, E-Chains® and accessories.

Shorten turnaround times by half

Thanks to sophisticated logistics, igus® is able to supply complete systems within 10 days of order to almost any part of the world.

Flexible response to order fluctuations

With ReadyChains® you remain prepared for all phases of an economic cycle. Fluctuations in your capacity utilization are absorbed by our product logistics.

Reduce the number of subcontractors and related orders by 75%

One order, one invoice, one delivery, one partner. You no longer need to procure countless individual components from a host of subcontractors; we know how to acquire the right parts quickly and economically.

Minimize your machine downtimes

External purchases of numerous individual components not only make your systems more susceptible to malfunction but also make trouble-shooting more difficult. ReadyChains® provide you with standardized systems. Every system is tested at out facility prior to delivery. igus® is certified in accordance with DIN EN ISO 9001:2008 and ISO/TS 16949:2009 in the field of E-Chains® with cables and harnessing, as well as plastic plain bearings.
www.igus.com/readychain

“Basic” ReadyChain®
Simple, harnessed E-Chain Systems® including installed cables without plug connections, labeled and furnished according to your specifications.

Shipped in 3 days

“Standard” ReadyChain®
Simple, harnessed E-Chain Systems® including installed cables with all plug connections, labeled and furnished with projections according to your specifications.

Shipped in 3-5 days

“Premium” ReadyChain®
A harnessed E-Chain System® including installed cables with all plugs, connectors, and components, labeled and furnished according to your specifications.

Shipped in 10 days

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Quality from the igus® laboratory: Tested and proven every day.

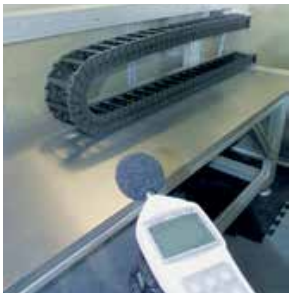
igus® test laboratory

When it comes to E-Chains, cables, polymer slide bearings and linear systems, applications involving high cycle counts, speeds and accelerations or demanding environmental conditions require proven systems providing durable and reliable operation. igus® regularly conducts tests at its own laboratory under realistic conditions. Every year, we conduct more than 2,000 tests on E-Chains® and cables, and over 5,000 tests on plain bearings. These tests focus on push/pull forces, friction values, wear rates, drive forces and abrasion under all possible conditions at diverse speeds. Influential factors like soiling, weathering, cold and impact are examined. Tests are also performed on electric cables, hydraulic and pneumatic hoses of all kinds. Our laboratory is at your disposal. Should we happen to lack a ready solution for your special problems, we will gladly conduct tests according to your requirements.

igus® ESD-tests in the production line

Electronic checking/archiving for every E-Chain® production run

Cables are also testedfor torsion properties



Noise level test inside an igus® acoustic cell

igus® dynamic bending test

Long term wear test of P4 profile RoI E-Chains®

Push Pull force speeds up to 32.8 ft/s , accelerations up to 656 ft/s^2 are tested

Long travel test field: 410 ft. travel length, speed 984 ft/min

All products are tested and available from a single source.
Examples of test certificates and quality seals for igus® products

How to use the catalog

Chapter color - every E-Chain® Series has a distinct chapter color permitting faster browsing

Product illustration with features of the selected E-Chain®

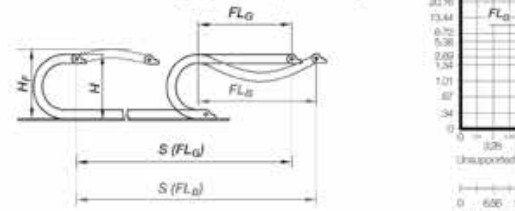
Description of the E-Chain®, design structure and detailed product information

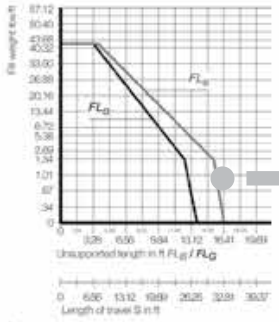
Assembly tips for opening and closing as well as removing lids if applicable

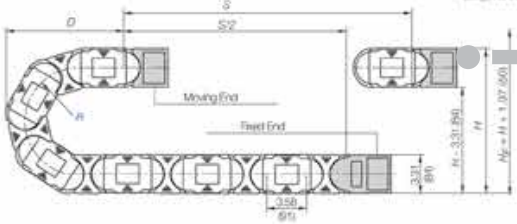
Advantages and recommendations regarding this igus® product

Energy Chain system® E4-1
Series E4-56/H4-56/R4-56
Installation Dimensions

Short travel, unsupported length
● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run
Further information ➤ Design, Chapter 1, main catalog







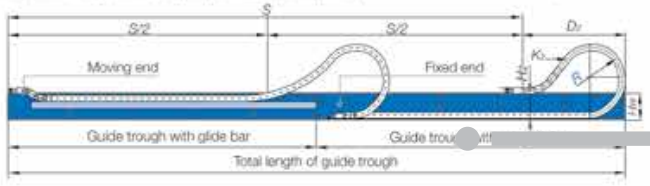
Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $^S/_2 + K$

The required clearance height: $H_r = H + 1.96$ in. (50 mm) (with 2.02 lbs/ft (3 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.45 (240)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.68 (500)
Hr*	13.94 (354)	15.12 (384)	17.09 (434)	19.06 (484)	22.20 (564)	22.99 (584)	26.93 (684)	30.87 (784)	34.80 (884)	38.74 (984)	42.68 (1084)
D	10.55 (268)	11.14 (283)	12.13 (308)	13.11 (333)	14.69 (373)	15.06 (383)	17.05 (433)	19.02 (483)	20.98 (533)	22.95 (583)	24.92 (633)
K	24.02 (610)	25.79 (655)	28.94 (735)	32.09 (815)	37.01 (940)	38.19 (970)	44.29 (1125)	50.39 (1280)	56.69 (1440)	62.99 (1600)	69.09 (1755)

For long travels with lowered mounting height
Long travel lengths from 32.8 ft.(10m) to max. 1,312.4 ft. (400m)

For center mount applications:
Chain length: = $^S/_2 + K_L$



R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.45 (240)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.68 (500)
Hr	13.94 (354)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)
Dr	10.55 (268)	17.72 (450)	22.83 (580)	27.95 (710)	35.43 (900)	38.58 (980)	46.46 (1180)	56.69 (1440)	60.24 (1530)	66.93 (1700)	72.83 (1850)
Kr	24.02 (610)	32.24 (819)	42.99 (1092)	53.15 (1274)	63.91 (1547)	64.49 (1638)	76.82 (2002)	89.57 (2275)	100.31 (2548)	114.54 (2912)	128.96 (3276)

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 9C UL94 HB

igus

Short Travels - Unsupported

Unsupported Energy Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to further details.

Legend
S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength Energy Chain® radius in final position
K = • R + safety buffer
Hr = Required clearance height
Hn = Trough inner height
Hr = *Mounting height
Dr = Overlength - long travels, gliding
Kr = *Add-on
*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the Energy Chain®/Tube must glide on itself. This requires a guide trough.

Design, Chapter 1, main catalog

Technical Data

Details of material properties ➤ Chapter 1, main catalog

E4-56
H4-56
R4-56

2.20

PDF: www.igus.com/e-chain/pdfs
Spec/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

6.44

Series
Quickly find the requested Series

Opening design of the selected e-chain® and inner height

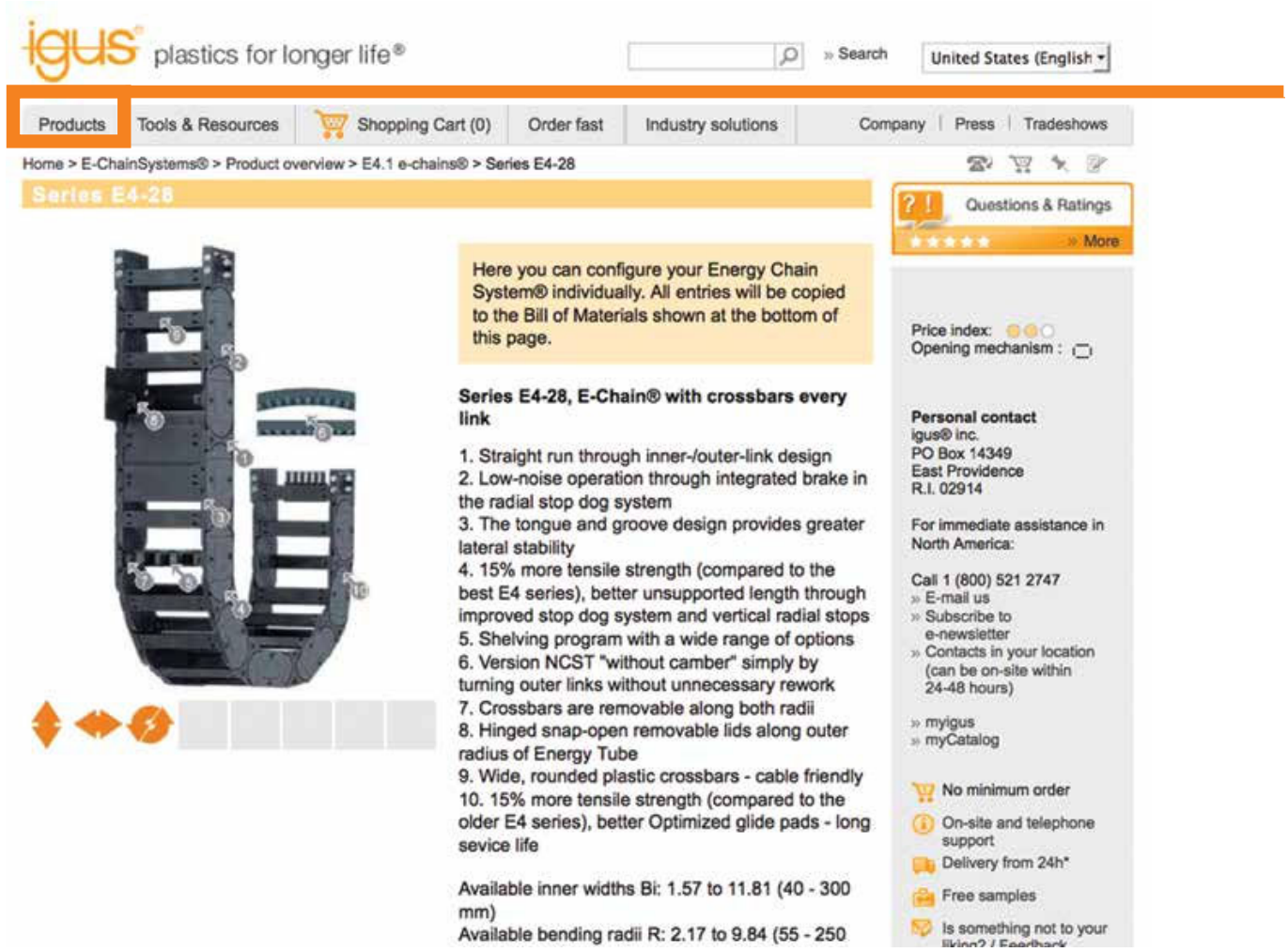
Unsupported length - diagram for the selected E-Chain®

Calculation aid - important details for configuring and calculating E-Chain® length as well as installation space

Available bending radii R
H = Nominal clearance height,
D = Over length
E-Chain® radius in final position,
K = Add-on for bending radius

Calculation aid - important details for configuring and calculating E-Chain® length as well as installation space for long travels with lowered mounting height

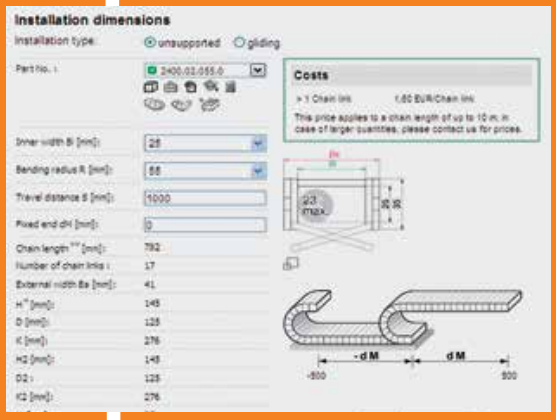
QuickLink - igus®
E-Chains® on the Internet!



Go online and make use of all advantages at www.igus.com or every product in this catalog, there is a special QuickLink or direct online pointer to further useful details, data and facts. These include:

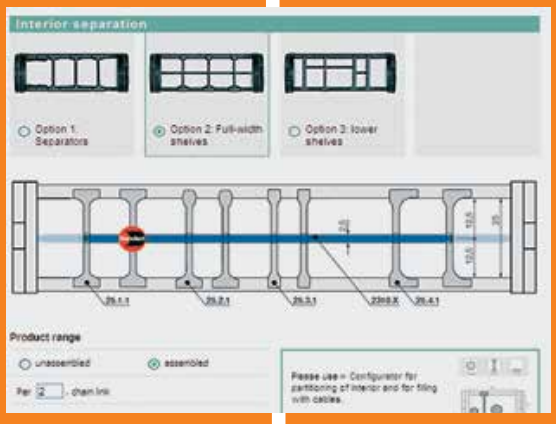
- Application videos and pictures
- Assembly instructions
- 3D-CAD files
- DXF data
- Comparisons and selection aids
- Online configuration tools
- Online wizard for calculations of service life
- PDF-data and other formats for download
- Personal support
- Catalog, CD and sample ordering forms

"Search" - E-Chain® product selector
Find the right E-Chain® quickly and easily by entering known application data and other parameters.



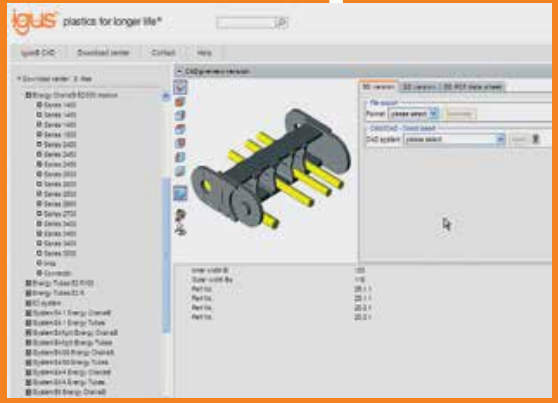
"Calculate chain length" E-Chain® length calculation.
Calculate the E-Chain® length and see all installation heights

"Configure" E-Chain® interior separator configuration
Quickly and easily determine interior separation for the selected E-Chain® using Drag & Drop. The configuration can be transfered automatically to your part list.

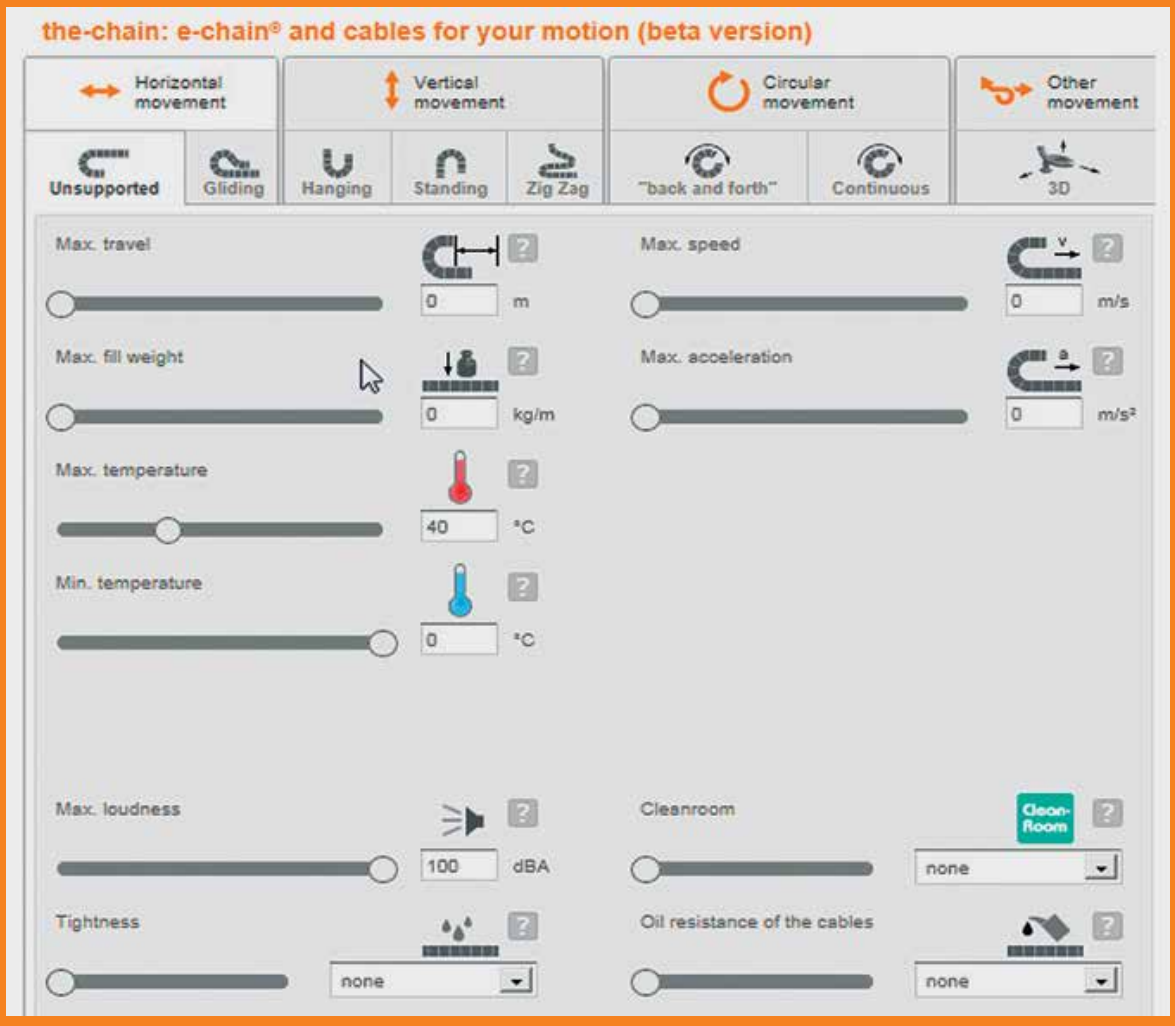


"Generate 3D file" E-Chain® CAD library
Download and save CAD data free of charge without having to register. Data on all products are updated and extended on a regular basis - nearly 30 3-D and 2-D formats are available

Take a tour www.igus-CAD.com



igus® the-chain®
Quickly and easily find the matching energy supply system

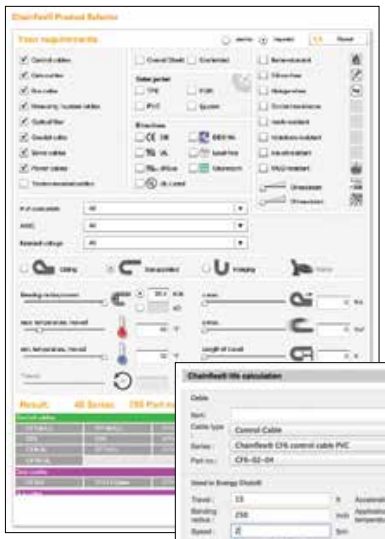


the-chain®: E-Chains® and cables for my motion - one website for any installation type
www.igus.com/the-chain® quickly and easily finds the right E-Chain® and cables for various motions. Simply select between horizontal, vertical, circular and undefined motions. Enter the required application parameters with a few clicks and immediately obtain an overview of matching E-Chains® and cables.

- Quickly find the right E-Chains® and cables
- Combined product selection aid for E-Chains® and cables
- Very simple and fast selection by motion type
- Direct access to the online catalog

Online-tool: www.igus.com/the-chain®

igus® Chainflex® online selection and configuration - www.igus.com/chainflexfinder



Use the product finder to find all relevant Chainflex® cables specifically for your application.
▸ igus.com/chainflexfinder

Calculate the service life of Chainflex® cable with the QuickLife service life predictor.

▸ igus.com/cf-lifetime

Chainflex® online shop: Select and order highly flexible cables for energy supply systems directly online.

▸ www.igus.com

Custom cable with the Chainflex® Design

Create the required cable for your E-Chain® with the Chainflex® custom cable ... from 2,500 ft ... delivered in 6 to 8 weeks!

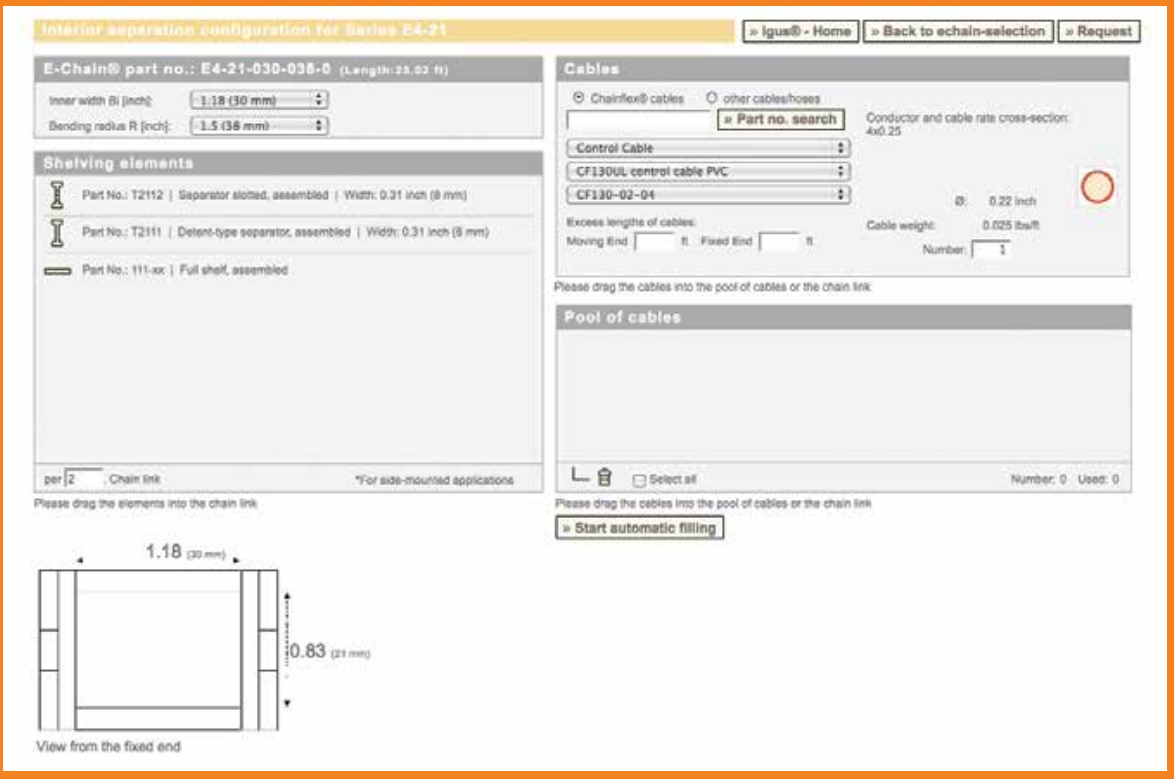
igus® can now produce and deliver an almost endless variety of individual special cables for customers within short lead times and in tested igus® quality. igus® combines the tested Chainflex® quality with the individual requirements for customers in our 18,840 sq. ft. igus® test lab.

With igus® custom cables you can specify

- the cable type
- the structure
- the shield
- the jacket material
- the color
- and the individual printing.

We will be glad to visit you for a personal discussion and advise you about your customized application.

igus® online configurator for interior separation- www.igus.com/quickchain100



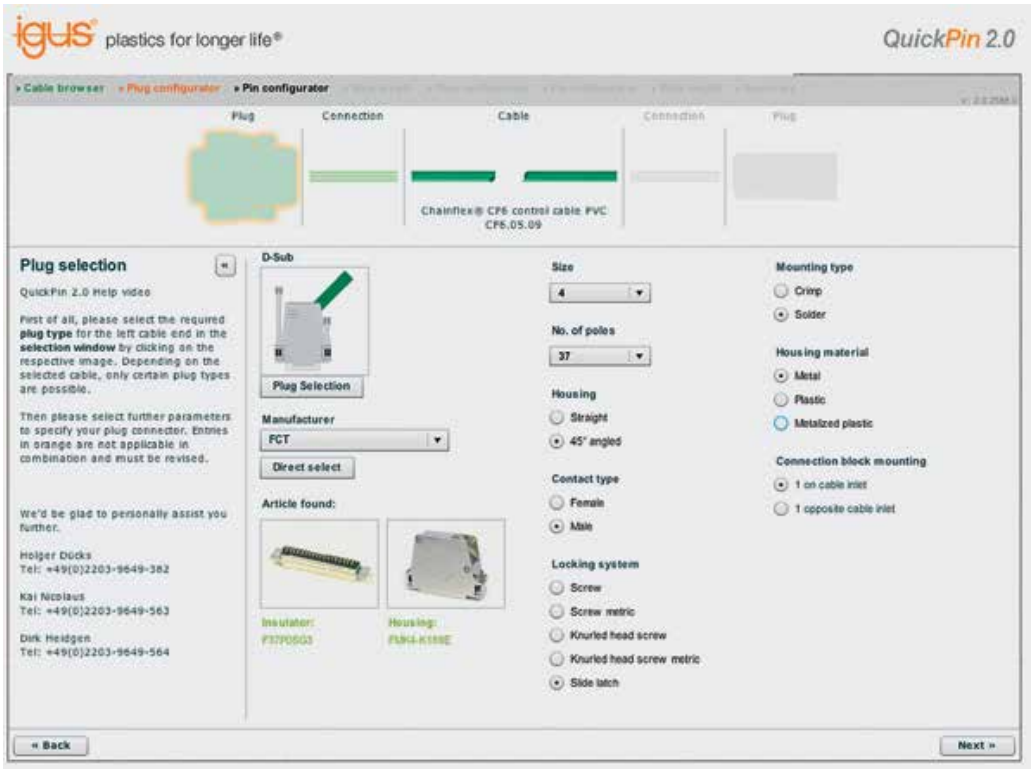
Change the E-Chain® width directly in the configurator - Cable overview for better handling

igus® online configurator for interior separation!
Quickly and accurate for the right E- Chain® and Chainflex® cable combination
With the interior shelving configurator you design the complete filling of an E-Chain® easily and quickly and generate a 3D-CAD-file with one click.

- Interior shelving configuration now with logical check of minimum bending radius
- No manual calculation and crosscheck of the Chainflex® cable diameter and E-Chain® cross section necessary
- Now with cable overview for better handling
- Changing of the E-Chain® width - now possible also in the inner shelving configurator
- Download E-Chain® partlist with interior shelving and cables in Excel format

www.igus.com/quickchain100

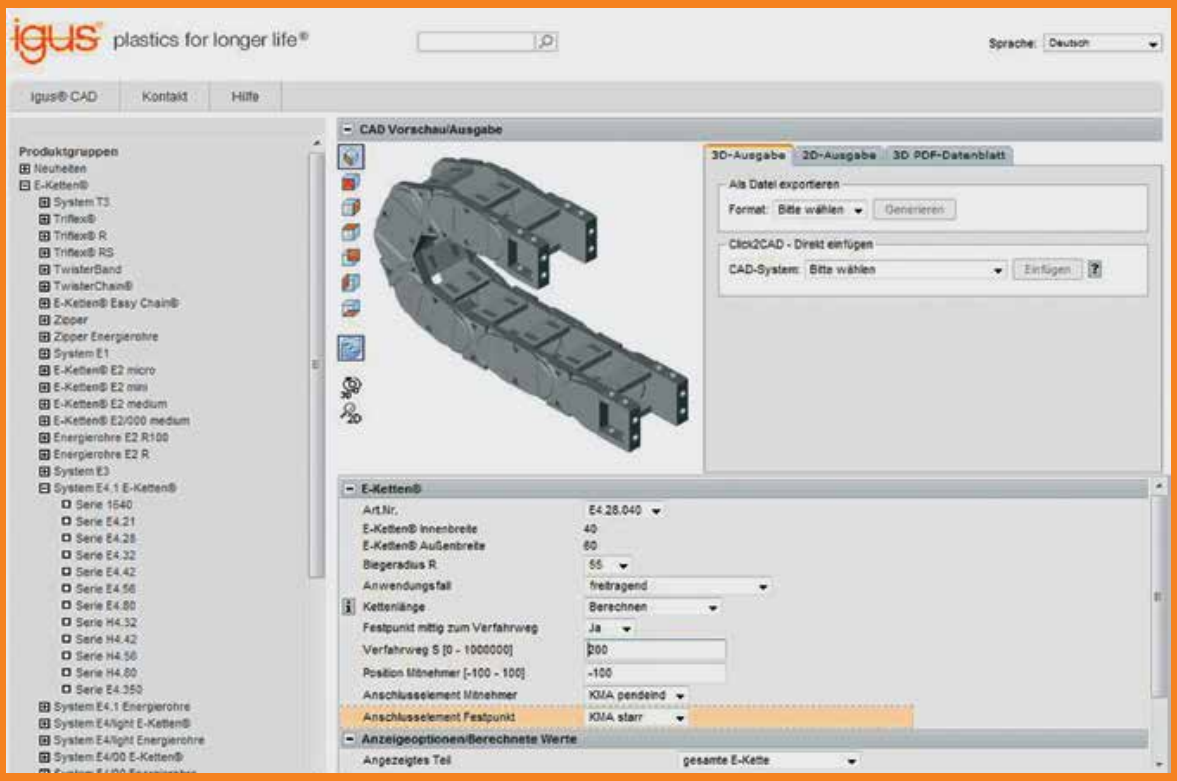
Quick & Easy - QuickPin 2.0 - Pin-Out Configurator - www.igus.com/quickpin



QuickPin 2.0 - connector-cable configurator In only 3 minutes you choose out of more than 1,000 Chainflex® cables and 3,000 connector components, configure cables online.

- Quick and easy configuration and ordering of Chainflex® cables and connectors. Per mouse click and drag & drop
- Circular plug-in connector, squared plug-in connectors, sensor connector M8/M12, D-Sub and free cable ending possible
- Just a click to transfer the configurated cable to the shopping basket and inquire, order or memorize for a later order
- Online pricing, including copper charge
- Harnessing from one source -100 % tested
- No installation required
- Many languages available
- Individual connector specification or components by manufacturers part numbers available

CAD online/offline... The 3D-CAD system is now also available offline



Now available: QuickCAD offline version

NEW

QuickCAD offline version

For all situations with limited internet access QuickCad is now also available as an offline version.

- Generation of 3D CAD models in 32 file formats
- CAD direct insertion driver for faster data transfer to various CAD systems (e.g.AutoCad, Inventor, Solidworks, CATIA, etc.)
- Quick and easy creation of 2D derivatives
- Integrated 2D and 3D CAD viewer
- Generation of 3D PDF datasheets
- 2D and 3D CAD files can be directly integrated in PDF files
- Available in 16 languages

To download the QuickCAD 2.1 program visit: **www.igus.com/downloads**

- Of course, as before, all CAD data are available to you without registration at: **www.igus-cad.com** for quick downloading

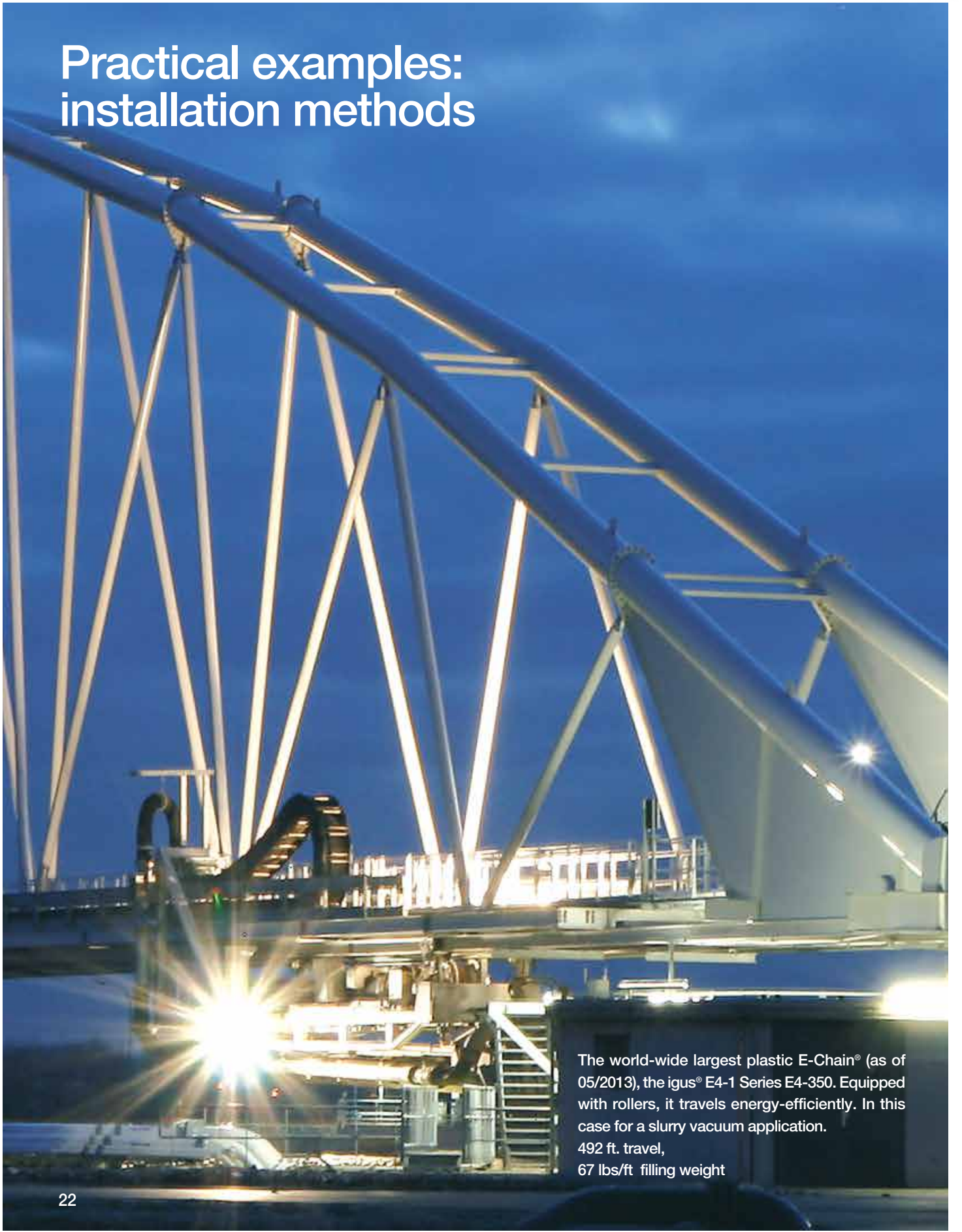
igus® applications.

Many interesting applications using igus® E-Chain Systems® can be found on the following pages

Malaysian ship unloading crane
One of the longest igus® travels with 1,448 ft for two ship unloaders in Malaysia with igus® Series 5050R. The integrated rollers reduce shearing and tractive loads by more than 75%.

The information in this catalog and the data in the “Design” section in particular, is based on our current knowledge of the products described. No legally binding assurance in respect of characteristics or suitability for a specific intended application can be derived from it. igus® is unable to assume liability of any nature for suitability of the products for a specific intended application in a practically-oriented test. Please consult igus®. For reasons relating to ongoing technical developments, we reserve the right to implement technical modifications and improvement of the products at any time. All catalog dimensions and values apply only to standard material igumid G.
Subject to printing errors. The terms “igus”, “ReadyChain”, “Chainflex”, “E-Chain”, “E-Chain System”, “E-Chain”, “Triflex”, “Twisterchain”, “igubal”, “iglide”, “DryLin”, “xiros”, “manus” and “plastics for longer life” are legally protected trademarks for igus® Inc. and, where applicable, in some foreign countries.

Practical examples: installation methods



The world-wide largest plastic E-Chain® (as of 05/2013), the igus® E4-1 Series E4-350. Equipped with rollers, it travels energy-efficiently. In this case for a slurry vacuum application.
492 ft. travel,
67 lbs/ft filling weight

Series E4-1 with side-mounted clip band as a guide for a suction hose. Partially with unsupported lower run

Standing application of an E2/000 E-Chain® with opening crossbars for gentle guidance of large hoses

Several igus® E-Chains® for various requirements on this torch cutting machine

A host of standing igus® E2/000 E-Chains® reliably supply this machining center

igus® E4 E-Tubes - unsupported, standing, or nested - supply this CNC machine. Fill weight up to 16 lbs/ft and v = 164 ft/s

The igus® E4 E-Chain® additionally guides an igus® E2/000 E-Chain® filled with cables

Practical examples: installation methods

Data gloves with E-Z Chain® Series E03 - Protect the sensors which makes it easier to take off an put on the gloves. Inner height of .20” (5 mm)

Two fully harnessed E2/000 E-Chains® with high fill weight, side mounted

Unsupported application with harnessed E-Chain System® E4

E2/000 - high stability in this elevator with an height of 740 ft

Series R68 works in an apple-sorting-machine: humidity and dirt

Standing application with System E4 and fixed mounting brackets

Drive simulator. High fill weights (40 lbs/ft) with E4 System

Applications: long strokes

Solutions with igus® E-Chain Systems®
igus® E-Chain Systems® guide and protect moving cables and hoses on automated equipment. They can be used in a wide variety of applications; some examples following. More exciting examples

The worldwide longest E-Chain travel of 2,018 ft with igus® Rol e-chains® and Chainflex® cables in a power plant

System E6, side mounted, in high-speed camera positioning system - high speeds and less vibrations

Long travel length with the super-aluminum-trough in a cold store

igus® steel guide trough used in a shelf conveyor application, Series 350 and Chainflex® cables

igus® steel guide trough used in a long travel robotics application

E-Chain® Series 4040RHD Rol e-chain® in an igus® super-aluminum-trough = up to 75% less driving power

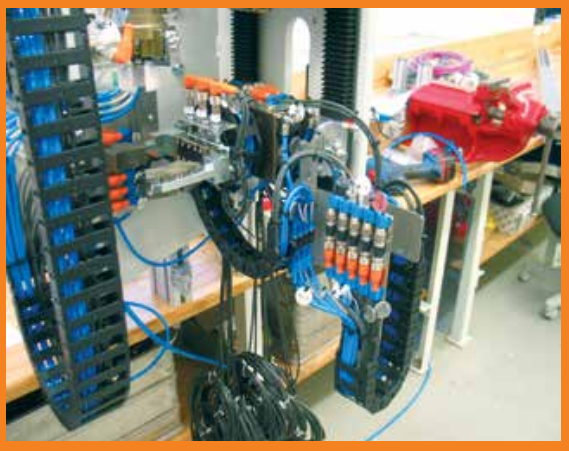
Travel up to 640 ft with the igus® System E4, safe guided in an igus® steel trough

Applications: machine tools

Portal milling machine with fully closed E4 E-Tube
with special material igumid HT. 1,562°F hot chips - no problem

Series E4-42 in a machine tool, completely assembled with igus® Chainflex® cables

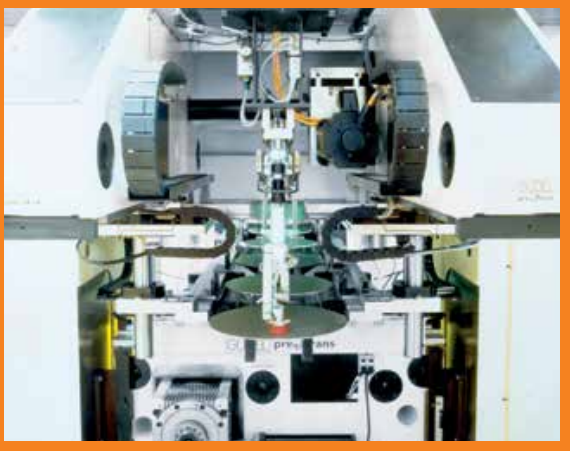
ReadyChain® with combined motions on tooling machines. Turnkey delivered with special parts for your machines



E2/000 dirt resistant E-Chain®, which saves installation space - used here on a machine tool for workpieces

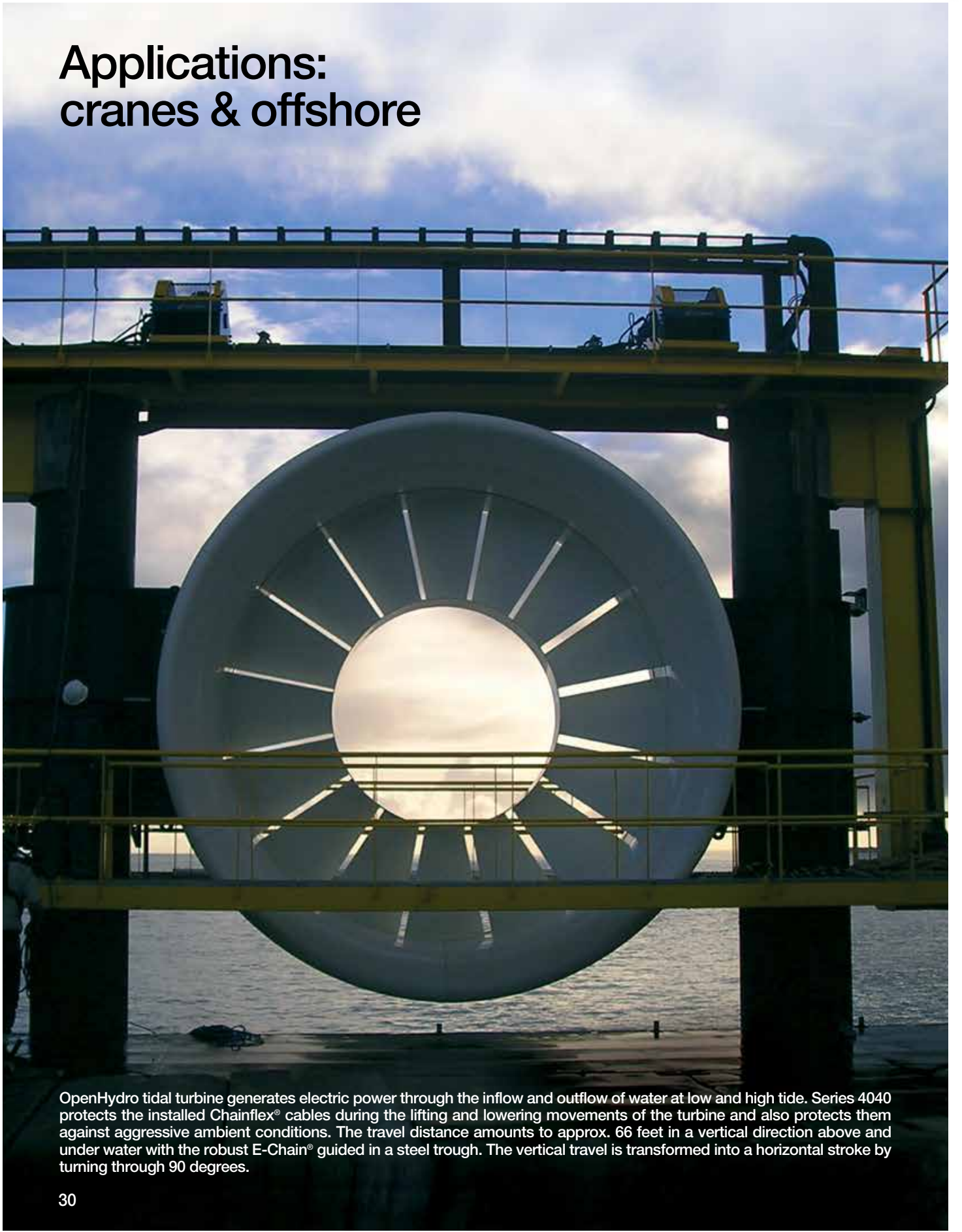
Machine tool gantry with various E4 E-Chains® - fast movements and high cycle counts

E4 E-Chain® was used here in curved sections with a 148 ft travel distance



Short travel lengths and high accelerations with Series E2 mini

Applications: cranes & offshore



OpenHydro tidal turbine generates electric power through the inflow and outflow of water at low and high tide. Series 4040 protects the installed Chainflex® cables during the lifting and lowering movements of the turbine and also protects them against aggressive ambient conditions. The travel distance amounts to approx. 66 feet in a vertical direction above and under water with the robust E-Chain® guided in a steel trough. The vertical travel is transformed into a horizontal stroke by turning through 90 degrees.

Seawater resistant super-aluminum-trough in a RTG-crane. Long travel with the E4/4 system

Stable guidance without oscillation. Long travel with 105 ft, crane operating speed 262 ft/min.

E4 as ZigZag version in a crane. The E4-Series guarantee very high availabily of the facility

E4 with extension link at a ship loader for coal unloading. Travel 345 ft, speed 787 ft/min, load 36 lbs/ft.

Installation of an E4-1 E-Chain®
Series 800 in an igus® steel guide trough

E-Chain® at the mast of the shelf conveyor rolls from one aluminum guide trough to the opposite one

Applications: high speed & smooth running

Long travel and side mounted installation with the vibration-free and low noise Series E6-29 in this camera application

System E6 in a pick and place robot. Handles injection molded CD covers in a split second

E6 accelerates the work sequences in the case of this application for wafer handling -
a = 13.2 ft/s², v = 19.7 ft/s

igus® Series E3-15 side mounted in a flat-bed scanner

igus® System E6 - High acceleration (8 g)

Nested E-Chains® reduce vibrations and improve milling accuracy Series E6-62

Low-noise low vibrations with E6.
Designed to withstand high dynamic loads

Applications: circular & 3D-movements

E-Z Triflex® E-Chains® for multidimensional movements on a production line

E4 “RBR”- application in a telescope - cold temperatures and snow

Laser measuring telescope with Triflex® R. Rotary motion in both directions ≤ 310° possible at high speeds ≤ 66 ft/s

3-axis robot for loading and unloading functions with Series R48 and 3D E-Chain® Triflex® R (TRE)

Circular movement with Series E4/4 - safe energy supply on cranes

Triflex® R in a magnesium die-casting industry (heat, dirt, oil, metal chips, dust, etc.)

E2 mini, Series B15 - The motor spindle has a swivelling range of approx. 210°

yes

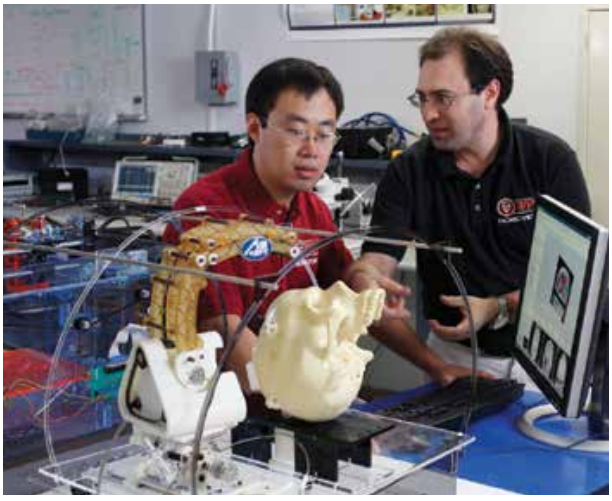
The yes Program is designed to foster the mechanical design ideas of students and to educate them on the merits and benefits of plastic components. Through yes, igus® donates its products to students, competitions and engineeering programs across the United States, Canada and Mexico.

Through the yes Program, igus®:

- offers free product donations to students, engineers and professors for use in various design competitions, school projects and engineering curriculums;
- supports the visions of various robotics competitions by donating products, technical support and other resources;
- revitalizes students' interest in engineering; and
- helps make the design ideas of students and engineers a reality.

yes Facts

- The yes Program is open to students of all ages and grade levels
- The yes Program sponsors competitions such as *FIRST*® Robotics, BEST™ Robotics, Botball and Rube Goldberg.
- The yes Program offers lecture engagements presented by bearings and cable carrier experts at schools and universities.



Hao Su, PhD candidate, and Professor Gregory Fischer from the Worcester Polytechnic Institute used iglide® plastic bushings and a DryLin® linear guide system for their MRI-guided needle placement robot, which will improve the way prostate cancer is detected and treated.

Students competing in the RASC-AL Exploration Robo-Ops competition, which took place at NASA's Rock Yard at the Johnson Space Center, used iglide® PRT slewing ring bearings in the turret of the robot's arm.

Interested in becoming part of the yes Program?

Contact yes@igus.com

Estudio de Fluidos

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942 25 27 50
edf@edfluidos.com

E-Z Chain

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

E-Z Chain - easy to fit - simply press cables in by hand!

E-Z Chain, split crossbar along the **outer** radius

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
E03	.20 (5)	ø .12	.20-.39 (5-10)	.31 (8)	.34-.54 (8.7-13.7)	.39-1.10 (10-28)	.39 (10)
E04	.28 (7)	ø .18	.28 (7)	.39 (10)	.51 (13)	.59-1.89 (15-48)	.66 (16.7)
E045	.37 (9.4)	ø .22	.63 (16)	.49 (12.5)	.91 (23)	.71-1.50 (18-38)	.51 (13)
E06	.42 (10.7)	ø .26	.39-.63 (10-16)	.59 (15)	.65-.86 (16.5-22.5)	.71-1.50 (18-38)	.79 (20)

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
E065	.44 (11.3)	ø .28	.63-1.42 (16-36)	.59 (15)	(24.8-49.3)	.71-1.50 (18-38)	.59 (15)
E08	.57 (14.5)	ø .39	.39-1.97 (10-50)	.76 (19.3)	.72-2.29 (18.2-58.2)	1.10-1.89 (28-48)	.79 (20)
E14	.96 (24.3)	ø.51	.59-1.57 (15-50)	.98 (25)	1.06-2.44 (27-62)	1.10-4.92 (28-125)	1.20 (30.5)
E200	.96 (24.3)	ø .79	2.24 (57)	1.38 (35)	2.93 (74.4)	2.17-7.87 (55-200)	1.81 (46)
E200-2	1.26 (32)	ø .71	1.46-1.97 (37-50)	1.38 (35)	3.72-4.74 (94.4-120.4)	2.17-7.87 (55-200)	1.81 (46)
E16	1.44 (36.5)	ø .98	.91-3.94 (23-100)	1.54 (39)	1.48-4.54 (37.5-115.3)	2.36-4.92 (60-125)	1.20 (30.5)
E26	1.44 (36.5)	ø 1.10	2.95 (75)	1.97 (50)	3.62 (92)	2.48-9.84 (63-250)	2.20 (56)
E26-2	1.46 (37.1)	ø .79	1.89 (48)	1.97 (50)	4.6 (117)	2.48-9.84 (63-250)	2.20 (56)
E26-3	1.46 (37.1)	ø .79	1.85 (47)	1.97 (50)	6.57 (167)	2.48-9.84 (63-250)	2.20 (56)
E300	1.91 (48.5)	ø 1.38	2.95 (75)	2.52 (64)	3.74 (95)	2.95-11.81 (75-300)	2.64 (67)
E300-2	1.91 (48.5)	ø .71	1.89 (48)	2.52 (64)	4.72 (120)	2.95-11.81 (75-300)	2.64 (67)
E300-3	1.91 (48.5)	ø .71	1.81 (46)	2.52 (64)	6.69 (170)	2.95-11.81 (75-300)	2.64 (67)

E-Z Chain, split crossbar along the **inner** radius

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
Z045	.37 (9.4)	ø .22	.63 (16)	.49 (12.5)	.91 (23)	.71-1.50 (18-38)	.51 (13)
Z06	.41 (10.5)	ø .26	.39-.63 (10-16)	.59 (15)	.65-.86 (16.5-22.5)	.71-1.50 (18-38)	.79 (20)
Z065	.44 (11.3)	ø .28	1.06 (27)	.59 (15)	1.55 (39.3)	.71-1.50 (18-38)	.59 (15)
Z08	.58 (14.7)	ø .39	.39-1.97 (10-50)	.76 (19.3)	.72-2.29 (18.2-58.2)	1.10-1.89 (28-48)	.79 (20)
Z14	.75 (19)	ø .51	.59-1.97 (15-50)	.98 (25)	1.06-2.44 (27-62)	1.10-4.92 (28-125)	1.20 (30.5)
Z200	.96 (24.3)	ø .79	2.24 (57)	1.38 (35)	2.93 (74.4)	2.17-7.87 (55-200)	1.81 (46)
Z200-2	.96 (24.3)	ø .71	1.46-1.97 (37-50)	1.38 (35)	3.72-4.74 (94.4-120.4)	2.17-7.87 (55-200)	1.81 (46)
Z16	1.26 (32)	ø .98	.91-3.94 (23-100)	1.54 (39)	1.48-4.54 (37.5-115.3)	1.57-4.92 (40-125)	1.20 (30.5)
Z26	1.44 (36.5)	ø 1.10	2.95 (75)	1.97 (50)	3.62 (92)	2.48-9.84 (63-250)	2.20 (56)
Z26-2	1.46 (37.1)	ø .79	1.89 (48)	1.97 (50)	4.6 (117)	2.48-9.84 (63-250)	2.20 (56)
Z26-3	1.46 (37.1)	ø .79	1.85 (47)	1.97 (50)	6.57 (167)	2.48-9.84 (63-250)	2.20 (56)
Z300	1.91 (48.5)	ø 1.38	2.95 (75)	2.52 (64)	3.74 (95)	2.95-11.81 (75-300)	2.64 (67)
Z300-2	1.91 (48.5)	ø .71	1.89 (48)	2.52 (64)	4.72 (120)	2.95-11.81 (75-300)	2.64 (67)
Z300-3	1.91 (48.5)	ø .71	1.81 (46)	2.52 (64)	6.69 (170)	2.95-11.81 (75-300)	2.64 (67)

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www.edfluidos.com

Quick Selection

Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	EDS/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
.154 (0.23)	1.31 (0.40)	–		–	–	–	○	■	●	■	●○○	2.7
.188 (0.28)	1.80 (0.55)	–		–	–	–	▲	■	●	●	●○○	2.11
.168 (0.25)	1.31 (0.40)	–		–	–	–	▲	■	●	■	●○○	2.15
.302 (0.45)	1.80 (0.55)	–		–	–	–	▲	■	●	●	●○○	2.21
.302 (0.45)	1.97 (0.60)	–		●	–	–	▲	■	●	●	●○○	2.25
.504 (0.75)	3.28 (1.00)	–		–	–	–	▲	■	●	●	●○○	2.31
.336 (0.5)	2.13 (0.65)	–		–	–	–	▲	■	●	●	●○○	2.35
1.34 (2.0)	5.74 (1.75)	–		–	–	–	▲	■	●	●	●○○	2.39
1.34 (2.0)	5.74 (1.75)	–		●	–	–	▲	■	●	●	●○○	2.39
.504 (0.75)	3.28 (1.00)	–		–	–	–	▲	■	●	●	●○○	2.45
2.69 (4.0)	7.87 (2.00)	–		–	–	–	▲	■	●	●	●○○	2.49
2.69 (4.0)	7.87 (2.00)	–		●	–	–	▲	■	●	●	●○○	2.49
2.69 (4.0)	7.87 (2.00)	–		●	–	–	▲	■	●	●	●○○	2.49
5.38 (8.0)	7.38 (2.25)	–		–	–	–	▲	■	●	●	●○○	2.55
5.38 (8.0)	7.38 (2.25)	–		●	–	–	▲	■	●	●	●○○	2.55
5.38 (8.0)	7.38 (2.25)	–		●	–	●	▲	■	●	●	●○○	2.55
.168 (0.25)	1.31 (0.40)	–		–	–	–	▲	■	●	■	●○○	2.15
.302 (0.45)	1.80 (0.55)	–		–	–	–	▲	■	●	●	●○○	2.21
.302 (0.45)	1.97 (0.60)	–		●	–	–	▲	■	●	●	●○○	2.25
.504 (0.75)	3.28 (1.00)	–		–	–	–	▲	■	●	●	●○○	2.31
.336 (0.5)	2.13 (0.65)	–		–	–	–	▲	■	●	●	●○○	2.35
1.34 (2.0)	5.74 (1.75)	–		–	–	–	▲	■	●	●	●○○	2.39
1.34 (2.0)	5.74 (1.75)	–		●	–	–	▲	■	●	●	●○○	2.39
.504 (0.75)	3.28 (1.00)	–		–	–	–	▲	■	●	●	●○○	2.45
2.69 (4.0)	7.87 (2.00)	–		–	–	–	▲	■	●	●	●○○	2.49
2.69 (4.0)	7.87 (2.00)	–		●	–	–	▲	■	●	●	●○○	2.49
2.69 (4.0)	7.87 (2.00)	–		●	–	–	▲	■	●	●	●○○	2.49
5.38 (8.0)	7.38 (2.25)	–		–	–	–	▲	■	●	●	●○○	2.55
5.38 (8.0)	7.38 (2.25)	–		●	–	–	▲	■	●	●	●○○	2.55
5.38 (8.0)	7.38 (2.25)	–		●	–	●	▲	■	●	●	●○○	2.55

System E-1, SnapChain, Zipper Chain

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

System E1 - Cost-effective, one-piece strip design for simple applications

E-Chains®, zip-open along the outer radius

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
E1-10	**.39 (10)**	ø .35	.51 (13)	.61 (15.5)	.72-2.29 (16.5)	.71 (18)	.79 (20)
E1-17	**.67 (17)**	ø .59	.83-1.73 (21-44)	.98 (25)	1.02-1.93 (26-49)	1.10 (28)	1.00 (25.5)
E1-18	**.71 (18)**	ø .63	.59 (15)	1.02 (26)	.79 (20)	1.10 (28)	.99 (25.25)
E1-20	**.79 (20)**	ø .71	.59 (15)	1.06 (27)	.87 (22)	1.10 (28)	.98 (25)

SnapChain - Fit cable assemblies quickly in bunches

E-Chains®, Loops to be opened along the outer radius

TE14-50	**Loop Length:** 50 mm		–	–	–	1.10-4.92 (28-125)	1.20 (30.5)
TE26-120	**Loop Length:** 120 mm		–	–	–	2.48-7.87 (63-200)	2.20 (56)

E-Tubes, Loops to be opened along the inner radius

TZ14-50	**Loop Length:** 50 mm		–	–	–	1.10-4.92 (28-125)	1.20 (30.5)
TZ26-120	**Loop Length:** 120 mm		–	–	–	2.48-7.87 (63-200)	2.20 (56)

Zipper Chain - Zipper fastening E-Chains® and E-Tubes!

E-Chains®, zip-open along the outer radius

047	**.35 (9)**	ø .28	.39-.63 (10-16)	.49 (12.5)	.63-.87 (16-22)	.71-1.50 (18-38)	.51 (13)
07	**.41 (10.3)**	ø .31	.24-2.52 (6-64)	.59 (15)	.49-2.80 (12.5-71)	.71-1.50 (18-38)	.79 (20)
09	**.59 (15)**	ø .51	.39-1.97 (10-50)	.76 (19.3)	.72-2.29 (18.2-58.2)	1.10-1.89 (28-48)	.79 (20)
15	**.67 (17)**	ø .59	.59-3.94 (15-100)	.94 (24)	1.02-4.45 (26-113)	1.50-7.09 (38-180)	1.20 (30.5)
17	**1.26 (32)**	ø 1.10	.59-3.94 (15-100)	1.54 (39)	1.02-4.45 (26-113)	2.48-4.92 (63-125)	1.20 (30.5)

E-Tubes, zip-open along the inner radius

R07	**.41 (10.3)**	ø .31	.39-1.97 (10-50)	.59 (15)	.65-2.24 (16.5-57)	1.50-1.89 (38-48)	.79 (20)
R09	**.59 (15)**	ø .49	.39-1.97 (10-50)	.76 (19.3)	.72-2.29 (18.2-58.2)	1.89-3.94 (48-100)	.79 (20)
R15	**.67 (17)**	ø .59	.98-3.15 (25-80)	.94 (24)	1.42-3.70 (36-94)	2.48-7.09 (63-180)	1.20 (30.5)
R17	**1.26 (32)**	ø 1.10	.59-2.48 (15-63)	1.54 (39)	1.02-2.99 (26-76)	2.48-4.92 (63-125)	1.20 (30.5)

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Quick Selection

Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	EDS/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
upon request	–	–		–	–	–	○	●	▲	●	●●●	2.69
upon request	–	–		–	–	–	○	●	▲	●	●●●	2.70
upon request	–	–		–	–	–	○	●	▲	●	●●●	2.71
upon request	–	–		–	–	–	○	●	▲	●	●●●	2.72
–	–	–		–	–	–	–	–	▲	■	●●●	2.77
–	–	–		–	–	–	–	–	▲	■	●●●	2.78
–	–	–		–	–	–	–	–	▲	■	●●●	2.77
–	–	–		–	–	–	–	–	▲	■	●●●	2.78
.168 (0.25)	1.31 (0.40)	–		–	–	–	▲	●	▲	■	●●●	3.7
.27 (0.4)	1.80 (0.55)	–		–	–	–	▲[2] ■	●	▲	■	●●●	3.11
.504 (0.75)	3.28 (1.00)	–		●	●	–	▲[2] ■	●	▲	■	●●●	3.19
1.01 (1.5)	3.94 (1.20)	–		●	●	–	▲	■	▲	■	●●●	3.27
.67 (1.0)	3.28 (1.00)	–		●	●	–	▲	●	▲	■	●●●	3.39
.27 (0.4)	1.80 (0.55)	–		–	–	–	▲	●	▲	■	●●●	3.15
.504 (0.75)	3.28 (1.00)	–		–	–	–	▲	●	▲	■	●●●	3.23
1.10 (1.5)	.81 (1.2)	–		●	●	–	▲	●	▲	■	●●●	3.33
1.01 (1.5)	.81 (1.2)	–		●	●	–	▲	●	▲	■	●●●	3.45

E2 Micro, E2 Mini

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

E2 Micro - smallest inner heights and bending radii

E-Chains®, non snap-open

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
03	.20 (5)	ø .14	.20-.39 (5-10)	.31 (8)	.34-.54 (8.7-13.7)	.39-1.10 (10-28)	.39 (10)
04	.28 (7)	ø .20	.28-1.18 (7-30)	.39 (10)	.47-1.38 (12-35)	.59-1.89 (15-48)	.66 (16.7)
05	.39 (10)	ø .31	.24-2.52 (6-64)	.47 (12)	.39-2.68 (10-68)	.71-1.50 (18-38)	.51 (13)
045	.41 (10.3)	ø .31	.24-2.52 (6-64)	.49 (12.5)	.47-2.76 (12-70)	.71-1.50 (18-38)	.79 (20)
06	.41 (10.5)	ø .31	.24-2.52 (6-64)	.59 (15)	.49-2.80 (12.5-71)	.71-1.50 (18-38)	.79 (20)
E2C-10	(10.6)	ø .31	.24-1.97(6-50)	.59(15)	.53-2.26 (13.4-57.4)	.71-1.50 (18-38)	.79 (20)
E2C-15	(14.9)	ø .49	.39-1.97(10-50)	.76 (19.3)	.70-2.28 (17.8-57.8)	1.10-2.95 (28-75)	.79 (20)
08	.59 (15)	ø .47	.39-1.97 (10-50)	.76 (19.3)	.72-2.29 (18.2-58.2)	1.10-1.89 (28-48)	.79 (20)

E-Chains®, snap-open along the inner radius

E2i-10	(10.6)	ø .31	.24-1.97(6-50)	.59(15)	.53-2.26 (13.4-57.4)	.71-1.50 (18-38)	.79 (20)
E2i-15	(14.9)	ø .49	.39-1.97(10-50)	.76 (19.3)	.70-2.28 (17.8-57.8)	1.10-2.95 (28-75)	.79 (20)

E-Chains®, snap-open along the outer radius

E2-10	(10.6)	ø .31	.24-1.97(6-50)	.59(15)	.53-2.26 (13.4-57.4)	.71-1.50 (18-38)	.79 (20)
B07	.41 (10.3)	ø .31	.63-1.57 (16-40)	.59 (15)	.89-1.85 (22.5-47)	.71-1.50 (18-38)	.79 (20)
B09	.56 (14.3)	ø .49	.63-1.57 (16-40)	.76 (19.3)	.95-1.90 (24.2-48.2)	1.10-1.89 (28-48)	.79 (20)
E2-15	(14.9)	ø .49	.39-1.97(10-50)	.76 (19.3)	.70-2.28 (17.8-57.8)	1.10-2.95 (28-75)	.79 (20)

E2 Mini - small and medium sizes

E-Chains®, non snap-open

10	.71 (18)	ø .63	.59-3.94 (15-100)	.91 (23)	1.02-4.45 (26-113)	1.10-7.09 (28-180)	1.20 (30.5)

E-Chains®, snap-open along the inner radius

14	.79 (20)	ø .63	.59-1.97 (15-50)	.98 (25)	1.02-2.40 (26-61)	1.10-4.92 (28-125)	1.20 (30.5)
B15i	.67 (17)	ø .55	.59-3.94 (15-100)	.91 (23)	1.02-4.45 (26-113)	1.50-7.09 (38-180)	1.20 (30.5)
B17i	1.26 (32)	ø 1.10	1.50 (38)	1.54 (39)	1.40-1.91 (35.5-48.5)	1.89-4.92 (48-125)	1.20 (30.5)

E-Chains®, snap-open along the outer radius

B15	.67 (17)	ø .55	.59-3.94 (15-100)	.91 (23)	1.02-4.45 (26-113)	1.50-7.09 (38-180)	1.20 (30.5)
B17	1.26 (32)	ø 1.10	.59-3.94 (15-100)	1.54 (39)	1.00-1.40 (25.5-113)	1.89-4.92 (48-125)	1.20 (30.5)

Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	EDS/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
.16 (0.24)	1.31 (0.40)	–		–	–	–	▲	○	▲	■	●●●	4.7
.25 (0.375)	1.64 (0.50)	–		–	–	–	▲	○	▲	●	●●●	4.11
.25 (0.375)	1.64 (0.50)	–		–	–	–	▲	○	▲	●	●●●	4.15
.17 (0.25)	1.64 (0.50)	–		–	–	–	▲	○	▲	■	●●●	4.19
.32 (0.48)	1.97 (0.60)	–		–	–	–	▲	○	▲	●	●●●	4.23
.47 (0.70)	2.46 (0.75)	–		▲	–	–	▲	○	▲	●	●●●	4.27
.84 (1.25)	4.27 (1.30)	–		–	–	–	▲	○	▲	●	●●●	4.41
.50 (0.74)	3.28 (1.00)	–		–	–	–	▲	○	▲	●	●●●	4.47
.47 (0.70)	2.46 (0.75)	–		▲	–	–	▲	○	▲	●	●●●	4.27
.84 (1.25)	4.27 (1.30)	–		–	–	–	▲	○	▲	●	●●●	4.41
.47 (0.70)	2.46 (0.75)	–		▲	–	–	▲	○	▲	●	●●●	4.27
.27 (0.40)	1.80 (0.55)	–		–	–	–	○	●	▲	■	●●●	4.33
.47 (0.70)	3.28 (1.00)	–		●	●	–	○	●	▲	■	●●●	4.37
.84 (1.25)	4.27 (1.30)	–		–	–	–	▲	○	▲	●	●●●	4.41
1.01 (1.50)	4.26 (1.30)	–		–	–	–	▲	●	▲	●	●●●	4.57
.34 (0.50)	2.13 (0.65)	–		●	●	–	▲	■	▲	●	●●●	4.63
1.01 (1.50)	4.26 (1.30)	–		●	●	–	▲	●	▲	●	●●●	4.67
.67 (1.00)	3.28 (1.00)	–		●	●	–	▲	○	▲	●	●●●	4.73
1.01 (1.50)	4.26 (1.30)	–		●	●	–	▲	●	▲	●	●●●	4.55
.67 (1.00)	3.28 (1.00)	–		●	●	–	▲	○	▲	●	●●●	4.61

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E2/000, E2 Medium Classic

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

E2/000 - General purpose E-Chain® for a wide range of applications

E-Chains®, snap-open along the inner radius

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
1400	.83 (21)	ø .71	.59-4.92 (15-125)	1.10 (28)	1.12-5.45 (28.5-138.5)	1.38-7.09 (35-180)	1.31 (33.3)
2400	.98 (25)	ø .91	.98-4.92 (25-125)	1.38 (35)	1.61-5.55 (41-141)	2.16-9.84 (55-250)	1.81 (46)
2600	1.38 (35)	ø 1.26	1.97-7.87 (50-200)	1.97 (50)	2.60-7.63 (66-194)	2.48-.984 (63-250)	2.20 (56)
3400	1.77 (45)	ø 1.65	1.97-9.84 (50-250)	2.52 (64)	2.76-10.63 (70-270)	2.95-11.81 (75-300)	2.64 (67)

E-Chains®, snap-open along the outer radius

1500	.83 (21)	ø .71	.59-4.92 (15-125)	1.10 (28)	1.12-5.45 (28.5-138.5)	1.38-7.09 (35-180)	1.31 (33.3)
2500	.98 (25)	ø .91	.98-4.92 (25-125)	1.38 (35)	1.61-5.55 (41-141)	2.16-9.84 (55-250)	1.81 (46)
2700	1.38 (35)	ø 1.26	1.97-7.87 (50-200)	1.97 (50)	2.60-8.62 (66-219)	2.48-.984 (63-250)	2.20 (56)
3500	1.77 (45)	ø 1.65	1.97-9.84 (50-250)	2.52 (64)	2.76-10.63 (70-270)	2.95-11.81 (75-300)	2.64 (67)
255	.94 (24)	ø .87	1.50-4.06 (38-103)	1.38 (35)	2.13-4.69 (54-119)	2.16-9.84 (55-250)	1.09 (27.8)

Half E-Tubes, snap-open along the inner radius

1450	.83 (21)	ø .71	.59-4.92 (15-125)	1.10 (28)	1.12-5.45 (28.5-138.5)	2.95-7.09 (75-180)	1.31 (33.3)
2450	.98 (25)	ø .91	.98-4.92 (25-125)	1.38 (35)	1.61-5.55 (41-141)	2.95-9.84 (75-250)	1.81 (46)
2650	1.38 (35)	ø 1.26	1.97-7.87 (50-200)	1.97 (50)	2.60-8.62 (66-219)	3.94-.984 (100-250)	2.20 (56)
3450	1.77 (45)	ø 1.65	1.97-9.84 (50-250)	2.52 (64)	2.76-10.63 (70-270)	4.92-11.81 (125-300)	2.64 (67)

E-Tubes, snap-open along the inner radius

1480	.83 (21)	ø .71	.59-4.92 (15-125)	1.10 (28)	1.12-5.45 (28.5-138.5)	1.38-7.09 (35-180)	1.31 (33.3)
2480	.98 (25)	ø .91	.98-4.92 (25-125)	1.38 (35)	1.61-5.55 (41-141)	2.16-9.84 (55-250)	1.81 (46)
2680	1.38 (35)	ø 1.26	1.97-7.87 (50-200)	1.97 (50)	2.60-8.62 (66-219)	2.48-.984 (63-250)	2.20 (56)
3480	1.77 (45)	ø 1.65	1.97-9.84 (50-250)	2.52 (64)	2.76-10.63 (70-270)	4.92-11.81 (125-300)	2.64 (67)

E2 Medium Classic - general purpose E-Chain®

E-Chains®, E2 Medium, closed design

200	.98 (25)	ø .91	.98-4.92 (25-125)	1.38 (35)	1.61-5.55 (41-141)	2.16-9.84 (55-250)	1.81 (46)
26	1.38 (35)	ø 1.26	1.97-7.87 (50-200)	1.97 (50)	2.60-8.62 (66-219)	2.48-9.84 (63-250)	2.20 (56)

E-Chains®, E2 Medium, snap-open along the inner radius

240	.98 (25)	ø .91	.98-4.92 (25-125)	1.38 (35)	1.61-5.55 (41-141)	2.16-9.84 (55-250)	1.81 (46)
27i	1.38 (35)	ø 1.26	1.97-7.87 (50-200)	1.97 (50)	2.60-8.62 (66-219)	2.48-.984 (63-250)	2.20 (56)
340	1.77 (45)	ø 1.65	1.97-9.84 (50-250)	2.52 (64)	2.76-10.63 (70-270)	2.95-11.81 (75-300)	2.64 (67)

E-Chains®, E2 Medium, snap-open along the outer radius

250	.98 (25)	ø .91	.98-4.92 (25-125)	1.38 (35)	1.61-5.55 (41-141)	2.16-9.84 (55-250)	1.81 (46)
27	1.38 (35)	ø 1.26	1.97-7.87 (50-200)	1.97 (50)	2.60-8.62 (66-219)	2.48-.984 (63-250)	2.20 (56)
350	1.77 (45)	ø 1.65	1.97-9.84 (50-250)	2.52 (64)	2.76-10.63 (70-270)	2.95-11.81 (75-300)	2.64 (67)

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Quick Selection

Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	EDS/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
1.34 (2)	5.74 (1.75)	246 (75)		●	●	–	▲	■	▲	●	●●●	4.85
3.36 (5)	7.38 (2.25)	328 (100)		●	●	●	▲	■	▲	●	●●●	4.103
5.37 (8)	9.02 (2.75)	3.94 (120)		●	●	●	▲	●	▲	●	●●●	4.123
8.74(13)	9.84 (3.00)	492 (150)		●	●	●	▲	●	▲	●	●●●	4.143
1.34 (2)	5.74 (1.75)	246 (75)		●	●	–	▲[2]■	■	▲	●	●●●	4.85
3.36 (5)	7.38 (2.25)	328 (100)		●	●	●	▲[2]■	■	▲	●	●●●	4.103
5.37 (8)	9.02 (2.75)	3.94 (120)		●	●	●	▲[2]■	●	▲	●	●●●	4.123
8.74(13)	9.84 (3.00)	492 (150)		●	●	●	▲	●	▲	●	●●●	4.143
1.34 (2)	5.91 (1.80)	328 (100)		●	●	●	▲	●	▲	■	●●●	4.163
1.34 (2)	5.74 (1.75)	246 (75)		●	●	–	●	■	▲	●	●●●	4.95
3.36 (5)	7.38 (2.25)	328 (100)		●	●	▲	●	■	▲	●	●●●	4.113
5.37 (8)	9.02 (2.75)	3.94 (120)		●	●	●	●	●	▲	●	●●●	4.133
8.74(13)	9.84 (3.00)	492 (150)		●	●	●	▲	●	▲	●	●●●	4.153
1.34 (2)	5.74 (1.75)	246 (75)		●	●	–	▲	■	▲	○	●●●	4.95
3.36 (5)	7.38 (2.25)	328 (100)		●	●	▲	▲	■	▲	○	●●●	4.113
5.37 (8)	9.02 (2.75)	3.94 (120)		●	●	●	▲	●	▲	○	●●●	4.133
8.74(13)	9.84 (3.00)	492 (150)		●	●	●	▲	●	▲	○	●●●	4.153
2.69 (4.0)	6.56 (2.00)	328 (100)		●	●	●	–	–	–	–	●●●	4.177
5.38 (8.0)	7.22 (2.20)	394 (120)		●	●	●	–	–	–	–	●●●	4.187
2.69 (4.0)	6.56 (2.00)	328 (100)		●	●	●	–	–	–	–	●●●	4.177
5.38 (8.0)	7.22 (2.20)	394 (120)		●	●	●	–	–	–	–	●●●	4.187
6.72 (10.0)	8.20 (2.50)	492 (150)		●	●	●	–	–	–	–	●●●	4.197
2.69 (4.0)	6.56 (2.00)	328 (100)		●	●	●	–	–	–	–	●●●	4.177
5.38 (8.0)	7.22 (2.20)	394 (120)		●	●	●	–	–	–	–	●●●	4.187
6.72 (10)	8.20 (2.50)	492 (150)		●	●	●	–	–	–	–	●●●	4.197

1) Conditionally suitable in inner radii
2) ESD-option available from stock. Shipped from stock in 24 hours.

E2-Tubes

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

E2 R100 - Protection against dirt and debris, cost-effective

E2 R100, Hinged, snap-open on both sides of the inner radius

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
R117	**.83 (21)**	ø .67	.79-3.94 (20-100)	1.10 (28)	1.26-4.41 (32-112)	2.48-7.09 (63-180)	1.20 (30.5)
R157	**1.57 (40)**	ø 1.46	1.57-7.87 (40-200)	1.97 (50)	2.20-8.50 (56-216)	3.94-9.84 (100-250)	1.81 (46)
R167	**1.97 (50)**	ø 1.81	1.97-9.84 (50-250)	2.52 (64)	2.67-10.55 (68-268)	3.94-11.81 (100-300)	2.31 (58.8)

E2 R100, Hinged, snap-open on both sides of the inner radius

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
R118	**.83 (21)**	ø .67	.79-3.94 (20-100)	1.10 (28)	1.26-4.41 (32-112)	2.48-7.09 (63-180)	1.20 (30.5)
R158	**1.57 (40)**	ø 1.46	1.57-7.87 (40-200)	1.97 (50)	2.20-8.50 (56-216)	3.94-9.84 (100-250)	1.81 (46)
R168	**1.97 (50)**	ø 1.81	1.97-9.84 (50-250)	2.52 (64)	2.67-10.55 (68-268)	3.94-11.81 (100-300)	2.31 (58.8)

E2 R - Chip protection at higher speeds and smooth running

E2 R, Removable lids along the outer radius

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
R48	**.98 (25)**	ø .87	.98-5.12 (25-130)	1.42 (36)	1.42-5.55 (36-141)	2.36-9.84 (60-250)	1.19 (30.3)
R58	**1.38 (35)**	ø 1.26	1.97-7.87 (50-200)	1.97 (50)	2.60-8.50 (66-216)	2.95-9.84 (75-250)	1.31 (33.3)
R68	**1.77 (45)**	ø 1.65	1.97-9.84 (50-250)	2.52 (64)	2.68-10.55 (68-268)	3.94-11.81 (100-300)	1.42 (36)

RX - Extremely chip repellent E-Tubes

System RX, Openable along the outer radius

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
RX32	**1.65 (42)**	ø 1.46	3.15 (80)	2.20 (56)	3.87 (98.4)	3.15-5.91 (80-150)	1.26 (32)
RX40	**2.05 (52)**	ø 1.89	3.94 (100)	2.76 (70)	4.84 (123)	3.94-11.81 (100-300)	1.57 (40)
RX48	**2.44 (62)**	ø 2.20	4.72 (120)	3.31 (84)	5.81 (147.5)	4.72-5.91 (120-150)	1.89 (48)
RX56	**2.87 (73)**	ø 2.56	5.51 (140)	3.86 (98)	6.78 (172.2)	5.51 (140)	2.20 (56)

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Quick Selection

	Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	EDS/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
	.154 (0.23)	1.31 (0.40)	–		–	–	–	○	■	●	■	◐●●	5.7
	.188 (0.28)	1.80 (0.55)	–		–	–	–	▲	■	●	●	◐●●	5.13
	.168 (0.25)	1.31 (0.40)	–		–	–	–	▲	■	●	■	◐●●	5.21
	1.01 (1.5)	3.93 (1.20)	–		●	–	–	▲	○	–	○	●●●	5.7
	5.38 (8.0)	7.38 (2.25)	–		●	▲	–	▲	○	–	○	●●●	5.13
	6.72 (10.0)	8.20 (2.50)	–		●	▲	–	▲	○	–	○	●●●	5.21
	.67 (1.0)	4.92 (1.50)	–		●	▲	–	▲	○	–	●	●◐●	5.27
	5.38 (8.0)	7.55 (2.30)	–		●	●	●	▲	○	–	●	●◐●	5.35
	6.72 (10.0)	8.20 (2.50)	–		●	●	●	▲	○	–	●	●◐●	5.43
	2.69 (4)	5.58 (1.7)	–		–	–	–	▲	○	–	●	●◐●	5.57
	4.03 (6)	5.91 (1.8)	–		–	–	–	▲	○	–	●	●◐●	5.61
	6.05 (9)	7.25 (2.1)	–		●	●	–	▲	○	–	●	●◐●	5.65
	7.39 (11)	7.54 (2.3)	–		●	●	–	▲	○	–	●	●◐●	5.69

System E4-1

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

E4-1 - ONE E-Chain® series for almost all applications

E4-1 E-Chains®, crossbars every link - robust version

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
E4-21	.83 (21)	ø .71	1.18-4.72 (30-120)	1.10 (28)	1.73-5.27 (44-134)	1.50-7.87 (38-200)	1.20 (30.5)
E4-28	1.10 (28)	ø .98	1.57-11.81 (40-300)	1.65 (42)	2.36-12.60 (60-320)	2.16-9.84 (55-250)	1.81 (46)
E4-32	1.26 (32)	ø 1.10	1.97-15.75 (50-400)	2.13 (54)	2.87-16.65 (73-423)	2.48-11.81 (63-300)	2.20 (56)
E4-42	1.65 (42)	ø 1.50	1.97-15.75 (50-400)	2.52 (64)	2.99-16.77 (76-426)	2.95-13.78 (75-350)	2.64 (67)
E4-56	2.20 (56)	ø 1.97	1.97-23.62 (50-600)	3.31 (84)	3.31-24.96 (84-634)	5.31-19.69 (135-500)	3.58 (91)
E4-80	3.15 (80)	ø 2.91	1.97-23.62 (50-600)	4.25 (108)	3.94-25.59 (100-650)	5.91-39.37 (150-1000)	4.37 (111)
E4-112	4.41 (112)	ø 3.94	1.97-23.62 (50-600)	5.51 (140)	3.31-24.96 (84-634)	7.87-23.62 (200-600)	5.63 (143)
600	4.25 (108)	ø 3.92	7.87-23.62 (200-600)	5.51 (140)	9.92-25.67 (252-652)	7.87-39.37 (200-1000)	5.63 (143)
800	7.87 (200)	ø 7.44	7.87-23.62 (200-600)	9.29 (236)	10.23-25.98 (260-660)	12.80-39.37 (325-1000)	9.84 (250)
840	8.03 (204)	ø 7.24	3.94-22.17 (100-563)	9.29 (236)	6.30-24.53 (160-623)	12.79-39.37 (325-1000)	9.84 (250)
E4-350	13.78 (350)	ø 12.40	15.75-31.50 (400-800)	17.72 (450)	21.26 37.01 (540-940)	19.69-39.37 (500-1000)	18.50 (470)

H4-1 E-Chains®, crossbars every 2nd link - standard version

H4-32	1.26 (32)	ø 1.10	1.97-15.75 (50-400)	2.13 (54)	2.87-16.65 (73-423)	2.48-11.81 (63-300)	2.20 (56)
H4-42	1.65 (42)	ø 1.50	1.97-15.75 (50-400)	2.52 (64)	2.99-16.77 (76-426)	2.95-13.78 (75-350)	2.64 (67)
H4-56	2.20 (56)	ø 1.97	1.97-23.62 (50-600)	3.31 (84)	3.31-24.96 (84-634)	5.31-19.69 (135-500)	3.58 (91)
H4-80	3.15 (80)	ø 2.91	1.97-23.62 (50-600)	4.25 (108)	3.94-25.59 (100-650)	5.91-39.37 (150-1000)	4.37 (111)
H4-112	4.41 (112)	ø 3.94	1.97-23.62 (50-600)	5.51 (140)	3.31-24.96 (84-634)	7.87-23.62 (200-600)	5.63 (143)
601	4.25 (108)	ø 3.82	7.87-23.62 (200-600)	5.51 (140)	9.92-25.67 (252-652)	7.87-39.37 (200-1000)	5.63 (143)

R4-1 E-Tubes, Fully enclosed - protection against chips, dust and dirt

R4-28	1.10 (28)	ø .98	1.97-11.81 (50-300)	1.65 (42)	2.76-12.60 (70-320)	2.95-9.84 (75-250)	1.81 (46)
R4-32	1.26 (32)	ø 1.10	1.97-11.81 (50-300)	2.13 (54)	2.87-16.65 (73-323)	4.92-11.81 (125-300)	2.20 (56)
R4-42	1.65 (42)	ø 1.50	1.97-11.81 (50-300)	2.52 (64)	2.99-16.77 (76-326)	4.92-13.78 (125-350)	2.64 (67)
R4-56	2.20 (56)	ø 1.97	2.95-18.19 (75-462)	3.31 (84)	4.29-19.57 (109-497)	5.91-19.69 (150-500)	3.58 (91)
R4-80	3.15 (80)	ø 2.91	7.87-15.75 (200-400)	4.25 (108)	9.84-15.75 (250-450)	7.87-39.37 (200-1000)	4.37 (111)
R4-112	4.25 (108)	ø 3.94	7.87-19.69 (200-500)	5.51 (140)	9.92-21.73 (252-552)	9.84-39.37 (250-1000)	5.63 (143)
R608	4.25 (108)	ø 3.92	7.87-15.75 (200-400)	5.51 (140)	9.92-17.80 (252-452)	9.84-39.37 (250-1000)	5.63 (143)

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Quick Selection

Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	EDS/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
2.69 (4)	8.20 (2.5)	394 (120)		●	●	–	▲2)■	▲■	▲	▲■	●●●	6.9
6.72 (10)	8.20 (2.5)	656 (200)		●	●	●	▲2)■	▲	▲	▲■	●●●	6.15
10.08 (15.0)	10.83 (3.3)	656 (200)		●	–	●	▲2)■	▲■	▲	▲■	●●●	6.25
24.86 (37.0)	13.12 (4.0)	984 (300)		●	–	●	▲2)■	▲	▲	▲■	●●●	6.37
42.00 (62.5)	16.41 (5.0)	1312 (400)		●	–	●	▲2)■	▲	▲	▲■	●●●	6.49
53.76 (80.0)	20.34 (6.2)	1312 (400)		●	–	●	▲2)■	▲	▲	▲■	●●●	6.61
33.60 (50.0)	14.76 (4.5)	1312 (400)		●	–	●	▲■	▲	▲	▲■	●●●	6.73
43.68 (65.0)	22.97 (7.00)	1476 (450)		●	–	●	▲	○	–	■	●●●	6.83
60.48 (90.0)	26.25 (8.0)	1,476 (450)		●	–	●	▲	○	▲	■	●●●	6.91
60.48 (90.0)	26.25 (8.0)	1,476 (450)		●	–	–	▲	○	▲	■	●●●	6.97
403.18 (600)	20.34 (6.2)	–		●	–	●	▲	–	▲	–	●●●	6.105
10.08 (15.0)	10.83 (3.3)	656 (200)		●	–	●	▲■	*	–	▲■	●●●	6.25
24.86 (37.0)	13.12 (4.0)	984 (300)		●	–	●	▲■	*	–	▲■	●●●	6.37
42.00 (62.5)	16.41 (5.0)	1,312 (400)		●	–	●	▲■	*	–	▲■	●●●	6.49
53.76 (80.0)	20.34 (6.2)	1,312 (400)		●	–	●	▲■	*	–	▲■	●●●	6.61
57.12 (85.0)	21.33 (6.5)	1,476 (450)		●	–	●	▲■	○	–	●	●●●	6.73
43.68 (65.0)	22.97 (7.00)	1476 (450)		●	–	●	▲	○	–	■	●●●	6.83
6.72 (10.0)	8.20 (2.5)	656 (200)		●	●	●	▲■	*	–	▲■	●●●	6.15
10.08 (15.0)	10.83 (3.3)	656 (200)		●	–	●	▲■	*	–	▲■	●●●	6.25
24.86 (37.0)	13.12 (4.0)	984 (300)		●	–	●	▲■	*	–	▲■	●●●	6.37
42.00 (62.5)	16.41 (5.0)	1,312 (400)		●	–	●	▲■	*	–	▲■	●●●	6.49
53.76 (80.0)	20.34 (6.2)	1,312 (400)		●	–	●	▲■	○	–	▲■	●●●	6.61
57.12 (85.0)	21.33 (6.5)	1,476 (450)		●	–	●	▲■	▲	▲	▲■	●●●	6.73
43.68 (65.0)	22.97 (7.00)	1476 (450)		●	–	●	▲	○	–	■	●●●	6.83

System E4/Light, E4-1 Light

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

E4/Light - Light stable and cost-effective

E-Chains®, crossbars every 2nd link - standard version

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
14040	2.20 (56)	ø 1.97	1.97-23.62 (50-600)	3.31 (84)	2.99-24.65 (76-626)	5.31-19.69 (135-500)	3.58 (91)
14240	2.44 (62)	ø 2.20	1.97-15.75 (50-400)	3.31 (84)	2.99-16.77 (76-426)	5.31-19.69 (135-500)	3.58 (91)
14550	2.76 (70)	ø 2.44	1.97-23.62 (50-600)	3.86 (98)	3.03-24.68 (77-627)	5.91-23.62 (150-600)	3.58 (91)
15050	3.15 (80)	ø 2.91	1.97-23.62 (50-600)	4.25 (108)	3.15-24.80 (80-630)	5.91-23.62 (150-600)	3.58 (91)
15250	3.39 (86)	ø 2.95	1.97-15.75 (50-400)	4.25 (108)	3.15-16.93 (80-430)	5.91-23.62 (150-600)	3.58 (91)
1640	4.41 (112)	ø 3.94	1.97-23.62 (50-600)	5.51 (140)	3.31-24.96 (84-634)	7.87-23.62 (200-600)	5.63 (143)

E-Chains®, crossbars every link - robust version

14140	2.20 (56)	ø 1.97	1.97-23.62 (50-600)	3.31 (84)	2.99-24.65 (76-626)	5.31-19.69 (135-500)	3.58 (91)
14340	2.44 (62)	ø 2.20	1.97-15.75 (50-400)	3.31 (84)	2.99-16.77 (76-426)	5.31-19.69 (135-500)	3.58 (91)
14650	2.76 (70)	ø 2.44	1.97-23.62 (50-600)	3.86 (98)	3.03-24.68 (77-627)	5.91-23.62 (150-600)	3.58 (91)
15150	3.15 (80)	ø 2.91	1.97-23.62 (50-600)	4.25 (108)	3.15-24.80 (80-630)	5.91-23.62 (150-600)	3.58 (91)
15350	3.39 (86)	ø 2.95	1.97-15.75 (50-400)	4.25 (108)	3.15-16.93 (80-430)	5.91-23.62 (150-600)	3.58 (91)

E-Tubes, Fully enclosed - protection against chips, dust and dirt

R18840	2.20 (56)	ø 1.97	2.95-18.19 (75-462)	3.31 (84)	3.98-19.25 (101-489)	5.91-19.69 (150-500)	3.58 (91)
R19050	2.76 (70)	ø 2.44	2.95-18.19 (75-462)	3.86 (98)	4.02-19.25 (102-489)	7.87-23.62 (200-600)	3.58 (91)
R19850	3.15 (80)	ø 2.91	2.95-18.19 (75-462)	4.25 (108)	4.13-19.41 (105-493)	7.87-23.62 (200-600)	3.58 (91)
R1608	4.41 (112)	ø 3.94	7.87-15.75 (200-400)	5.51 (140)	9.21-17.09 (234-434)	9.84-24.96 (250-600)	5.63 (143)

E4-1 Light - High dynamics, light and cost-effective

E-Chains®, crossbars are swivelable on both sides, openable on the inner and outer radius

E4-38L	1.50 (38)	ø 1.34	1.97-9.84 (50-250)	2.13 (54)	2.60-10.63 (66-270)	2.48-11.81 (63-300)	2.20 (56)
E4-48L	1.89 (48)	ø 1.69	1.97-9.84 (50-250)	2.52 (64)	2.76-10.63 (70-270)	2.95-13.78 (75-350)	2.64 (67)

E-Tubes, Fully enclosed, lids are swivelable on both sides, openable on the inner and outer radius

R4-38L	1.50 (38)	ø 1.34	3.94 (100)	2.13 (54)	4.57 (116)	4.92-11.81 (125-300)	2.20 (56)
R4-48L	1.89 (48)	ø 1.69	2.95-6.89 (75-175)	2.52 (64)	3.74-7.68 (95-195)	4.92-13.78 (125-350)	2.64 (67)

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Quick Selection

Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	EDS/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
26.88 (40.0)	13.12 (4.0)	492 (150)		●	–	●	▲■	○	▲	●	●●●	6.117
26.88 (40.0)	13.12 (4.0)	492 (150)		●	–	●	▲[2]■	○	▲	●	●●●	6.129
36.96 (55.0)	13.78 (4.2)	820 (250)		●	–	●	▲■	○	▲	●	●●●	6.141
36.96 (55.0)	15.09 (4.6)	820 (250)		●	–	●	▲[2]■	○	▲	●	●●●	6.151
36.96 (55.0)	15.09 (4.6)	820 (250)		●	–	●	▲■	○	▲	●	●●●	6.165
33.60 (50.0)	14.76 (4.5)	1,312 (400)		●	–	●	▲■	○	▲	●	●●●	6.175
26.88 (40.0)	13.12 (4.0)	492 (150)		●	–	●	▲■	○	▲	●	●●●	6.117
26.88 (40.0)	13.12 (4.0)	492 (150)		●	–	●	▲■	○	▲	●	●●●	6.129
36.96 (55.0)	13.78 (4.2)	820 (250)		●	–	●	▲■	○	▲	●	●●●	6.141
36.96 (55.0)	15.09 (4.6)	820 (250)		●	–	●	▲■	○	▲	●	●●●	6.151
36.96 (55.0)	15.09 (4.6)	820 (250)		●	–	●	▲■	○	▲	●	●●●	6.165
26.88 (40.0)	13.12 (4.0)	492 (150)		●	–	●	▲■	○	▲	●	●●●	6.117
36.96 (55.0)	13.78 (4.2)	820 (250)		●	–	●	▲■	○	▲	●	●●●	6.141
36.96 (55.0)	15.09 (4.6)	820 (250)		●	–	●	▲■	○	▲	●	●●●	6.151
33.60 (50.0)	14.76 (4.5)	1,312 (400)		●	–	●	▲■	○	▲	●	●●●	6.175
8.73 (13)	9.02 (2.75)	262 (80)		●	–	●	▲	–	▲	▲■	●●●	6.191
17.47 (26)	12.30 (3.75)	328 (100)		●	–	●	▲	–	▲	▲■	●●●	6.201
8.73 (13)	9.02 (2.75)	262 (80)		●	–	●	▲	–	▲	▲■	●●●	6.191
17.47 (26)	12.30 (3.75)	328 (100)		●	–	●	▲	–	▲	▲■	●●●	6.201

System E4/4, E4/00

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

E4/4 Classic - High stability “on the side” - very long travels

E-Chains®, crossbars every link

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
2828	1.26 (32)	ø 1.10	1.97-15.75 (50-400)	2.13 (54)	2.87-16.65 (73-423)	2.48-11.81 (63-300)	2.20 (56)
3838	1.65 (42)	ø 1.50	1.97-15.75 (50-400)	2.52 (64)	3.03-16.81 (77-427)	2.95-13.78 (75-350)	2.64 (67)
4040	2.20 (56)	ø 1.97	1.97-23.62 (50-600)	3.31 (84)	3.39-25.04 (86-636)	5.31-19.69 (135-500)	3.58 (91)
5050	3.15 (80)	ø 2.91	1.97-23.62 (50-600)	4.25 (108)	3.94-25.59 (100-650)	5.91-39.37 (150-1000)	3.58 (91)

E-Chains®, crossbars every 2nd link

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
2928	1.26 (32)	ø 1.10	1.97-15.75 (50-400)	2.13 (54)	2.87-16.65 (73-423)	2.48-11.81 (63-300)	2.20 (56)
3938	1.65 (42)	ø 1.50	1.97-15.75 (50-400)	2.52 (64)	3.03-16.81 (77-427)	2.95-13.78 (75-350)	2.64 (67)
4140	2.20 (56)	ø 1.97	1.97-23.62 (50-600)	3.31 (84)	3.39-25.04 (86-636)	5.31-19.69 (135-500)	3.58 (91)
5150	3.15 (80)	ø 2.91	1.97-23.62 (50-600)	4.25 (108)	3.94-25.59 (100-650)	5.91-39.37 (150-1000)	3.58 (91)

E-Tubes, Fully enclosed

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
R7728	1.26 (32)	ø 1.10	1.97-11.81 (50-300)	2.13 (54)	2.87-12.72 (73-323)	4.92-11.81 (125-300)	2.20 (56)
R7838	1.65 (42)	ø 1.50	1.97-11.81 (50-300)	2.52 (64)	3.03-12.87 (77-327)	4.92-13.78 (125-350)	2.64 (67)
R8840	2.20 (56)	ø 1.97	2.95-18.19 (75-462)	3.31 (84)	4.37-19.65 (111-499)	5.91-19.69 (150-500)	3.58 (91)
R9850	3.15 (80)	ø 2.91	2.95-18.19 (75-462)	4.25 (108)	4.92-20.20 (125-513)	7.87-39.37 (200-1000)	3.58 (91)

E4/00 Classic - E4 modular system

E-Chains®, crossbars every link

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
220	1.10 (28)	ø .98	1.57-11.81 (40-300)	1.65 (42)	2.36-12.60 (60-320)	2.16-9.84 (55-250)	1.81 (46)
280	1.26 (32)	ø 1.10	1.97-15.75 (50-400)	2.13 (54)	2.87-16.65 (73-423)	2.48-11.81 (63-300)	2.20 (56)
380	1.65 (42)	ø 1.50	1.97-15.75 (50-400)	2.52 (64)	2.99-16.77 (76-426)	2.95-13.78 (75-350)	2.64 (67)
400	2.20 (56)	ø 1.97	1.97-23.62 (50-600)	3.31 (84)	3.31-24.96 (84-634)	5.31-19.69 (135-500)	3.58 (91)
640	4.41 (112)	ø 3.94	3.43-22.13 (87-562)	5.51 (140)	5.47-24.17 (139-614)	7.87-39.37 (200-1000)	5.63 (143)

E-Chains®, crossbars every 2nd link

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
290	1.26 (32)	ø 1.10	1.97-15.75 (50-400)	2.13 (54)	2.87-16.65 (73-423)	2.48-11.81 (63-300)	2.20 (56)
390	1.65 (42)	ø 1.50	1.97-15.75 (50-400)	2.52 (64)	2.99-16.77 (76-426)	2.95-13.78 (75-350)	2.64 (67)
410	2.20 (56)	ø 1.97	1.97-23.62 (50-600)	3.31 (84)	3.31-24.96 (84-634)	5.31-19.69 (135-500)	3.58 (91)

E-Tubes, Fully enclosed

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
R760	1.10 (28)	ø .98	1.97-11.81 (50-300)	1.65 (42)	2.76-12.60 (70-320)	2.48-9.84 (63-250)	1.81 (46)
R770	1.26 (32)	ø 1.10	1.97-11.81 (50-300)	2.13 (54)	2.87-12.72 (73-323)	4.92-11.81 (125-300)	2.20 (56)
R780	1.65 (42)	ø 1.50	1.97-11.81 (50-300)	2.52 (64)	2.99-12.83 (76-326)	4.92-13.78 (125-350)	2.64 (67)
R880	2.20 (56)	ø 1.97	2.95-18.19 (75-462)	3.31 (84)	4.29-19.57 (109-497)	5.91-19.69 (150-500)	3.58 (91)

Quick Selection

Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	EDS/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
6.72 (10.0)	11.48 (3.50)	656 (200)		●	–	●	▲■	○	–	●	●●○	6.217
20.16 (30.0)	12.47 (3.80)	919 (280)		●	–	●	▲■	○	–	●	●●○	6.229
33.60 (50.0)	14.76 (4.50)	984 (300)		●	–	●	▲■	○	–	●	●●○	6.241
33.60 (60.0)	19.69 (6.00)	1312 (400)		●	–	●	▲■	○	–	●	●●○	6.253
6.72 (10.0)	11.48 (3.50)	656 (200)		●	–	●	▲■	○	–	●	●◐○	6.217
20.16 (30.0)	12.47 (3.80)	919 (280)		●	–	●	▲■	○	–	●	●◐○	6.229
33.60 (50.0)	14.76 (4.50)	984 (300)		●	–	●	▲■	○	–	●	●●○	6.241
33.60 (60.0)	19.69 (6.00)	1312 (400)		●	–	●	▲■	○	–	●	●●○	6.253
6.72 (10.0)	11.48 (3.50)	656 (200)		●	–	●	▲■	○	–	●	●●◐	6.217
20.16 (30.0)	12.47 (3.80)	919 (280)		●	–	●	▲■	○	–	●	●●◐	6.229
33.60 (50.0)	14.76 (4.50)	984 (300)		●	–	●	▲■	○	–	●	●●◐	6.241
33.60 (60.0)	19.69 (6.00)	1312 (400)		●	–	●	▲■	○	–	●	●●◐	6.253
5.38 (8.0)	9.02 (2.75)	656 (200)		●	●	●	▲	●	–	■	●●○	6.271
6.72 (10.0)	11.48 (3.50)	656 (200)		●	–	●	▲	●	–	■	●●○	6.279
20.16 (30.0)	12.47 (3.80)	984 (300)		●	–	●	▲	○	–	■	●●○	6.289
33.60 (50.0)	14.76 (4.50)	1312 (400)		●	–	●	▲	○	–	■	●●○	6.299
43.68 (65.0)	22.97 (7.00)	1476 (450)		●	–	●	▲	○	–	■	●◐○	6.309
6.72 (10.0)	11.48 (3.50)	656 (200)		●	–	●	▲	●	–	■	●◐○	6.279
20.16 (30.0)	12.47 (3.80)	984 (300)		●	–	●	▲	○	–	■	●◐○	6.289
33.60 (50.0)	14.76 (4.50)	1312 (400)		●	–	●	▲	○	–	■	●◐○	6.299
5.38 (8.0)	9.02 (2.75)	656 (200)		●	●	●	▲	○	–	■	●●◐	6.271
6.72 (10.0)	11.48 (3.50)	656 (200)		●	–	●	▲	○	–	■	●●◐	6.279
20.16 (30.0)	12.47 (3.80)	984 (300)		●	–	●	▲	○	–	■	●●◐	6.289
33.60 (50.0)	14.76 (4.50)	1312 (400)		●	–	●	▲	○	–	■	●●◐	6.299

System E3, E6, E6-1, T3

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

E3 - Highly dynamic and cleanroom compatible

E-Chains®, zip-open lids

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
E3-10	.39 (10)	ø .31	.79-2.36 (20-60)	.59 (15)	1.26-2.83 (32-72)	.59-1.89 (15-48)	.66 (16.7)
E3-15	.59 (15)	ø .51	.79-2.36 (20-60)	.79 (20)	1.26-2.83 (32-72)	1.26-2.95 (32-75)	.66 (16.7)
E3-22	.87 (22)	ø .79	.79-2.36 (20-60)	1.06 (27)	1.26-2.83 (32-72)	1.73-2.95 (44-75)	.66 (16.7)

E6 - Extremely low noise, minimum vibration and abrasion, cleanroom suitable

E-Chains®, crossbars every 2nd link

E6-29	1.14 (29)	ø .98	1.18-5.51 (30-140)	1.38 (35)	1.81-6.14 (46-156)	2.17-5.91 (55-150)	.87 (22)
E6-35	1.38 (35)	ø 1.22	1.18-5.51 (30-140)	1.65 (42)	1.97-6.30 (50-160)	2.17-3.94 (55-150)	.98 (25)
E6-40	1.57 (40)	ø 1.42	1.57-11.81 (40-300)	2.13 (54)	2.36-12.60 (60-320)	2.48-7.87 (63-200)	1.09 (27.8)
E6-52	2.05 (52)	ø 1.81	1.57-11.81 (40-300)	2.56 (65)	2.52-12.76 (64-324)	2.95-9.84 (75-250)	1.18 (30)
E6-62	2.44 (62)	ø 2.13	1.97-15.75 (50-400)	3.31 (84)	3.39-17.17 (86-436)	4.53-13.78 (115-350)	1.97 (50)
E6-80	3.15 (80)	ø 2.83	1.97-23.62 (50-600)	4.25 (108)	3.94-25.59 (100-650)	5.91-17.72 (150-450)	2.56 (65)
E6-80L	3.15 (80)	ø 2.83	3.43-21.65 (87-550)	4.25 (108)	4.53-22.76 (115-578)	5.91-17.72 (150-450)	2.56 (65)

E-Tubes, Fully enclosed

R6-29	1.10 (28)	ø .98	1.18-4.72 (30-120)	1.38 (35)	1.81-5.35 (46-136)	2.17-5.91 (55-150)	.87 (22)
R6-40	1.57 (40)	ø 1.42	1.97-4.92 (50-125))	2.13 (54)	2.76-5.71 (70-145)	2.48-7.87 (63-200)	1.09 (27.8)
R6-52	2.05 (52)	ø 1.81	1.97-6.89 (50-175)	2.56 (65)	2.91-7.83 (74-199)	2.95-9.84 (75-250)	1.18 (30)

E6-1 - More dynamics, smoother running, easier to open, 2nd generation

E-Chains®, crossbars removable along both radii

E61-29	1.14 (29)	ø .98	1.18-5.51 (30-140)	1.38 (35)	1.73-5.67 (44-144)	2.17-5.91 (55-150)	.87 (22)

T3 - Highly dynamic and cleanroom compatible

E-Chains®, openable from both sides

T3-29	1.14 (29)	ø .98	1.18-5.51 (30-140)	1.38 (35)	2.17-5.71 (55-145)	1.50 (38)	.59 (15)

Quick Selection

Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	EDS/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
0.20 (0.30)	2.46 (0.75)	–		●	–	–	▲	■■	▲	■■	●●◐	7.11
0.47 (0.70)	2.95 (0.90)	–		●	▲	–	▲	■■	▲	■■	●●◐	7.15
0.57 (0.85)	3.94 (1.20)	–		●	▲	–	▲	■■	▲	■■	●●◐	7.19
2.02 (3.0)	4.92 (1.50)	-		●	●	●	▲	■	▲	■■	●●●	7.29
4.03 (6.0)	6.23 (1.90)	-		●	●	●	▲	■	▲	■■	●●●	7.39
6.72 (10.0)	9.02 (2.75)	197 (60)*		●	●	–	▲	■	▲	■■	●●●	7.45
10.08 (15.0)	9.84 (3.00)	262 (80)*		●	●	●	▲	■	▲	■■	●●●	7.55
28.90 (43.0)	13.12 (4.00)	328 (100)		●	●	●	▲	■	▲	■■	●●●	7.65
37.63 (56.0)	17.23 (5.25)	-		●	–	●	▲	■	▲	■■	●●●	7.73
16.80 (25.0)	8.20 (2.50)	394 (120)		●	–	●	▲	■	▲	■■	●●●	7.83
2.02 (3.0)	4.92 (1.50)	-		●	–	–	▲	■	▲	■■	●●●	7.35
6.72 (10.0)	9.02 (2.75)	197 (60)*		●	–	–	▲	■	▲	■■	●●●	7.51
10.08 (15.0)	9.84 (3.00)	262 (80)*		●	–	–	▲	■	▲	■■	●●●	7.61
2.35 (3.5)	4.92 (1.50)	-		●	●	●	▲	■■	▲	■■	●●●	7.97
.67 (1.00)	4.75 (1.45)	–		●	●	●	▲	■■	▲	■■	●●◐	7.109

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Triflex® R

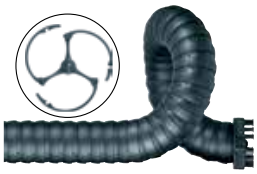
Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

E3 - Highly dynamic and cleanroom compatible

TRC, closed design

Series	Inner height *hi* in. (mm) ø cable max. in.	ø	Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
TRC-30	.47/.39 (12/10)	ø .39	.47/.39 (12/10)	1.36 (34.5)	1.36 (34.5)	1.97 (50)	.44 (11.3)
TRC-40	.59/.51 (15/13)	ø .51	.59/.51 (15/13)	1.69 (43)	1.69 (43)	2.28 (58)	.55 (13.9)
TRC-60	.89/.77 (22.5/19.5)	ø .81	.89/.77 (22.5/19.5)	2.56 (65)	2.56 (65)	3.43 (87)	.80 (20.4)
TRC-70	1.10/.94 (28/24)	ø 1.02	1.10/.94 (28/24)	3.19 (81)	3.19 (81)	4.33 (110)	1.01 (25.6)
TRC-85	1.30/1.10 (33/28)	ø 1.22	1.30/1.10 (33/28)	3.72 (94.5)	3.72 (94.5)	5.31 (135)	1.20 (30.6)
TRC-100	1.48/1.28 (37.5/32.5)	ø 1.40	1.48/1.28 (37.5/32.5)	4.25 (108)	4.25 (108)	5.71 (145)	1.41 (35.7)
TRC-125	1.70/1.70 (43.3/43.3)	ø 1.40	1.70/1.70 (43.3/43.3)	5.31 (135)	5.31 (135)	7.17 (182)	1.76 (44.6)

TRCF, closed design with snap-lock mechanism



TRCF-85	1.29 (32.8)	ø 1.18	1.29 (32.8)	3.72 (94.5)	3.72 (94.5)	5.31 (135)	1.22 (31)
TRCF-100	1.48 (37.5)	ø 1.36	1.48 (37.5)	4.25 (108)	4.25 (108)	5.71 (145)	1.36 (34.5)

TRE, “E-Z” design for fast installation of cables and hoses

TRE-30	.47/.39 (12/10)	ø .39	.47/.39 (12/10)	1.36 (34.5)	1.36 (34.5)	1.97 (50)	.44 (11.3)
TRE-40	.59/.51 (15/13)	ø .51	.59/.51 (15/13)	1.69 (43)	1.69 (43)	2.28 (58)	.55 (13.9)
TRE-60	.89/.77 (22.5/19.5)	ø .81	.89/.77 (22.5/19.5)	2.56 (65)	2.56 (65)	3.43 (87)	.80 (20.4)
TRE-70	1.10/.94 (28/24)	ø 1.02	1.10/.94 (28/24)	3.19 (81)	3.19 (81)	4.33 (110)	1.01 (25.6)
TRE-85	1.30/1.10 (33/28)	ø 1.22	1.30/1.10 (33/28)	3.72 (94.5)	3.72 (94.5)	5.31 (135)	1.20 (30.6)
TRE-100	1.48/1.28 (37.5/32.5)	ø 1.40	1.48/1.28 (37.5/32.5)	4.25 (108)	4.25 (108)	5.71 (145)	1.41 (35.7)
TRE-125	1.70/1.70 (43.3/43.3)	ø 1.40	1.70/1.70 (43.3/43.3)	5.31 (135)	5.31 (135)	7.17 (182)	1.76 (44.6)

TRL, light version with “E-Z” design

TRL-30	.47/.39 (12/10)	ø .39	.47/.39 (12/10)	1.36 (34.5)	1.36 (34.5)	1.97 (50)	.44 (11.3)
TRL-40	.59/.51 (15/13)	ø .51	.59/.51 (15/13)	1.77 (45)	1.77 (45)	2.28 (58)	.55 (13.9)
TRL-60	.89/.77 (22.5/19.5)	ø .83	.89/.77 (22.5/19.5)	2.56 (65)	2.56 (65)	3.43 (87)	.80 (20.4)
TRL-70	1.10/.94 (28/24)	ø 1.02	1.10/.94 (28/24)	3.19 (81)	3.19 (81)	4.33 (110)	1.01 (25.6)
TRL-100	1.48/1.28 (37.5/32.5)	ø 1.40	1.48/1.28 (37.5/32.5)	4.25 (108)	4.25 (108)	5.71 (145)	1.41 (35.7)

TRLF, light version with snap-lock mechanism

TRLF-65	.96 (24.4)	ø .87	.96 (24.4)	2.76 (70.2)	2.76 (70.2)	3.94 (100)	.91 (23.1)
TRLF-85	1.29 (32.8)	ø 1.18	1.29 (32.8)	3.72 (94.5)	3.72 (94.5)	5.31 (135)	1.22 (31)
TRLF-100	1.48 (37.5)	ø 1.40	1.48 (37.5)	4.25 (108)	4.25 (108)	5.71 (145)	1.36 (34.5)

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Quick Selection

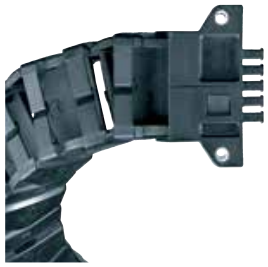
Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	EDS/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
–	–	–		●	–	–	1)	○	●	●	●●●	8.15
–	–	–		●	–	–	▲2)	○	●	●	●●●	8.15
–	–	–		●	–	–	▲2)	○	●	●	●●●	8.15
–	–	–		●	–	–	▲2)	○	●	●	●●●	8.15
–	–	–		●	–	–	▲	○	●	●	●●●	8.15
–	–	–		●	–	–	▲	○	●	●	●●●	8.15
				●	–	–	▲	○	●	●	●●●	8.15
–	–	–		●	–	–	1)	○	●	●	●●●	8.17
–	–	–		●	–	–	1)	○	●	●	●●●	8.17
–	–	–			–	–	–	○	●	●	●●●	8.19
–	–	–		●	–	–	–	○	●	●	●●●	8.19
–	–	–		●	–	–	–	○	●	●	●●●	8.19
–	–	–		●	–	–	–	○	●	●	●●●	8.19
–	–	–		●	–	–	–	○	●	●	●●●	8.19
–	–	–		●	–	–	–	○	●	●	●●●	8.19
				●	–	–	–	○	●	●	●●●	8.19
–	–	–			–	–	1)	○	●	●	●●●	8.21
–	–	–		●	–	–	1)	○	●	●	●●●	8.21
–	–	–		●	–	–	1)	○	●	●	●●●	8.21
–	–	–		●	–	–	1)	○	●	●	●●●	8.21
–	–	–		●	–	–	1)	○	●	●	●●●	8.21
–	–	–		●	–	–	–	○	●	●	●●●	8.23
–	–	–		●	–	–	–	○	●	●	●●●	8.23
–	–	–		●	–	–	–	○	●	●	●●●	8.23

E-Z Triflex®, Triflex®

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

E-Z Triflex® - For simple 3D applications, easy filling from 2 sides

"E-Z" design for fast installation of cables and hoses



Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
E331-25	.98 (25)	ø .35	.98 (25)	1.34 (34)	1.34 (34)	1.89-7.87 (48-200)	.57 (14.5)
E331-32	1.26 (32)	ø .47	1.26 (32)	1.97 (50)	1.97 (50)	2.95-9.84 (75-250)	.98 (25)
E331-50	1.97 (50)	ø .83	1.97 (50)	2.68 (68)	2.68 (68)	3.94-9.84 (100-250)	1.18 (30)
E331-75	2.95 (75)	ø 1.30	2.95 (75)	3.78 (96)	3.78 (96)	5.51-11.81 (140-300)	1.42 (36)
E332-25	.98 (25)	ø .35	.98 (25)	1.34 (34)	1.34 (34)	1.89-7.87 (48-200)	.57 (14.5)
E332-32	1.26 (32)	ø .47	1.26 (32)	1.97 (50)	1.97 (50)	2.95-9.84 (75-250)	.98 (25)
E332-50	1.97 (50)	ø .83	1.97 (50)	2.68 (68)	2.68 (68)	3.94-9.84 (100-250)	1.18 (30)
E332-75	2.95 (75)	ø 1.30	2.95 (75)	3.78 (96)	3.78 (96)	5.51-11.81 (140-300)	1.42 (36)
E333-25	.98 (25)	ø .35	.98 (25)	1.34 (34)	1.34 (34)	1.89-7.87 (48-200)	.57 (14.5)
E333-32	1.26 (32)	ø .47	1.26 (32)	1.97 (50)	1.97 (50)	2.95-9.84 (75-250)	.98 (25)
E333-50	1.97 (50)	ø .83	1.97 (50)	2.68 (68)	2.68 (68)	3.94-9.84 (100-250)	1.18 (30)
E333-75	2.95 (75)	ø 1.30	2.95 (75)	3.78 (96)	3.78 (96)	5.51-11.81 (140-300)	1.42 (36)

Triflex® - For simple, closed 3D applications

Closed design

331-16	.63 (16)	ø .55	.63 (16)	1.02 (26)	1.02 (26)	1.50-3.94 (38-100)	.52 (13.3)
331-32	1.26 (32)	ø 1.10	1.26 (32)	1.97 (50)	1.97 (50)	2.95-9.84 (75-250)	.98 (25)
331-50	1.97 (50)	ø 1.77	1.97 (50)	2.68 (68)	2.68 (68)	3.94-9.84 (100-250)	1.18 (30)
331-75	2.95 (75)	ø 2.64	2.95 (75)	3.78 (96)	3.78 (96)	5.51-11.81 (140-300)	1.42 (36)
332-16	.63 (16)	ø .55	.63 (16)	1.02 (26)	1.02 (26)	1.50-3.94 (38-100)	.52 (13.3)
332-32	1.26 (32)	ø 1.10	1.26 (32)	1.97 (50)	1.97 (50)	2.95-9.84 (75-250)	.98 (25)
332-50	1.97 (50)	ø 1.77	1.97 (50)	2.68 (68)	2.68 (68)	3.94-9.84 (100-250)	1.18 (30)
332-75	2.95 (75)	ø 2.64	2.95 (75)	3.78 (96)	3.78 (96)	5.51-11.81 (140-300)	1.42 (36)
333-16	.63 (16)	ø .55	.63 (16)	1.02 (26)	1.02 (26)	1.50-3.94 (38-100)	.52 (13.3)
333-32	1.26 (32)	ø 1.10	1.26 (32)	1.97 (50)	1.97 (50)	2.95-9.84 (75-250)	.98 (25)
333-50	1.97 (50)	ø 1.77	1.97 (50)	2.68 (68)	2.68 (68)	3.94-9.84 (100-250)	1.18 (30)
333-75	2.95 (75)	ø 2.64	2.95 (75)	3.78 (96)	3.78 (96)	5.51-11.81 (140-300)	1.42 (36)

Snap-open

351-50	1.97 (50)	ø 1.77	1.97 (50)	2.68 (68)	2.68 (68)	3.94-9.84 (100-250)	1.18 (30)
352-50	1.97 (50)	ø 1.77	1.97 (50)	2.68 (68)	2.68 (68)	3.94-9.84 (100-250)	1.18 (30)
353-50	1.97 (50)	ø 1.77	1.97 (50)	2.68 (68)	2.68 (68)	3.94-9.84 (100-250)	1.18 (30)

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Quick Selection

Interior separation possibilities...

Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Separators	Full-width shelves	Shelves	EDS/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
–	–	–		●	–	–	▲	○	●	●	●◐○	8.64
–	–	–		●	–	–	▲	○	●	●	●◐○	8.64
–	–	–		●	–	–	▲	○	●	●	●◐○	8.64
–	–	–		●	–	–	▲	○	●	●	●◐○	8.64
–	–	–		●	–	–	▲	○	●	●	●◐○	8.65
–	–	–		●	–	–	▲	○	●	●	●◐○	8.65
–	–	–		●	–	–	▲	○	●	●	●◐○	8.65
–	–	–		●	–	–	▲	○	●	●	●◐○	8.65
–	–	–		●	–	–	▲	○	●	●	●◐○	8.66
–	–	–		●	–	–	▲	○	●	●	●◐○	8.66
–	–	–		●	–	–	▲	○	●	●	●◐○	8.66
–	–	–		●	–	–	▲	○	●	●	●◐○	8.66
–	–	–		–	–	–	▲	○	▲	○	●◐○	8.77
–	–	–		●	–	–	▲	○	▲	○	●◐○	8.77
–	–	–		●	–	–	▲	○	▲	○	●◐○	8.77
–	–	–		●	–	–	▲	○	▲	○	●◐○	8.77
–	–	–		–	–	–	▲	○	▲	○	●◐○	8.78
–	–	–		●	–	–	▲	○	▲	○	●◐○	8.78
–	–	–		●	–	–	▲	○	▲	○	●◐○	8.78
–	–	–		●	–	–	▲	○	▲	○	●◐○	8.78
–	–	–		–	–	–	▲	○	▲	○	●◐○	8.79
–	–	–		●	–	–	▲	○	▲	○	●◐○	8.79
–	–	–		●	–	–	▲	○	▲	○	●◐○	8.79
–	–	–		●	–	–	▲	○	▲	○	●◐○	8.79
–	–	–		●	–	–	▲	○	▲	○	●●●	8.77
–	–	–		●	–	–	▲	○	▲	○	●●●	8.78
–	–	–		●	–	–	▲	○	▲	○	●●●	8.79

TwisterChain, TwisterBand

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

TwisterChain New Generation - Circular and spiral movements

Openable from both sides along the inner radius

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
TC32	1.26 (32)	ø 1.10	3.44-5.91 (87.5-150)	2.13 (54)	4.27-6.73 (108.5-171)	3.94-9.84 (100-250)	2.20 (56)
TC42	1.65 (42)	ø 1.50	3.44-5.91 (87.5-150)	2.52 (64)	4.35-8.78 (110.5-223)	3.94-9.84 (100-250)	2.64 (67)
TC56	2.20 (56)	ø 1.97	4.92-7.87 (125-200)	3.31 (84)	6.10-9.06 (155-230)	5.91-15.75 (150-400)	3.58 (91)

TwisterChain Classic - First Generation for circular and spiral movements

Snap-open with film-hinge or can be opened with "E-Z" design

2208	1.10 (28)	ø .98	2.07-4.43 (52.5-112.5)	1.65 (42)	3.15-5.51 (80-140)	2.17-5.91 (55-150)	1.73 (44)
2808	1.26 (32)	ø 1.14	1.97-5.91 (50-150)	2.13 (54)	3.19-7.13 (81-181)	3.94-9.84 (100-250)	2.20 (56)
3808	1.65 (42)	ø 1.53	1.97-7.87 (50-200)	2.52 (64)	3.35-9.25 (85-235)	3.94-9.84 (100-250)	2.64 (67)
4008	2.20 (56)	ø 2.07	1.97-7.87 (50-200)	3.31 (84)	3.66-9.57 (93-243)	5.91-15.75 (150-400)	3.58 (91)

Twisterband (7000° rotation**) - Rotary movements in minimum space

Snap-open with film-hinge or can be opened with "E-Z" design

						R min. R max.	
TB12-23-09	.36 (9)	ø .28	.91 (23)	1.65 (42)	3.15-5.51 (80-140)	.94 - 1.38 (24 - 35)	–
TB20-44-12	.47 (12)	ø .36	1.73 (44)	2.13 (54)	3.19-7.13 (81-181)	1.34 - 2.24 (34 - 57)	–
TB20-44-18	.71 (18)	ø .55	1.73 (44)	2.52 (64)	3.35-9.25 (85-235)	1.34 - 2.24 (34 - 57)	–
TB30-75-22	.87 (22)	ø .67	2.95 (75)	3.31 (84)	3.66-9.57 (93-243)	1.73 - 3.03 (44 - 77)	–

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Quick Selection

Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m) 180° 360°	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	EDS/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
2.69 (4)	1.34 (2)	–	–	●	●	●	▲	○	▲	●	●●◐	8.93
4.03 (6)	2.42 (3.6)	–	–	●	●	●	▲	○	▲	●	●●◐	8.95
5.38 (8)	3.36 (5)	–	–	●	●	●	▲	○	▲	●	●●◐	8.97
1.01 (1.5)	.67 (1.0)	–	–	●	●	●	▲	○	▲	●	●●◐	8.115
1.34 (2.0)	.67 (1.0)	–	–	●	●	●	▲	○	▲	●	●●◐	8.116
2.02 (3.0)	1.21 (1.8)	–	–	●	●	●	▲	○	▲	●	●●◐	8.117
2.68 (4.0)	1.68 (2.5)	–	–	●	●	●	▲	○	▲	●	●●◐	8.119
≈.54 (0.8)	≈.40 (0.6)	–	–	–	–	–	○	▲	○	●	●●◐	8.138
≈.84 (1.25)	≈.67 (1.0)	–	–	–	–	–	○	▲	○	●	●●◐	8.138
≈.84 (1.25)	≈.67 (1.0)	–	–	●	–	–	○	▲	○	●	●●◐	8.138
≈1.14 (1.7)	≈.87 (1.3)	–	–	●	–	–	○	▲	○	●	●●◐	8.138

Guide Troughs - For long travels

Legend
- ● Aluminum, seawater resistant
- ○ Galvanized steel
- ▲ Galvanized steel/plastic
- ■ Stainless steel upon request

Super Aluminum Trough - Basic version, for general use

Openable from both sides along the inner radius

Series/ Product	Outer height Trough side part in. (mm)	Zipper Chains	Series E2 mini	Series E2/000 *Conditionally suitable in inner radii	System E2 Tubes	System E4-1
970-30-SL / 970-31-SL	3.03 (77)	15	10/B15	–	–	–
970-30-SL / 970-32-SL	3.03 (77)	–	–	1400*/1450*/1480*/1500	–	–
971-30-SL / 971-31-SL	3.43 (87)	–	–	2400*/2450*/2480*/2500/255	–	–
972-02-30-SL / 972-02-31-SL	4.61 (117)	–	–	–	–	E4-28/R4-28
972-30-SL / 972-31-SL	4.61 (117)	–	–	–	–	E4-32/H4-32/R4-32
972-30-SL / 972-32-SL	4.61 (117)	–	–	2600*/2650*/2680*/2700	R58	–
973-30-SL / 973-31-SL	5.67 (144)	–	–	3400*/3450*/3480*/3500	R68	E4-42/H4-42/R4-42
974-30-SL / 974-31-SL	7.24 (184)	–	–	–	–	E4-56/H4-56/R4-56
975-30-SL / 975-31-SL	9.29 (236)	–	–	–	–	–

Super Aluminum Trough - Heavy-duty version, for heavy-duty use

Snap-open with film-hinge or can be opened with “E-Z” design

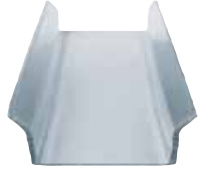
Series/ Product	Outer height Trough side part in. (mm)	Zipper Chains	Series E2 mini	Series E2/000 *Conditionally suitable in inner radii	System E2 Tubes	System E4-1
971-30-SL / 971-31-SL	3.43 (87)	–	–	2400*/2450*/2480*/2500/255	R48	–
972-02-30-SL / 972-02-31-SL	4.61 (117)	–	–	–	–	E4-28/R4-28
972-30-SL / 972-31-SL	4.61 (117)	–	–	–	–	E4-32/H4-32/R4-32
972-30-SL / 972-32-SL	4.61 (117)	–	–	2600*/2650*/2680*/2700	R58	–
973-30-SL / 973-31-SL	5.67 (144)	–	–	3400*/3450*/3480*/3500	R68	E4-42/H4-42/R4-42
974-30-SL / 974-31-SL	7.24 (184)	–	–	–	–	E4-56/H4-56/R4-56
975-30-SL / 975-31-SL	9.29 (236)	–	–	–	–	–

Steel Trough - For harsh environments

Snap-open with film-hinge or can be opened with “E-Z” design

Series/ Product	Outer height Trough side part in. (mm)	Zipper Chains	Series E2 mini	Series E2/000 *Conditionally suitable in inner radii	System E2 Tubes	System E4-1
92-30 / 92-01	2.76 (70)	–	–	2480	–	–
95-30 / 92-01	3.94 (100)	–	–	2680	R58	–
96-30 / 92-01	3.94 (100)	–	–	–	–	E4-28/R4-28
98-30 / 92-01	5.12 (130)	–	–	–	–	E4-32/H4-32/R4-32
93-30 / 93-01	5.12 (130)	–	–	3480	R68	E4-42/H4-42/R4-42
94-30 / 93-01	6.69 (170)	–	–	–	–	E4-56/H4-56/R4-56
94-14450-30/94-14450-31	6.69 (170)	–	–	–	–	–
99-30 / 93-01	6.69 (170)	–	–	–	–	E4-80
97-30 / 93-01	11.81 (300)	–	–	–	–	E4-112/H4-112/R4-112
90-30 / 90-20	18.90 (480)	–	–	–	–	–

Steel guide trough - One-piece, U-shaped, special solution for Series 10, B15, 15



Series/ Product	Outer height Trough side part in. (mm)	Zipper Chains	Series E2 mini	Series E2/000 *Conditionally suitable in inner radii	System E2 Tubes	System E4-1
91-10 to 91-71	1.89 (48)	–	–	–	–	–

Quick Selection

	System E4/Light	System E4-1 Light	System E4/4	System E4/00	System E6 please consult igus® for long travels	Side part material See legend	Price index	Page
	–	–	–		–	●	●◐○	9.17
	–	–	–		–	●	●◐○	9.19
	–	–	–		E6-29/R6-29	●	●◐○	9.21
	–	–	2828/2928/R7728	220/R760	E6-35	●	●◐○	9.23
	–	E4-38L/R4-38L	2828/2928/R7728	280/290/R770	E6-40/R6-40	●	●◐○	9.25
	–	–	–	–	–	●	●◐○	9.27
	–	E4-38L/R4-38L	3838/3938/R7838	380/390/R780	E6-52/R6-52	●	●◐○	9.29
	14040/14140/R18840/14240/14340	–	4040/4140/R8840	400/410/R880	E6-62	●	●◐○	9.31
	15050/15150/R19850/15250/15350	–	5050/5150/R9850		E6-80	●	●◐○	9.35
	–	–	–		E6-29/R6-29	●	●◐○	9.21
	–	–		220/R760	E6-35	●	●◐○	9.23
	–	E4-38L/R4-38L	2828/2928/R7728	280/290/R770	E6-40/R6-40	●	●◐○	9.25
	–	–	–	–	–	●	●◐○	9.27
	–	E4-38L/R4-38L	3838/3938/R7838	380/390/R780	E6-52/R6-52	●	●◐○	9.29
	14040/14140/R18840/14240/14340	–	4040/4140/R8840	400/410/R880	E6-62	●	●◐○	9.31
	15050/15150/R19850/15250/15350	–	5050/5150/R9850	–	E6-80	●	●◐○	9.35
		–	–	–	E6-29/R6-29	○ ■	●◐○	9.43
		–	–	–	–	○ ■	●◐○	9.45
		–	–	220/R760	E6-35	○ ■	●◐○	9.47
		–	2828/2928/R7728	280/290/R770	E6-40/R6-40	○ ■	●◐○	9.49
		–	3838/3938/R7838	380/390/R780	E6-52/R6-52	○ ■	●◐○	9.51
	14040/14140/R18840/14240/14340	–	4040/4140/R8840	400/410/R880	E6-62	○ ■	●◐○	9.53
	14550/14650/R19050	–	–	–	–	○ ■	●◐○	9.55
	15050/15150/R19850	–	5050/5150/R9850	–	E6-80	○ ■	●◐○	9.57
	1640/R1608	–	–	600/601/R608/640	–	○ ■	●◐○	9.59
	–	–	–	800/840	–	○ ■	●◐○	9.61
	–	–	–	–	–	○ ■	●◐○	9.42

Guide Troughs - For long travels

Legend
- ❏ Steel, powder coated
- ○ Galvanized steel
- ▲ Galvanized steel/plastic
- ■ Stainless steel upon request

Support tray tool kit - For support of the lower run

Support tray - Type 01

Series/ Product	Outer height Trough side part in. (mm)	Zipper Chains	Series E2 mini	Series E2/000 *Conditionally suitable in inner radii	System E2 Tubes	System E4-1
S9-010/011-05-	43	–	–	2500.../2700.../	–	E4.21/E4.28/E4.32
S9-010/011-07-	43	–	–	2500.../2700.../	–	E4.21/E4.28/E4.32
S9-010/011-10-	43	–	–	2500.../2700.../	–	E4.21/E4.28/E4.32
S9-010/011-15-	43	–	–	2700.../	–	E4.28/E4.32

Support tray - Type 02

S9-020/021-10-	53	–	–	3400.../	–	E4.42/E4.56/E4.80
S9-020/021-15-	53	–	–	3400.../	–	E4.42/E4.56/E4.80
S9-020/021-20-	53	–	–	3400.../	–	E4.42/E4.56/E4.80
S9-020/021-25-	53	–	–	3400.../	–	E4.42/E4.56/E4.80

Guidefast - Energy supply for crane girders

Economical energy supply for crane girders and indoor cranes

GF91-30/31-025-	113	–	–	1500	–	–
GF91-30/31-050-	113	–	–	500	–	–
GF92-30/31-05-	113	–	–	2500/255	–	–
GF92-30/31-07-	113	–	–	2500/255	–	–
GF92-30/31-10-	113	–	–	2500/255	–	–
GF95-30/31-05-	113	–	–	2700	–	–
GF95-30/31-07-	113	–	–	2700	–	–
GF95-30/31-10-	113	–	–	2700	–	–

Guidelite - Realize long travels up to (150 m), quick and cost-effective

Efficient long travel set

9GL-64-50-450-XX	145	–	–	2500 / 2700 / 3500	–	E4.21/E4.28/E4.32
9GL-64-50-LLL	145	–	–	1500/ 2500 / 2700 / 3500	–	E4.21/E4.28/E4.32

Quick Selection

	System E4/Light	System E4-1 Light	System E6/E6-1 please consult igus® for long travels	Side part material See legend	Price index	Page
	14040/14240/14550/15050/15250	E4.38L/R4.38L	E6.29/E61.29/E6.35/E6.40	❑	● ○ ○	9.65
	14040/14240/14550/15050/15250	E4.38L/R4.38L	E6.29/E61.29/E6.35/E6.40	❑	● ○ ○	9.65
	14040/14240/14550/15050/15250	E4.38L/R4.38L	E6.29/E61.29/E6.35/E6.40	❑	● ○ ○	9.65
	14040/14240/14550/15050/15250	E4.38L/R4.38L	E6.40	❑	● ○ ○	9.65
	E4.38L/R4.38L	E4.38L/R4.38L	E6.52/E6.62/E6.80	❑	● ○ ○	9.67
	E4.38L/R4.38L	E4.38L/R4.38L	E6.52/E6.62/E6.80	❑	● ○ ○	9.67
	E4.38L/R4.38L	E4.38L/R4.38L	E6.52/E6.62/E6.80	❑	● ○ ○	9.67
	E4.38L/R4.38L	E4.38L/R4.38L	E6.52/E6.62/E6.80	❑	● ○ ○	9.67
	–	–	–	O	● ○ ○	9.72
	–	–	–	O	● ○ ○	9.72
	–	–	–	O	● ○ ○	9.72
	–	–	–	O	● ○ ○	9.72
	–	–	–	O	● ○ ○	9.72
	–	–	–	O	● ○ ○	9.72
	–	–	–	O	● ○ ○	9.72
	–	–	–	O	● ○ ○	9.72
	–	–	–	▲	◐ ○ ○	9.76
	–	–	–	▲	◐ ○ ○	9.78

E-Chains® for long travels - E4/4HD, P4, Rol

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

E4/4HD Heavy-Duty - For extremely high additional fill weights on long travels

E-Chains®, Heavy-Duty, crossbars every link - extra robust version

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
4040HD	2.20 (56)	ø 1.97	1.97-23.62 (50-600)	3.31 (84)	4.09-25.75 (104-654)	5.31-11.81 (135-300)	3.58 (91)
5050HD	3.15 (80)	ø 2.91	1.97-23.62 (50-600)	4.25 (108)	4.33-25.98 (110-660)	7.87-19.69 (200-500)	3.58 (91)

E-Chains®, Heavy-Duty, fully enclosed-protection against chips, dust and dirt - extra robust version

8840HD	2.20 (56)	ø 1.97	2.95-18.19 (75-462)	3.31 (84)	5.08-20.31 (129-516)	5.91-11.81 (150-300)	3.58 (91)
9850HD	3.15 (80)	ø 2.91	2.95-18.19 (75-462)	4.25 (108)	5.31-20.55 (135-522)	7.87-19.69 (200-500)	3.58 (91)

P4 profile Rol E-Chain® - 57% less energy consumption

P4 profile Rol E-Chain®, crossbars every link

P4-32	1.26 (32)	ø 1.10	3.94-7.87 (100-200)	2.13 (54)	5.20-9.13 (132-232)	5.91-9.84 (150-250)	2.20 (56)
P4-42	1.65 (42)	ø 1.50	3.94-7.87 (100-200)	2.52 (64)	6.06-10.00 (154-254)	3.94-13.78 (100-350)	2.64 (67)
P4-56	2.20 (56)	ø 1.97	7.36-15.75 (187-400)	3.31 (84)	10.12-18.50 (257-470)	9.84-13.78 (250-350)	3.58 (91)
P4-80	3.15 (80)	ø 2.83	7.36-15.75 (187-400)	4.25 (108)	10.35-18.74 (263-476)	9.84-13.78 (250-350)	3.94 (100)

Rol E-Chain® - Long travels up to 2,624 ft. (800 m), rolling instead of gliding

E-Chains®, crossbars every link

2828R	1.26 (32)	ø 1.10	1.97-15.75 (50-400)	2.13 (54)	2.91-16.69 (74-424)	4.92-11.81 (125-300**)	2.20 (56)
3838R	1.65 (42)	ø 1.50	1.97-15.75 (50-400)	2.52 (64)	3.03-16.81 (77-427)	5.91-13.78 (150-350**)	2.64 (67)
4040R	2.20 (56)	ø 1.97	1.97-23.62 (50-600)	3.31 (84)	3.39-25.04 (86-636)	7.87-15.75 (200-400**)	3.58 (91)
5050R	3.15 (80)	ø 2.83	1.97-23.62 (50-600)	4.25 (108)	3.94-25.59 (100-650)	9.84-19.69 (250-500**)	3.94 (100)

E-Tubes, fully enclosed - protection against chips, dust and dirt

7728R	1.26 (32)	ø 1.10	1.97-11.81 (50-300)	2.13 (54)	2.91-12.76 (74-324)	5.91-11.81 (150-300)	2.20 (56)
7838R	1.65 (42)	ø 1.50	1.97-11.81 (50-300)	2.52 (64)	3.03-16.81 (77-427)	7.87-13.78 (200-350)	2.64 (67)
8840R	2.20 (56)	ø 1.97	2.95-18.19 (75-462)	3.31 (84)	4.37-19.65 (111-499)	11.81-15.75 (300-400)	3.58 (91)
9850R	3.15 (80)	ø 2.83	2.95-18.19 (75-462)	4.25 (108)	4.92-20.20 (125-513)	11.81-19.69 (300-500)	3.94 (100)

Rol E-Chain® RHD Heavy-Duty - Particularly high additional loads

E-Chains®, crossbars every link

4040RHD	2.20 (56)	ø 1.97	1.97-23.62 (50-600)	3.31 (84)	4.09-25.75 (104-654)	11.81-15.75 (300-400)	3.58 (91)
5050RHD	3.15 (80)	ø 2.83	1.97-23.62 (50-600)	4.25 (108)	4.33-25.98 (110-660)	9.84-19.69 (250-500)	3.94 (100)

E-Tubes, fully enclosed - protection against chips, dust and dirt

8840RHD	2.20 (56)	ø 1.97	2.24-4.92 (57-125)	3.31 (84)	5.08-20.31 (129-516)	11.81-15.75 (300-400)	3.58 (91)
9850RHD	3.15 (80)	ø 2.83	2.87-5.55 (73-141)	4.25 (108)	5.31-20.55 (135-522)	11.81-19.69 (300-500)	3.94 (100)

E-Chain®

Quick Selection

Interior separation possibilities...

Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Separators	Full-width shelves	Shelves	EDS/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
10.75 (16)	–	> 1,148 (350)		●	●	●	○	○	▲	–	●◐○	9.83
40.32 (60)	–	> 1,641 (500)		●	●	●	○	○	▲	–	●◐○	9.93
10.75 (16)	–	> 1,148 (350)		●	●	●	○	○	▲	–	●●○	9.83
40.32 (60)	–	> 1,641 (500)		●	●	●	○	○	▲	–	●●○	9.93
4.03 (6)	–	> 1,641 (500)		●	●	●	○	▲	▲	–	●●◐	9.107
4.70 (7)	–	> 1,969 (600)		●	●	●	○	▲	▲	–	●●◐	9.111
8.74 (13)	–	> 2,625 (800)		●	●	●	○	▲	▲	–	●●◐	9.115
20.16 (30)	–	> 2,625 (800)		●	●	●	○	▲	▲	–	●●◐	9.119
4.03 (6)	–	> 820 (250)		●	●	●	○	○	▲	–	●●○	9.127
4.70 (7)	–	> 1,082 (330)		●	●	●	○	○	▲	–	●●○	9.129
8.74 (13)	–	> 1,641 (500)		●	●	●	○	○	▲	–	●●○	9.131
10.75 (16)	–	> 1,969 (600)		●	●	●	○	○	▲	–	●●○	9.135
4.03 (6)	–	> 820 (250)		●	●	●	○	○	▲	–	●●◐	9.127
4.70 (7)	–	> 1,082 (330)		●	●	●	○	○	▲	–	●●◐	9.129
8.74 (13)	–	> 1,641 (500)		●	●	●	○	○	▲	–	●●◐	9.131
10.75 (16)	–	> 1,969 (600)		●	●	●	○	○	▲	–	●●◐	9.135
10.75 (16)	–	> 1,969 (600)		●	●	●	○	○	▲	–	●●○	9.133
20.16 (30)	–	> 2,625 (800)		●	●	●	○	○	▲	–	●●○	9.137
10.75 (16)	–	> 1,969 (600)		●	●	●	○	○	▲	–	●●◐	9.133
20.16 (30)	–	> 2,625 (800)		●	●	●	○	○	▲	–	●●◐	9.137

E-Chains® for long travels - AUTO-GLIDE

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

AUTO-GLIDE - Save on long travels, self-guiding E-Chains®

Version 01 - for E4-1, self-guiding E-Chains®

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
E4-32AG	1.26 (32)	ø 1.10	4.41-10.31 (112-262)	2.12 (54)	5.35-11.26 (136-286)	3.94-11.81 (100-300)	2.20 (56)
E4-42AG	1.65 (42)	ø 1.50	4.41-10.31 (112-262)	2.52 (64)	5.47-11.38 (139-289)	4.92-13.78 (125-350)	2.64 (67)
E4-56AG	2.20 (56)	ø 1.97	5.91-9.84 (150-250)	3.31 (84)	7.24-11.18 (184-284)	5.91-19.69 (150-500)	3.58 (91)

Version 02 - for E2/000, self-guiding E-Chains®

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
2400AG	.98 (25)	ø .91	2.24-3.03 (57-77)	1.38 (35)	2.87-3.66 (73-93)	2.95-9.84 (075-250)	1.81 (46)
2600AG	1.38 (35)	ø 1.26	1.97-2.95 (50-75)	1.97 (50)	2.60-3.58 (66-91)	2.95-9.84 (075-250)	2.20 (56)
3400AG	1.77 (45)	ø 1.65	2.95-3.94 (75-100)	2.52 (64)	3.74-4.72 (95-120)	3.94-11.81 (100-300)	2.64 (67)

Version 03 - for E-Z Chain, self-guiding E-Chains®

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
EA16	1.26 (32)	ø 1.12	1.89 (48)	1.54 (39)	2.36 (60)	2.56-3.94 (065-100)	1.20 (30.5)
EA25	.98 (25)	ø .89	1.97 (50)	.99 (25.2)	2.36 (60)	2.95-3.94 (075-100)	.98 (25)

Version 04 - with special glide elements, self-guiding E-Chains®

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)
2400/2500.AG	.98 (25)	ø .91	2.24-4.92 (57-125)	1.38 (35)	2.87-5.55 (73-141)	2.17-9.84 (055-250)	1.81 (46)
2600/2700.AG	1.38 (35)	ø 1.26	1.97-9.84 (50-250)	1.97 (50)	2.59-7.64 (66-194)	2.95-9.84 (075-250)	2.20 (56)

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942 25 27 50
edf@edfluidos.com
www.edfluidos.com

Quick Selection

Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	EDS/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
3.36-4.70 (5.0-7.0**)	–	196.9 (60)		●	●	●	○	○	▲	–	●●◐	9.143
2.69-6.45 (4.0-9.6**)	–	229.7 (70)		●	●	●	○	○	▲	–	●●◐	9.145
4.30-8.06 (6.4-12**)	–	262.5 (80)		●	●	●	○	○	▲	–	●●◐	9.147
1.34 (2.0)	–	131.2 (40)		●	●	●	○	○	▲	–	●○○	9.151
1.68 (2.5)	–	196.9 (60)		●	●	●	○	○	▲	–	●○○	9.153
3.36-5.38 (5.0-8.0**)	–	229.7 (70)		●	●	●	○	○	▲	–	●○○	9.155
2.69 (4.0)	–	65.6 (20)		●	●	●	○	○	▲	–	●○○	9.159
2.69 (4.0)	–	65.6 (20)		●	●	●	○	○	▲	–	●○○	9.160
1.08 (1.6)	–	65.6 (20)		●	●	●	○	○	▲	–	●○○	9.163
1.34 (2.0)	–	98.4 (30)		●	●	●	○	○	▲	–	●○○	9.165

More solutions for long travels

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

Description

Guidelok horizontal - Upper run guide, self-supporting in chip areas

- Cost-effective solution
- Travels, unsupported up to 164 ft. (50 m) possible
- Chips cannot get stuck between upper and lower run
- Modular system with few parts (also possible without sideways trough)
- Enormous increase of “self-supporting” length of E-Chains®
- Lower push-/pull forces (smaller E-Chains®, self-supporting and rollers = energy efficient)
- Lower cost than most steel E-Chains® or ambitions gliding systems
- Open guide trough design, chips can fall through

Basic Flizz® - Enclosed solution, e.g. waste-water treatment plants

- Low-maintenance system for travels up to 328 ft. (100 m)
- Protection against weather and dirt exposure
- Cost-effective and fully enclosed complete solution
- Standardized and modular design
- Easy wall mounting or optionally as floor attachment
- Cables cannot entangle, hang, or tear
- No slip-ring contact
- Cables or hoses can be easily retrofitted on demand
- Reduce power costs
- No additional drives needed

Micro Flizz® - Small E-Chains® in aluminum profile

- Compact system for a secure guidance of power, data and air
- Maintenance-free alternative for busbar
- E-Chain® is guided in special slot, no sliding against each other
- Control via stationary switch cabinet possible
- Accelerations up to 164 ft/s² (50 m/s²) and speeds up to 19.69 ft/s (6 m/s)
- Fast assembly
- Less space required
- Available also as preassembled
- Smooth running due to ball bearings in the guide carriages

PPDS - Push Pull Force Detection System - Condition monitoring

- Electronic diagnostics tool
- Online monitoring of the displacement forces
- The PPDS system measures the displacement forces on the E-Chain® several times per second
- If a variance occurs the plant can be automatically stopped with the help of the PPDS system
- Easy installation by means of non-interchangeable connectors
- Easy programming using the membrane keypad directly at the device
- Compact housing, stable, corrosion resistant

Modular system for projects - “Special solutions from stock”

- Modular standard system
- Faster quotations, faster project planning
- Detailed service manuals and documentation
- Time and cost savings
- Safe function
- System warranty available upon request, for individual applications
- PPDS-tow arm with electronic push/pull force monitoring
- Fixed end modules
- Extreme gliders gliding elements
- HD trough systems with different assembly kit designs, matching the respective application and stress levels

Quick Selection

Typical industries and applications	travel max ft. (m)	Travel speed max ft. (m)	Price index	Page
	≈ 164 (50)	≈ 6.56 (2)	●○○	9.169
● Machine tools ● Applications in the chip area ● Wherever a gliding application is not recommended				
	≈ 328 (100)	≈ 6.56 (2)	◐○○	9.171
● Sludge scrapers ● Longitudinal scrapers ● Sand catchers ● Grease trap ● Waste-water treatment ● Plating facilities ● Cranes ● Plant construction ● Locks				
	≈ 394 (120)	≈ 26.3 (8)	◐○○	9.173
● Rack feeder ● Indoor cranes ● Industrial gates ● Working stations ● Sewage treatment plants ● Camera systems ● Sliding doors ● Operator panels ● Measure systems ● Studio equipment ● Conveyor technique				
	≈ 2,625 (800)	≈ 32.8 (10)	◐○○	9.181
● Malfunction-sensitive plants, such as conveyor systems in power plants ● Waste incineration systems ● Chemical plants ● Crane building ● Generally with long travel distances that have high fail-safe requirements ● For long travel applications, if tensile and compressive force monitoring is needed				
				9.183
● Cranes ● Offshore				

Special solutions for movements in all dir

	Description

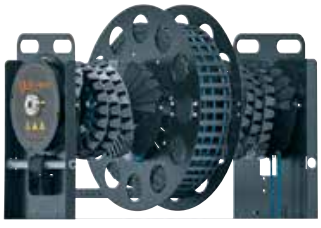
Guidelok slimline F - Safe vertical guidance

- Up to 22.9 ft/s (7 m/s) and 32.8 ft/s (10 m/s²)
- Up to 80% less trough required, saving costs and weight
- For hanging systems up to 164 ft. (50 m)
- No swinging of the E-Chain®, high reliability due to the lever mechanism and guiding rails
- Faster and easier installation
- Reduced noise
- Easy access for servicing
- Energy and data and all kinds of media are safely

LiftBand - Guide up to a height of 42.6 ft. (13 m) with limited installation space

- Modular, silent, space saving
- Guide media, energy and data up and down
- Available in 2 sizes - Inner width .98" and 1.26" (25 mm and (32 mm)
- 2 radii available - 6.89" and 9.84" (175 mm and 250 mm)
- Alternative to zig-zag solution
- Lighter and smaller installation space
- Vertical applications implemented with ease
- Max. expansion length: 42.6 ft. (13 m)
- Simply press cables up to a diameter of .35"/.47"(9/12* mm) into the E-Chain®
- Pull cables up to .43"/.59" (11/15* mm) into the E-Chain® (*depends on Series)

E-Spool - The cable drum without a slip ring



- Route many different cables in very narrow spaces
- Different media and diameters in one drum possible
- No tensile load of the cables
- Energy supply in all possible directions (horizontal, vertical, diagonal)
- Space-saving, no "E-Chain® junction" - E-Chain® rolled into the home position, the paths remain free
- Cable diameters up to .67" (17 mm)
- Cables can be retroactively added or changed
- Alternative to zig-zag solutions
- Max. deployment and retract speed : 3.28 ft/s (1 m/s)

ections

Quick Selection

Typical industries and applications	travel max ft. (m)	Travel speed max ft. (m)	Price index	Page
	≈ 164 (50)	≈ 6.56 (2)	●○○	9.187
● Storage and retrieval units ● Lifts ● Elevators ● Construction and crane lifts ● Hoists				
	≈ 328 (100)	≈ 6.56 (2)	●○○	9.189
● Stage technology ● Indoor cranes ● Mobile telescoping antennas				
	≈ 394 (120)	≈ 26.3 (8)	◐○○	9.191
● Telescopic applications ● Light / Stage equipment ● Space-saving alternative to zigzag applications				

Chainfix strain relief

igus® strain relief	Series

Clamps and stainless steel clamps - for maximum pull forces

CFX [1] Single, double, triple standard clamps
CFXL[1] Single, double, triple clamps with wide base for maximum pull forces
Saddle elements - bottom and stacker saddles
Chainfix Multi-clamps [1]

Tiewrap plates - for universal tiewrap, bolted or clip-on

Option 1A: Tiewrap plates as single part - Series 2000 + cable tiewraps
Option 1B: Tiewrap plates as single part - Series 3000 + cable tiewraps

Tiewrap plates - with clip-on connection for the profile rail

Option 2: Tiewrap plates with clip-on connection for the profile rail
Option 3: Integrated strain relief for E2 E-Tubes - Series R
Option 4: Tiewrap plates for fixed crossbars
Option 5: Tiewrap plates for opening crossbars

Clips - high pull forces, plug-in

Option 1: For all E-Chains® with profile rails
also suitable for assembly in the KMA mounting brackets
Option 2: Clip-on strain relief for opening crossbars

Strain relief separators - with integrated teeth

Separator with integrated strain relief - Easy strain relief with tiewrap

Strain relief element - outside of the E-Chain® cross section

Easy strain relief for cables, even in enclosed tubes.
With stepped, integrated teeth

Strain relief Nuggets - for profile rail

Simple and universal cable attachment, for cable diameters of .79” (20 mm) and 1.18” (30 mm)
Clips onto standard profile rail

Strain relief connector system - modular and customizable

CFB plastic strain relief connector system, many cables in a very confined space

[1] Standard material zinc-coated steel. Stainless-steel (1.4301) version also available.

Quick Selection

Pitch in. (mm)	For Series E-Z Chain	For Series E2/000	For Series E2 E-Tubes	For Series E4-1/E4-1 Light	For Series E4/Light	For Series E6/E6-1	Page
.24-1.65 (6-42)	–	X	–	X	X	X	10.9
.24-1.65 (6-42)	–	X	–	X	X	X	10.10
.24-1.65 (6-42)	–	X	–	X	X	X	10.11
.24-.47 (6-12)	–	X	–	X	X	X	10.12
max. 1.42 (36)	–	X	–	X	X	X	10.15
max. 1.42 (36)	–	X	–	X	X	X	10.16
	X	X	X	X	X	X	10.17
	X	X	X	X	X	X	10.17
							10.18
							10.18
.16-.94 (4-24)	–	X	–	X	X	X	10.19
	–	–	X	–	–	–	
.16-.94 (4-24)	X	X	–	–	–	–	10.20
.79-1.18 (20-30)	–	X	–	X	X	X	10.21
	–	X	–	X	–	–	10.23
≤ 1.18 (30)	–	X	–	X	X	X	10.24
≤ 1.18 (30)	–	X	–	X	X	X	10.24
.17-.55 (4.3-14)							10.25
	Please consult igus® for individual designing						

PMA cable protection

	Product	Description	Page
PMAFLEX Conduits - cable protection			
	PACOF	Flexible, medium, split	11.5
	PPCOF	Very Flexible, medium, split	11.6
	LN	Two-part lock nuts	11.7
	LNO	One-piece split connectors	11.7
	VCS	Flexible, heavy	11.8
	PIS/PIH	Highly flexible, medium	11.9
	CYL	Very flexible, medium	11.10
PMAFIX Connectors - safety and sealing systems			
	IP66 - stat., IP54 dyn.	Universal safety clip	11.11
	IP68 - stat., IP67 dyn.	Oval clip	11.11
	PMAFIX / PMAFLEX	Connectors	11.12
	PMAFIX connectors VW	90° elbow, metric & PG	11.13
	PMAFIX connectors VA	45° elbow, metric & PG	11.14
	PMAFIX connectors VN	Straight, metric	11.15
	PMAFIX connectors VN	Straight, PG	11.16
	PMAFIX connectors VB	90° curved elbow, metric & PG	11.17
	PMAFIX connectors VO	Flange 90°	11.18
PMA - Acessories			
	PMAFIX FH-O	One-piece system support	11.19
	PMA VH	System supports	11.19
	PMA GPS	One-piece system supports	11.20
	PMA MN	Hexagonal lock nuts, metric & PG	11.20
	PMA SGB	Tube clamps	11.21
	PMA 514	Plug screws, metric & PG	11.22

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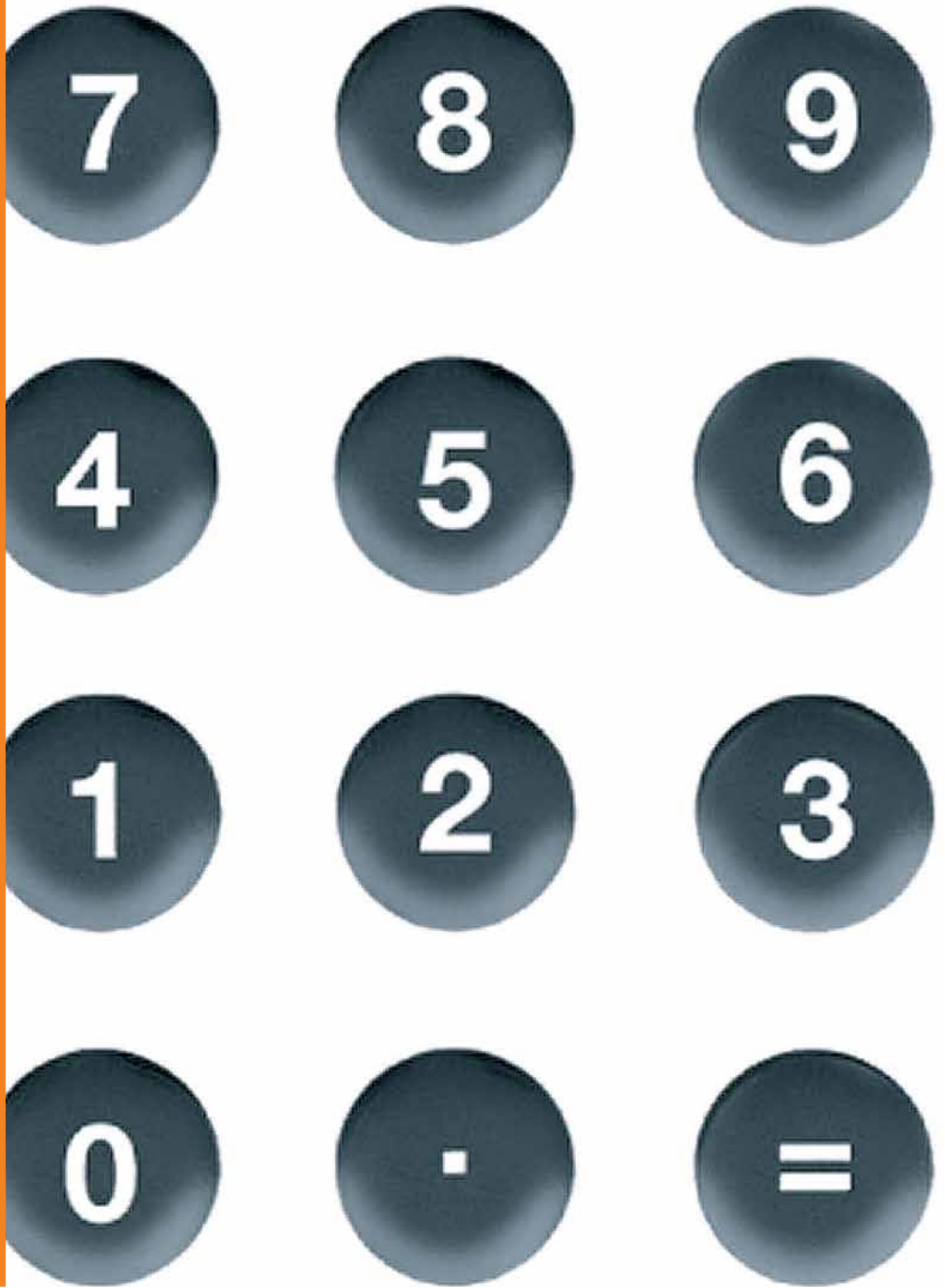

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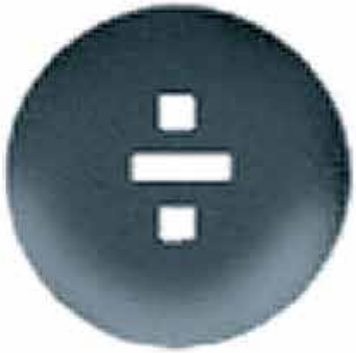

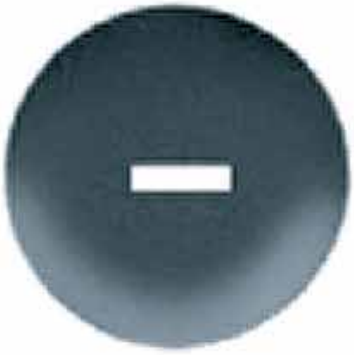

Designing with igus®

Calculation tools, diagrams, and application examples

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E-Chain System® Design
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igus® ReadyChain®

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E-Chain System® Design
Designing with igus®
Introduction

An all-in-one energy supply system - the-chain

There are many options to supply your equipment and systems with energy and data. But there is hardly a solution as universal and durable as the E-Chain System®. Whether you have a circular motion, a suspended or upright application, a long travel distance, high loads or large cables and hoses - igus® plastic E-Chains® will help you solve nearly any type of energy supply problem, quickly, safely and with ease. Whether you wish to reliably guide many large hoses for any type of media, sensitive fiber optic signals over long distances, disruption-free data in torsional movements, or only air at high accelerations, igus® can supply you with the matching energy supply system in addition to the optimally matched Chainflex® cables. By tapping into the extensive igus® construction kit, you will find the solution to match your needs and application: from the individual components to the completed installation at your facility. We have developed a online tool to help you find these resources with greater ease ➤ **www.igus.com/the-chain**. Should you have trouble finding exactly the product you need, our engineers are always at your disposal to help you design **the-chain**.

On the following pages, we offer important guidelines which are to be taken into consideration when designing safe E-Chain Systems®. All specifications are based on test results from the igus® laboratory and our field experience since 1971.

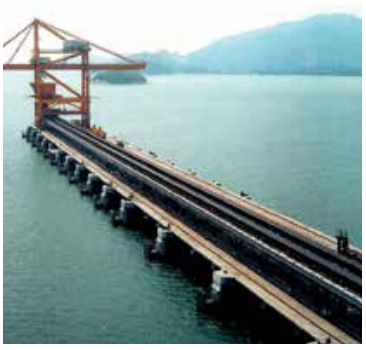
In addition, we strongly encourage you to take advantage of our free design service. Simply fill in the "igus® system design" fax sheet on page 1.5 of this catalog, log onto the igus web site at http://www.igus.com and e-mail us your technical specifications, or call us at 1-800-521-2747.

We will provide a comprehensive quote by the end of the next business day.

Laboratory tests and practical experience

Our calculations and analyses are based on the result of ongoing practical tests in our Technical Center and our experience with gliding applications. The focal points of our tests are push-pull forces, friction values and abrasion under widely varying conditions and speeds, as well as factors such as dirt, weathering or impact and bumps. We test all system components such as cables, hoses, strain relief and other accessories, in addition to the E-Chains® or E-Tubes and Guide Troughs.

E-Chain System® Design Application Examples



Long travels 1,447 ft. (441 m) with igus® Rol E-Chain ® long travel applications

High fill weights 40.3 lbs/ft (60 kg/m) with System E4. fill weights/load diagrams

Multi-axis E-Chains® E-Z Triflex® on a production line, combined movements

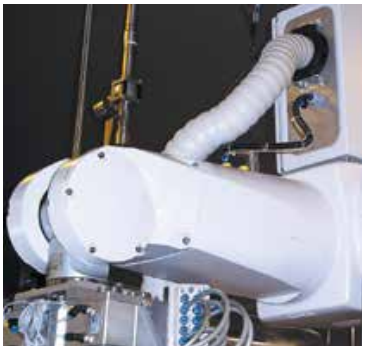
ReadyChain® under water. System E4 and Chainflex® CF9, ReadyChain®

ReadyChain® with combined motions on tooling machines

Series E6-52 high speed 49.2 ft/s (15 m/s) low noise operation, optimized noise level

Crash test unit: 72.2 ft/s (22 m/s) speed and 2,572 ft/s² (784 m/s²) acceleration, travel speed

Complex movements with igus® Triflex® R, combined movements



Cleanroom and Triflex® R technical environment

Extension links for E2 and E4 for large conduits, cable and hoses

Zig-zag movements, 118 ft. (36 m) height with E4/4

igus® System E6 - High acceleration and ESD safety, ESD & ATEX

E-Chain System® Design
Application Examples

Unsupported application System E4, up to 164 ft/s (50 m/s) speed

Unsupported, side-mounted
E4 Series R188

Unsupported nested application
System E4

Gliding application System E4, up to 1641 ft (500 m) realized

Gliding, side-mounted
Series E4/4

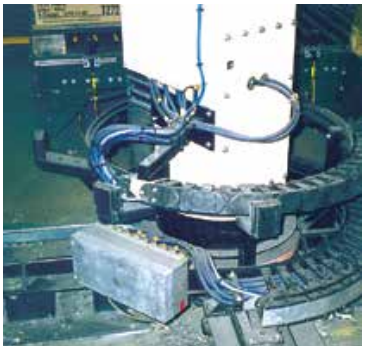
Gliding application
System E4

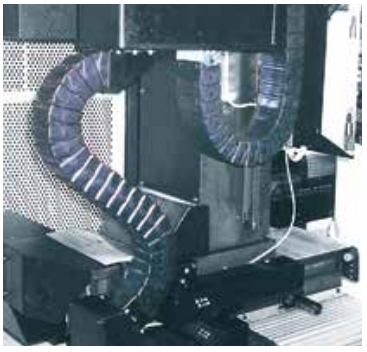
Vertical, standing Series E4/light, up to 19.69 ft (6 m) possible

Rotary movement
System E4

E-Chains® side by side as individual or "multiband"
Series Zipper

Vertical, hanging Series E4 up to 131 ft (40 m) possible


Spiral and rotary movement
TwisterChain®


Combined movement
Series Triflex®

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Application-Icons

- Unsupported - short travels
- Gliding - long travels
- Vertical hanging
- Vertical standing
- Zig-zag
- Side-mounted
- Rotary motion
- Continuously revolving
- Horizontal and vertical
- Nested
- Side by side
- Combined motions

E-Chain System® Design
igus Terminology and Formulas

Throughout this catalog you will find the following terms and formulas:

Short cut		Description	
α	=	The rotation angle of the rotating machine element	(°)
ΔM	=	Deviation of the center point	(in.)
a	=	Acceleration	(ft/s²)
AR	=	Outer radius, E-Chain®	(in.)
Ba	=	Outer E-Chain® width	(in.)
Bi	=	Inner E-Chain® width	(in.)
B_{Ra}	=	Guide trough outer width	(in.)
B_{Ri}	=	Guide trough inner width	(in.)
D	=	Over length E-Chain® radius in final position	(in.)
D_2	=	Over length for long travels gliding	(in.)
FL_B	=	Unsupported length with sag	(ft)
FL_G	=	Unsupported straight length	(ft)
FL_U	=	Unsupported lower run	(ft)
FZ_{max}	=	Maximum additional load	(lbs/ft)
H	=	Nominal clearance height	(in.)
ha	=	Outer E-Chain® height	(in.)
H_F	=	Required clearance height	(in.)
hi	=	Inner E-Chain® height	(in.)
H_{Ra}	=	Outer trough height	(in.)
H_{Ri}	=	Inner trough height	(in.)
IR	=	Inner radius, E-Chain®	(in.)
K	=	Add-on for bending radius (K is taken from the data tables of the individual igus® Series)	(in.)
K_2	=	Further add-on if the mounting bracket location is set lower (for long travels)	(in.)
L_K	=	E-Chain® length	(in.)
n	=	Number of links	(1)
n_{Mon}	=	Number of installation sets (left/right)	(1)
n_{Ri}	=	Number of trough-sets (left/right)	(1)
R	=	Bending radius	(in.)
RBR	=	"Reverse bending radius"	(in.)
S	=	Length of travel	(in.)
$S/2$	=	Half length of travel	(in.)
T	=	Pitch	(in.)
v	=	Speed (travel)	(ft/s)
X_1	=	Inner machine-construction space (TwisterChain®)	(in.)
X_2	=	Outer radius chain, including clearance (TwisterChain®)	(in.)

Formula		Description
$2 \times FL_B$	=	Calculation of maximum travel length, unsupported with sag
$2 \times FL_G$	=	Calculation of maximum travel length, unsupported straight
$B_{Ri} \geq Ba + .20\ (5mm)$	=	Calculation of the minimum guide trough width
$H_{Ri} \geq 2 \times ha$	=	Calculation of the minimum guide trough height
$K = \pi \times R$	=	Add-on for bending radius
$L_K = S/2 + \Delta M + K$	=	Calculation of chain lengths for all types of applications, fixed end is outside the center of travel, except rotary movements and most long travels
$L_K = S/2 + K$	=	Calculation of chain lengths for all types of applications, fixed end in the center of travel, except rotary movements and most long travels
$L_K = S/2 + K_2$	=	Calculation of chain lengths for long travel gliding applications fixed end in the center of travel

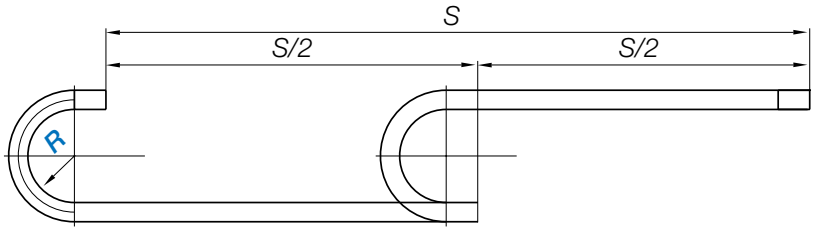
E-Chain System® Design
Calculation of E-Chain® Lengths
Camber

Calculation of E-Chain® lengths

If the fixed end of the E-Chain® is located in the center of the travel, the chain length "L_K" is calculated by using half the length of travel and adding the value "K" for the curve length. (You can obtain the value "K" from the tables in the catalog.) Placing the fixed end in the **center** of the travel is the most **cost-effective solution** because it requires the shortest E-Chain®, cables and hoses.

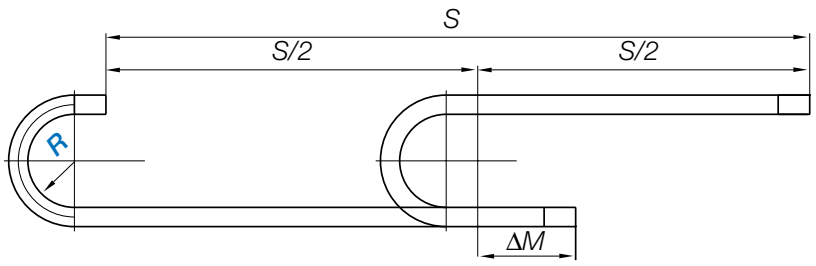
$$L_K = S/2 + K$$

This formula is generally valid for **all types of applications** if the fixed end is in the center of the travel. Exceptions: rotary movements and most long travels.



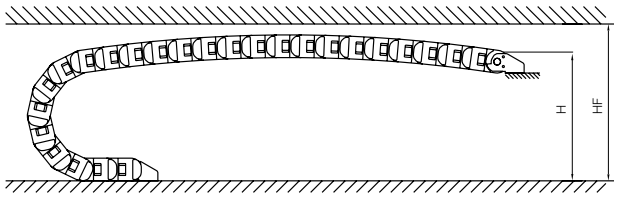
$$L_K = S/2 + \Delta M + K$$

This formula is valid if the fixed end is outside the center of the travel.



Camber

"Camber" is the curve of the upper run along its unsupported length. **All igus® E-Chains are manufactured with camber, special "no camber" (NC) E-Chains® are available upon request.** The camber allows for longer unsupported lengths and increases service life and operating safety. In the **Installation Dimensions** section of each respective E-Chain® description, you will find the measurement H_F, which specifies the **necessary clearance height**, taking the camber into account. The camber allows for longer unsupported lengths and increases service life and operating safety. Upon request, we can deliver E-Chains® without camber for restricted space applications; however, these "no camber" chains do not have the same load-bearing capacity. Please consult igus®.



Principle of camber for igus® E-Chains® H_F = required installation height

The fixed end in the center of the travel is the most favorable solution

L_K	= E-Chain® length
S	= Length of travel
R	= Bending radius
ΔM	= Deviation from the center point
K	= $\pi \bullet R$ + "safety buffer" Add-on for bending radius (*K* is taken from the data tables of the individual igus® series

"No camber" - Special "NC" E-Chains® with no camber are also available. Please consult igus®

H	= Nominal clearance height
H_F	= Required clearance height

Necessary clearance height- depends on the camber of the E-Chain®. Find values for necessary clearance height *"H_F"* on each product page.

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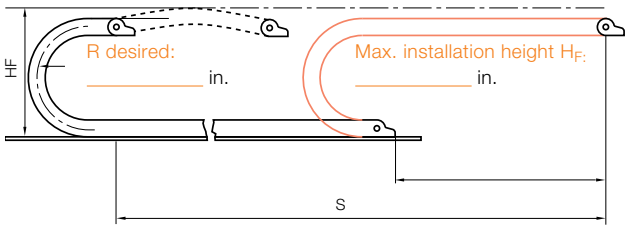
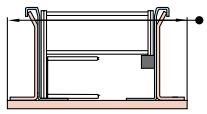
E-Chain System® Design
System Analysis Worksheet

Please supply us with as much application data as possible. Items highlighted in red must be filled out for analysis. You will receive a complete analysis with cable/hose layout proposal and quote by the end of the next business day. Please contact us if you have any questions.

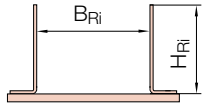
Installation space

Travel: _____ in. Fixed end: center of the travel ☐ yes
or_____ inches from the center





Max. width permitted (if applicable):
_____ in.



Guide trough?
☐ yes; if yes, which:
Dimensions:
B_{Ri} _____ in.
Dimensions:
H_{Ri} _____ in.

Assembly point (floor, wall, console, etc.): _____in.

Span (Standard = 6.5 ft.):_____in.

Dynamics

Speed:_____ (f/s) Acceleration: _____ (f/s^2)

Cycles/Day: _____ Days/Year: _____ Outer diameter: _____

Environment

Temperature (°F): _____ Humidity (%): _____ Dust, dirt, chips: _____

Special parameters: _____

Cables/Hoses

Number	Manufacturer/Type, No.	Conductor/AWG	Outer Dia.	Weight lbs/ft.	Bending radius

Further individual components desired:

E-Chains® / E-Tubes ☐
Chainflex® cables/special conduits ☐
Guide troughs ☐
Strain relief ☐
Harnessing ☐
On-site assembly ☐
Other: _____

Please copy, fill in and fax. Thank you.

E-Chain® ☐
E-Tube ☐
To be opened:
On both sides ☐
Along the outer radius ☐
Along the inner radius ☐
Special requests: _____
igus® System guarantee? ☐

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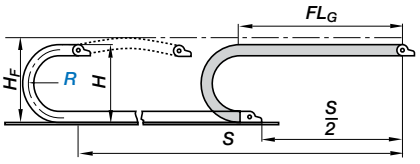
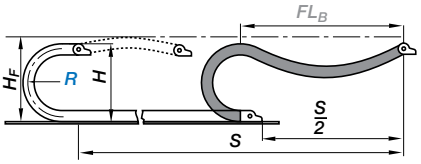
E-Chain System® Design
Use this page for your drawings

E-Chain System® Design
Unsupported, Short Travel Applications

The FL_G type of installation always generates the longest service life and can be operated with the maximum values for speed and acceleration.



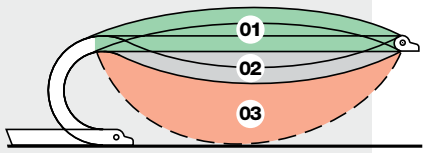
FL_G unsupported straight length



FL_B unsupported length with sag

Unsupported applications

If the upper run of the E-Chain® operates without touching the lower run over the entire travel, it is called and "unsupported" application. The distance between the moving end and the beginning of the radius curve of the E-Chain® is called the "unsupported length". The unsupported application is the most common. igus® E-Chains® are very well suited for high dynamics and long service life. The maximum unsupported length is dependent upon the fill weight and the type of E-Chain® or E-Tube. As a result, we differentiate amng three types of unsupported length:



● 01) Unsupported with straight upper run FL_G

01) Unsupported with "straight" upper run FL_G

The ***FL_G*** E-Chain® applies when the upper run either has camber, is straight, or has a maximum of .39"-1.97" (10-50 mm) sag, depending on the size of the chain. The ***FL_G*** type of installation is always preferred. The E-Chain® runs quietly and is not exposed to any additional vibration.

02) Unsupported with permitted sag FL_B

The ***FL_B*** E-Chain® applies when the sag amounts to more than .39"-1.97" (10-50 mm), depending on the chain size, and less than a defined maximum sag. This maximum sag is dependent on the type of chain. The ***FL_B*** application is technically permissible in many cases. It becomes problematic if the acceleration and the travel frequency are high.

03) "Critical Sag"

If the sag is greater than permissible for ***FL_B***, then we refer to it as "critical sag." An installation with critical sag must be avoided or reserved for extreme circumstances. An E-Chain® should never be installed with critical sag. There are applications which, after a very long period of use, reach the stage of critical sag. The E-Chain®/Tube should be replaced at that time.

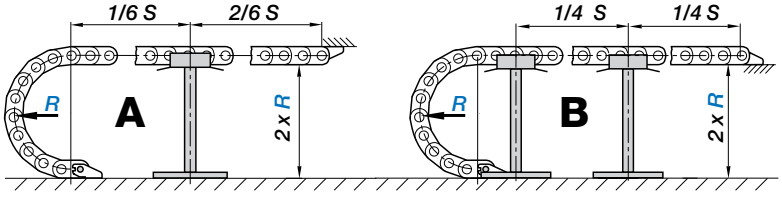
E-Chain System® Design
Unsupported, Short Travel Applications

Example of unsupported with FL_B sag

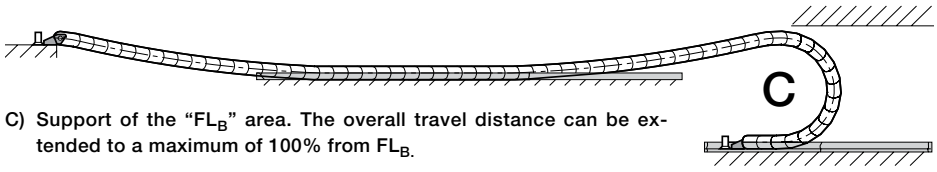
What to do if the unsupported length is insufficient:

If your application, fill weight and travel fall outside the "unsupported length" parameters of the desired E-Chain®, you have the following options:

- Select a more stable igus® E-Chain®
- Support the chain in the unsupported area (this possibility has restrictions for acceleration, speed and noise as a consequence; three fundamental examples are detailed below; please consult igus® if you are considering this possibility we will gladly provide you with a detailed proposal)
- Use a "multiband" chain or "nest" two E-Chains® inside one another (please consult igus® regarding these options)
- Design the travel distance as a "gliding application" (see page 1.x).



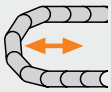
Support of the "FL_G" area.
A) The overall "straight, unsupported travel can be increased along the upper run by a maximum of 50% of the FL_G and
B) along the lower run by a maximum of 100%.



C) Support of the "FL_B" area. The overall travel distance can be extended to a maximum of 100% from FL_B.

For every igus E-Chain®/Tube, you will find the values for "FL_G" and "FL_B" in two locations: On the following pages in this chapter as an overview and within every individual series' chapter. These values are essential for:

- Finding a suitable E-Chain® for your fill weight and travel distance
- Identifying the maximum load for the selected E-Chain®



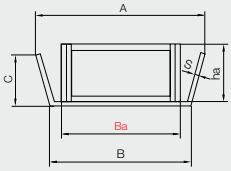
E-Chain System® Design
Unsupported, Short Travel Applications

Standard

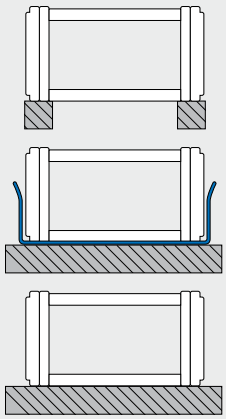
We recommend pivoting mounting brackets as standard. We also recommend locking mounting brackets as standard if high speeds > 65.6 ft/s (20 m/s) or accelerations > 65.6 ft/s² (20 m/s²)

Standard values of maximum speed and acceleration

Unsupported	FL_G	FL_B
v max ft/s (m/s)	65.6 (20)	9.84 (3)
v peak ft/s (m/s)	164 (50)	–
a max ft/s² (m/s²)	656 (200)	19.69 (6)
a peak ft/s² (m/s²)	2572 (784)	–



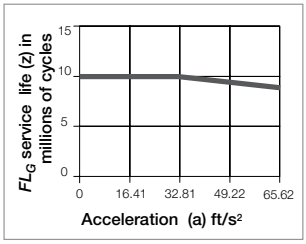
Ba = chain outer width
A = B + .39" (10)
B = ba + .20" (5)
C = ha/.08" (2)
S = .06" - .12" (1.5 - 3)



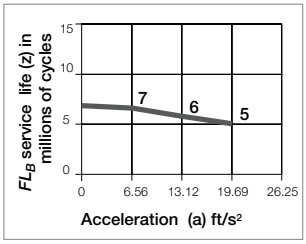
Different surfaces and guide troughs are possible

Speed and acceleration, service life

For unsupported applications, the acceleration (a), is the critical parameter. High acceleration can cause the E-Chain® to vibrate and reduce its service life. This is a particular danger if the E-Chain® already has a sag greater than the FL_G value. Maximum values for acceleration speed and service life are achieved only with E-Chains® incorporating the FL_G (unsupported, straight) design. FL_G designed igus E-Chain Systems® can sustain very high loads. To date, a peak acceleration of 2,572 ft/s² (784 m/s²) has been achieved during continuous use. Through ongoing testing in the igus® laboratory and from practical experience, standard values for service life have been formulated (see graphs). Our tests confirm that these standard values apply to all igus E-Chains® and E-Tubes. It is crucial to determine whether the application will be designed as unsupported, straight FL_G or unsupported, with sag FL_B.



Standard values on service life for "FL_G" dependent on acceleration



Standard values of service life for "FL_B" dependent on acceleration

Load-bearing surfaces

Unsupported E-Chains® normally require some type of surface on which the lower portion of the chain runs. As the drawings on the right demonstrate, a wide range of configurations are available. Many material options are feasible: Metals, polymers, stone, wood, concrete, glass, etc. **We also have solutions to minimize the noise generated by the carrier's lower portion. Please consult igus®.** When selecting the running surface, be sure dirt and debris cannot collect in the E-Chain® path.

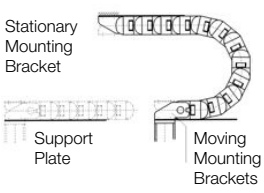
Mounting Brackets

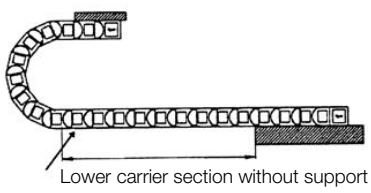
We recommend pivoting mounting brackets as standard for unsupported applications. Pivoting mounting brackets compensate for the camber, can be installed more easily and decrease the load on the first E-Chain® link in operation. **Exception:** If the acceleration is greater than 65.6 ft/s² (20 m/s²) or if the height is limited to the H_F measurement, locking mounting brackets keep the E-Chain under the H_F measurement.

Horizontal Inverted

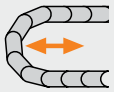
E-Chains® without support along the lower run have restricted use. An E-Chain® is said to be "horizontal inverted" when the stationary end is positioned on the top and the moving end is positioned on the bottom. Care must be taken to assure the maximum unsupported inverted span (FLu) is not exceeded. A support plate behind the moving end bracket may be necessary to prevent cantilevered loading and potential wear or breakage. If the lower run of the E-Chain® cannot be supported over the whole length of travel, please contact igus® with your application information and we will be happy to specify a chain for you.

System E4 partially unsupported - please consult igus regarding this type of configuration.





E-Chain System® Design
Unsupported, Noise-Optimized



Unsupported, noise optimized

The igus® program offers you optimal noise-reduction E-Chains®. The table below briefly illustrates the differences in noise levels among various E-Chains®. In addition to the E-Chain®, the running surface, the dynamics and the cable and hose package all play a role in overall noise generation. Have our specialists design the quietest E-Chain System® for your application.

System T3 ≤ 33 dB(A)

Optimal smoothness of motion was the prime development goal, as well as making it an economic solution. The igus® T3 E-Chain® is very flexible and runs -due to the special geometry- very smooth. A measurement indicates a value of ≤ 33 dB(A) at 1 m/s and with an unsupported length with series **T3.29.050.038.0**, and all this with a sound pressure level generated by external noise.

System E3 ≤ 38 dB(A)

Long-term tests in the igus® acoustic laboratory showed reductions of 19-20 db(A) compared with standard E-Chains®, measured at a speed of 1.8 m/s and an acceleration of 3 m/s². Figure determined in the igus® laboratory in accordance with DIN 45635, taking into consideration background noises, for the series **E3.22.060.044.0**.

System E6 ≤ 46 dB(A)

A measurement conducted by the Rhineland Technical Inspection Authority (TÜV Rheinland) in May 2002 indicates a value of ≤ 46 dB(A) at 6.56 ft/s (2 m/s) and with an unsupported length of 4.92 ft (1.5 m) with **Series E6-52-10-100-0**, and all this with at least 10 dB(A) sound pressure level generated by external noise. The System E6 runs very smooth due to the short link pitch.

System E4 ≤ 46 dB(A)

A measurement by the Rhineland Technical Inspection Authority (TÜV Rheinland) for **System E4/101, Series 221-10-200-0** indicates a value of 46 dB(A) at 4.92 ft/s (1.5 m/s) with an unsupported length.

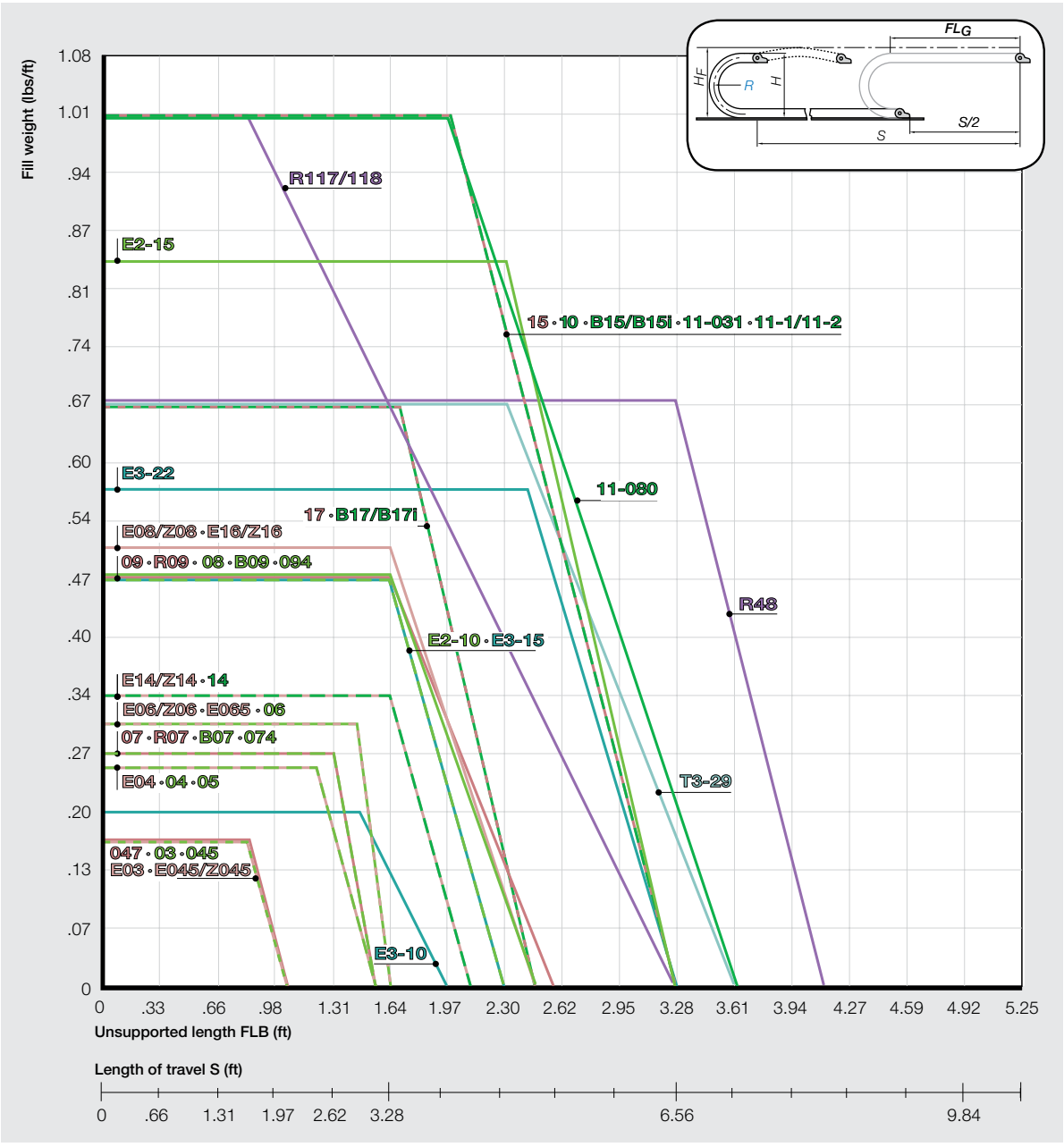
igus® Series	System	Average of the corrected sound pressure levels	Test method (unsupported)
T3-29	T3	= 33 dB(A)	3.28 ft/sec (1.0 m/s)
E3-22	E3	= 38 dB(A)	5.91 ft/sec (1.8 m/s)
E6-52	E6	= 46 dB(A)	6.56 ft/sec (2.0 m/s)
221	E4/100	= 46 dB(A)	4.92 ft/sec (1.5 m/s)
ES4-42	E4-1	= 46 dB(A)	3.28 ft/sec (1.0 m/s)
E4-42	E4-1	= 50 dB(A)	3.28 ft/sec (1.0 m/s)
255	E2 Medium	= 53 dB(A)	4.92 ft/sec (1.5 m/s)
Competitors Product		**Average sound levels**	**Test method (unsupported)**
Chain 1 Third party product		= 77 dB(A)	6.56 ft/sec (2.0 m/s)
Chain 2 Third party product		= 68 dB(A)	6.56 ft/sec (2.0 m/s)
Chain 3 Third party product		= 73 dB(A)	6.56 ft/sec (2.0 m/s)

Source: TÜV Rheinland, except series E3-22 - source: igus® laboratory

A reduction of 3 dB(A) sounds like a 50% reduction in the noise level to the human ear

We have received an official certificate from the Rhineland Technical Inspection Authority (TÜV Rhineland Berlin Brandenburg). A copy is available upon request.

E-Chain System® Design
Unsupported, Straight FL_G
Fill weights up to 1.01 lbs/ft (1.5 kg/m)



Important information

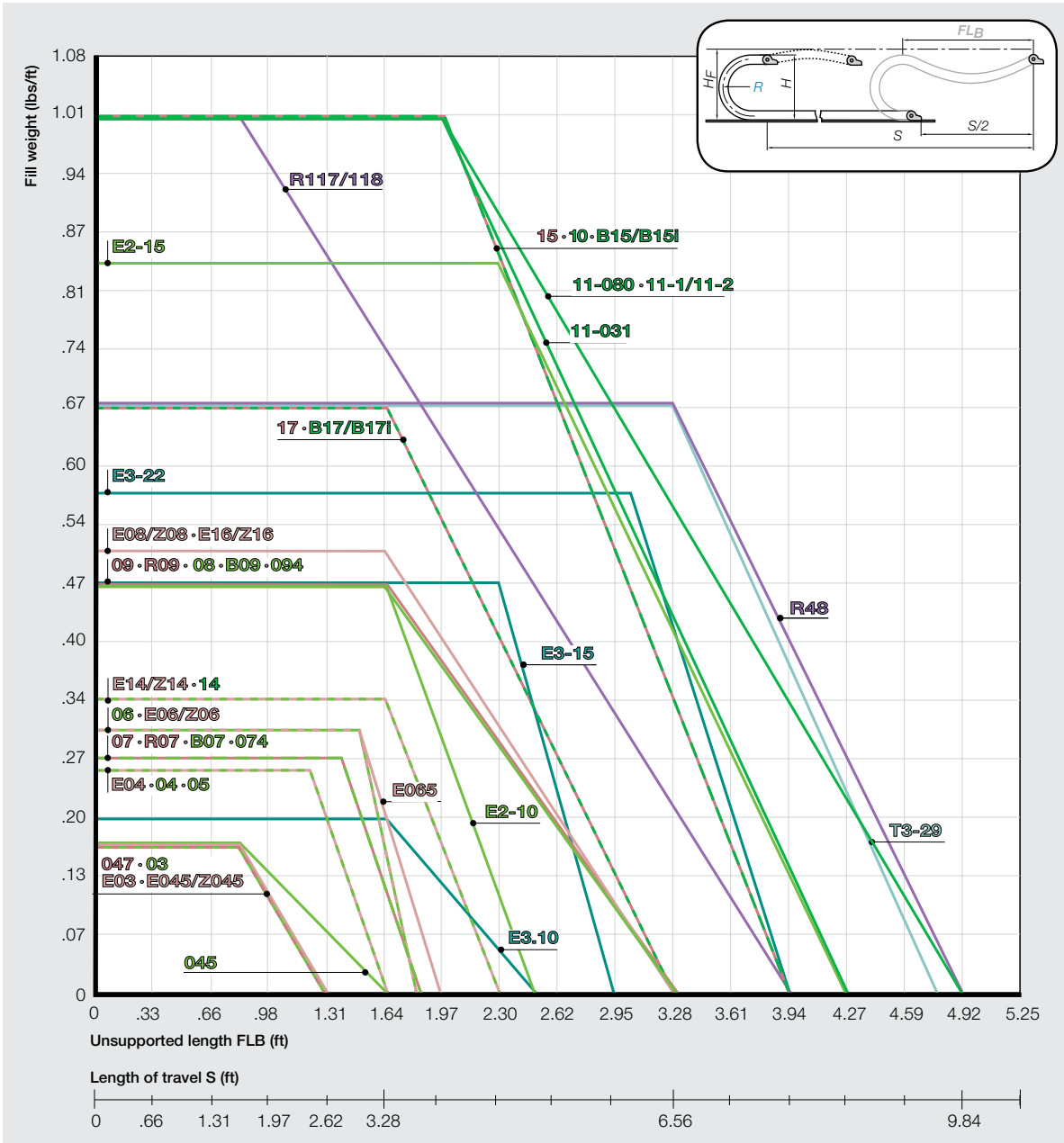
- Fill weight - Weight of all cables and hoses, including contents (for media hoses) within the E-Chain®, typically given (lbs/ft)
- FL_G - unsupported E-Chain® with straight upper run
- FL_B - unsupported E-Chain® with permitted sag
- To the right of the FL_B graph of the diagram, the application is shown in “critical sag”, **which must be avoided!**

These values are essential for:

- Finding a suitable E-Chain® for your fill weight and travel distance
- Identifying the max. load for the selected E-Chain®.

If you cannot meet your application demands using these parameters, keep in mind these specifications are conservative maximum values. In individual cases, they can be exceeded by up to 30%. Special solutions are also possible. Please consult igus®, we will be happy to assist you with your application.

E-Chain System® Design
Unsupported, Sag FL_B
Fill weights up to 1.01 lbs/ft (1.5 kg/m)



The maximum travel - 2 x FL_G or FL_B

If the fixed end is in the center, then:

E-Chain® length: $L_K = S/2 + K$

S = Length of travel

R = Bending radius

H = Nominal clearance height

H_F = Required clearance height

K = $\pi \bullet R$ + "safety buffer" Add-on for bending radius

(*K* is taken from the data tables of the individual igus® series)

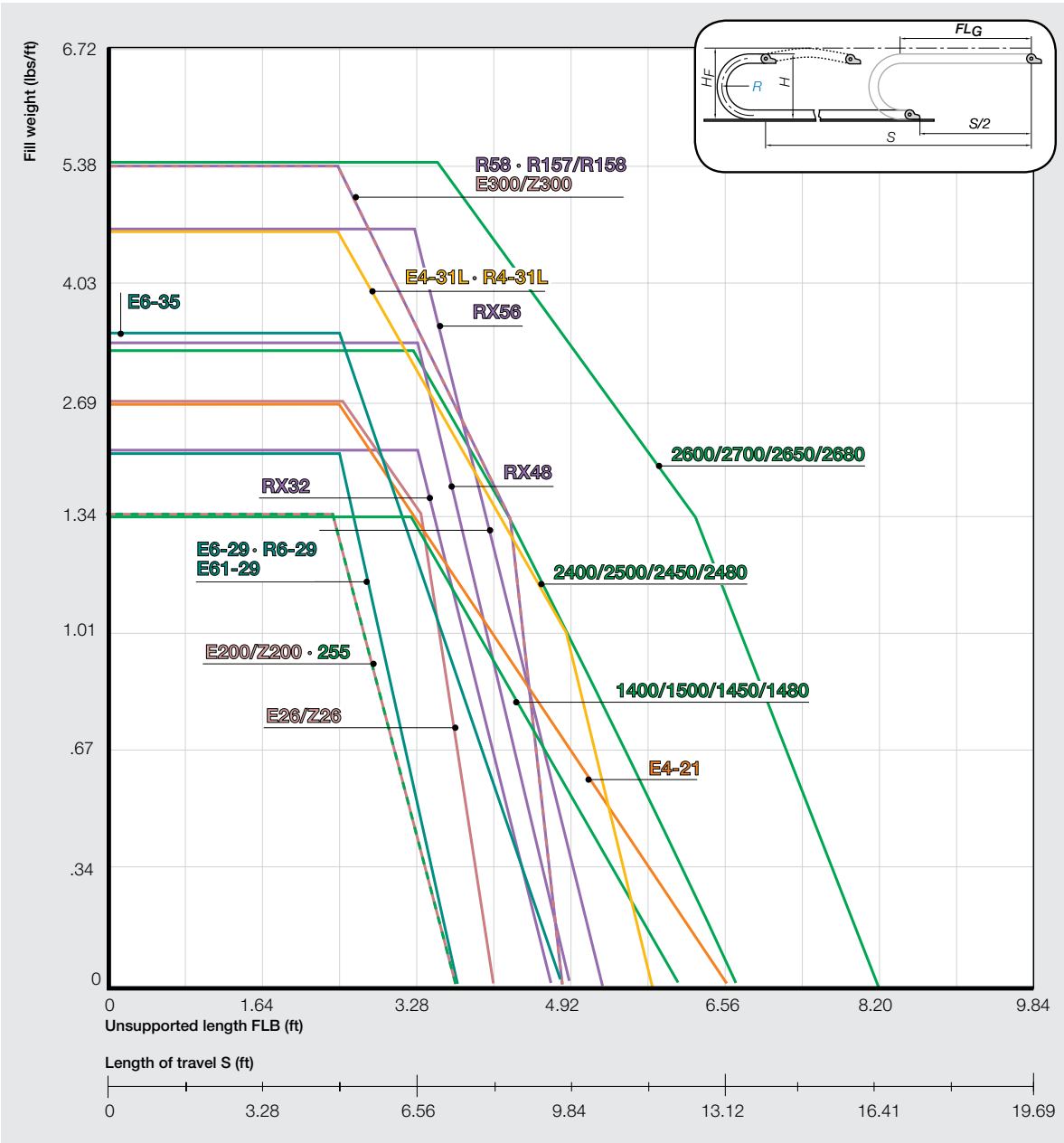
Diagram Series

You will find both diagrams for each series listed individually in the catalog!

E-Z Chain®	chapter 2
Zipper	chapter 3
E2 micro	chapter 4
E2 mini	chapter 4
E2/RX E-Tubes	chapter 5
System E3	chapter 7
System T3	chapter 7

More Information ➤ www.igus.com

E-Chain System® Design
Unsupported, Straight FL_G
Fill weights up to 6.05 lbs/ft (9.0 kg/m)



Important information

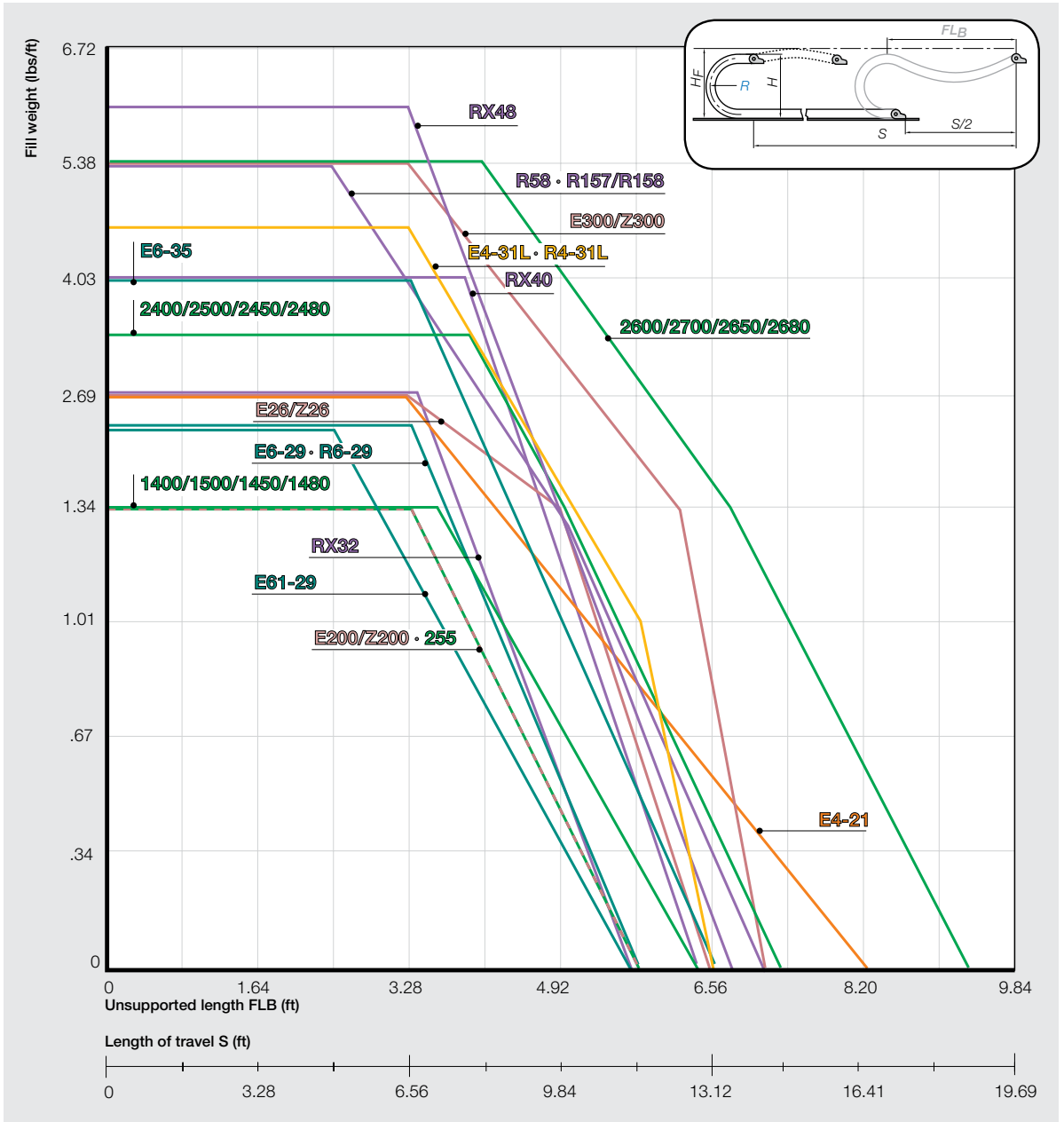
- Fill weight - Weight of all cables and hoses, including contents (for media hoses) within the E-Chain®, typically given (lbs/ft)
- FL_G - unsupported E-Chain® with straight upper run
- FL_B - unsupported E-Chain® with permitted sag
- To the right of the FL_B graph of the diagram, the application is shown in “critical sag”, **which must be avoided!**

These values are essential for:

- Finding a suitable E-Chain® for your fill weight and travel distance
- Identifying the max. load for the selected E-Chain®.

If you cannot meet your application demands using these parameters, keep in mind these specifications are conservative maximum values. In individual cases, they can be exceeded by up to 30%. Special solutions are also possible. Please consult igus®, we will be happy to assist you with your application.

E-Chain System® Design
Unsupported, Sag FL_B
Fill weights up to 6.05 lbs/ft (9.0 kg/m)



The maximum travel -always amounts to **2 x 2 x FL_G or FL_B** if the fixed end is in the center of the travel. In this case, the following applies:

E-Chain® length: $L_K = S/2 + K$

S = Length of travel

R = Bending radius

H = Nominal clearance height

H_F = Required clearance height

K = $\pi \bullet R$ + "safety buffer" Add-on for bending radius

(*K* is taken from the data tables of the individual igus® series

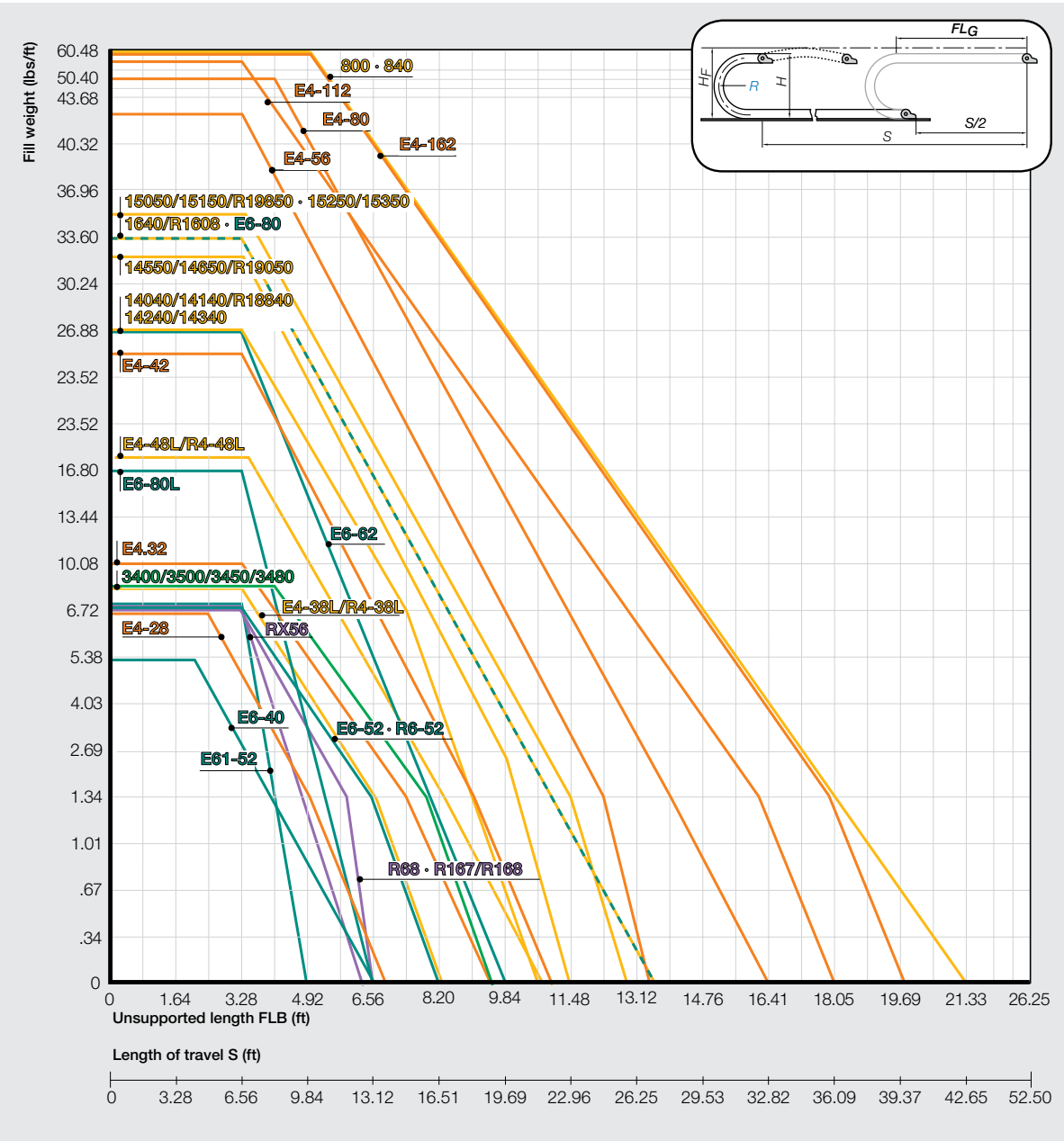
Diagram Series

You will find both diagrams for each series listed individually in the catalog!

E-Z Chain®	chapter 2
E2/000	chapter 4
E2/RX E-Tubes	chapter 5
E4-1	chapter 6
E4-1 light	chapter 6
E6	chapter 7
E6-1	chapter 7

More Information ➤ www.igus.com

E-Chain System® Design
Unsupported, Straight FL_G
Fill weights up to 60.48 lbs/ft (90.0 kg/m)



Important information

- Fill weight - Weight of all cables and hoses, including contents (for media hoses) within the E-Chain®, typically given (lbs/ft)
- FL_G - unsupported E-Chain® with straight upper run
- FL_B - unsupported E-Chain® with permitted sag
- To the right of the FL_B graph of the diagram, the application is shown in “critical sag”, **which must be avoided!**

These values are essential for:

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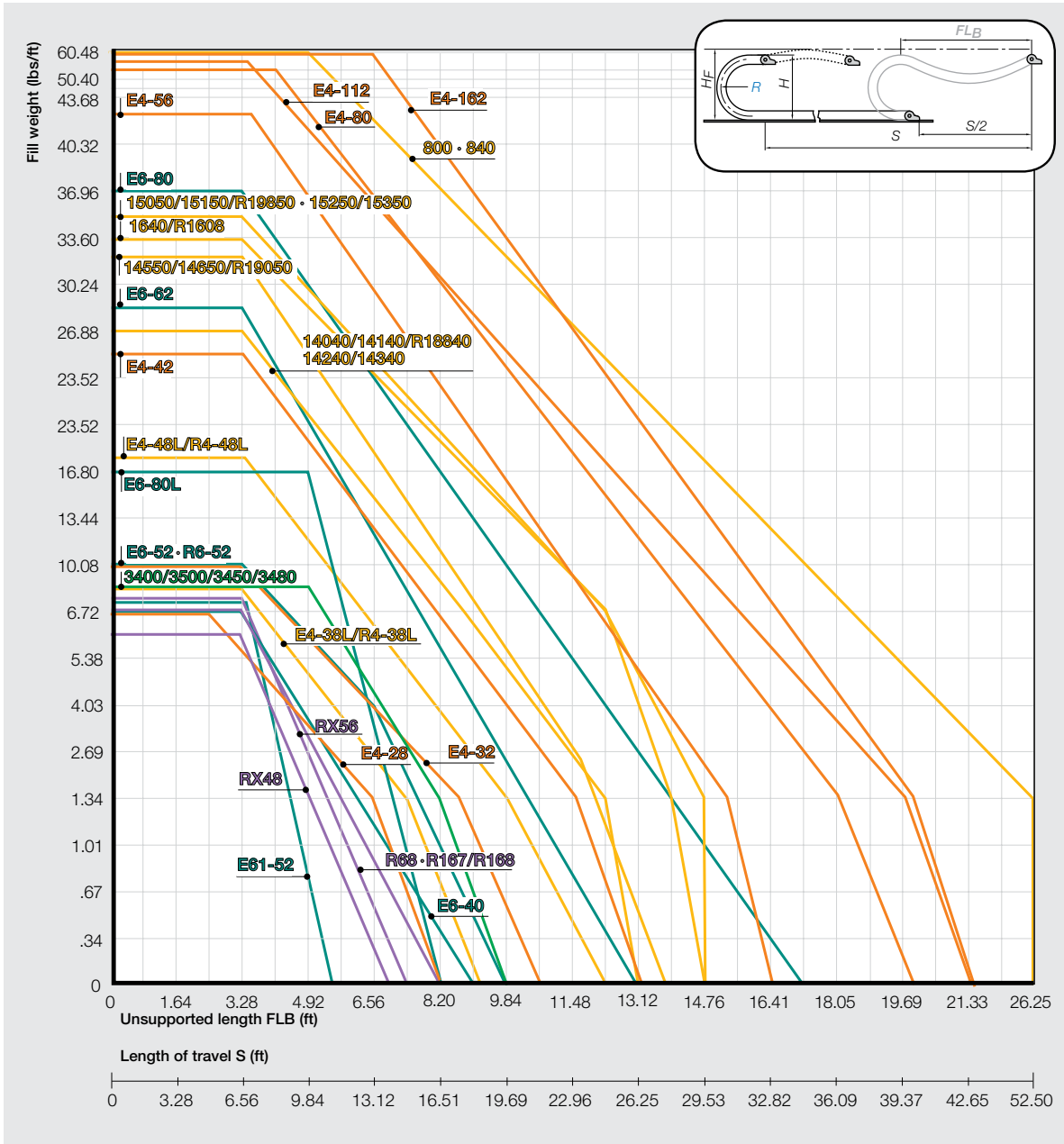
- Identifying the max. load for the selected E-Chain®.

If you cannot meet your application demands using these parameters, keep in mind these specifications are conservative maximum values. In individual cases, they can be exceeded by up to 30%. Special solutions are also possible. Please consult igus®, we will be happy to assist you with your application.

E-Chain System® Design
Unsupported, Sag FL_B
Fill weights up to 60.48 lbs/ft (90.0 kg/m)



The maximum travel -always amounts to **2 x 2 x FL_G or FL_B** if the fixed end is in the center of the travel. In this case, the following applies:

E-Chain® length: $L_K = S/2 + K$

S = Length of travel

R = Bending radius

H = Nominal clearance height

H_F = Required clearance height

K = $\pi \bullet R$ + "safety buffer" Add-on for bending radius

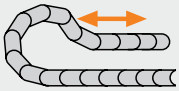
(*K* is taken from the data tables of the individual igus® series

Diagram Series

You will find both diagrams for each series listed individually in the catalog!

E2/000	chapter 4
E2 / RX E-Tubes	chapter 5
E4.1	chapter 6
E4-1 light	chapter 6
E4/light	chapter 6
E6	chapter 7
E6-1	chapter 7

More Information ➤ www.igus.com



E-Chain System® Design
Gliding, Long Travel Applications

Recommended ratio of E-Chain® inner width *Bi* and bending radii *R* (on long travels)

The minimum inner widths of an E-Chain® on long travels depends on the bending radii of the E-Chain®.

igus® specifies: $Bi_{min.} = {}^{R}/_{4}$

Please contact igus® if you have large bending radii on long travel lengths.

Example of lowered mounting height

Gliding applications principle

For long travels, the upper run of the igus® E-Chains® rests on the lower run. The upper run glides partially on the lower run and partially at the same height on a glide bar. The illustrations shown below depict the gliding application principle. For lateral guidance, a guide trough is necessary. If the stationary mounting bracket and the fixed end of the cables and hoses can be placed in the center, the E-Chain® length is calculated as follows: $L_K = {}^{S}/_{2} + K_2$. Depending on the technical data and the selected E-Chain®, the mounting point of the moving end of the E-Chain® must be lowered on some units.

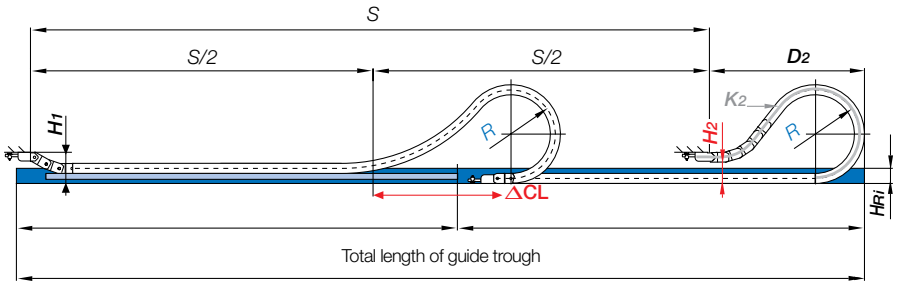
Lowered mounting height: In our system analysis for long travels, we give exact details for your specific application.

Long travel with E4 Rol E-Chain®, guided in a igus® steel guide trough

For center mounted applications, E-Chain® length:

$$L_K = {}^{S}/_{2} + K$$

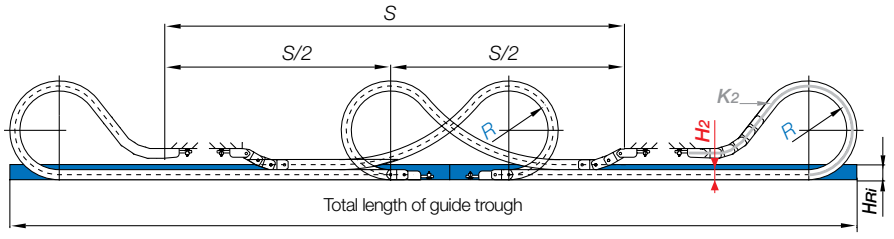
S	=	Length of travel
${}^{S}/_{2}$	=	half Length of travell
R	=	Bending radius
H_{Ri}	=	Trough inner height
H_F	=	Required clearance height
K_2	=	Add-on if the mounting bracket location is set lower (specified by igus®)
D_2	=	Over length for long travels gliding
H_2	=	Installation height with lowered mounting



The function of an E-Chain System® for gliding applications (schematically)
The fixed end of the E-Chain® is located in the center of the travel distance

Advantages lowered moving end:

- Space saving
- Longer travels possible
- Higher service life due to less wear



For a configuration involving two opposed E-Chains®, the travel is measured as shown and selected when these factors apply: ● Restricted space ● High loads

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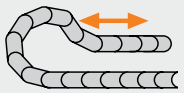
E-Chain System® Design
Gliding, Long Travel Applications



Advantages for long travel applications with igus® E-Chains®

- Travels over 1312 ft (400 m)
- Gliding speeds up to 16.4 ft/s (5 m/s) (more in individual cases)
- Service life of 10 years and more with igus® E-Chain Systems®

Further advantages of the design are:

- Many different types of cables and hoses can operate side by side in the same system (i.e. electrical, data, fiber optic cables with hydraulic and pneumatic hoses)
- Space-saving installation
- Quiet operation
- High accelerations
- Durable in wind, weather, dirt, and chemicals
- Simple assembly of the modular system on the spot
- Rapid assembly and replacement of cables and hoses

E4 E-Chain® with extension links for many cables and large hoses on a long travel application

Standard

Gliding applications = pivoting mounting brackets

Design assistance, free of charge

We recommend that igus® calculate every gliding application for you. We will always offer the most cost-effective solution, taking the technical requirements and operating safety into consideration. The system solution designed by us is also automatically given an igus® system guarantee.

To be able to advise you accurately, we require the following specifications:

- Travel in (ft) or (m)
- Travel speed (ft/min) or (ft/s)
- Acceleration (ft/s²)
- Fill weight (lbs/ft)
- Maximum cable/hose outer diameter (in.) or (mm)
- Type and number of cables and hoses
- Required bending radius (in.) or (mm)
- Cycle frequency (n/day or n/hour)
- Technical environment.

Please call us and within hours you will receive a detailed system proposal!

Please call us and within hours you will receive a detailed system proposal

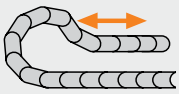
Trends in long travel applications

New developments are currently being tested:

- Travels up to 2,625 ft (800 m). We break through the 1,312 ft (400 m) barrier by means of special components. Please ask us for more specific information.
- Long travel systems “off the reel.” Complete made-to-spec E-Chain Systems® - with cables, connectors, strain relief - are delivered on the reel and “rolled off” into the pre-assembled guide troughs. Travel distances up to 328 ft (100 m) are delivered this way today, with longer travels possible.
- Long travel **without** guide troughs. Our AUTO-GLIDE system consists of self-guiding E-Chains®. We have recently extended this technology to large E-Chains® and currently offer travels up to 328 ft (100 m).
- Long travels with very small E-Chains, for example, the igus “Flizz” offers the guidance of a single bus cable inside a small E-Chain with high acceleration on long travel applications.

Longest igus® travel of 2,018 ft (615 m) with Rol-E-Chain and Chainflex® cables

More Information ➤ www.igus.com



E-Chain System® Design
Gliding, Long Travel Applications

If the fixed point is in the center of the travel, use half of the guide trough with glide bars and the other half of the guide trough without glide bars
$H_{Ri} \geq 2 \times h_a$
$B_{Ri} \geq Ba + .20"$ (5 mm)

Ba = E-Chain® outer width
Bi = E-Chain® inner width
ha = E-Chain® outer height
H_{Ri} = inner trough height
B_{Ri} = inner trough width
(depending on *Ba*)

$H_{Ri} \geq 2 \times ha$
$B_{Ri} = Ba + 4$
(Aluminum SuperTrough)
$B_{Ri} = Ba + 5$
(Steel guide trough)

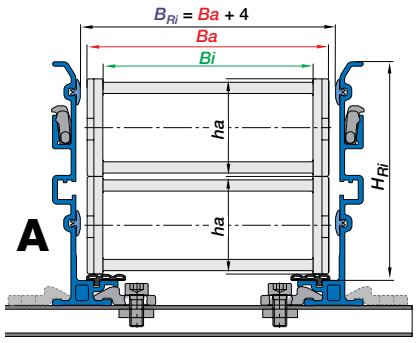
Guide troughs

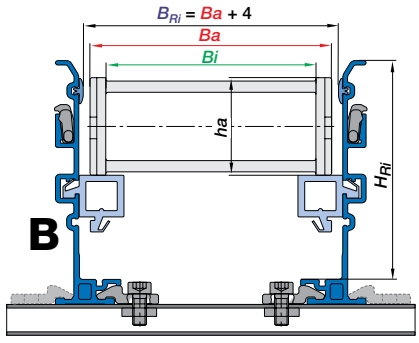
Guide troughs are used for long travels. They allow igus® E-Chains® and E-Tubes to continue smooth low-friction operation in these long travel situations. Diagrams are shown below. The height of the trough must be at least twice the total chain link height. The sides must provide a chamfered opening. The trough inner width is the same as the chain outer width, plus .16 (4 mm) for Aluminum SuperTrough and plus .20" (5 mm) for Steel Guide Trough. When the upper run cannot glide on the lower run, glide bars must be installed along the sides of the trough. igus® recommends the use of polymer glide bars. They are optimally matched to the chain material and achieve the lowest values for friction, noise and wear. Guide troughs with and without glide bars can be obtained for almost all igus E-Chains®.

Important: When assembling the trough parts, the following points must be given particular attention:

- Properly align all trough parts upon installation
- All screw heads should be flush with the trough
- Smooth leveled transition between the end of the chain and the glide bars
- Solid connection with the glide surface

These points must be observed when using assembly-friendly igus® guide troughs





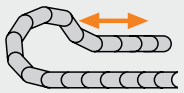
A) Aluminium SuperTrough without glide bars - upper run glides on the lower run
B) Aluminium SuperTrough with glide bars.
We recommend the use of igus® polymer glide bars. They are optimally matched to the E-Chain® material and achieve the lowest values for friction, noise and wear.

Glide friction values for igus E-Chains® made of igumid G and various glide bars:

igumid G	igus® Polymer Glide Bar	Galvanized Sheet Steel	Anodized Aluminum	Stainless Steel
Friction value (dynamic)	0.19	0.45	0.54	0.48

Source: igus® Laboratory

E-Chain System® Design
Gliding, Long Travel Applications



Travel speeds and accelerations

Travel speeds up to 19.7 ft/s (6 m/s) in continuous operation are possible and in use on current applications. In special cases, up to (10 m/s) are possible after consultation with igus®. For example, E4 Series E-Chains® achieve **speeds of 72 ft/s (22 m/s) and accelerations of 2,572 ft/s² (784 m/s²)** in crash test units. (Only a few thousand cycles per year are required in this situation.) Acceleration plays a large role in the calculation. Differentiations must be made between normal operational acceleration and a sudden jolt of acceleration such as unexpected stops or so-called "E-stops." Even in these situations, igus® E-Chains® prove to be very durable.

Automated storage/retrieval system with System E2 and Chainflex® cables - travels up to 262 ft (80 m) and speed of 14.8 ft/s (4.5 m/s)

Corrosion-free guide troughs are available in the material:

- Normally galvanized
- Stainless steel
- Seawater resistant
- Aluminum

Service Life

We offer service life calculations for your application based on our extensive gliding application experience. As developers of plastic bearings, we possess vast material behavior knowledge which we apply to the development of E-Chains® as well. Units with 656 ft (200 m) travels have been in operation for 8 years with minimum maintenance. Units up to 197 ft (60 m) travels have been in operation for 15 years with almost no maintenance. (Please consult igus® for references and calculations for your project.) The maintenance-free aspects of igus® E-Chain Systems® over long periods and under harsh operating conditions is often the deciding factor in choosing igus. Our system guarantee (depends on the application) provides additional peace of mind.

Technical environment

Long travel applications using igus E-Chains® run in water, in dirt, in the tropics, in explosion risk areas (with special design features) and many other conditions. Guide troughs can be supplied in corrosion-free materials. You will find more details in the **Technical Environment** section of this chapter.

Calculation

Comprehensive tests place us in the position of knowing our products precisely. Important factors in these tests are:

- Push-pull forces under both ambient and extreme temperatures
- Humidity and dirt
- Friction values of the polymers, alone and against various glide surfaces
- Behavior of electrical cables under push-pull conditions
- Behavior of hydraulic and media hoses under push-pull conditions
- Service life, and noise generation.

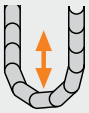
If we cannot calculate your application based on these factors, we will perform a practical test for you in our laboratory. Please consult igus®.

Long travel "off the reel." Up to 328 ft (100 m) travel pre-assembled and ready to install

Technical data - gliding applications

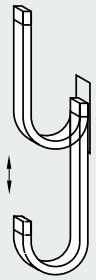
Travel max	1,969 - 2,625 ft (600-800m)	
Travel speed max	32.8 ft/s (10 m/s)	
Travel acceleration max	164 ft/s² (50 m/s²)	depending on application, please consult igus®
Fill weight max	47.04 lbs/ft (70 kg/m)	depending on application, please consult igus®

E-Chain System® Design
Vertical, Hanging Applications

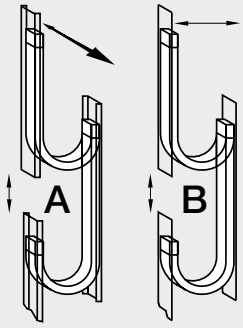


Standard

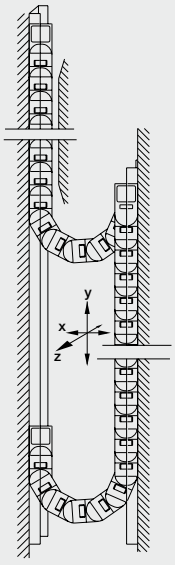
We recommend **locking mounting brackets** for hanging applications. In restricted spaces, other solutions are possible with consultation.



In most cases, vertical motion applications do not require lateral guidance



If lateral acceleration will occur in two directions, guidance is necessary



Principle of a hanging igus® E-Chain® with lateral guidance, lateral accelerations in both directions are contained

Hanging assembly with one-sided U profile

Vertical, hanging applications

In accordance with the principle of hanging applications, heights of over 328 ft (100 m) are possible with igus® E-Chains®. E-Chains® with interior separation allow many different types of cables/hoses to operate together in the same system without becoming entangled.

Cables and hoses

Two important factors in vertical hanging applications are how the cables and/or hoses lay in the E-Chain® and how they are secured at the end points: all cables and hoses must bear their own weight when hung. The E-Chain® should house and protect the cables and should not absorb any further tensile forces. igus® interior separation elements should be used for distinct division of all cables and hoses. The cables and hoses must be secured carefully to both end points of the E-Chain®.The strain relief must be designed so that the opposite run cannot catch. Safe strain relief and clear separation of the cables/ hoses are the basic prerequisites for hanging installations. **Cables and hoses must be able to move freely and bear their own weight.**

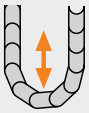
Vertical motion without lateral acceleration

If the application involves vertical motion without lateral acceleration, the E-Chain® can be installed without lateral support. If the space restrictions are severe, an igus E-Chain® with no camber must be specified.

Vertical motion with lateral acceleration

In most cases where lateral acceleration occurs, lateral guidance of the E-Chain® must be provided. The diagram shows an example of such guidance. Partial guidance is also an option, however, it must at least cover the area in which the E-Chain® may sway. Lateral acceleration can occur in two directions. Lateral guidance must be installed accordingly. If you have a choice, the layout in **Figure A** is preferred. Additional guidance along the side of the E-Chain® helps to stabilize the chain further.

E-Chain System® Design Vertical, Hanging Applications Guidelok Slimline F



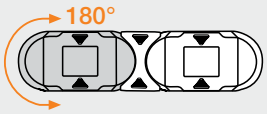
No camber version with igus® special NC E-Chains®

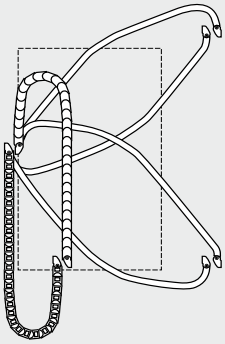
A normal igus® E-Chain® with camber is suitable for hanging use if enough space is available. Camber contributes to the quiet operation of the E-Chain®, required by the slightly bulbous appearance a little more space. If there is not enough room, a “no camber” E-Chain® must be installed. This is frequently the case with storage and retrieval systems in narrow aisles. igus® offers numerous NC versions without camber. With igus® E4-1 it is easy to create a NC-version. Simply rotate the E-Chain® outer link 180°.

Order example: **E4-32-10-175-0-NC** (No Camber)

The E4-1 system is one of igus® best solutions for hanging applications

With E4-1 it’s easy to create a NC-version. Simply rotate the E-Chain® outer link





Hanging and standing igus® E-Chain systems® can reach different points

Technical data - vertical, hanging

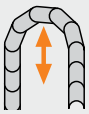
Travel height max.	328 ft (100 m)	
v max.	65.6 ft/s (20 m/s)	dependent on height and strength of the E-Chain®
a max.	164 ft/s² (50 m/s²)	dependent on height and strength of the E-Chain®

Special solution
Guidelok slimline F - safe vertical guidance

- Up to 23 ft/s (7 m/s) and 32.8 ft/s² (10 m/s²)
- Up to 80% less trough required, saving costs and weight
- For hanging systems up to 164 ft. (50 m)
- No swinging of the E-Chain®, high reliability due to the locking mechanism and guiding rails
- Faster and easier installation
- Reduced noise
- Easy access for servicing
- Energy and data and all kinds of media are safely guided

More information ➤ Chapter 9

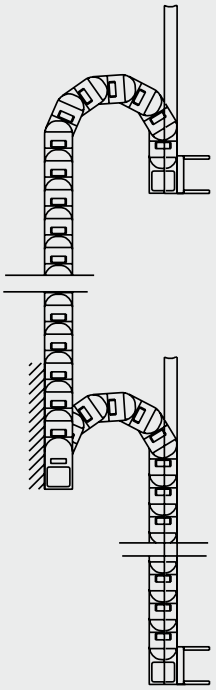
igus® Guidelok slimline F vertical guidance in a high-bay warehouse



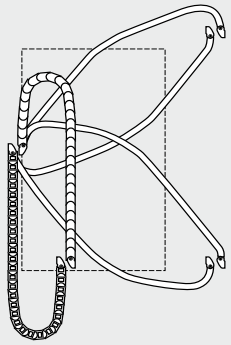
E-Chain System® Design
Vertical Standing Applications

Standard

We recommend locking mounting brackets for standing applications



Options for a standing application with support of the first chain links: on the left, with U-shaped guidance; on the right, with the support of the first chain links.



Hanging and standing igus® E-Chain systems® can reach different points

Locking KMA mounting brackets can be directly attached flush to the machine

Standing application with support of the first chain links; R68 E-Tube

Vertical standing applications

Standing applications are standard on many machines and plants. Cables will be guided safely in vertical strokes.

Mounting brackets

The mounting brackets must be attached so that the E-Chain® cannot bow out.
The igus® program offers locking or one-sided locking mounting brackets for almost all types of E-Chains®. Locking KMA mounting brackets are highly recommended because they can be attached flush to the machine.

Cables and hoses

Cables and hoses must be laid in the chain so that they can bend freely. For precise guidance of the cables and hoses, we strongly recommend igus® interior separation elements. Cables must be strain relieved at both ends

Lateral acceleration

If lateral acceleration occurs, the E-Chain® should be supported along the outer radius. For higher chain heights, it is generally recommended that at least the first three links on the outer radius be supported. For maximum heights and weights, the entire distance must often be supported. Due to the wide variety of combinations involving weights, stroke heights, E-Chain® types and bending radii, we strongly recommend you consult igus® for design assistance.

Combined movements

Combined vertical and horizontal movements are possible with igus E-Chains® for a cost-saving solution.

For higher E-Chain® stroke heights, it is generally recommended that at least the first three links along the outer radius be supported.
For maximum heights and strokes, the whole chain must often be supported.

With lateral acceleration, the E-Chain® must be supported and, depending on the direction of this acceleration, be guided along the side.

Technical data - vertical, standing

Max. stroke height		
- without support	≈ 13 ft (4 m)	
- with support of the first E-Chain® links	≈ 19.7 ft (6 m)	
- with full support	≈ 65.6 ft (20 m)	
v max	65.6 ft/s (20 m/s)	dependent on stroke height and weight
a max	164 ft/s² (50 m/s²)	dependent on stroke height and weight

E-Chain System® Design
Vertical Standing Applications
Zig-Zag - LiftBand

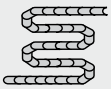
Decommissioning of a nuclear power station. Zig-zag application with igus® E-Chains®

Zig-zag design

The modular design of igus® E-Chains® facilitates this space-saving and unconventional solution. For modern platform technology, such as performance stages, a variety of cables/hoses which adjust the stage height must be accommodated. Lack of space almost invariably presents difficulties. The photo above shows an E-Chain® in a zig-zag configuration produced by incorporating reverse bend radii or ***RBR***. The unextended E-Chain® is stored in a basket. When the platform is raised, the E-Chain® unfolds, generating little to no noise. This construction is possible with E4-1 System as well as many other E-Chain® systems. Please consult igus® for these kinds of applications.

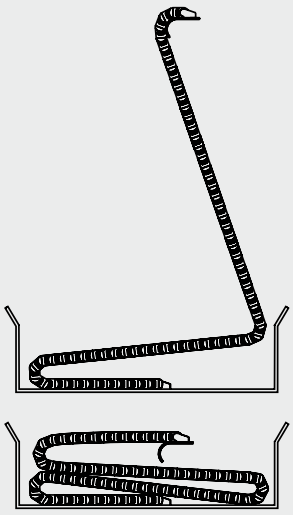
Technical data - zig-zag

Travel max.	131 ft (40 m)	
v max.	1.31 ft/s (0.4 m/s)	depending on application, please consult igus®
a max.	3.28 ft/s² (1.0 m/s²)	depending on application, please consult igus®



Standard

We recommend pivoting mounting brackets for zig-zag applications



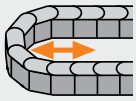
Space-saving solution - stroke heights of over 65.6 ft. (20 m) are possible

Special solution
LiftBand -
vertical guidance with limited space

Modular, silent, space saving - vertical guidance for energy, data and media. High vertical applications that have plenty of space horizontally but allow only for little system height can be implemented with the LiftBand.

- Available in 2 sizes
- Alternative to Zig-Zag solution
- Lighter and smaller installation space
- Vertical applications implemented with ease
- Maximum expansion length: 42.7 ft. (13m)

More information ➤ Chapter 9



Standard

We recommend locking mounting brackets for side-mounted applications

Side-mounted E-Chains® - are strongly recommended if the installation height is restricted.

E4 E-Chains® assembled in an unsupported manner on the traveling column machine. The Y and Z axes have a travel of 314.9" (8,000 mm) and 68.9" (1,750 mm) at a speed of 82 ft/min (25 m/min).

E-Chain System® Design
Side Mounted Applications

E-Chain®, side-mounted, supported System E4

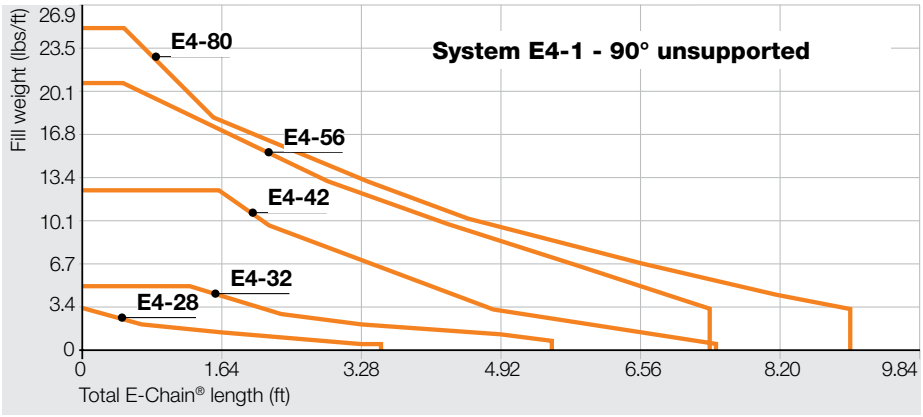
Short travels with or without support

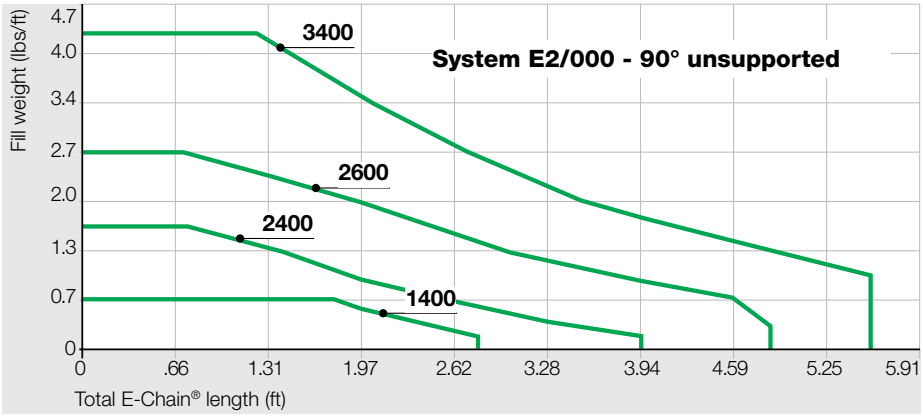
igus® E-Chains® placed on their side can be used unsupported to a limited extent. The turned "unsupported length" in this case is dependent on the following factors:

- Fill weight
- Width of the E-Chain®
- Bending radius
- Parallel placement

The greater the fill weight of the E-Chain®, the shorter the available unsupported length. When placed on its side, the chain width, in effect, becomes the height. As this "height" increases, the E-Chain System® becomes proportionally more stable. Small bending radii provide greater stability. If further movement in a second axis is added to the parallel motion of two chains, the unsupported length is impaired. For applications with low fill weight, the standard mounting brackets are adequate. If, however, the fill weight is high and the travels are long, the E-Chain® must then be supported either in whole or in part. Due to the variety of application possibilities, we strongly recommend you make use of our consulting services.

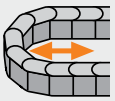
Example load diagrams for E-Chains® side-mounted at 90°

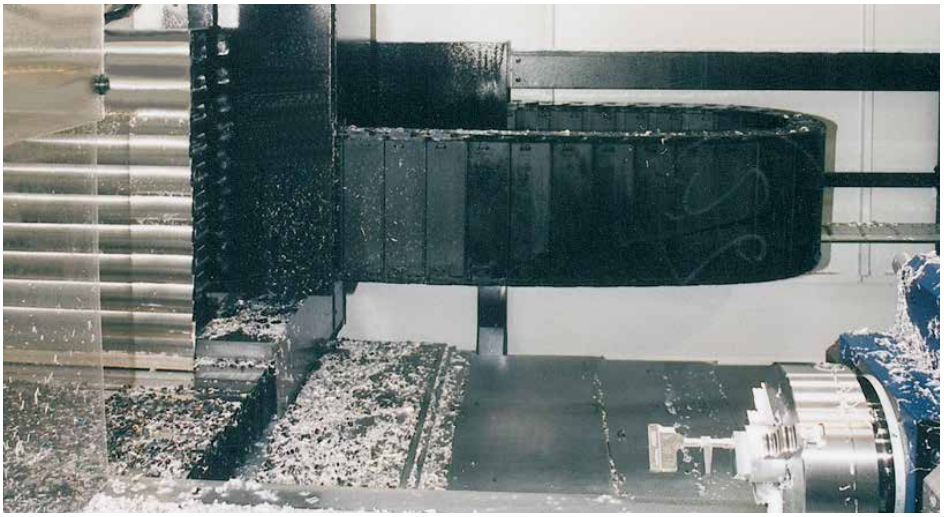




The unsupported lengths can be extended by supporting the links next to the mounting brackets. Please consult igus® for more series and details

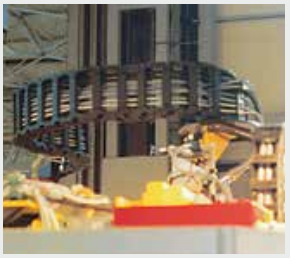
E-Chain System® Design
Side Mounted Applications





System E4 E-Tube in direct chip area E4/light

igus® - Series E4/4 with partial support



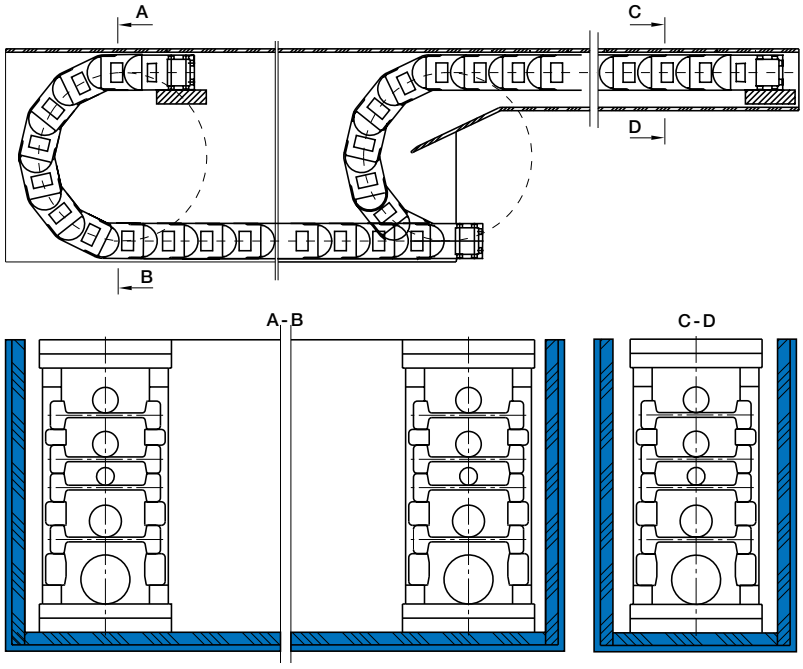
Unsupported - System E4

Long travel, gliding

Side-mounted E-Chains® can travel over 328 ft (100 m) with adequate guidance. All chain types are designed to operate gliding on their side. The corresponding glide surface is usually an igus® polymer, stainless steel or galvanized steel, depending on how high the demands on the travel speed and service life are. Roller and ball bearings or additional gliding elements are not necessary for igus® E-Chains®.

Cables and hoses

Cables and hoses must be guided so that the E-Chain System® can move freely at all times. The igus® modular separation options offers numerous possibilities, such as separators and spacers, to keep these cables/hoses separated and bending freely for maximum service life. igus® will gladly provide an application analysis, free of charge.

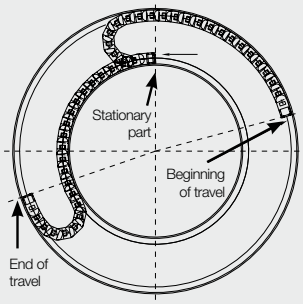


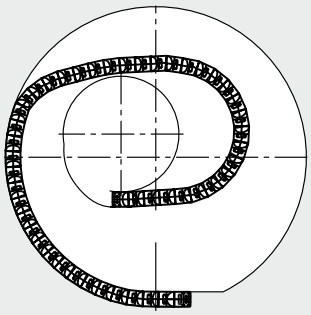
Principle of a guide trough for long travel, side-mounted

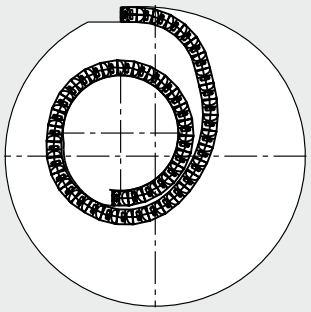
More Information ➤ www.igus.com

E-Chain System® Design
Rotary Motion - RBR - Applications

We recommend pivoting mounting brackets for most applications with rotary motions







**Standard E-Chain®
3500-075-200-0,
angle of rotation 225°**

RBR-rotary movement with igus® System E4, installed on a crane

Rotary motion with a standard igus® E-Chain®

Circular motion of 180° with standard E-Chain® on a crane turret drive

Rotary motion with an “RBR”

“RBR” is “reverse bending radius” and means that the E-Chain® can bend in two directions. Each igus® E-Chain® can incorporate RBR designs, with the exception of several radii, for the E-Tubes R117 to R9850 and for the Series 07, 09, 14, 15, and 17. The RBR does not necessarily need to be identical to the normal bending radius of an E-Chain®. For example: Part No. E4-32-15-100/425-0, describes a Series E4-32 E-Chain® with an inner width of 5.91 (150 mm), standard bending radius of 3.94 (100 mm) and RBR of 16.73 (425 mm).

Most rotary motions can be achieved with the RBR option. **Angles of rotation up to 540°** have been achieved. Below is an example of rotary motion using an RBR E-Chain®. Please consult igus for your particular application.

Rotary movements require less installation height. The E-Chains® glide mostly on surfaces made of polymer, stainless steel or steel and are guided through channels into a rotary movement. (See “side-mounted” for further design tips.) Bending radius, circular radii and E-Chain® widths are variable with this product line.

Rotary motion with standard E-Chains®

The photo to the left shows an application which was achieved using “standard” E-Chains® (standard, in this case, means that the E-Chain® only bends in one direction). Such solutions are possible if a **great deal of space** is available and if the angles of rotation are limited to a maximum of 450°. All igus® E-Chains®, E-Tubes and Chainflex® cables are appropriate for this situation.

Technical data - rotary motion RBR

Max. angle of rotation	540°	more upon request
v max	6.56 ft/s (2.0 m/s)	more upon request, depending on the application
a max	65.6 ft/s² (20 m/s²)	more upon request, depending on the application

E-Chain System® Design
Rotary Motion - RBR - Applications

System E2 medium with 360° *RBR* rotary motion on a robot

Product range for rotary motions with RBR

E-Chains® with "RBR" are available as standard from stock for the complete Triflex® range. In addition, we supply a number of E-Chains® which are molded with "RBR". For all other types, "RBR" requires modification We will be more than willing to offer you this option.

The E-Chain® Series appearing in the table are RBR versions available from stock. Almost all igus® E-Chains® can be delivered as a RBR version. Please contact us for an special inquiry.

- Chainflex® cables with TPE outer jacket are specially suited for E-Chains® with RBR option
- Please use for E-Chains® with RBR option a strain relief only for the moving end

Table of RBR E-Chains® available from stock

Part Number	Series	Part Number	Series
03-05-10/70	E2 micro	10-4-038/600	E2 mini
05-16-018/018	E2 micro	10-4-048/048	E2 mini
06-20-018/018	E2 micro	10-4-048/400	E2 mini
06-30-018/018	E2 micro	10-4-075/220	E2 mini
06-64-018/018	E2 micro	B15i-050-100/460	E2 mini
10-1-028/028	E2 mini	1400-050-075/075-0	E2/000
10-1-038/600	E2 mini	1500-038-075/450-0	E2/000
10-1-048/048	E2 mini	2400-09-055/250	E2/000
10-1-075/220	E2 mini	2700-15-150/090	E2/000
10-2-028/028	E2 mini	250-05-060/060	E2 medium
10-2-038/600	E2 mini	250-07-060/060	E2 medium
10-2-048/048	E2 mini	E/Z14-1-038/038	E-Z Chain®
10-2-075/220	E2 mini	E/Z14-2-038/038	E-Z Chain®
10-3-028/028	E2 mini	E/Z14-3-038/038	E-Z Chain®
10-3-038/600	E2 mini	E/Z14-3-075/075	E-Z Chain®
10-3-048/048	E2 mini	E/Z14-4-038/038	E-Z Chain®
10-3-075/220	E2 mini	TE14-50-028/028	SnapChain
10-4-028/028	E2 mini	TE26-120-063/063	SnapChain

Many igus® E-Chains® are available with "RBR" -reverse bending radius. Please see the 'Product Range' for relevant series.

Vertical rotary motion of an E2 E-Chain®

The E-Chain® series appearing in the table at the left are "RBR" versions available from stock. Almost all other igus® E-Chains® can be special ordered as "RBR". Please contact us for any special inquiry.

E-Chain System® Design
Rotary Motion - RBR - Guide Troughs

Rotary motion with RBR, diameter 236.2" (6,000 mm), with RBR the inner ring rotates

Guide troughs for rotary applications

igus® guide troughs - standard modular system RM

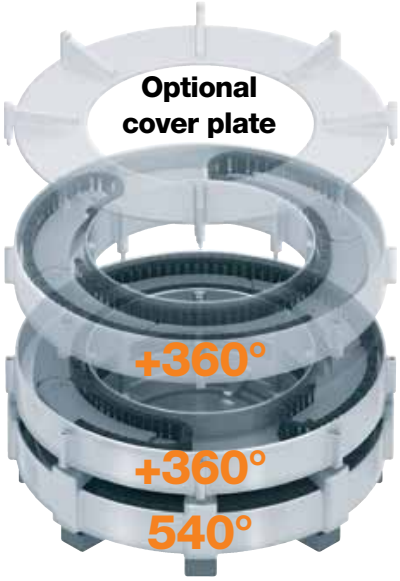
For rotary motions up to 540° igus® offers a modular system of guiding trough systems. Those systems are divided into an inner and an outer ring. Since one ring is moving together with the E-Chain® there is no relative movement between E-Chain® and trough, so the wear is reduced to an absolute minimum. Depending on the application they are made from galvanized steel or stainless steel.

Typical application areas:
offshore, stacker/reclaimer, bucket-wheel excavators, rotary cranes, other rotating applications

Realize 900° and more with igus® Multi Rotation Modules (MRM)

igus® Multi Rotation Modules help to realize rotating movements up to 900° and more. Thanks to stackable add-on modules the angle of rotation can be extended "virtually" indefinitely. The Multi Rotation Modules are also ideally suited for rotary motions with high fill weights and limited space.

- Several individual systems are stacked on each other and form a complete system
- The maximum rotation of the individual levels can easily be added, thereby enabling rotary motions up to 900 degrees and more
- Compact design enables the operation even in tight spaces, and can be extended as needed
- High fill weights possible
- E-Chains® can be assembled easily
- Peripheral speeds up to 3.28 ft/s (1 m/s)
- One layer for rotation movements up to 540°, two layers for up to 900°, higher rotation angle possible with more layers



Functional principle

- As the defined rotation angle of the lower layer is reached, the next upper module is carried along automatically due to an integrated connection system
- The construction minimizes potential interference. The Multi-Rotation Module-System is ideal for rotary applications, heavy loads and for harsh environments
- Unlike other systems using sliding contacts, the E-Chain® can also guide hoses for air, gas or fluids, as well as bus and fiber optic cables

E-Chain System® Design
TwisterChain® - TwisterBand - E-Spool

Circular and spiral movements up to 540° - TwisterChain®

- Higher loads and smoother running
- igus® 2nd generation of TwisterChain® circular E-Chains® significantly improved smoothness, stability and strength
- The TwisterChain® has a modular construction for width, height and radius
- Stronger with intermediate link - more fill weight possible
- 25% less weight than existing TwisterChain®
- Rotary speeds up to 3.28 ft/s (1 m/s) and more, rotary/spiral movements up to 540°
- Highly dynamic and smoother running (with the guide trough Type 01)

More information
➤ see Chapter 8

Rotary movements in small spaces - TwisterBand

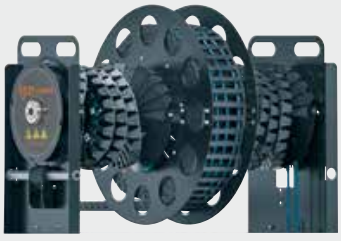
- Compact
- Cost effective
- Low wear and low maintenance in a confined space
- Energy (in the process), data and media are kept secure
- Rotary movements up to 7000° (Installation position, vertical: up to 3000°, horizontal: 7000° and more possible)
- Rotary speeds up to 360°/s possible
- Minimum installation space, fits closely around the rotary axis
- Can be reliably used in various installation positions (horizontal or vertical)
- Compact, modular and lightweight

More information
➤ see Chapter 8

Special solution: E-Spool - the cable drum without a slip ring

- Route many different cables in very narrow spaces
- Different media and diameters possible in one drum
- No tensile load of the cables
- Energy supply in all possible directions (horizontal, vertical, diagonal)
- Space-saving, no "E-Chain® junction" - E-Chain® rolled into the home position, access paths remain free
- Cable diameters up to .67" (17 mm)
- Cables can be retrospectively added or changed
- Alternative to zig-zag solutions
- Maximum deployment and retract speed: 3.28 ft/s (1 m/s)

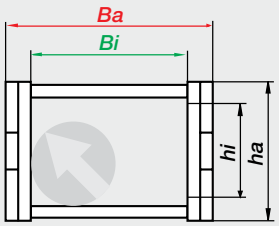
More information
➤ see page Chapter 9



E-Chain System® Design Cable and Hose Packages General Rules

Rules for:
- Maximum conduit diameters
- Shelving
- Bend radius

Electrical cables need at least 10% reserve space all around, hydraulic hoses require 20%



The maximum conduit diameter is specified for each series in its respective chapter

Hydraulics and electric cables are separated from one another in this example

General rules for cables and hoses in E-Chains®

The key advantage of an igus® E-Chain System® is the safe accommodation of various forms of data cables and energy suppliers in one system. We recommend the optimal separation layout of the cables/hoses in the carrier, but you, the customer, are still afforded the final choice. It is possible, for instance, to maintain minimum distances between bus and motor cables and mix pneumatics, electric and hydraulics in the same compartments. In addition to the quality of the cables used, the arrangement of each cable/hose within the chain and the space allowed, are important for the service life of the system. Various separation options enable the adaptation of the E-Chains® to the specific requirements of each respective application. In this chapter, we give you detailed recommendations. Due to the variety of the application parameters, we strongly recommend you take advantage of our free consultation services. Simply give us a list of your cable requirements (or merely the required electrical or other services) and you will receive our recommendation by the end of the next business day.

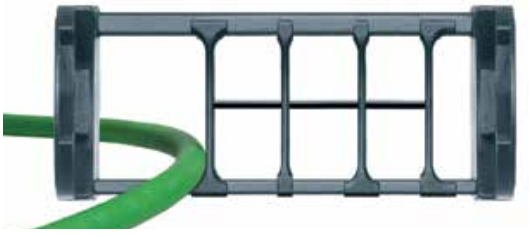
Maximum cable and hose diameters

The maximum cable and/or hose diameter corresponds to the inner height of the selected E-Chain®/ E-Tube, with additional minimum clearance. This minimum clearance would be, for example, 10% for electrical round cables, 20% for hydraulic hoses. An E-Chain® is ideal if a minimum lateral gap to the next cable or hose has been factored in. Depending on the nature of the cables, the dynamics, and the expected service life, more clearance must be allowed. In specific cases, clearances may be altered further. Please consult igus®.

Neatly laid cables with igus® interior separation

E-Chain® Interior separation

Cables and hoses with very different diameters should be laid separately. The separation is achieved using modular separators. Cables and hoses must **under no circumstances** have the opportunity to tangle. Therefore, the clearance height of a compartment with several similar cables or hoses next to one another **must not amount to more than one and a half times the cable/hose diameter.**



The igus® modular E-Chain System® solves all known requirements for interior separation

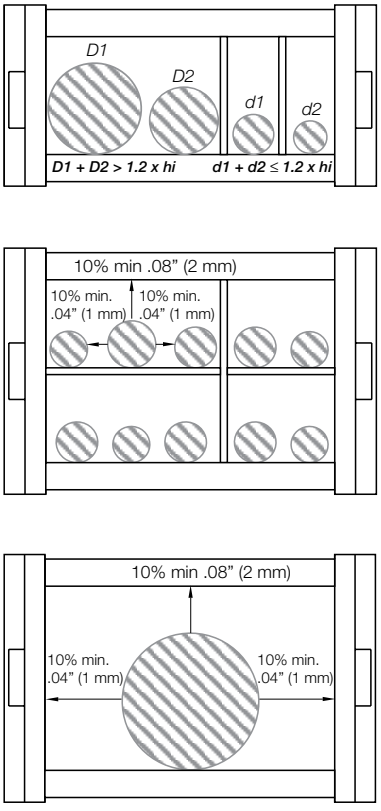
E-Chain System® Design Cable and Hose Packages Distribution Rules

Reasons for distribution rules

The cables and hoses must be laid so that they can move freely at all times and so that no tensile force is exerted at the radius of the E-Chains®. For high-speed applications and high cycles, **cables or hoses must not be laid on top of each other without horizontal separation.** The standard values for this are: Travel speed over **1.64 ft/s (0.5 m/s)** and cycles over **10,000 per year.** igus® interior separation offers a safe solution for this situation.

Further guidelines for distribution

The cable or hose weight should be symmetrically distributed along the width of the E-Chain®. Cables and hoses with different outer jacket materials must not be allowed to "stick" together. If necessary, they must be laid separately. All igus® Chainflex® cables can be combined with each other and all other brands of cable or hose. The cables and hoses should always be fixed at the moving end. The fixed end should always involve strain relief. Exceptions are made only for certain hydraulic hoses with length compensation issues or other high pressure hoses **Generally, the faster and more frequently the E-Chain® operates, the more important the exact positioning of the cables and hoses inside the chain. Due to the wide variety of the possibilities, we strongly recommend you take advantage of our free consultation services for your specific applications.**



Clearance space "all-around" for round electrical cables

Distribution Rules

D1 + D2 > 1.2 x hi

Rule 1: If D1 + D2 > 1.2 x chain inner height, no separation between the two cables/hoses is necessary. Two cables or hoses should never be left unguided on top of one another or be allowed to become tangled.

D1 + D2 ≤ 1.2 x hi

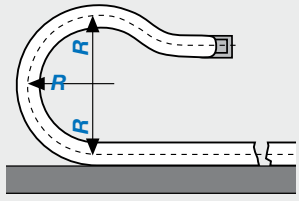
Rule 2: If d1 + d2 ≤ 1.2 x chain inner height, a vertical separator or a horizontal shelf must be used to reduce the inner height, thereby preventing the entanglement of d1 and d2.

Clearance space in %	
Electrical round cables	10
Electrical flat cables	10
Pneumatics	5-10
Hydraulics	20
Media hoses	15-20

Bend radius *R*

The bend radius of our E-Chain® depends on the thickest or stiffest cable or hose in your application. The bend radii of the E-Chains® should be adjusted to the recommendations of the cable or hose manufacturer. The selection of a larger radius than the minimum will positively affect service life. The specification of minimum bend radii for cables and hoses refers to use at normal temperatures; other bend radii may be recommended. Please ask your cable or hose supplier for details. We recommend complete E-Chain Systems® - where bend radii for all cables and hoses, interior separation and service life are optimally matched. igus® Chainflex® cables permit a small bend radius of 4 x d for one million strokes

E-Chain® with extension links supports a smaller E-Chain® with electric cables



Pinciple sketch - bending radius *R*

E-Chain System® Design Cable and Hose Packages Distribution Rules

Corkscrewing: an effect of improper cable and hose placement in an E-Chain®

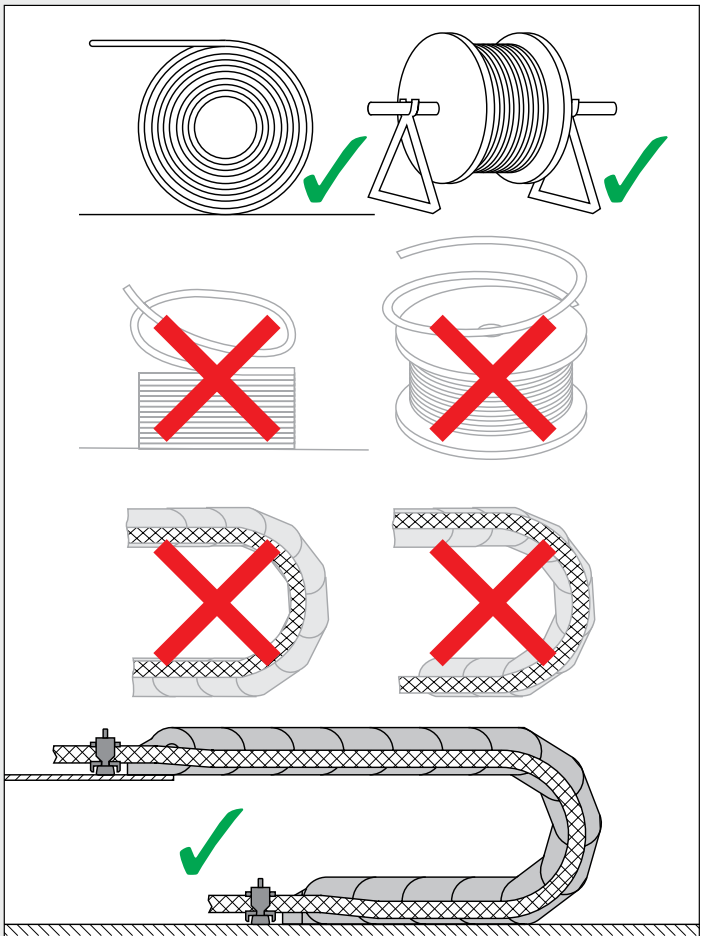
Example from igus® test laboratory: continuous development and testing of Chainflex® round electrical cables

Round Electrical Cables

For electrical cables, the round cable is a safe, modular and cost-effective solution for E-Chain Systems®. We recommend the following criteria for selecting the proper round electrical cables:

- Small minimum bending radii and mounting heights
- Strain relief integrated directly into the mounting bracket
- Uncomplicated installation process - no hanging, laying out, etc, of cables
- Long service life at minimum bending radius
- Service life expectations for your application (short or long travel, hanging, etc.)
- Test data on service life from realistic tests
- Flexible shields for shielded cables
- Abrasion-resistant and non-adhesive outer jackets
- Large selection to avoid expensive custom designs

For bus cables and fiber optic cable, special attention must be paid to how effective transmission rates and shielding remain after millions of cycles at the minimum bending radius.



Cables must be able to bend freely. Chainflex® cables can be strain-relieved directly at the mounting bracket

Installation and strain relief of round electrical cables

1. The cables must be laid straight, without twisting. Cables must not be uncoiled from the top of the spool. igus® Chainflex® cables are immediately ready for placement directly into the E-Chain®. They need not be disconnected or laid out before installation.
2. The cables must be laid so that each individual cable can move freely from side to side.
3. The cables must be able to move freely along the radius. This must be double-checked if the upper run operates at the cable's maximum bending radius.
4. The division of the carrier's interior using shelves or igus® interior separators is necessary if several cables and/or hoses with varying diameters are laid out. It is important to prevent cables and hoses from tangling.
5. For cables and hoses with different jacket materials, it is important to prevent them from "sticking" to one another. If necessary, they should be separated. igus® Chainflex® cables can be combined with all others.
6. Round electrical cables must be secured with strain relief at both ends. In exceptional cases, the cables may be fixed with strain relief at the moving end of the E-Chain® only. A gap of 10-30 x cable diameter between the end of the bending segment and the fixed point is recommended for most cables. Chainflex® cables can, on the other hand, be secured directly to the mounting bracket with strain relief (this has been confirmed with testing).

We will be pleased to provide you with recommendations for complete E-Chain Systems® - where bending radii for all cables and hoses, interior separation and service life are optimally matched

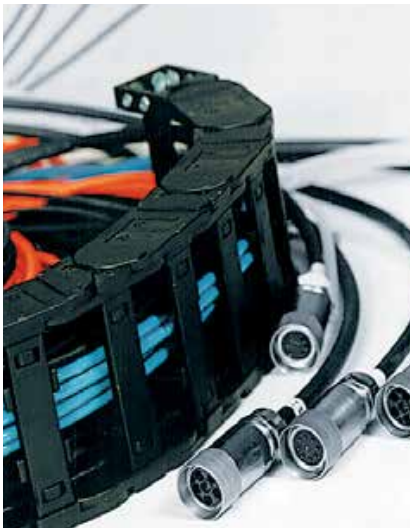
E-Chain System® Design Cable and Hose Packages Distribution Rules

Pneumatic hoses

In principle, the same rules apply for pneumatic hoses as for round cables. In practice, it has been demonstrated that pneumatic hoses are less susceptible to wear. After consultation, they can be laid together more closely than the “10% clearance all-around” rule. A double-sided strain relief is required under these conditions. For pneumatic hoses made of rubber, we recommend strictly following the “10% clearance” rule because they tend to adhere to each other and to other cables/hoses.

Flat cables

Flat cables must be able to move freely along the bending radius. Two flat cables next to one another should be kept apart with separators. If two flat cables are laid on top of one another, we strongly recommend the use of horizontal igus® shelving. Flat and round cables should be laid separately in the E-Chain®. Strain relief should be attached at both ends. Flat cables are only conditionally recommended for use in E-Chains®.



Fully pre-assembled E-Chain System® with several pneumatic and hydraulic hoses

Hydraulic hoses

When designing hydraulic hoses in E-Chains®, special attention should be paid to the expansion of the hoses when pressurized. Sufficient room must be left in the E-Chain® for this as well as the possible larger external diameter of the hoses under pressure. It is important for selected hoses to be sufficiently flexible (i.e. meet bending radius specified by the E-Chain®). The gliding ability and abrasion-resistant surface of the hoses are also important. All crossbars and shelves in the igus E-Chain® minimize abrasion of hoses through wide, rounded and smooth surfaces. Normally, hoses with textile braiding are more flexible than hoses made of steel wire, while maintaining smaller outer diameters and better fatigue strength under stress.
As lateral movements of the hydraulic hoses within the chain can lead to increased abrasion of the hose material, they should be secured in position with vertical separators, but not forced. Special “locking” separators, which grip the opening crossbars of the chain, as well as the use of “spacers,” prevent lateral shifting of the separators; they also ensure the hoses stay put in cases of strong vibration and impact on the chain. Details about these accessories can be found in the description of various chain types.

Strain Relief

Hydraulic hoses are most often stretched lengthwise during operation. This must be taken into account when applying strain relief. More hose length is factored in to allow the hose to “breathe,” or “floating” strain relief must be implemented. In some cases, strain relief on the moving end only can be tolerated.

Rollclip

In almost all cases, the broad, smooth and rounded surfaces of all igus® E-Chains® and Tubes are sufficient to protect hydraulic hoses from abrasion. In extreme cases, the igus Rollclip can be installed. The hoses come in contact with a series of polymer cylinders which rotate. “Extreme” cases include particularly soft materials, particularly narrow bending radii or highly dynamic loads. Over 95% of all applications can be solved without Rollclips.

● Pneumatic hoses

The igus® program also offers polymer pneumatic hoses called Chainflex® Air

● Flat cables

Outer jackets made of rubber must be specified particularly carefully, because of potentially high friction

● Hydraulic hoses

Hydraulic hoses need more space: 20% all-around clearance

igus® Rollclip, detachable

E-Chain System® Design
Strain Relief Elements
Chainfix

Ideally, the cables/hoses should have strain relief at both ends of the E-Chain®. At the very least, they must have strain relief at the moving end of the E-Chain®.

For more information on all igus® strain relief elements,
➤ Chapter 10

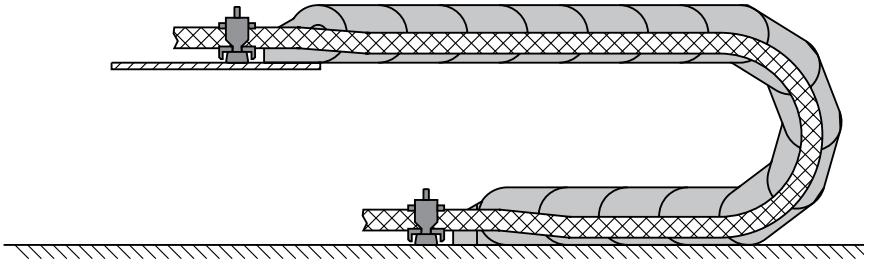
Strain relief in KMA mounting bracket with profile rail.

Strain relief for electrical cables

Strain relief can consist of standard elements or can be custom-made. For most applications, our standard program of profile rails in mounting brackets and space-saving Chainfix® clamps can be used. We also offer simple strain relief solutions using cable tiewraps and tiewrap plates. In ideal cases, the cables should be secured at both ends of the E-Chain® with strain relief (in a few instances, strain relief at the moving end of the E-Chain® is sufficient - please consult igus® for these cases).

Minimum gap of the strain relief and the beginning of the bend radius

Tests on our premises and in field applications have shown strain relief located at the last bending point of the E-Chain® has no influence over the durability of igus® Chainflex® cables. It is possible, therefore, to integrate the strain relief with the mounting bracket. This space-saving option for strain relief is offered by igus® for almost all E-Chains® (More details on this in the individual chapters).



Ideal installation of cables in E-Chains®. Chainflex® cables can be directly strain-relieved in the mounting bracket (minimum gap to the last curved chain link is not necessary)

Chainfix strain relief with KMA brackets; used here for cables and hoses

E-Chain System® Design
Strain Relief Elements
Chainfix

Features of Chainfix clamp

- Optimal igus® Chainfix housing with reduced height
- Long service life for dynamic applications thanks to improved clamping elements
- Integration with KMA mounting brackets - saves both time and space during installation and available for complete systems with cables and strain relief
- Improved housing foot clamp for easy fit into the profile rail
- Black housing and setscrews for attractive appearance
- Setscrews, tightened with Allen wrench, for easy installation
- Mark of the installation direction
- Now with better fixation due to optimized design

Tiewrap plates as individual parts

- Strain relief accessory for igus® E-Chain Systems®
- Attachment to mounting brackets
- Integration into the profile rail of KMA (polymer/metal mounting brackets)

Tiewrap plates with clip-on connection for the profile rail

The plates **3050-ZC** and **3075-ZC** can be clipped directly into the profile rail without bolts or any extra hardware. Clip-on tiewrap plates can be released and repositioned with just a screwdriver used as a lever.
4 options available:

- Tiewrap plates with clip-on connection for the profile rail
- Integrated strain relief for E2 Tubes - series R
- Tiewrap plates for fixed crossbars
- Tiewrap plates for opening crossbars

Chainfix clip - modular snap-on strain relief device

Chainfix clip is a series of clamps and bottom parts made of plastic for cable diameters ranging from .16" (4 mm) to .94" (24 mm). Chainfix Clip is available for profile rail, also suitable for assembly in the KMA mounting brackets and clip-on strain relief for cross bars.

- Quick assembly without any tools
- 2 and 3 layers on top of one another possible
- Each layer can be detached and changed later on
- High tensile forces in case of single-layer installation, decreasing with the number of layers

Strain relief separator

- Can be integrated in mounting bracket
- Can be positioned as required
- Easy installation
- Cost-effective
- For most series from stock

Strain relief element outside of the E-Chain® cross section

- Easy strain relief for cables, even in enclosed tubes
- Stepped strain relief - good access when retrofitting several cables with strain reliefs
- Matching for E-Chains® and E-Tubes
- Easy retrofit assembly possible
- Simple installation into top-hat rails and profile rail on KMA mounting brackets

Chainfix nugget - for profile rail

Option 1: universal cable fixation, for diameter with Ø .79" (20 mm) and Ø 1.18" (30 mm)

- The smart helper for electricians in the machine building industry
- Accessory for all KMA with integrated profile rail
- Easy to assemble, without any screws and tools
- Adjustable to every E-Chain® filling
- Very small space requirement
- Easy strain relief due to attachment with pre-harnessed cable strap

More Information ➤ www.igus.com

°F

E-Chain System® Design
Technical Data
Material Data

igus® materials

- igumid G
- igumid NB
- igumid ESD
- igumid TE
- igumid GE
- igumid DT

Find technical data about igus® materials, temperatures and chemical resistance
➤see page 1.47

igus® factory; automatic compounding and conveyor belt for igumid G

Plastics for longer life® - igus® know-how in polymer materials

Each year, igus® engineers develop more than one hundred new plastic compounds and test igus® products in more than 15,000 experiments per year. That's how in recent years they have built an extensive database of the tribological properties of polymers. This database makes it possible for us to better assess most of the applications in advance and provide our customer with confidence during use. Our calculations and analyses are based on the result of ongoing practical tests in our technical center and our experience with gliding applications. The focal points of our tests are push/pull forces, friction values and abrasion under widely varying conditions and speeds, as well as factors such as dirt, weathering or impact and bumps. We test all system components such as cables, hoses, strain relief and other accessories, in addition to the E-Chains® or E-Tubes and guide troughs.

Technical environment:

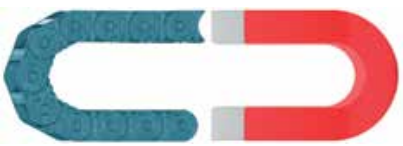
- **Fire resistance**
- **Radiation**
- **Weathering**
- **Cold, heat**
- **Explosion areas**
- **Vacuum**
- **Hot chips**
- **Dirt, dust**
- **Cleanroom**
- **Chemicals**

Technical environment

The igumid G material, from which igus® E-Chains® are made, possesses the following wide-ranging features to cope with a variety of environments: the ability to handle pressure and strenuous loads, abrasion resistance, sturdiness, stable behavior at high and low temperatures, and suitability for outdoor use. Numerous application examples, from refrigerator blocks to steel mills, prove this. In extreme cases, we also offer modifications and other igus® compounds as a solution. Please consult igus®.

Magnetically detectable plastic E-Chains® - For the food and tobacco industry

- The material igumid DT is detected to the tiniest fragment all common metal detection systems and can therefore be selected automatically
- Particles as small as .04" (1.0 mm) can be recognized for fragments passing at speeds of 65.6 ft/min (20 m/min)



More information ➤ www.igus.com

E-Chain System® Design
Technical Data
Material igumid

Flammability of igumid G

The flame-retardant characteristics of igumid G can be described using various classifications:

- Test procedure VDE 0304 parts 3-5.70 - classification llc.
- Tested according to UL 94 “Standard Tests for Flammability of Plastic Materials for Parts in Devices and Appliances” classification 94 HB for .13 and .06 in. (3.2 and 1.6 mm) thickness of the body.
- Tested according to DIN 4102 “Fire Behavior of Building Materials and Parts” classification materials class B-2.

For further requirements, please consult igus® for special solutions, such as materials with self-extinguishing properties (UL94-V2 or UL94-V0).

All E-Chains® (except for the E-Z Chains and Series 14 Chains) are made from igumid G.

Flammability of igumid NB

All E-Z Chains and Series 14 Chains are made from the flame-retardant igumid NB material. These chains have the following flame-retardant classifications:

- UL 94 classification - V2
- VDE 0304 Parts 3-5.70 classification - llb
- DIN 4102 flammability of materials - B2

Please consult igus regarding material availability “V0.”

Temperature resistance

igumid G is very suitable for outdoor applications. In our experience, the mechanical properties of the chain are not impaired. igumid G is also UV-resistant. igus® E-Chains® are used in applications as cold as -40°F (-40°C). Installation may be eventually compromised at temperatures below -13°F (-25°C). In such cases, we offer special solutions made from cold-elastic materials. +248°F (+120°C) continuous temperatures are possible, however, the mechanical values are reduced and the service life is impaired. Please consult igus® if you have specific temperature requirements.

Resistance to radiation

igus® offers several solutions for high radiation areas. igumid G is very resistant to high-energy radiation. Under gamma radiation, in the range of 8 x 10^4 rd, the mechanical properties of igumid G change very little. Please consult igus®

Series 4040R Rol E-Chain® on a coal unloading system - travel 623 ft. (190 m), speed 1.64 ft/s (0.5 m/s,) fill weight 5.41 lbs/ft. (8.05 kg/m)

Live broadcast from the Winter Olympics in Lillehammer; 246 ft (75 m) travel at -13°F (-25°C)

°F

igumid G:
UL 94 HB (Standard)

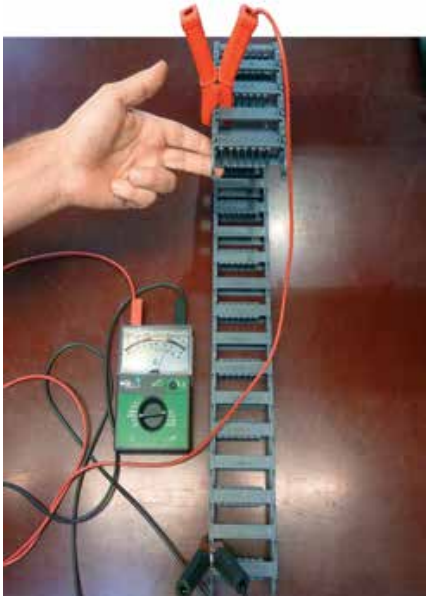
igumid NB:
UL 94 V2 (Standard)
UL 94 V0 (upon reqwuest)

igumid G:

- UV-resistant
- Temperature range from:
  -40°F (-40°C) to
  +248°F (+120°C)

E-Chain System® Design Technical Data ESD & ATEX

- **ESD** - avoidance of static charges in the field of manufacturing processes of electronic components or assemblies
- **ATEX** - prevention of explosive static charge in hazardous environment



100% of the produced ESD E-Chains® are checked for their continuous conductivity from one end to the other

Measurements of the electrical surface leakage resistance for igus® E-Chains® with the special material igumid GC were made already in 1992 by the igus® GmbH together with the PTB (Physikalisch-Technische-Bundesanstalt) in Braunschweig, supplemented by additional certifications in 1998 and 1999 according to DIN 53482 and the guidelines for static electricity "ZH1/200" of the Federation of Trade Associations. In the course of further innovation, the material igumid ESD was certified by the PTB (Physikalisch-Technische-Bundesanstalt) in May 2002. The material igumid ESD combines in its properties the requirements of the ESD as well as ATEX criteria. In some mechanical requirements, the igumid ESD surpasses even the standard material igumid and has been tested with over 10 million cycles in the igus® technology center.

Your benefits with ESD products

- ESD material tested with over 10 million cycles for the highest requirements
- Snap-open E-Chains® with mounting brackets and interior separation in ESD and ATEX design available from stock
- Standardized product - igumid ESD with PTB certificate
- Proven over years of use in explosion-proof areas

Conductivity of igus® products from igumid ESD

In contrast to applied conductive surface coatings or potentially volatile incorporated anti-static agents, the additives used in the igumid ESD products from igus® grant long-term, maintenance-free conductivity to E-Chains®. However, a conductive E-Chains® alone is not enough to ensure sufficient conductivity. Instead, all individual components, as well as the entire E-Chain®, must exhibit continuous conductivity. igumid ESD E-Chains® are slate grey in color* to distinguish as conductive materials. All products in this catalog are optimized in this regard, and their continuous conductivity is tested, measured and documented prior to delivery. Only igus® E-Chains® that have passed these tested are marked with the tested seal, and delivered to igus® customers.

*Exception: igus® Zipper E-Chains® Series 07/09

Product range of ESD E-Chains® from stock

	Bi	
Zipper	**in.**	**(mm)**
07	.39 - 1.97	(10 - 50)
09	.63 - 1.97	(16 - 50)
E2/000		
1500	.59 - 3.15	(15 - 80)
2500	.98 - 4.92	(25 - 125)
2700	1.97 - 4.92	(50 - 125)
E4-1		
E4.21	1.18 - 2.76	(30 - 70)
E4.28	1.57 - 4.92	(40 - 125)
E4.32	1.97 - 7.87	(50 - 200)
E4.42	1.97 - 7.87	(50 - 200)
E4.56	2.95 - 11.81	(75 - 300)
E4.80	2.95 - 11.81	(75 - 300)

	Ba	
Triflex® R TRC	**in.**	**(mm)**
TRC.40	1.69	(43)
TRC.60	2.56	(65)
TRC.70	3.19	(81)

E-Chain System® Design
Technical Data
ESD & ATEX

More information on igus® ESD E-Chains® - classification Ex II 2 GD

● **General safety information:** these additional operating Instructions apply to the explosion-protected versions of our E-Chains® of Type ESD in color grey (similar to RAL 7015). They supplement the Installation Instructions for the standard E-Chains® and the catalog information. The information in these instructions relates only to data impacting on explosion protection. The technical information in the Installation Instructions for the standard E-Chains® and the category information still apply unchanged unless these Instructions explicitly exclude or replace the relevant information. Required documentation and other documents are filed with the following institute pursuant to the ATEX Directive:

Physikalisch-Technische Bundesanstalt (PTB) Braunschweig and Berlin
Bundesallee 100 • 38116 Braunschweig/Germany

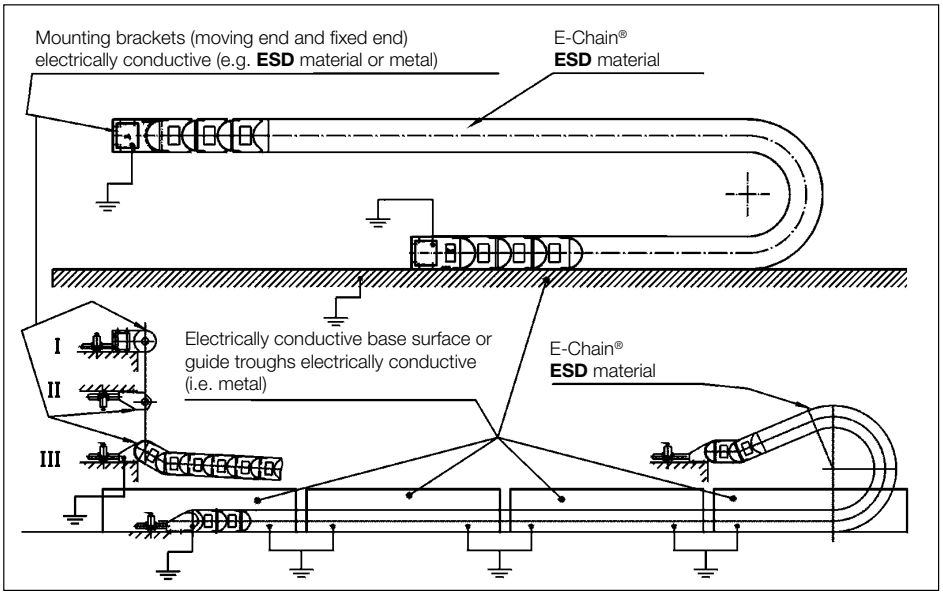
● **Assembly, removal and installation:** please follow the information in the installation instructions for the standard E-Chains® and the catalog information on assembly , removal and installation for trouble-free operation. igus® ESD E-Chains® must be grounded with appropriate measures in accordance with drawing number 18392.2 in order to discharge any electrostatic charges occurring.

Assembly, installation, commissioning and maintenance may be performed only by personnel trained in explosion protection!

Please also note the corresponding national safety regulations and the relevant national regulations in respect of explosion protection during installation and operation.

● **Commissioning:** before commissioning the system, check that the system has been installed correctly in accordance with the Installation Instructions for the standard E-Chains® and the catalog information. Correct grounding must be checked in particular in the case of ESD E-Chains®.

● **Maintenance:** igus® E-Chains® are maintenance-free. Correct grounding of the E-Chains® must be inspected at regular intervals. (*in case of large projects a customized maintenance plans can become an issue and will be created if necessary)



Connection of an E-Chain® in accordance with ATEX Directive 94/9/EC

igumid G - Ex II 3 GD
igus® E-Chains® made of standard material igumid G correspond to the German federal office of Physics and Technology (PTB) to classification Ex II 3 GD according to ATEX-RL 94/9/EG.

igumid ESD - Ex II 2 GD
igus® E-Chains® made of igumid ESD correspond according to the German federal office of Physics and Technology (PTB) to classification Ex II 2 GD according ATEX-RL 94/9/EG

igus® igumid ESD with PTB certificate
We have received an official certificate from the German National Standards Laboratory (PTB) on material igumid ESD and we are able to provide you with a copy on request.

E-Chain System® Design
Technical Data
Cleanroom and ESD

Cleanroom qualification of igus® E-Chains®

In many applications where cumbersome special solutions are used, a simple standard E-Chain® can be used instead. A comprehensive test program was devised and performed for both gliding use and unsupported use. For many applications, the E-Chains® in special materials are practically abrasion-free. Detailed test results are available upon request. IPA tests confirm that standard igus® E-Chains® meet cleanroom requirements. "Tested and certified as very good!" E-Chains® for cleanroom applications in the test stand cleanroom environment demand very high wear-resistance of moving parts. E-Chain®, for example, must be very wear resistant, in order the meet the normal requirements for such a sensitive environment.

Fraunhofer IPA TESTED® DEVICE
igus GmbH
Energy chain E61.29.50.075.0.CR
Report No. IG 1303-640

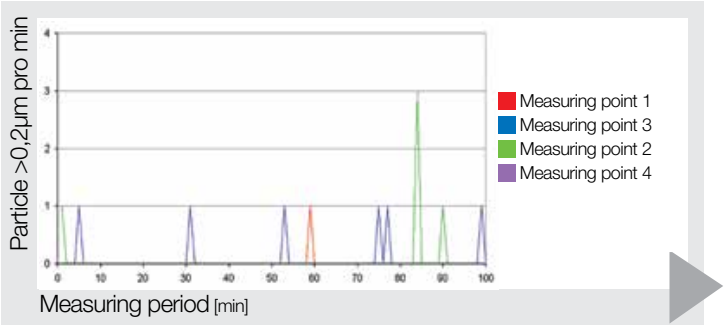
IPA Fraunhofer Institute has tested the following igus® series according to DIN EN ISO 14644-1

Result according to DIN EN ISO 14644-1	Equivalent to US Federal Standard 209E	Classification Series	Report No.	Speed ft/s (m/s)
ISO Class 1	No comparable classification	**E3-15-040-075-0**	IG0704-400	1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0)
ISO Class 1	No comparable classification	**E6-29-060-150-CR**	IG0704-400	1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0)
ISO Class 1	No comparable classification	**E61-29-050-075-0**	IG1303-640-1	1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0)
ISO Class 2	No comparable classification	**E14-3-038-0**	IG0308-295	3.28 (1.0)
ISO Class 2	No comparable classification	**1500-050-038-0**	IG1303-640-1	1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0)
ISO Class 2	No comparable classification	**E4-32-10-063-0-CR**	IG1303-640-1	1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0)
ISO Class 2	No comparable classification	**T3-29-050-038-0**	IG1303-640-1	1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0)
ISO Class 3	ISO Class 1	**E6-29-060-150-0**	IG0704-400	1.64 / 6.56 (0.5 / 2.0)
ISO Class 3	ISO Class 1	**2500-05-055-0**	IG0308-295	6.56 (2.0)
ISO Class 5	ISO Class 3	**E4-32-10-063-0**	IG1303-640-1	1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0)

*special material cleanroom

Particle generation measurement

Result: particle generation
E14-3-038-0

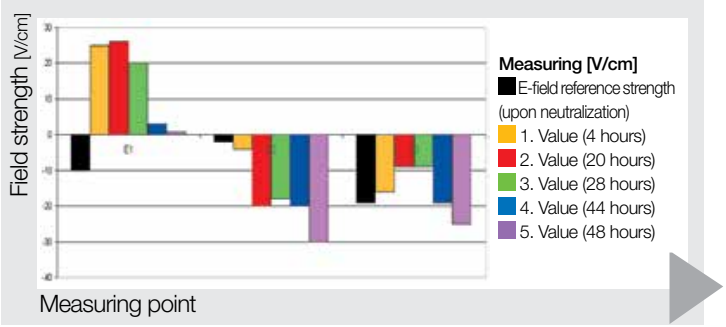


ISO Class 2
according to
DIN EN ISO 14644-1
for E14-3-038-0

Absorption LEVEL 1 confirmed by IPA-Fraunhofer-Institut according to SEMI E78-0998 for the E6 standard material. Continuously constant conductance value as there are no pin-bore connection (no air gaps).

Field strength measurement

Result: field strength
E6-29-050-055-0



Level 1
ESD-compatibility
according to SEMI
E78-0998 for
E14-3-038-0 and
E6-29-050-055-0

E-Chain System® Design
Technical Data
Dirty Environments

Spatter, hot chips

Laboratory tests and numerous field applications over the past 20 years have proven that igus®' E-Chains® and fully enclosed E-Tubes protect cables used in welding robots and machine tools. E-Tubes made from the igus® igumid HT material are resistant against hot chips and flying debris up to 1,562°F (850°C), no chips stick. This opens up new possibilities for replacing more complex and expensive steel tubes. All standard E2 and E4 E-Tubes are available made from igumid HT, upon request. Please note: igumid G in direct contact with large amounts of melted aluminum is not recommended.

igus® E-Tubes in the chip area of machine tools

Dirt, dust, chips

Materials and design make igus E-Chains® excellent problem-solvers in harsh environments. Experience and application references are available upon request. Please consult igus with your application.

Also hot asphalt is no problem for igus® E-Tubes

Vacuum

igus® E-Chains® made of igumid G can be used in vacuum applications. Very little outgassing occurs.

Chemical resistance

igumid G is resistant to fuel, lubricants, oils, fats, alcohol, ester, ketone, and aliphatic and aromatic hydrocarbons. Oxidants and acids are damaging. The table on ➤ **Page 1.48** shows an excerpt of the precise details concerning resistance to chemicals. Acid-resistant E-Chains® are available upon request.

System E4 in an incinerating plant - safe also in abrasive dirt and dust

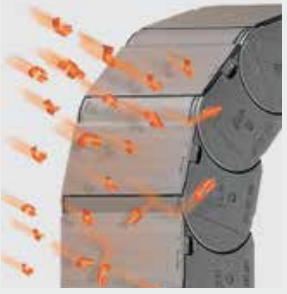
Coolant resistance

E-Chains® and E-Tubes have proven resistant to cooling agents. However, we are always willing to perform individual tests if you have particular problems or advanced developments.

Compost sludge - numerous related references available upon request

Chemical Resistance Table
➤ **Page 1.48**

igus® - experience with:
dust, dirt, mud, compost, wood, textile fibers, paper dust, abrasive paste, cooling agents, glass dust, glass splinters, coal dust, sand, corundum and much more.



E-Tubes that repel hot chips, up to 1,562°F (850 °C) with the igus® "igumid HT" material.

igus® tests: E-Chains® and Chainflex® cables are tested for resistance against chemicals and oils in long-term tests

E-Chain System® Design
Technical Data
Material Data igumid - Colors

Material data igumid

Material data table Mechanical properties	Units of measure	igumid G	igumid NB	igumid ESD	igumid TE	igumid GE
Yield stress (dry/wet)	MPa	190/130	78/40	*	*	*
Elongation at break (dry/wet)	%	004/006	20/210	*	*	*
Elasticity module (tensile test)	MPa	9000/7000	2900/1200	*	*	*
Limit of elasticity (bending)	MPa	7.800	3.000	9.500	1.290	7200
Bending strength	MPa	240	120	230	55	200
Hardness Shore D	–	79	79	83	72	80
General properties						
Density	g/m3	1,37	1,14	1,2	1,02	1,46
Absorption of humidity 23/50 RF	% by weight	1,4	3,4	1,9	0,8	0,7
Maximum water absorption	% by weight	5,6	7,6	7,3	1,6	4
Electical properties						
Specific transitional resistance	Ω*cm	>1011	>1011	<109	>1011	>1011
Surface resistance ROA	Ω	>1011	>1011	<109	>1011	>1011
Thermal properties						
Lower application temperature	°C / °F	-40°C / -40°F	-40°C / -40°F	-40°C / -40°F	-40°C / -40°F	-40°C / -40°F
Upper long-term application temp.	°C / °F	120°C / 248°F	80°C / 176°F	80°C / 176°F	70°C / 158°F	120°C / 248°F
Upper short-term application temp.	°C / °F	180°C / 356°F	170°C / 338°F	150°C / 302°F	140°C / 284°F	200°C / 392°F
Material certificates						
Fire resistance as per UL94	–	HB	V2	HB	HB	HB
Silicone-free	–	++	++	++	++	++
Halogen-free	–	++	++	++	++	x
2002/95/EG (RoHS)	–	++	++	++	++	++
2002/96/EG (WEEE)	–	++	++	++	++	–
Color						
according to RAL, approx.	–	■ ≈RAL9004	■ ≈RAL9004	■ ≈RAL7015	■ ≈RAL9004	■ ≈RAL9004

++ = yes x = no *Values upon request

Colors and special solutions

Product prices are always based on the color black. E-Chains® in any color shown in the color selection chart are subject to a percentage based color surcharge. Any other colors that are not shown in the chart are individually calculated depending on the article and quantity, insofar as this is technically possible. As a rule, colored E-Chains® are not available from stock. Delivery lead-time and surcharges for colored E-Chains® are available upon request. As a rule, all specifications related to stability (for instance unsupported lengths) and material characteristics apply only to black E-Chains®. The characteristics of colored E-Chains® may differ. This also applies to all E-Chains® from special materials, such as conducting E-Chains® made from igumid ESD material or other special materials. For technical reasons HT and ESD materials cannot be supplied in other colors.

E-Chain® color variations with RAL-numbers

Color	Availability	RAL #	Part No. Suffix	Color	Availability	RAL #	Part No. Suffix
Black	Standard, from stock	≈ RAL 9004	**-0**	**White**	special color	≈ RAL 9003	**-1**
Slate grey	ESD material only	≈ RAL 7015	**-ESD**	**Grey white**	special color	≈ RAL 9002	**-1S**
Grey brown	HT material only	≈ RAL 8019	**-HT**	**Orange**	special color	≈ RAL 2003	**-2**
Grey	special color, E-Chains® only	≈ RAL 7023	**-3**	**Yellow**	special color	≈ RAL 1018	**-4**
Dusty grey	special color, E-Tubes only	≈ RAL 7037	**-31**	**Light grey**	special color	≈ RAL 7035	**-14**

Black E-Chains® available from stock! Delivery time for special colors: Please consult igus®.

E-Chain System® Design
Technical Data
Chemical Resistance

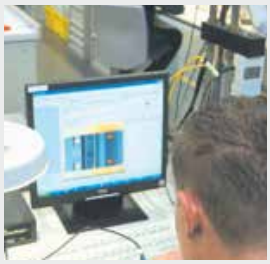
Medium	Concentration weight %	igumid G / NB	igumid TE
Acetic acid	2	++	+
Acetone	100	++	++
Ammonia (aqueous)	10	++	++
Benzole	100	++	++
Bitumen	100	+	–
Boric acid (aqueous)	10	++	+
Butyric acid	100	+	–
Calcium chloride (aqueous)	Sat. aq. sol.	++	++
Caustic potash	10	++	++
Chlorinated hydrocarbons		++	+
Chlorine water	Sat. aq. sol.	–	–
Chromic acid (aqueous)	1	+	–
Color		++	++
Diesel oil	100	++	++
Fats, cooking		++	++
Fluorinated hydrocarbons		++	++
Formaldehyde (aqueous)	30	+	+
Formic acid (aqueous)	2	+	++
Gasoline	100	++	++
Hydraulic oils		++	+
Hydrochloric acid	pH_2	+	–
Hydrochloric acid	2	–	–
Hydrochloric acid	10	–	–
Ink, printing ink		++	++
Mercury		++	++
Methyl acetate	100	++	++
Milk		++	++
Mineral oil		++	++
Oil, cooking		++	++
Oil, lubricating oil		++	++
Oleic acid	100	++	++
Paraffin oil		++	++
Perchlorethylene	100	++	–
Polyester resins (with styrene)		++	++
Potassium carbonate (aqueous)	60	++	++
Potassium sulphate (aqueous)	100	++	++
Propane gas		++	++
Sodium carbonate (aqueous)	50	++	++
Tartaric acid		+	++
Vaseline		++	++
Zinc sulfate (aqueous)	10	++	–

The values specified are values determined by laboratory tests and are material-specific. All specifications apply to black E-Chains®

Resistance classes
++ = resistant
+ = conditionally resistant
– = non-resistant
Sat. aq. sol. = saturated aqueous solution

E-Chain System® Design Standards and Certificates

Examples for test certificates and approvals of igus® products



Quality inspection of every E-Chain® production

Test location for ESD-E-Chains®

Chainflex® cables with many certificates for e.g. DESINA

Noise level tests in igus® own acoustic laboratory

ISO 9001:2008

igus® Inc. has been certified since May 2002

Certified ISO 9001:2008

TÜV construction test

igus® E-Chains® and E-Tubes are construction-tested by TÜV Rheinland. igus® E-Chains® were tested and passed by TÜV Rheinland in accordance with the valid machine guidelines. As a result, the user of igus® E-Chains® need not worry about meeting CE requirements through testing for this portion of the machinery. The construction test 2PFG 1036 / 10/97 for protective equipment includes the following:

- Application/safety
- Assembly
- Fatigue strength
- Resistance to external influences
- Sharp corners and edges

ESD/ATEX

igus® E-Chains® made of standard material igumid G correspond to the German federal office of Physics and Technology (PTB) to classification Ex II 3 GD according to ATEX-RL 94/9/EG. igus® E-Chains® made of igumid ESD correspond according to the German federal office of Physics and Technology (PTB) to classification Ex II 2 GD according ATEX-RL 94/9/EC.

IPA Cleanroom

Many E-Chains® are suitable for the use in cleanrooms according to DIN EN ISO 14644-1. Confirmed by the IPA Fraunhofer Institute.

UL, CSA, CEI, CE, VDE

All igumid-materials for E-Chains® and E-Tubes have got the UL-material approval. The material igumid NB has the fire protection class approval IIb according to the test VDE 0304 Part 3/5.70, the approval V2 according UL94 and the construction material class B2 according DIN 4102.

Interbus, CC-Link and DESINA

Chainflex®- cables are produced according to a variety of international standards. **Interbus certification:** for Interbus certification of certain CF11 bus cables. **CC-Link**: CC Link is a Fieldbus established by Mitsubishi Electric Automation. igus® Chainflex® CFBUS.035 is

Clearly quieter

igus® E-Chain Systems® are clearly quieter. In the acoustic laboratory of the TÜV and the igus® GmbH different E-Chains® were compared. The igus® System E3, E6 and E4/00 (Series E4/101) are measurably (and clearly) quieter than other products

igumid

The material igumid is free from toxins, according 2011/65/EU (RoHS2).

iF Design Award

32 iF Design Awards since 1987

Estudio de Fluidos
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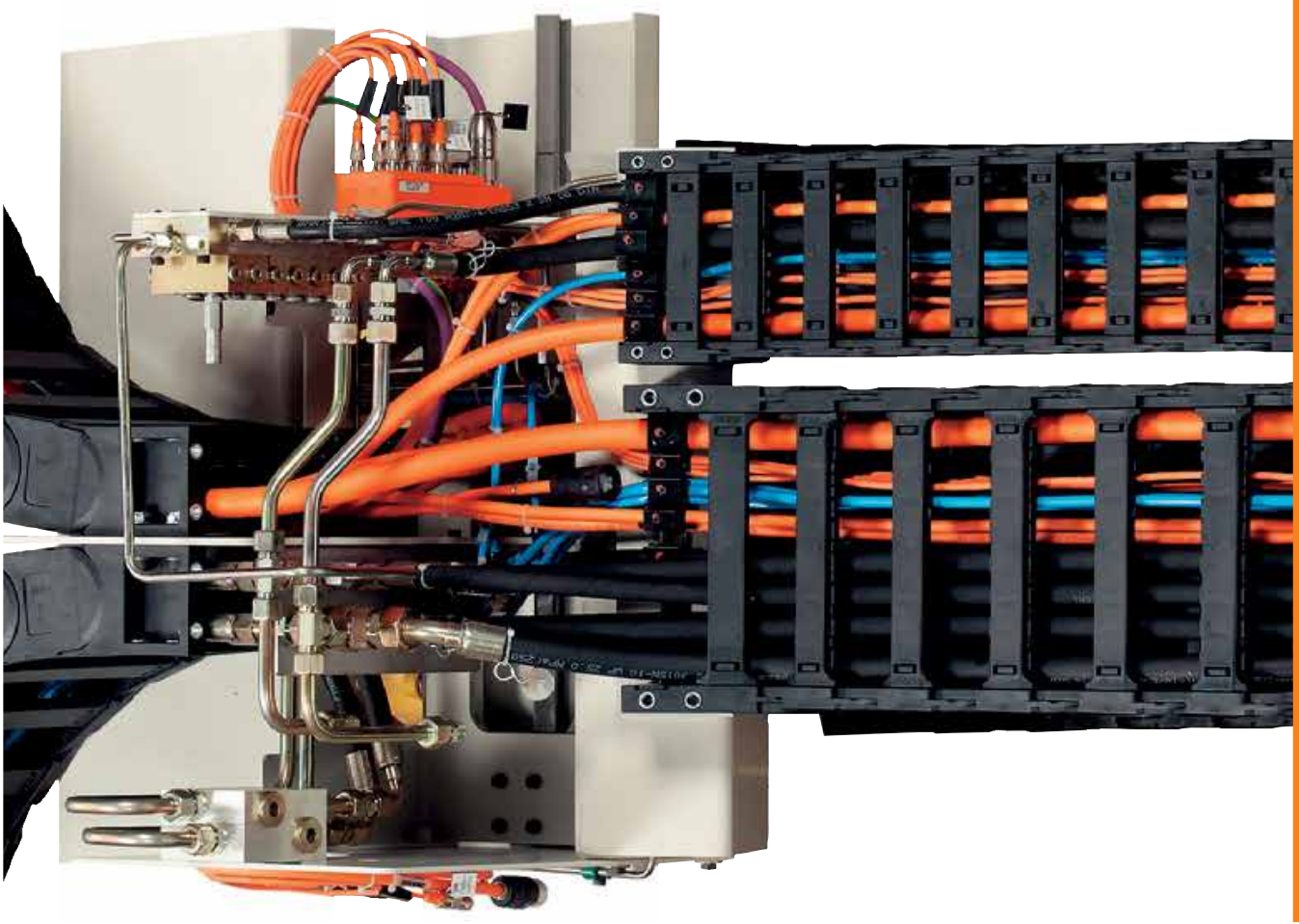
942 25 27 50
edf@edfluidos.com
www.edfluidos.com

igus®
ReadyChain® & ReadyCable

Ready-to-install energy supply systems.
Cables with connectors.
Minimize process costs.
Everything from a single source.



ReadyChain®
Ready to install assembled E-Chain Systems®

Assembled energy supply systems, connectors and cables from igus®. Everything from one source, directly from the manufacturer, delivered quickly to your machine

Ready to install systems, from connectors through assembled cables up to complex energy supply modules, delivered in 1-10 days

Customer specific production

ReadyChains® - increase your capacities and cash flow quickly with igus

- Lower the overhead costs
- Cut your throughput times from days to hours
- Respond flexibly to order variations
- Utilize igus® manufacturing capacities and our know-how in cable assembly

From one off to mass production

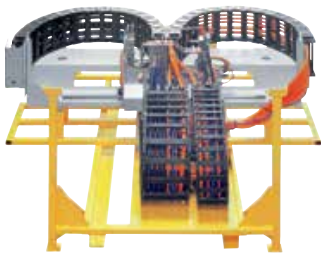
Reduce the number of suppliers and orders by 75% with igus®

- One order, one invoice, one delivery
- A partner for minimal machine downtimes
- All ReadyChain® components are subject to an extensive quality control and function testing

ReadyChain®
You decide, igus® delivers

You decide the degree of harnessing

Any degree of harnessing is possible
We harness from simple E-Chain systems® with inserted Chainflex® cables to complex systems. These systems may include all cables and hoses (pneumatic, hydraulic), patch plugs, inner partitions, connecting elements and connecting parts as requested.



You decide the size

Any size is possible
Because of our up-to date production processes we can deliver fast and inexpensive custom-build or serial production products.

From batch size 1 .....to serial production

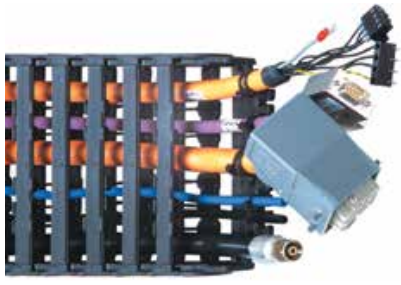
You decvide the travel

Choosing the travel
ReadyChains® offers the whole spectrum of possible travels of the igus® E-Chains®. We harness anything from extremely short to long travels. Safe transportation guarantees damage-free delivery of all lengths.

From short .....to long travel

Standardized ReadyChain® packages help you get started

ReadyChain® Basic



ReadyChain® Standard

ReadyChain® Project

More Information ➤ www.igus.com

ReadyChain®
The igus® ReadyChain® Factory

**Up to 1,000 orders/week, over 9,843 ft² floor space, “chain-cable-guarantee” since 1989.
More than 13 project engineers and over 127 dedicated ReadyChain® assembly employees.**

In igus® ReadyChain® factories, we assemble customized E-Chain Systems®.

Up-to-date production processes, custom-build or serial production

Full service from system acceptance to installation

11 ReadyChain® factories worldwide

Customized cable assembling at igus® Inc.

ReadyChain®
Modular, quick and ready-to-install

1 Everything from one source

The ReadyChain® system includes pre-assembled, customized E-Chain Systems®. The "plug-and-play" solutions are configured, manufactured and delivered according to individual customer specifications. The use of the mounting rack can yield benefits even at low volumes.

2 Flexible components

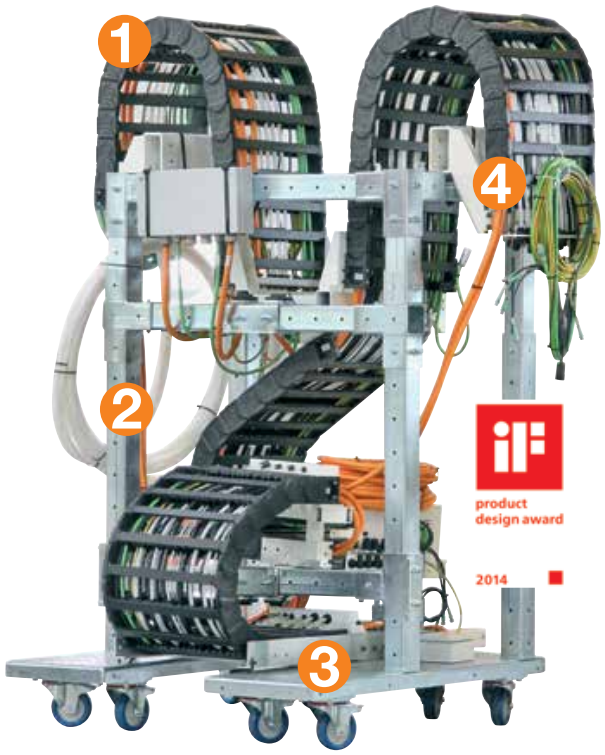
The telescoping supports and braces of the ReadyChain® rack allow flexible adaptation to the installation needs on site. Changes in mass production can be easily undertaken. By using modular parts, additional components can also be easily attached to the rack.

3 Sustainable use

The components of the readychain® rack are galvanized and thus designed for a long life. Each rack is constructed within a few hours. The individual elements can be reused at any time removing the need to dispose of custom made parts, such as conventional welded transport racks.

4 Precise fitting "Plug & Play"

All interfaces and attachments are designed in such a way that the installation of the E-Chain® can be managed quickly and easily. The complete package includes the matching plugs and connectors, plates, sensor actuator boxes, linear bearings, links to the central lubrication, etc., all reducing the installation time considerably.



Save 80% at prototyping. Assembly transport rack for ready-to-install energy supply systems.

ReadyChain®
Connectors, cables and accessories

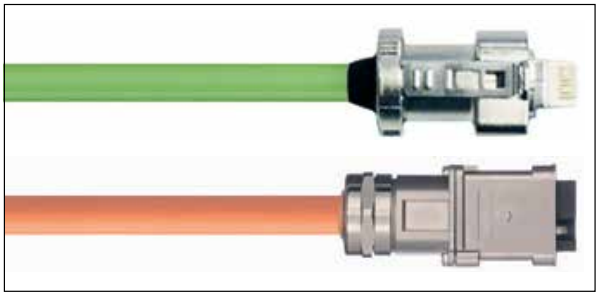
igus® connectors

Round plug connector kit

Square plug connector kit

Tools and accessories

igus® ReadyCable


Drive systems: 3,200 cables

Catalog standards: video/vision/bus technology

Catalog standards: network/ethernet/FOC/Field bus

Catalog standards: CF-INI initiator cables up to 4 x d

igus® hoses and attachments

Configured online with hose cable configurator...

...to meet your needs

ReadyChain®
Configured, fitted, with System Guarantee

1 System acceptance
2 Project phase
3 Initial acceptance of prototype
4 igus® installation

ReadyChain® Service
- We visit you
- Define interfaces
- Logistics planning
- Cycle integration
- Time schedule

System acceptance on your machine

ReadyChain® service
- Component selection
- Interface optimizations
- Documentation
- Integrated project management
- Cost optimization

Project planning

ReadyChain® Skype service*
- Initial acceptance from your work place
- Build your prototype with an igus® project engineer, live in your meeting
- Your requests for changes explained with a model or visit us for acceptance in production

Prototype including transport rack

ReadyChain® installation
- System installation by igus® specialists
- igus® supervision service for own installation
- Transparent, fixed price

Installation on site

*only available in Germany

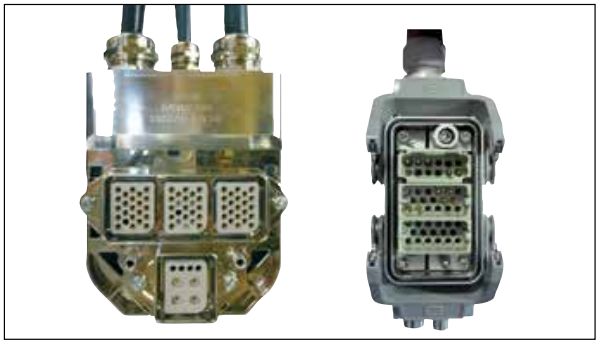
ReadyChain®
Cable assembly

Capacity for 600,000 assembled cables a year, more than 18,000 test programs, 1,800 test adapters

Lean, automated manufacturing processes ensure a reliable system with short lead times

Computer-based high-voltage testing and inspection of all assembled cables

Modern machinery - automatic stripper-crimper



Special cable assemblies

System guarantee

Cable guarantee

ReadyChain®
igus® - Everything from stock

E-Chains® ...

More than 90,000 E-Chain® components

... Chainflex® cables...

Over 9 million feet of cable in stock

... ReadyChain®

3,500 connector components

Hundreds of feet of guide trough

18,840 ft² test lab - more than 15,000 tests every year

Quickly within reach

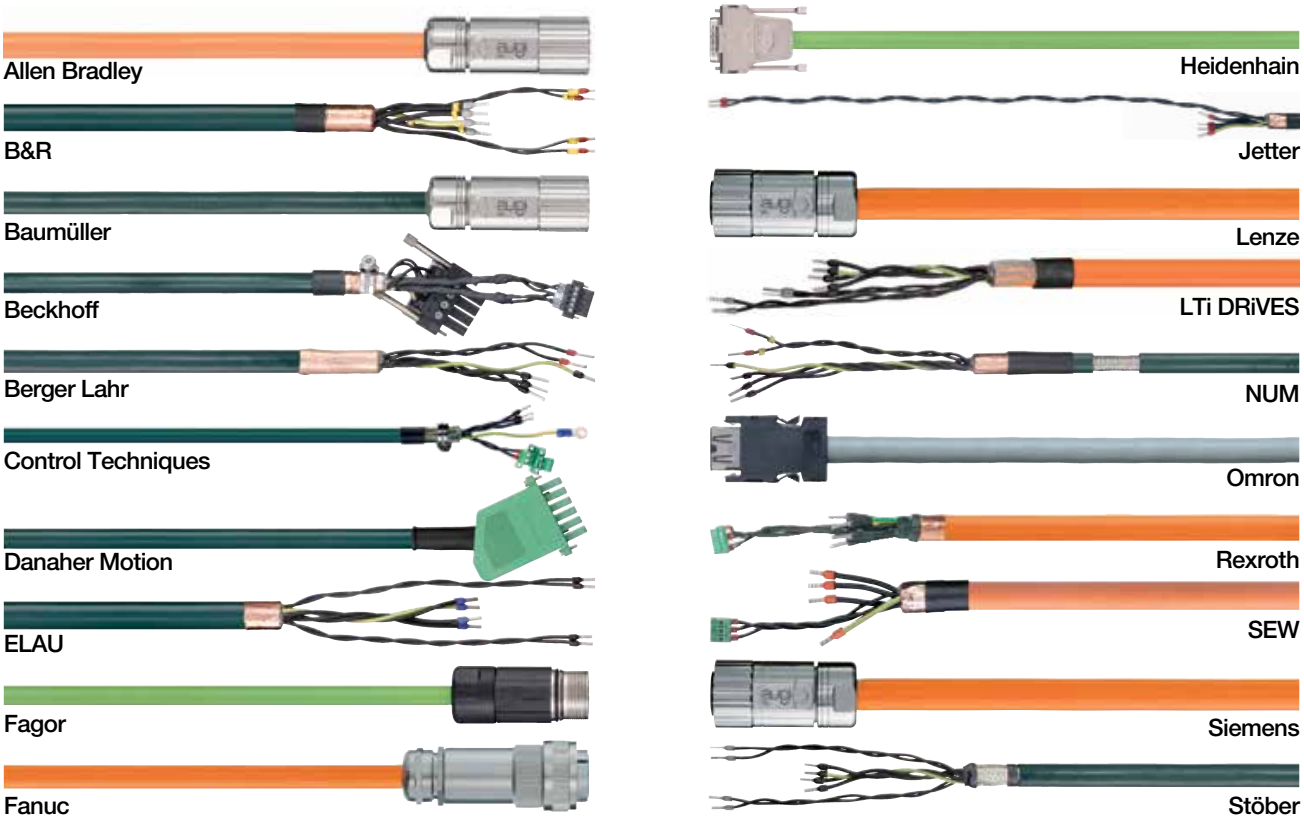
Numerous strain relief solutions

More than 8,000 cable assemblies per week

Just in time supply

ReadyCable
Harnessed Cables in 24 to 48 hours*

Harnessed cables according to 20 manufacturer standards



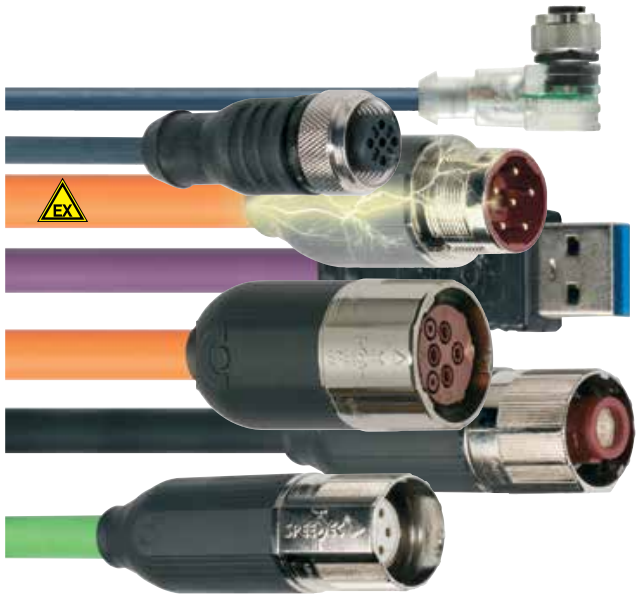
- igus® offers more than 3,200 harnessed cables for drive systems according to 20 different manufacturers
- Servo, Power and Signal/encoder cables
- No cutting costs, no minimum order quantity, no costs for packaging
- Cable length according to customer requirements
- Smallest bend radius from 7.5 x d
- Reduce storage cost and increase cash-flow

*Harnessed according to Allen Bradley, Fanuc and Siemens. For lead times on other manufacturer standards please consult igus®

Electrical cables with connectors according to your needs with QuickPin 2.0

QuickPin 2.0
Connector-cable configurator
➤ www.igus.com/quickpin

ReadyChain®
igus® - Everything from stock



As individual as your project - injection-molded connectors from igus®

- Various sizes: M8, M12, M23, M40, USB 3.0 etc.
- Sizes M23+M40 with SpeedTec® quick release fastener
- Angled versions
- According to UL/CSA standard
- Individual customer logo possible
- ESD material for ATEX-areas
- Tamper-proof
- Tight according to IP66/67 already before the molding process
- 360° shielded
- Space and weight saving

Professionally injection molded - molding M23

Assembled to your specifications

100% tested: test field

100% tested - digital continuity test

igus
Assembly service with warranty

Improve technology and reduce costs with complete igus® systems

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www.edfluidos.com

Assembly Service
Save time and money

Installation
- Installation of your Energy Chain Systems® solution
- On-site supervision and as-built documentation
- Design and delivery of custom brackets and other accessories
- Installation inspections to ensure proper operation
- Full system performance warranty

Modernization / Retrofit
- Complete modernization solutions for your existing energy supply system
- Upgrade performance in speed and length of travel
- Increase system service life
- Minimize downtime and increase machine safety
- Reduce operation costs with an energy saving solution

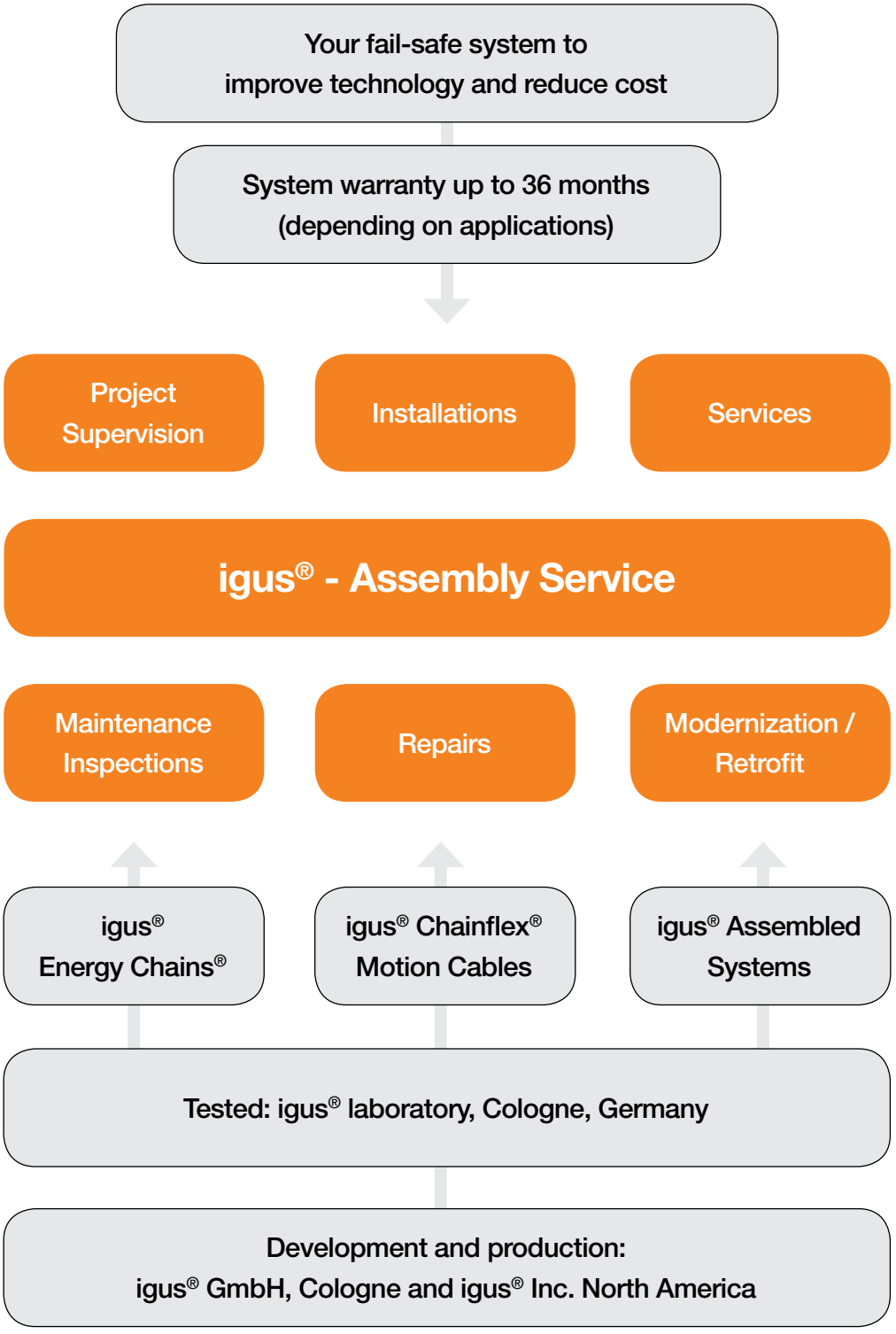
Failure Inspection Services
- Services to survey and report on the conditions of your current system
- Report of serviceable items and adjustments to prolong life
- Proposals for upgrades and optimizations

Maintenance Inspections
- Full system inspections to comply with warranty documentation
- Identification of problem areas and anticipated life expectancy of parts
- Adjustment of cables, chain, and trough components
- Repair or replacement of system components that are damaged or worn

More Information ➤ www.igus.com

Assembly Service
Save time and money

From a single source - components, service and reliability



Assembly Service
Save time and money

igus® certified installation personnel
Reduces installation time and costs, ensures long system life and prevents failures caused by installation error.

Fixed costs for assembly and maintenance
Offers savings in administrative costs with purchasing and planning.

Accurate estimates for resource planning
Systems are installed correctly, and on schedule

Our network of installers minimizes costs by providing local
Keeps travel and reaction times short and saves installation costs.

Flexible availability when you need us
Support available, even during nights and weekends.

Everything from a single source - including warranty!
From the design stage through delivery and installation, we will support you from start to finish.

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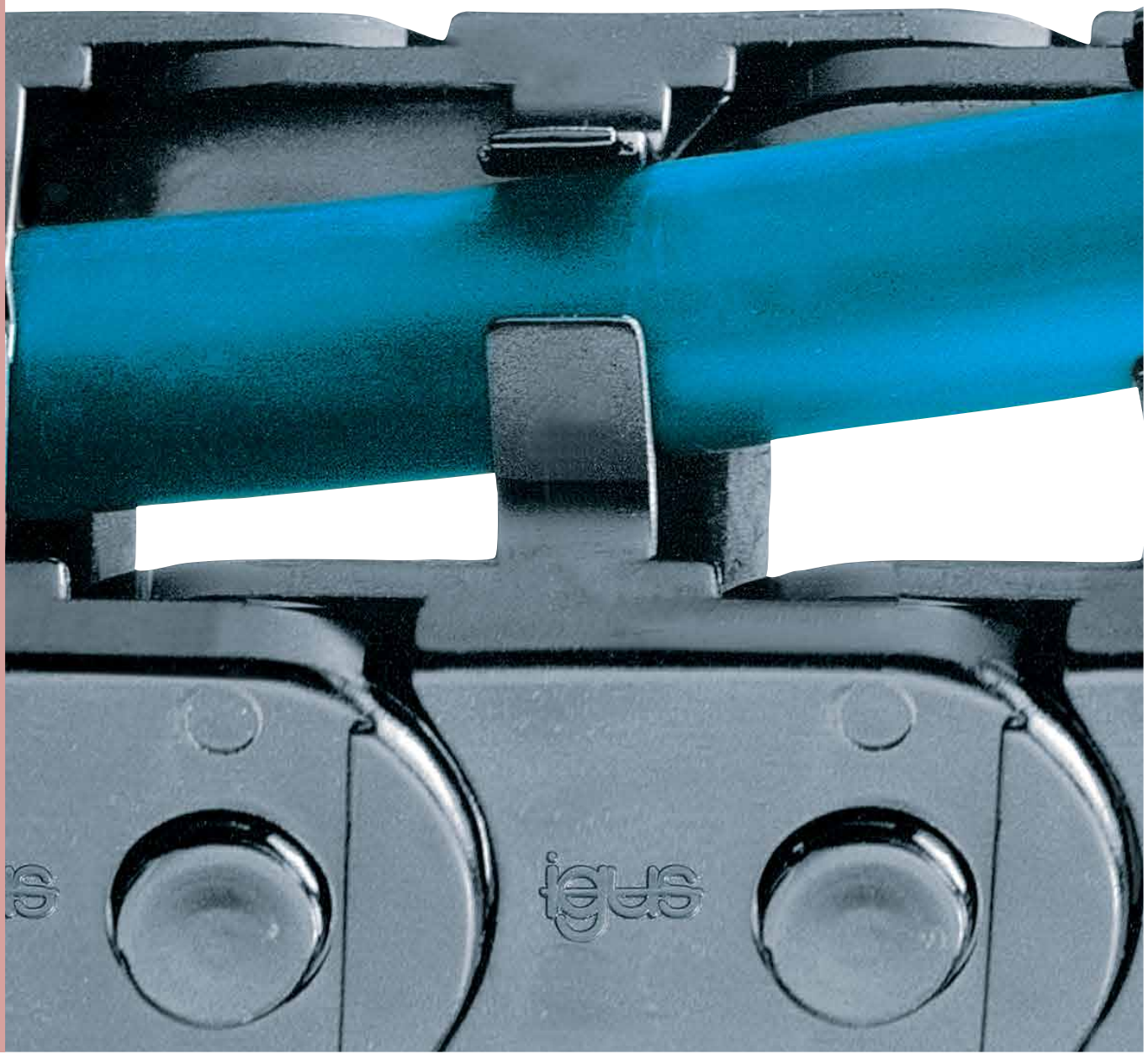

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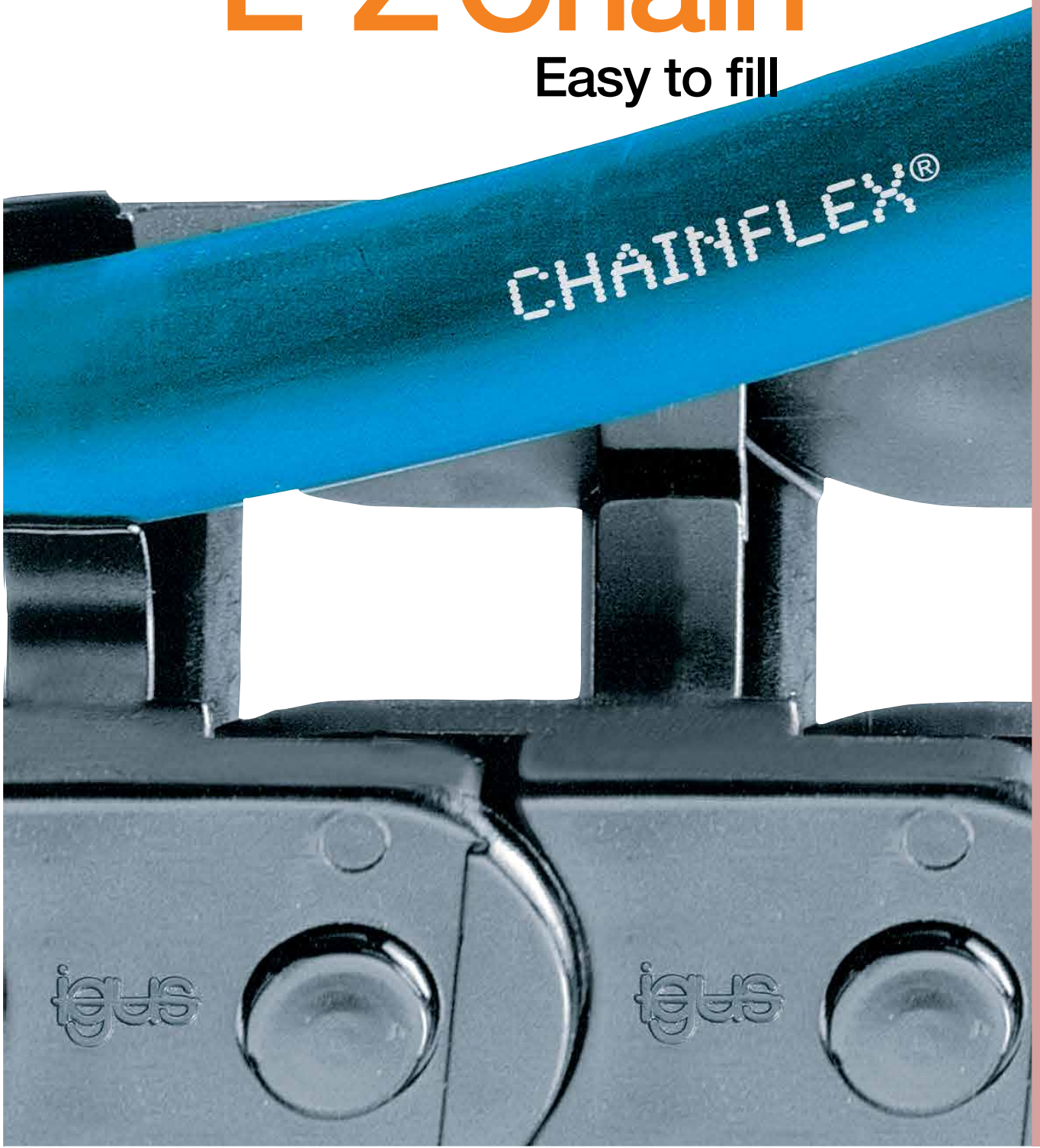
igus®

E-Z Chain

Easy to fill

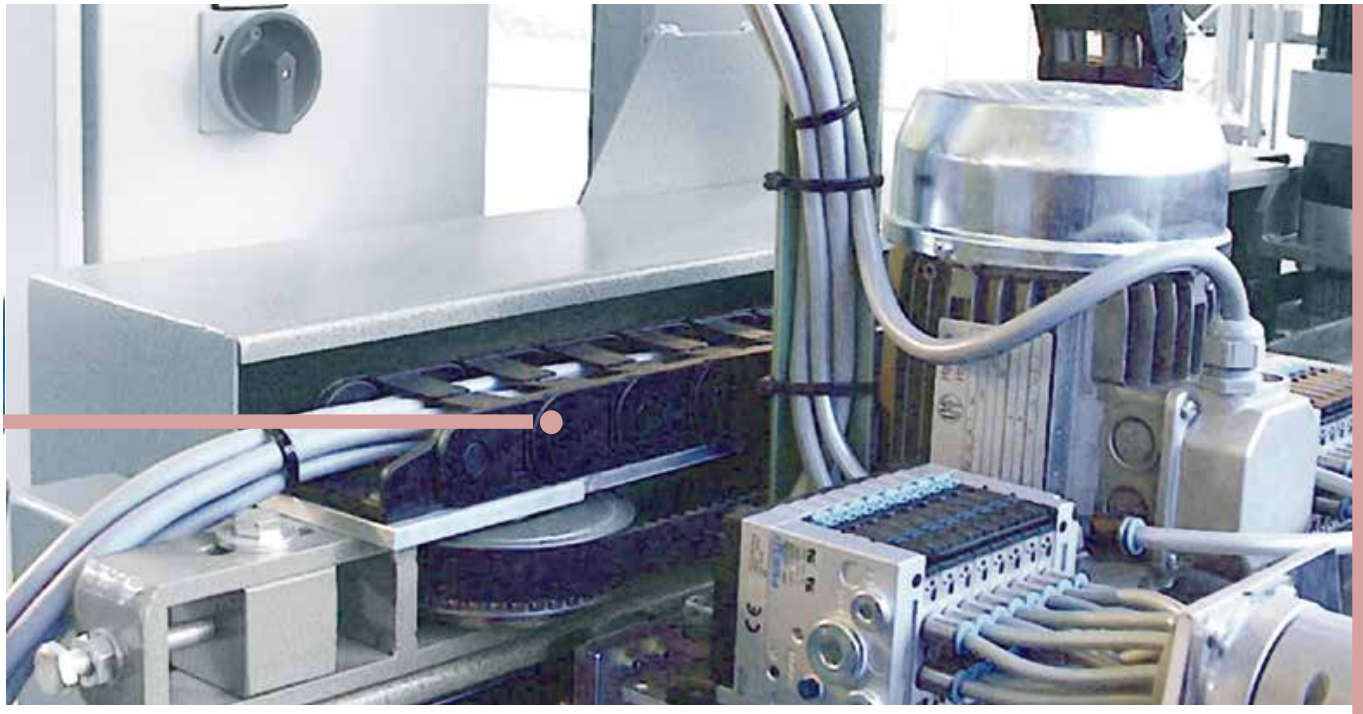


E-Z Chain® - easy to fill and very cost-effective

E-Z Chain – cost effective cable carrier offers easy access to cables and hoses. E-Z Chain cable carriers are designed with a split crossbar along the outer radius for fast installation or removal of cables and hoses—without any tools. The split crossbars are flexible, but retain their shape and strength to provide secure protection and easy cable accessibility.

Typical industries and applications

- General machinery
- Cleanroom applications
- Electronic apparatus
- Office equipment
- Vending machines
- Packaging machines



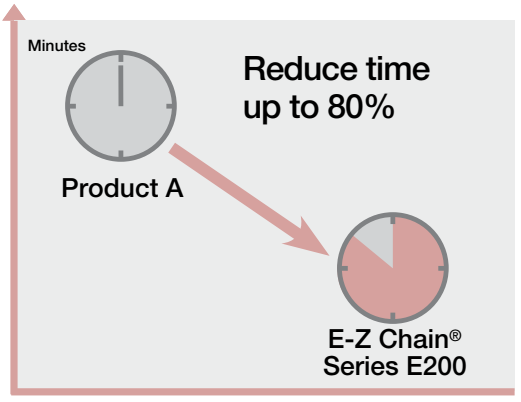
Machinery of all kinds feature igus® E-Z Chains® - reduces assembly times

Clean room test acc. to Fraunhofer Institute IPA
Standard material - ISO Class 2 acc. to ISO 14644-1
Speed: v = 3.28 ft/s (1.0 m/s) and a = 6.56 ft/s (2.0 m/s) - Series E14-3-038

Special equipment: Electrically conductive ESD/ATEX version upon request.

Flammability Class VDE 0304 IIC UL94 V2

With E-Z Chain® rotary and torsional motions are possible

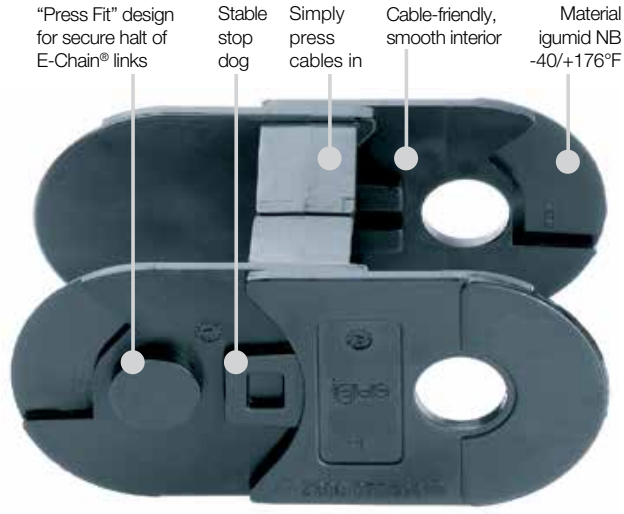


Assembly time: Insertion of 2 cables Ø .24" and .39" (6 and 10 mm).
We can provide you with more details about this and other tests.

E-Z Chain® Series E14 on server unit, removable for maintenance purposes Cleanroom Class 2 ISO is standard

E-Z Chain® on adjustable office furniture with UL94 - V2 Classification

E-Chain System®
E-Z Chain Series



E-Z Chain®: "E" and "Z" makes "Easy"

- Easy to fill from the outer (exterior) radius (Version "E") or inner radius (Version "Z")
- Fast cable accessibility without opening and closing lids
- Easy to lengthen and shorten at any point
- Low price with one-piece design
- Dirt-repellent, contoured exterior
- Mounting brackets available with integrated strain relief
- Limited torsion tolerance
- Available with interior separation (some types)
- Flammability rating UL94-V2
- Suitable for clean-room applications
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Chapter 1, Design**

Selection table

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
E03	.20	(5)	.20 - .39	(5-10)	.34 - .54	(8.7-13.7)	.31	(8)	.39 - 1.10	(10 - 28)
E04	.28	(7)	.28	(7)	.51	(13)	.39	(10)	.59 - 1.89	(15 - 48)
E045/Z045	.37	(9.4)	.39 - 1.06	(10-27)	.63 - 1.46	(16 - 37)	.49	(12.5)	.71 - 1.50	(18 - 38)
E06/Z06	.41/.42	(10.5 / 10.7)	.39 - .79	(10-20)	.65 - 1.04	(16.5-26.5)	.59	(15)	.71 - 1.50	(18 - 38)
E065	.44	(11.3)	.63 - 1.42	(16-36)	.98 - 1.94	(24.8-49.3)	.59	(15)	.71 - 1.50	(18 - 38)
E08/Z08	.57/.58	(14.6 / 14.7)	.39 - 1.97	(10-50)	.72 - 2.29	(18.2-58.2)	.76	(19.3)	1.10 - 1.89	(28 - 48)
E14/Z14	.75	(19)	.59 - 1.97	(15-50)	1.06 - 2.44	(27-62)	.98	(25)	1.10 - 4.92	(28 - 125)
E200/Z200	.96	(24.3)	1.46 - 2.24	(37-57)	2.93 - 4.74	(74.4-120.4)	1.38	(35)	2.17 - 7.87	(55 - 200)
E16/Z16	1.26	(32)	.91 - 3.94	(23-100)	1.48 - 4.54	(37.5-115.3)	1.54	(39)	1.57 - 3.94	(40 - 100)
E26/Z26	1.44/1.46	(36.5 / 37.1)	1.85 - 2.95	(47-75)	3.62 - 6.57	(92-167)	1.97	(50)	2.48 - 9.84	(63 - 250)
E300/Z300	1.91	(48.5)	1.81 - 2.95	(46 - 75)	3.74 - 6.69	(95-170)	2.52	(64)	2.95 - 11.81	(75 - 300)

Quick assembly with ESD!

E-Z Chain® now available as ESD version

- Easy to fill on the outer-/inner radius
- Accessible to the cables without opening and closing of lids
- Cost-effective one-piece design E-Chain®
- Mounting brackets available

More information ➤ www.igus.com

E-Chain System®
E-Z Chain Series

Assembling | **Separating** | **Filling** | Series E03 · E04 · E/Z045

1

Twist and click or twist and devide

2

Press in cable

Assembling | Series E/Z06 · E065 · E/Z08 · E/Z14 · E/Z200 · E/Z16 · E/Z26 · E/Z300

1

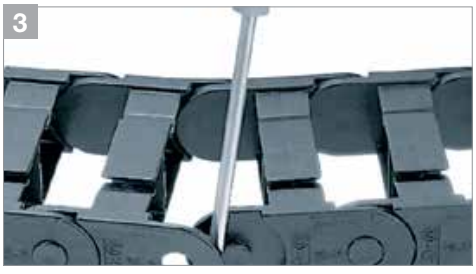
Push and click...

2

Snap in pin

Separating | Series E/Z06 · E065 · E/Z08 · E/Z14 · E/Z200 · E/Z16 · E/Z26 · E/Z300

3



Release side link

4

Twist and pull apart

Filling | Series E/Z06 · E065 · E/Z08 · E/Z14 · E/Z200 · E/Z16 · E/Z26 · E/Z300

5

Press in cable

6

Pull out cable

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E03

igus®

E-Chain System® E-Z Chain Series E03

.20

Price Index

Series E03

Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Smallest inner heights .20" (5 mm)
Series E03 E-Z Chain

Assembly Tips

Just push the cables into the E-Chain using your thumb

Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- If a non-opening Energy is needed
  ➤ **Series 03 E2 Micro**

Features & Benefits

1. Smallest E-Chain® - interior dimensions .20" x .20" (5 x 5 mm)
2. Small pitch for low-noise and smooth operation
3. Very easy to fill - ideal for harnessed cable assemblies, without opening and closing lids
4. Mounting bracket with integrated strain relief
5. Very lightweight - ideal for low fill weight
6. Patented push button design holds the links together
7. For smallest bending radii
   Chainflex® CF98/CF99 - 4 x d

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **E03-05-010-0**	E-Chain®
1 Set **E03-05-12Z**	Mounting Bracket

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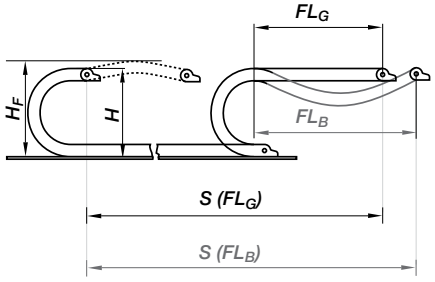
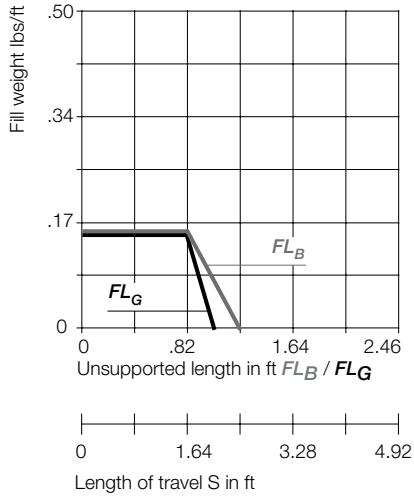
E-Chain System® E-Z Chain Series E03 Installation Dimensions

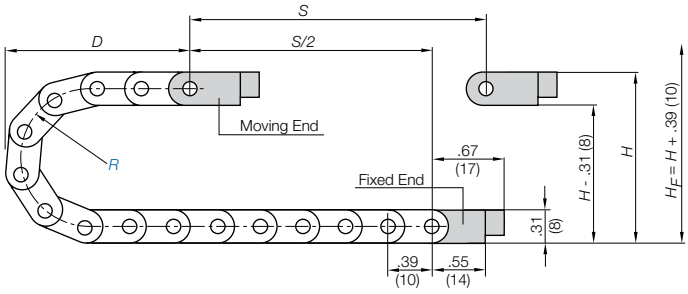
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .39" (10 mm)
Links per ft (m): = 30.47 (100)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: H_F **= H + .39 in. (10 mm)** (with .067 lbs/ft (0.1 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.39 (010)	.47 (012)	.59 (015)	.71 (018)	1.10 (028)
H	1.10 (28)	1.26 (32)	1.50 (38)	1.73 (44)	2.52 (64)
D	1.14 (29)	1.22 (31)	1.34 (34)	1.46 (37)	1.85 (47)
K	2.17 (55)	2.36 (60)	2.76 (70)	3.15 (80)	4.33 (110)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material (E-Chain®) - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class (E-Chain®), igumid NB	VDE 0304 IIC UL94 V2
Flammability Class (mounting brackets), igumid G*	VDE 0304 IIC UL94 HB

*Available in igumid NB upon request, please consult igus® for delivery time

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

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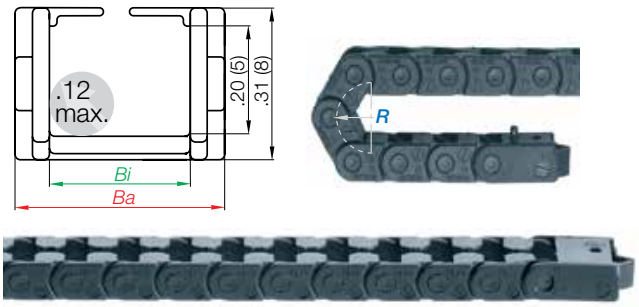
igus®

E-Chain System® E-Z Chain Series E03

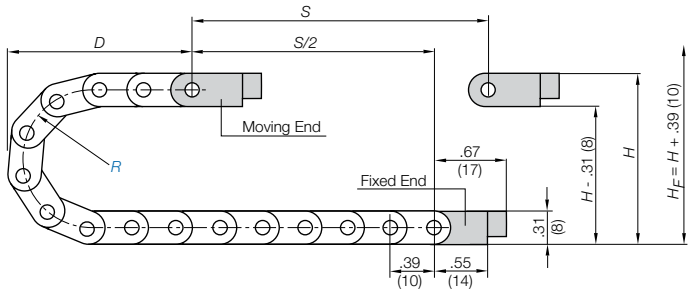
Series E03 - Split crossbar along the outer radius



Part Number Structure

E03- 05- 010- 0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: E03-05-[028]-0
Pitch: .39 in. (10 mm) per link links/ft (m) = 30.47 (100)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)	Crossbar gap in. (mm)
E03-05-	☐	-0*	.20 (5)	.34 (8.7)	≈ 0.020 (0.03)	.04 (1)
E03-07-	☐	-0*	.28 (7)	.42 (10.7)	≈ 0.026 (0.04)	.08 (2)
E03-10-	☐	-0*	.39 (10)	.54 (13.7)	≈ 0.033 (0.05)	.08 (2)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 03-05-[028]-0

	010	012	015	018	028
R	.39 (010)	.47 (012)	.59 (015)	.71 (018)	1.10 (028)
H	1.10 (28)	1.26 (32)	1.50 (38)	1.73 (44)	2.52 (64)
D	1.14 (29)	1.22 (31)	1.34 (34)	1.46 (37)	1.85 (47)
K	2.17 (55)	2.36 (60)	2.76 (70)	3.15 (80)	4.33 (110)

0=Standard color black. For other colors see Chapter 1
*Please note: For this series the crossbars do not overlap. Please see table for gap amount.

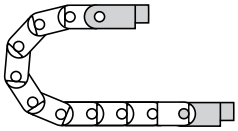
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E-Z Chain Series E03 Mounting Brackets

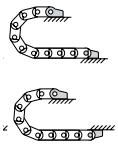
Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Adaptor plate for rapid installation

Moving end with bore
03 ...1Z

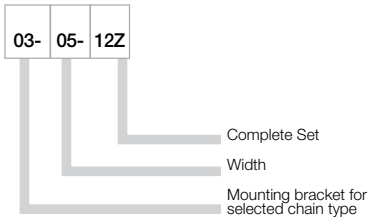


Fixed end with pin
03...2Z

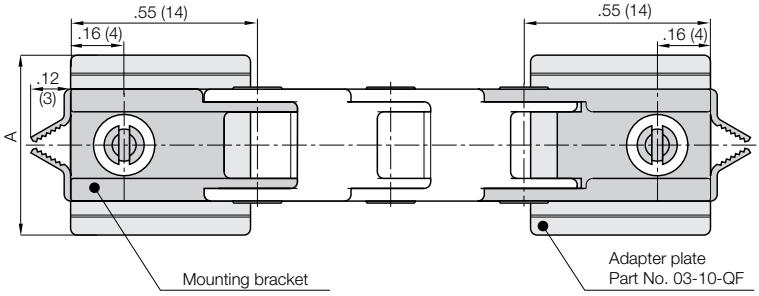


Possible installation configurations -

Part Number Structure



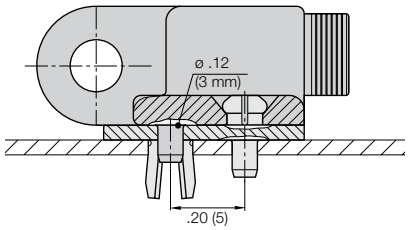
Full set, for both ends:
03- 05- 12Z Full set, **each part with pin/bore**
Single-part order:
03- 05- 1Z Mounting bracket **with bore**
03- 05- 2Z Mounting bracket **with pin**



Width Index	Part No. Full Set	Dimension A in.	(mm)
-05	**03-05-12PZ**	.34	(8.7)
-07	**03-07-12PZ**	.42	(10.7)
-10	**03-10-12PZ**	.54	(13.7)

Additional Accessories

03-10-QF = Adapter plate for all sizes
The adapter has broken edges, so that it can be adapted to the respective chain width. It is not absolutely necessary for attaching the mounting brackets. The mounting brackets can also be screwed on without the adapter plate.



PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

E04

igus®

E-Chain System® E-Z Chain Series E04

.28

Price Index

Series E04

Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2 (at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

Features & Benefits

1. Small pitch for low-noise and smooth operation
2. Very easy to fill - ideal for harnessed cable assemblies, without opening and closing lids
3. For high acceleration
4. Mounting brackets available
5. Limited torsion tolerance
6. Cable friendly smooth interior
7. Patented push button design holds the links together

Just push the cables into the E-Chain using your thumb

Special solution:
opening gap (0.8 mm)
Part No. E04-07-015-S

Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- If a non-opening Energy is needed
  ➤ **Series 04 E2 Micro**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **E04-07-038-0**	E-Chain®
1 Set **040-07-12**	Mounting Bracket

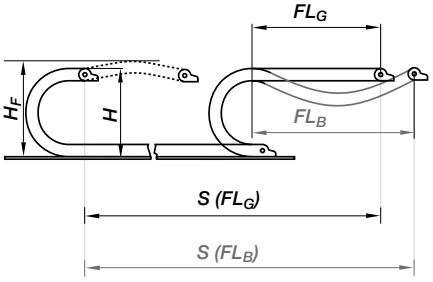
Estudio de Fluidos
Pol. Ind. de Guarnizo, Parcela 207
39611 GUARNIZO (Cantabria), España
942 25 27 50
edf@edfluidos.com
www.edfluidos.com

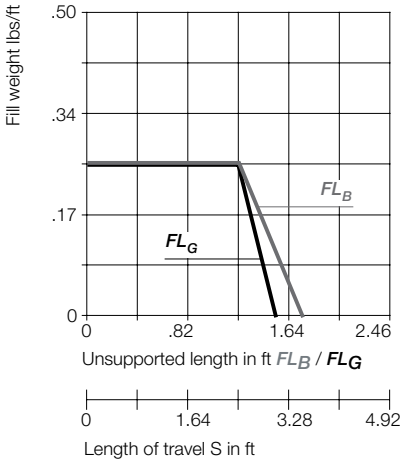
E-Chain System® E-Z Chain Series E04 Installation Dimensions

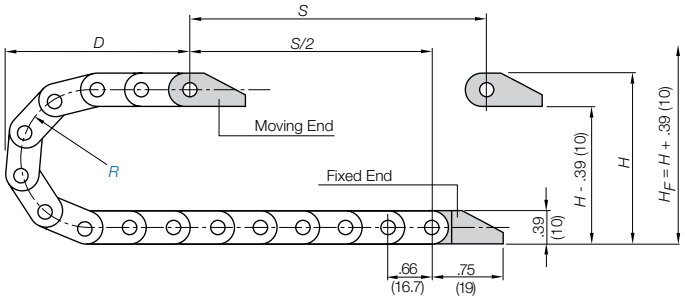
Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .66" (16.7 mm)
Links per ft (m): = 18.28 (60)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: $H_F = H + .39$ **in. (10 mm)** (with .067 lbs/ft (0.1 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.59 (015)	.71 (018)	1.10 (028)	1.50 (038)	1.89 (048)
H	1.57 (40)	1.81 (46)	2.60 (66)	3.39 (86)	4.17 (106)
D	1.77 (45)	1.89 (48)	2.28 (58)	2.68 (68)	3.07 (78)
K	3.35 (85)	3.54 (90)	4.92 (125)	6.10 (155)	7.28 (185)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
$K = \pi \bullet R +$ *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Material (E-Chain®) - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class (E-Chain®), igumid NB	VDE 0304 IIC UL94 V2
Flammability Class (mounting brackets), igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

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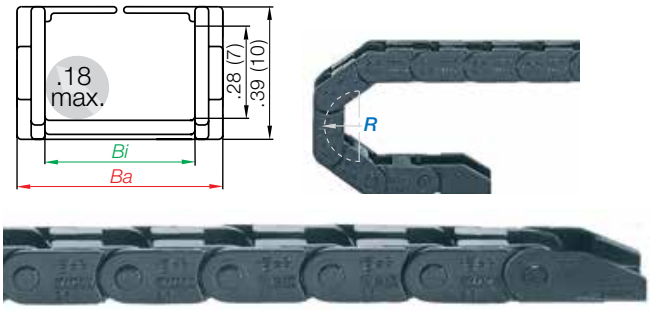
E-Chain System® E-Z Chain Series E04

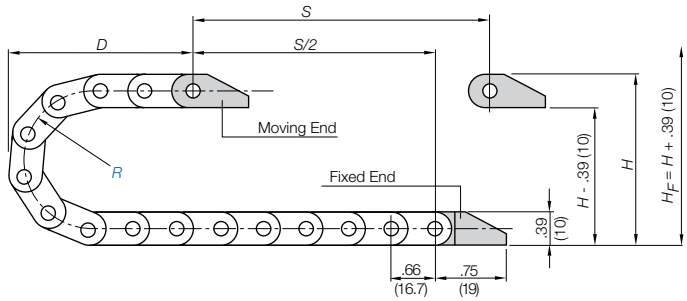
Series E04 - Split crossbar along the outer radius



Part Number Structure

E04- 07- 038- 0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: E04-07-038 -0
Pitch: .66 in. (16.7 mm) per link links/ft (m) = 18.28 (60)

Part Number			*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)	Crossbar Gap in. (mm)
E04-07-	□	-0*	.28 (7)	.51 (13)	≈ 0.053 (0.08)	.10 (2.5)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E04-07-038 -0

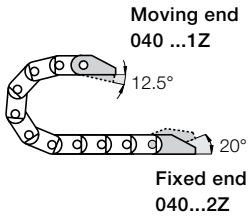
	015	018	028	038	048
R	.59 (015)	.71 (018)	1.10 (028)	1.50 (038)	1.89 (048)
H	1.57 (40)	1.81 (46)	2.60 (66)	3.39 (86)	4.17 (106)
D	1.77 (45)	1.89 (48)	2.28 (58)	2.68 (68)	3.07 (78)
K	3.35 (85)	3.54 (90)	4.92 (125)	6.10 (155)	7.28 (185)

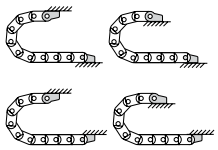
0=Standard color black. For other colors see Chapter 1
*Please note: For this series the crossbars do not overlap. Please see table for gap amount.

E-Chain System® E-Z Chain
Series E04
Mounting Brackets

Polymer, one-piece

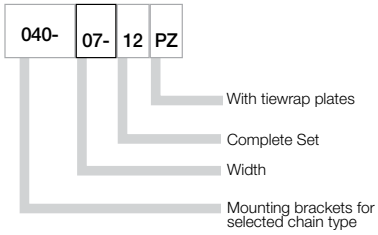
- One-piece mounting bracket
- Corrosion resistant
- Available preassembled

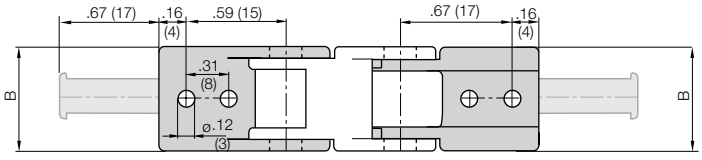




Possible installation configurations -

Part Number Structure





Full set, for both ends:

040-07-12 Full set, **each part with pin/bore**

Single-part order:

040-07-1 Mounting bracket **with bore**

040-07-2 Mounting bracket **with pin**

Chain Type	Part No. Full set without Tiewrap Plate	Part No. Full set with Tiewrap Plate	Dimension B in.	(mm)	Number of Teeth
E04-07	**040-07-12**	**040-07-12PZ**	.47	(12)	1

Additional accessories

Quicksnap - the complete, detachable mounting unit, upon request
Only available for the 040-07 E-Chain - **Part No. 040-07-QS**

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

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E045
Z045

igus®

E-Chain System® E-Z Chain Series E045/Z045

.37 .37

Price Index

Series E045

Special Features / Options

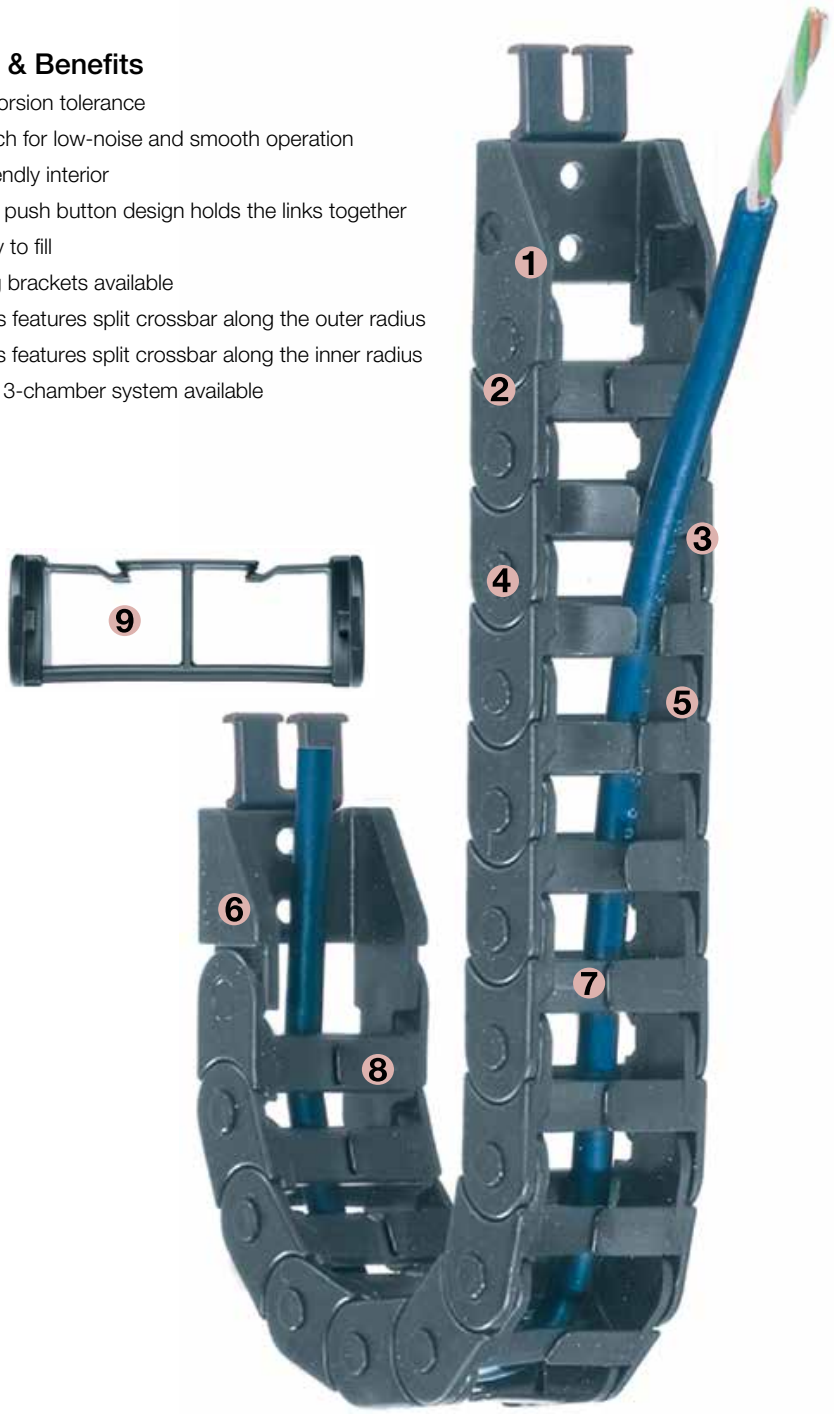
IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

Features & Benefits

1. Limited torsion tolerance
2. Small pitch for low-noise and smooth operation
3. Cable friendly interior
4. Patented push button design holds the links together
5. Very easy to fill
6. Mounting brackets available
7. "E" Series features split crossbar along the outer radius
8. "Z" Series features split crossbar along the inner radius
9. 1-, 2-, or 3-chamber system available



Assembly Tips

Just push the cables into the E-Chain using your thumb

Usage Guidelines

- If filling is required without opening and closing
- If a very small pitch is required

- If smooth operation is required
  ➤ **Series 045 E2 Micro**
- If high stability is required
  ➤ **Series 06 E2 Micro**
- If non-opening is required
  ➤ **Series 045 E2 Micro**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

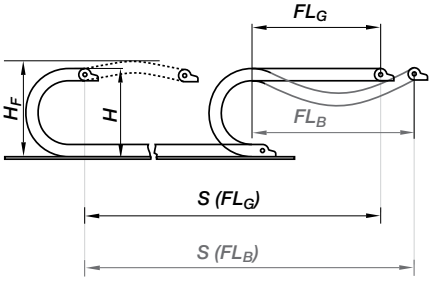
3.28 ft (1 m) **E045-16-038-0**	E-Chain®
1 Set **0450-16-12**	Mounting Bracket

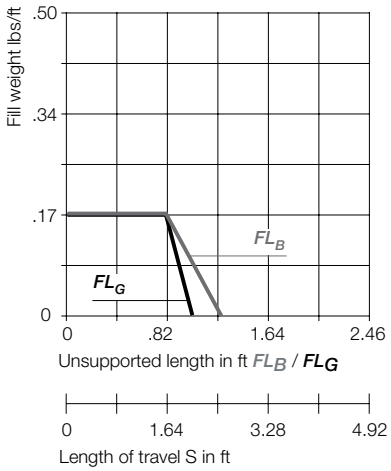
E-Chain System® E-Z Chain Series E045/Z045 Installation Dimensions

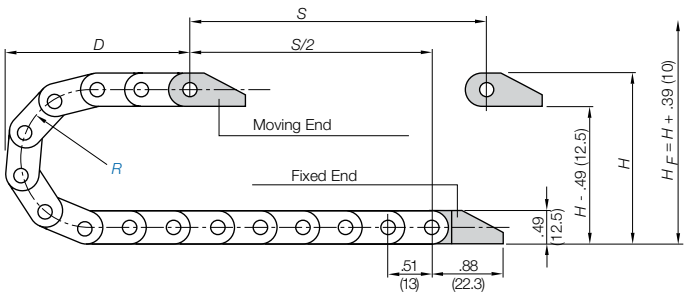
Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .51" (13 mm)
Links per ft (m): = 23.47 (77)
For center mount applications:
Chain length = $^{S}/_{2} + K$

The required clearance height: H_F **= H + .39 in. (10 mm)** (with .067 lbs/ft (0.1 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.71 (018)	1.10 (028)	1.50 (038)
H	1.91 (48.5)	2.70 (68.5)	3.48 (88.5)
D	1.73 (44)	2.13 (54)	2.52 (64)
K	3.35 (85)	4.53 (115)	5.91 (150)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Material (E-Chain®) - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class (E-Chain®), igumid NB	VDE 0304 IIC UL94 V2
Flammability Class (mounting brackets), igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

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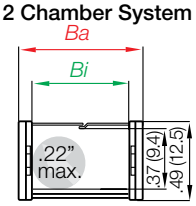
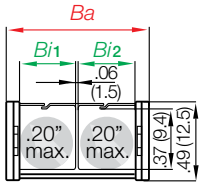
E-Chain System® E-Z Chain Series E045/Z045

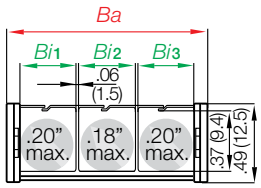
Series E045 - Split crossbar along the outer radius

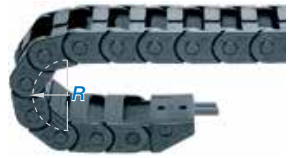
Single Chamber System
2 Chamber System



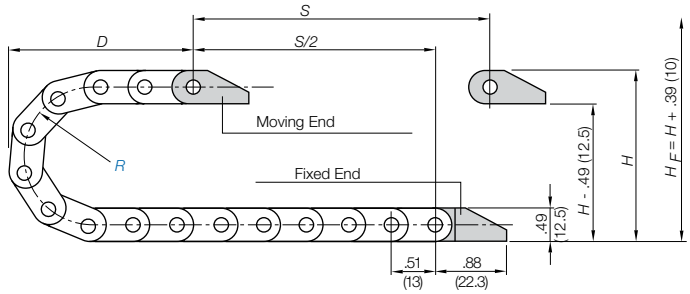
3 Chamber System



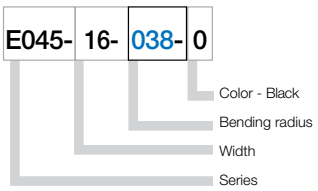




Supplement part number with required radius. Example: E045-16-[038]-0
Pitch: .51 in. (13 mm) per link links/ft (m) = 23..47 (77)



Part Number Structure



Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)	Crossbar Gap in. (mm)
Single Chamber System				
E045-10-[ ]-0*	.39 (10)	.63 (16)	≈ 0.06 (0.09)	.08 (2)
E045-16-[ ]-0	.63 (16)	.91 (23)	≈ 0.07 (0.11)	-
2 Chamber System				
E045-2/7-[ ]-0*	.28/.28 (7/7)	.91 (23)	≈ 0.09 (0.13)	.09 (2.25)
E045-2/9-[ ]-0*	.35/.35 (9/9)	1.06 (27)	≈ 0.09 (0.14)	.09 (2.25)
3 Chamber System				
E045-3/9-[ ]-0*	.35/.35/.35 (9/9/9)	1.46 (37)	≈ 0.11 (0.17)	.09 (2.25)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E045-16-[038]-0

	018	028	038
R	.71 (018)	1.10 (028)	1.50 (038)
H	1.91 (48.5)	2.70 (68.5)	3.48 (88.5)
D	1.73 (44)	2.13 (54)	2.52 (64)
K	3.35 (85)	4.53 (115)	5.91 (150)

0=Standard color black. For other colors see Chapter 1
*Please note: For this series the crossbars do not overlap. Please see table for gap amount.

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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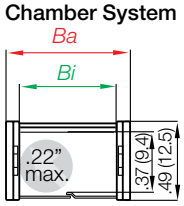
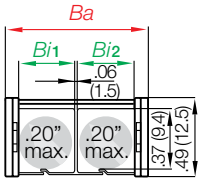
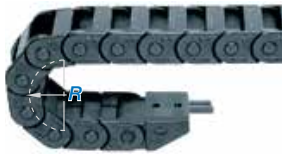
E-Chain System® E-Z Chain
Series E045/Z045

Series Z045 - Split crossbar along the inner radius

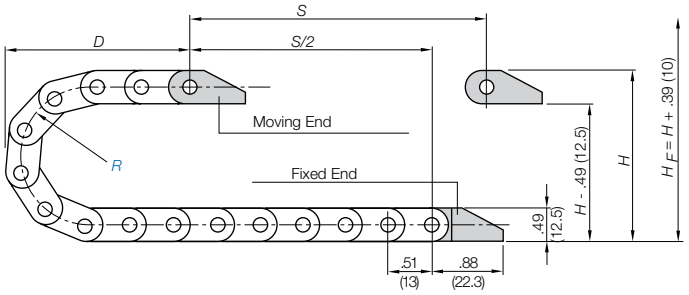
Single Chamber System
2 Chamber System



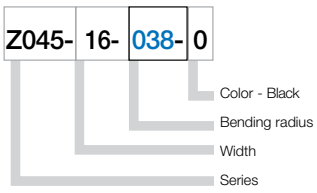




Supplement part number with required radius. Example: Z045-16-038-0
Pitch: .51 in. (13 mm) per link links/ft (m) = 23..47 (77)



Part Number Structure



Part Number Single Chamber System	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)	Crossbar Gap in. (mm)
Z045-16-☐-0*	.63 (16)	.91 (23)	≈ 0.07 (0.11)	.08 (2)
2 Chamber System				
Z045-2/7-☐-0*	.28/.28 (7/7)	.91 (23)	≈ 0.09 (0.13)	.09 (2.25)

Choose from the radii below for all of the above sizes
Radius (mm) Example: Z045-16-038-0

	018	028	038
R	.71 (018)	1.10 (028)	1.50 (038)
H	1.91 (48.5)	2.70 (68.5)	3.48 (88.5)
D	1.73 (44)	2.13 (54)	2.52 (64)
K	3.35 (85)	4.53 (115)	5.91 (150)

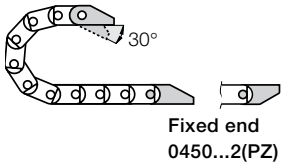
0=Standard color black. For other colors see Chapter 1
*Please note: For this series the crossbars do not overlap. Please see table for gap amount.

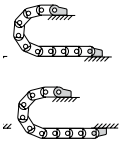
PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

E-Chain System® E-Z Chain Series E045/Z045 Mounting Brackets

Polymer, one-piece

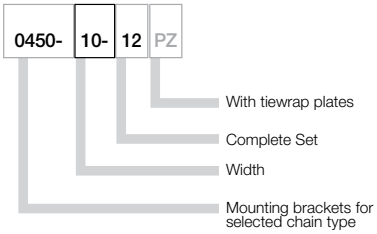
- One-piece mounting bracket
- Corrosion resistant
- Available preassembled





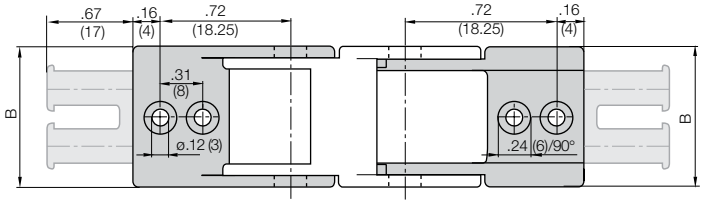
Possible installation configurations -

Part Number Structure

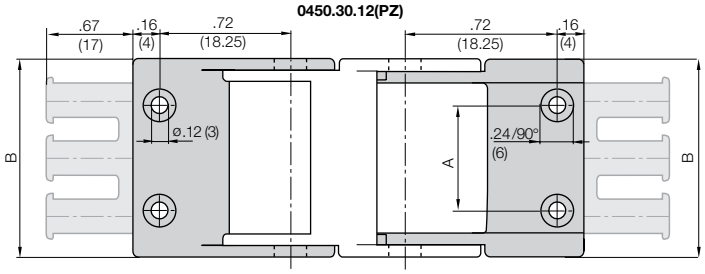


Full set, for both ends:
0450-10-12PZ
Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
0450-10-1PZ
Mounting bracket **with bore + tiewrap plate**
0450-10-2PZ
Mounting bracket **with pin + tiewrap plate**

0450.10.12(PZ) – 0450.20.12(PZ)



0450.30.12(PZ)



Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
E045/Z045-10	**0450-10-12PZ**	**0450-10-12**	—	—	.63	(16)	1
E045/Z045-16	**0450-16-12PZ**	**0450-16-12**	—	—	.87	(22)	2
E045/Z045-2/7	**0450-16-12PZ**	**0450-16-12**	—	—	.87	(22)	2
E045/Z045-2/9	**0450-20-12PZ**	**0450-20-12**	—	—	1.02	(26)	2
E045/Z045-3/9	**0450-30-12PZ**	**0450-30-12**	.87	(22)	1.42	(36)	3

Additional Accessories

Quickfix - mounting bracket with dowel, upon request
Part No.
0450-16-12Q

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E-Chain System® E-Z Chain Series E045/Z045

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

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E06
Z06

igus®

E-Chain System® E-Z Chain Series E06/Z06

.42 .41

Features & Benefits

1. Small pitch for low-noise and smooth operation
2. Cable friendly - smooth interior
3. Very lightweight
4. Patented push button design holds the links together
5. Very easy to fill - ideal for harnessed cable assemblies
6. Integrated strain relief option
7. "E" Series features split crossbar along the outer radius
8. "Z" Series features split crossbar along the inner radius
9. Limited torsion tolerance

Price Index

Series E06/Z06

Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

Assembly Tips

Just push the cables into the E-Chain using your thumb

Special solution -
opening gap 0.14 (3.5 mm)
Part No. E06-10-018S3

Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- "Z" Series is unsuitable for gliding applications
  ➤ **Series 07 Zipper**
- If non-opening is required
  ➤ **Series 06 E2 Micro**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

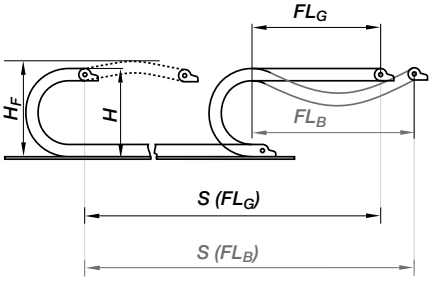
3.28 ft (1 m) **E06-10-038-0**	E-Chain®
1 Set **060-10-12**	Mounting Bracket

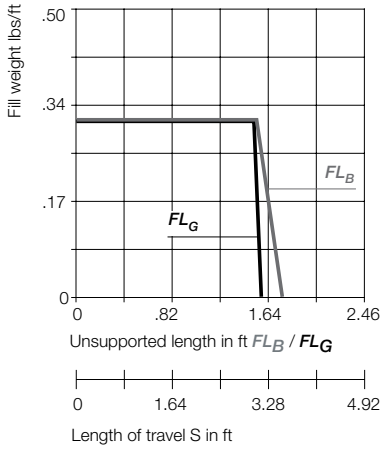
E-Chain System® E-Z Chain Series E06/Z06 Installation Dimensions

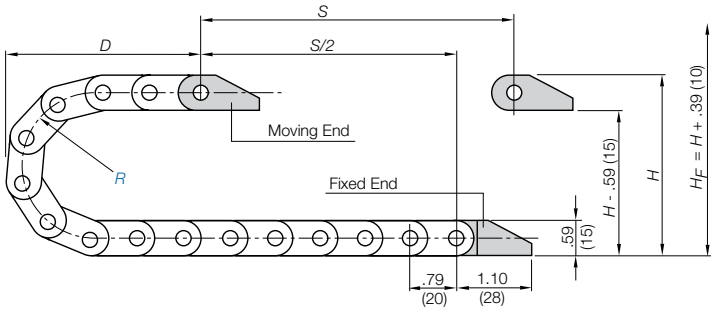
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: $H_F = H + .39$ **in. (10 mm)** (with .13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.71 (018)	1.10 (028)	1.50 (038)
H*	2.01 (51)	2.80 (71)	3.58 (91)
D	2.20 (56)	2.60 (66)	2.99 (76)
K	3.94 (100)	5.12 (130)	6.30 (160)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
$K = \pi \bullet R + safety\ buffer$
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Material (E-Chain®) - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class (E-Chain®), igumid NB	VDE 0304 IIC UL94 V2
Flammability Class (mounting brackets), igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

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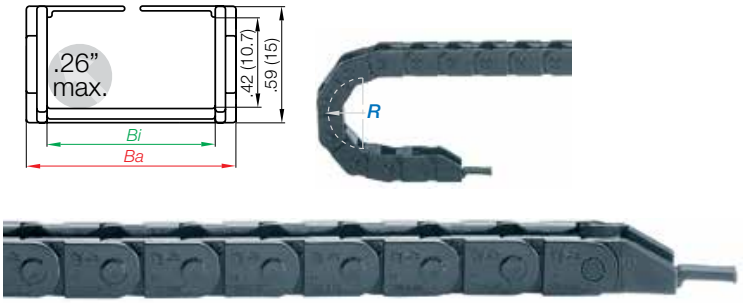
igus®

E-Chain System® E-Z Chain
Series E06/Z06

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

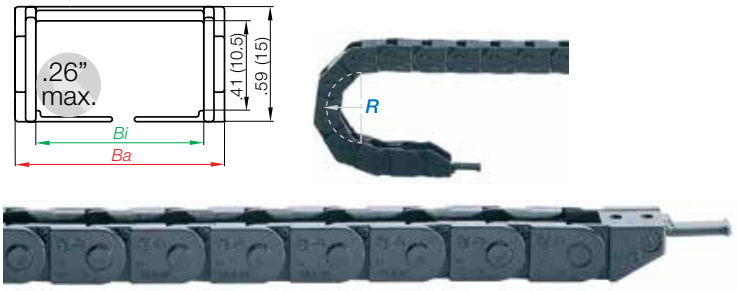
Series E06 - Split crossbar along the outer radius



Part Number Structure

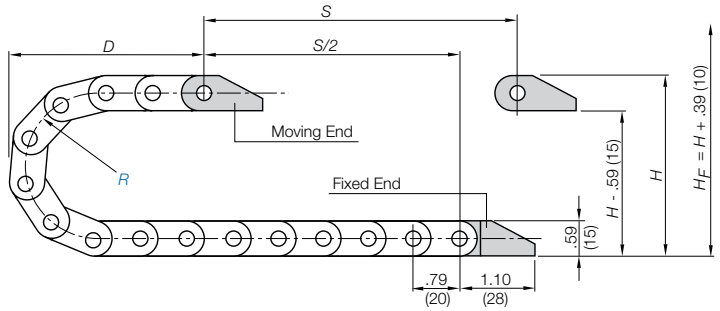
E06- 10- 038- 0
- Color - Black
- Bending radius
- Width
- Series

Series Z06 - Split crossbar along the inner radius



Part Number Structure

Z06- 10- 038- 0
- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: E06-10-[038]-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Part Number Split Crossbar Outer Radius	Split Crossbar Inner Radius		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)	Crossbar Gap in. (mm)
E06-10	Z06-10*	[ ]-0	.39 (10)	.65 (16.5)	≈ 0.09 (0.14)	.22 (5.5)
E06-16-	Z06-16*	[ ]-0	.63 (16)	.86 (22.5)	≈ 0.11 (0.16)	.22 (5.5)
E06-20-	Z06-20	[ ]-0	.79 (20)	1.04 (26.5)	≈ 0.12 (0.18)	-

Choose from the radii below for all of the above sizes
Radius (mm) Example: E06-10-[038]-0

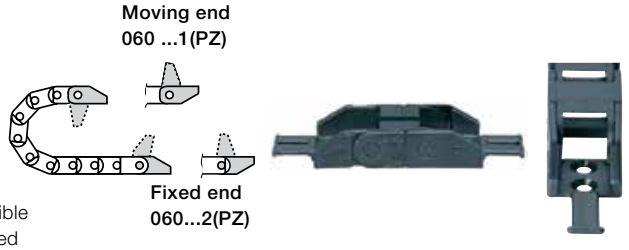
	018	028	038
R	.71 (018)	1.10 (028)	1.50 (038)
H*	2.01 (51)	2.80 (71)	3.58 (91)
D	2.20 (56)	2.60 (66)	2.99 (76)
K	3.94 (100)	5.12 (130)	6.30 (160)

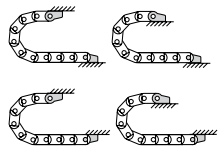
0=Standard color black. For other colors see Chapter 1
*Please note: For this series the crossbars do not overlap. Please see table for gap amount.

E-Chain System® E-Z Chain Series E06/Z06 Mounting Brackets

Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without integrated strain relief tiewrap plates



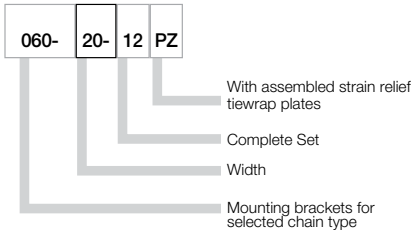


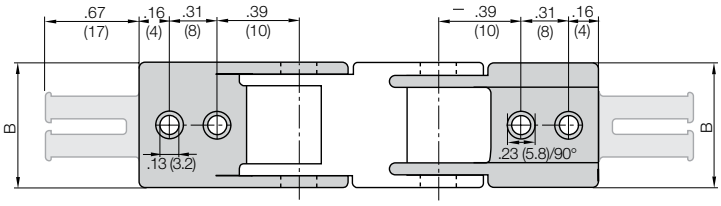
Possible installation configurations -

Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.

Part Number Structure





Full set, for both ends:

060- 20- 12 PZ Full set, **each part with pin/bore**

Single-part order:

060- 20- 1 PZ Mounting bracket **with bore**

060- 20- 2 PZ Mounting bracket **with pin**

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimensions B in.	(mm)	Number of Teeth
E06/Z06-10	**060-10-12PZ**	**060-10-12**	.65	(16.5)	1
E06/Z06-16	**060-16-12PZ**	**060-16-12**	.89	(22.5)	2
E06/Z06-20	**060-20-12PZ**	**060-20-12**	1.06	(27.0)	2

Additional Accessories

Quicksnap - the complete, detachable mounting unit, upon request
Part No.
060-10-QS
060-16-QS
060-20-QS

Quickfix - mounting bracket with dowel, upon request
Part No. 060-20-34QZ

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

E065
Z065

igus®

E-Chain System® E-Z Chain Series E065/Z065

.45

Price Index

Series E065/Z065

Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Torsional motion possible

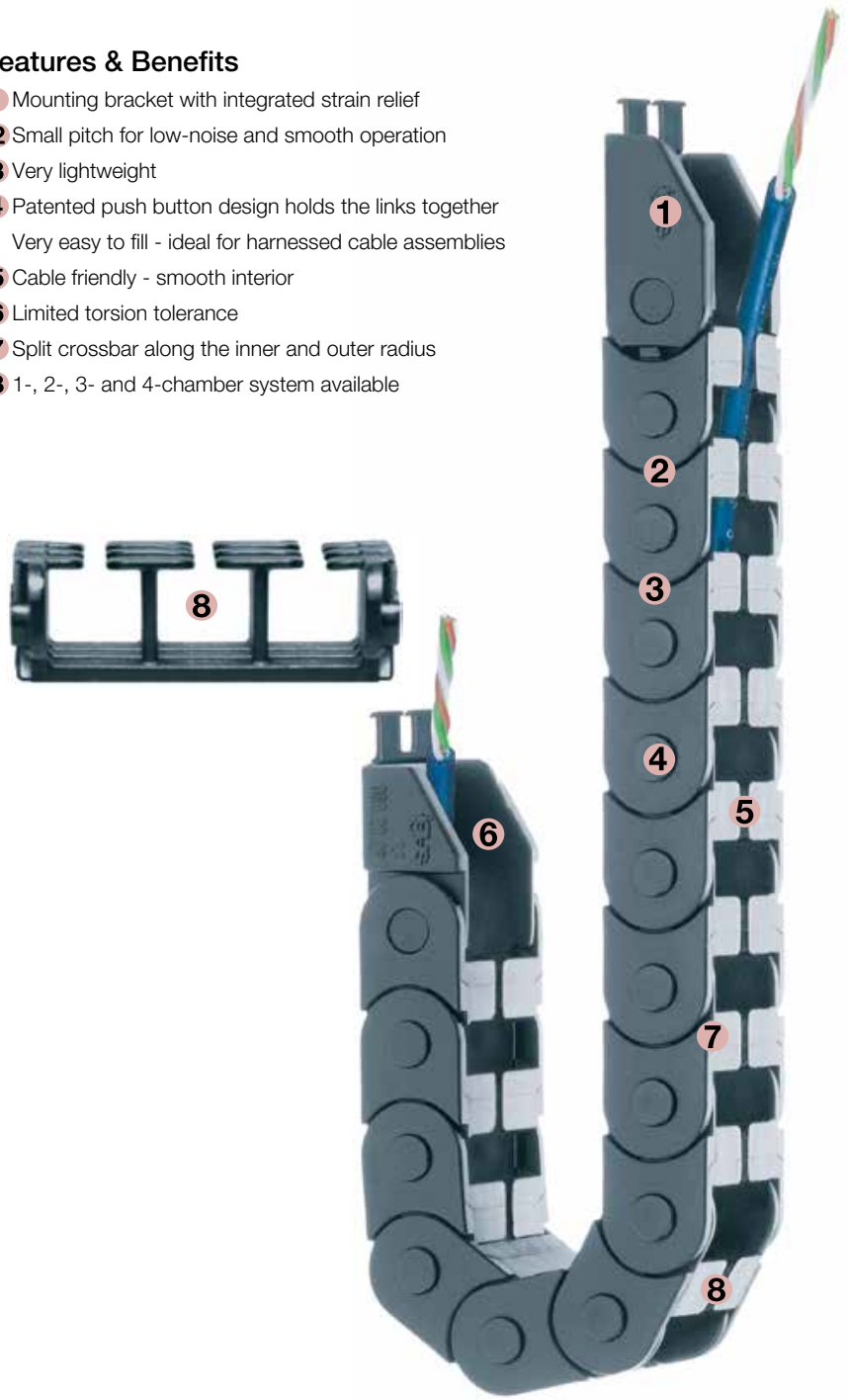
Special equipment: Electrically conductive ESD/ATEX version upon request

Assembly Tips

Just push the cables into the E-Chain using your thumb

Features & Benefits

1. Mounting bracket with integrated strain relief
2. Small pitch for low-noise and smooth operation
3. Very lightweight
4. Patented push button design holds the links together
   Very easy to fill - ideal for harnessed cable assemblies
5. Cable friendly - smooth interior
6. Limited torsion tolerance
7. Split crossbar along the inner and outer radius
8. 1-, 2-, 3- and 4-chamber system available



Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- If high loads and long unsupported lengths are present
  ➤ **Series 06 E2 Micro**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

x.xx ft (1 m) **E065-16-038-0**	E-Chain®
1 Set **0650-16-12PZ**	Mounting Bracket

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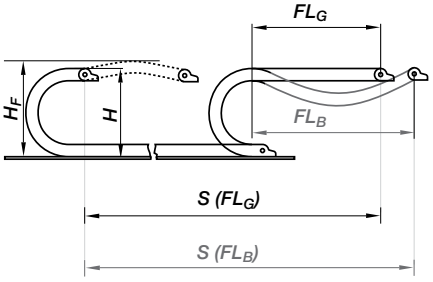
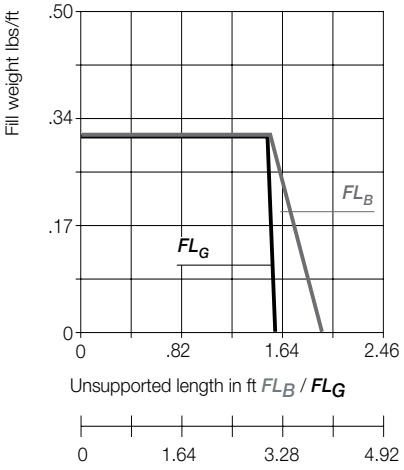
E-Chain System® E-Z Chain Series E065/Z065 Installation Diemnsions

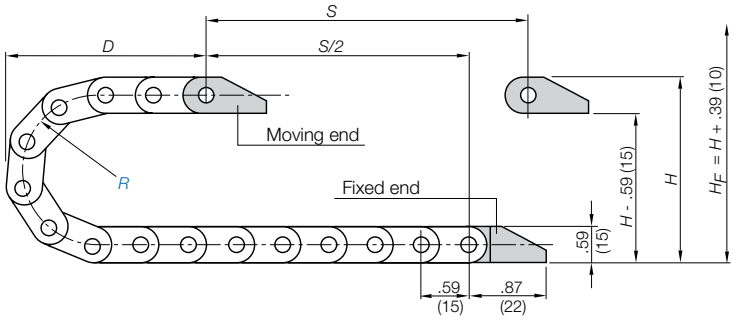
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: ***HF = H + .39 in. (10 mm)*** (with .13 lbs/ft (0.2 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	.71 (018)	1.10 (028)	1.50 (038)
H*	2.01 (51)	2.80 (71)	3.58 (91)
D	1.89 (48)	2.28 (58)	3.68 (68)
K	3.54 (90)	4.72 (120)	5.91 (150)

Pitch per link: = .59" (15 mm)
Links per ft (m): = 20.34 (67)
For center mount applications:
Chain length = $S/2 + K$

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + safety buffer
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material (E-Chain®) - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class (E-Chain®), igumid NB	VDE 0304 IIC UL94 V2
Flammability Class (mounting brackets), igumid G*	VDE 0304 IIC UL94 HB

*Available in igumid NB upon request, please consult igus® for delivery time

Technical Data

Details of material properties
➤ **Chapter 1**

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

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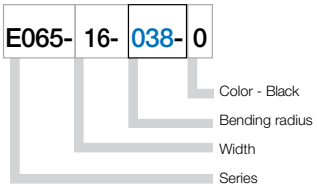
E-Chain System® E-Z Chain
Series E065/Z065

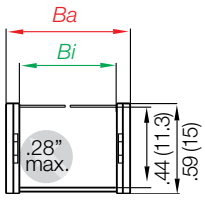
Telephone 1-800-521-2747
Fax 1-401-438-7270

Series E065
Split crossbar along the outer radius

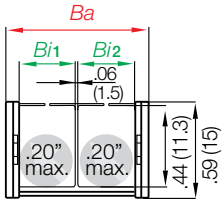
Part Number Structure



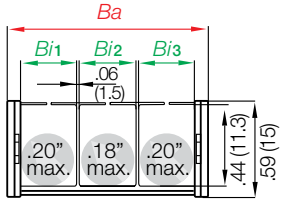
1 Chamber System



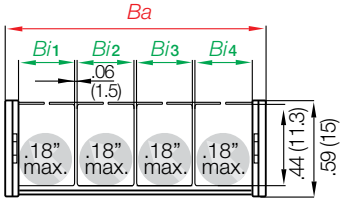
2 Chamber System



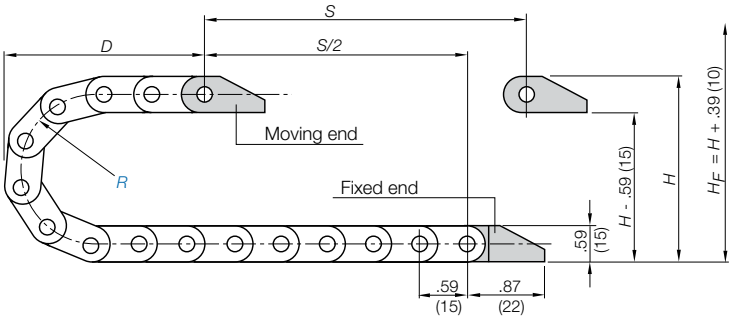
3 Chamber System



4 Chamber System



Supplement part number with required radius. Example: E065-16-038-0
Pitch: .59 in. (15 mm) per link links/ft (m) = 20.34 (67)



Part Number 1 Chamber System	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E065-16-☐-0*	.63 (16)	.98 (24.8)	≈ 0.11 (0.17)
2 Chamber System			
E065-2/9-☐-0*	.35/.35 (9/9)	1.15 (29.3)	≈ 0.13 (0.19)
3 Chamber System			
E065-3/9-☐-0*	.35/.35/.35 (9/9/9)	1.55 (39.3)	≈ 0.15 (0.22)
4 Chamber System			
E065-4/9-☐-0*	.35/.35/.35/.35 (9/9/9/9)	1.94 (49.3)	≈ 0.17 (0.25)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E065-16-038-0

	018	028	038
R	.71 (018)	1.10 (028)	1.50 (038)
H*	2.01 (51)	2.80 (71)	3.58 (91)
D	1.89 (48)	2.28 (58)	3.68 (68)
K	3.54 (90)	4.72 (120)	5.91 (150)

* Crossbars do not overlap. There is a gap of .10" (2.5mm)

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Estudio de Fluidos
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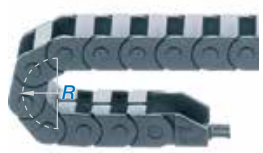
www.edfluidos.com

E-Chain System® E-Z Chain
Series E065/Z065

Series Z065
Split crossbar along the inner radius

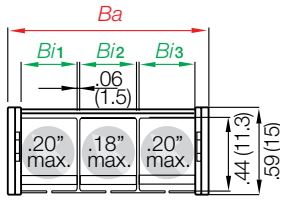


Part Number Structure

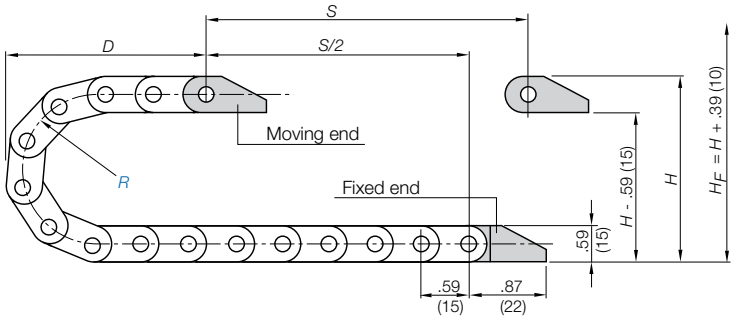
Z065- 3/9- 038- 0

- Color - Black
- Bending radius
- Width
- Series

3 Chamber System



Supplement part number with required radius. Example: Z065-3/9-038-0
Pitch: 2.20 in. (56 mm) per link links/ft (m) = 5.49 (18)



Part Number 3 Chamber System	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
Z065-3/9-□-0	.35/.35/.35 (9/9/9)	1.55 (39.3)	≈ 0.15 (0.22)

Choose from the radii below for all of the above sizes
Radius (mm) Example: Z065-3/9-038-0

	018	028	038
R	.71 (018)	1.10 (028)	1.50 (038)
H*	2.01 (51)	2.80 (71)	3.58 (91)
D	1.89 (48)	2.28 (58)	3.68 (68)
K	3.54 (90)	4.72 (120)	5.91 (150)

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

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igus®

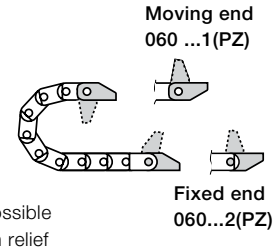
E-Chain System® E-Z Chain Series E065/Z065 Mounting Brackets

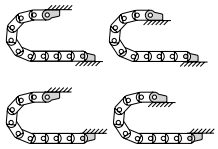
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with integrated strain relief tiewrap plates





Possible installation configurations -

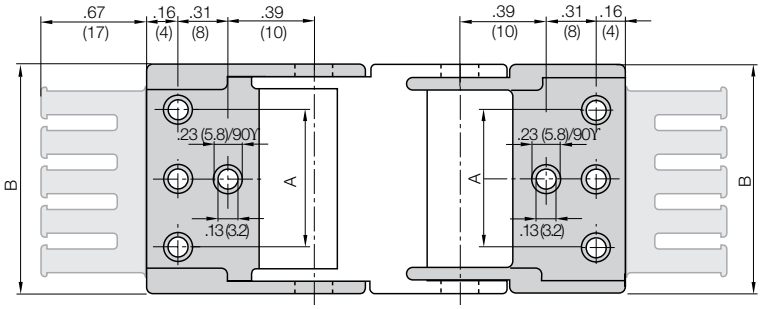
Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.

Part Number Structure

0650-	3/99-	12	PZ

- PZ — With assembled strain relief tiewrap plates
- 12 — Complete Set
- 3/99- — Width
- 0650- — Mounting brackets for selected chain type



Full set, for both ends:
0650- 3/9- 12 PZ Full set, **each part with pin/bore**

Single-part order:
0650- 3/9- 1 PZ Mounting bracket **with bore**
0650- 3/9- 2 PZ Mounting bracket **with pin**

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimensions A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
E065-16-	**0650-16-12PZ**	**0650-16-12**		—	.89	(22.5)	2
E065-2/9	**0650-2/9-12PZ**	**0650-2/9-12**		—	1.06	(27)	2
E065/Z065-3/9	**0650-3/9-12PZ**	**0650-3/9-12**	.87	(22)	1.46	(37)	3
E065-4/9	**0650-4/9-12PZ**	**0650-4/9-12**	1.26	(32)	1.85	(47)	4

Additional Accessories

Quicksnap - the complete, detachable mounting unit, upon request

Quickfix - mounting bracket with dowel, upon request

E-Chain System® E-Z Chain
Series E065/Z065

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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E08
Z08

igus®

E-Chain System® E-Z Chain Series E08/Z08

.57 .58

Price Index

Series E08/Z08

Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

Assembly Tips

Just push the cables into the E-Chain using your thumb

Features & Benefits

1. Cable-friendly interior
2. Small pitch for low-noise and smooth operation
3. Lightweight
4. Patented push button design holds the links together
5. Integrated strain relief option
6. Very easy to fill - ideal for harnessed cable assemblies
7. "E" Series features split crossbar along the outer radius
8. "Z" Series features split crossbar along the inner radius
9. Limited torsion tolerance

Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- "Z" Series is unsuitable for gliding applications
  ➤ **Series 09 Zipper**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **E08-30-038-0**	**E-Chain®**
1 Set **080-30-12PZ**	**Mounting Bracket**

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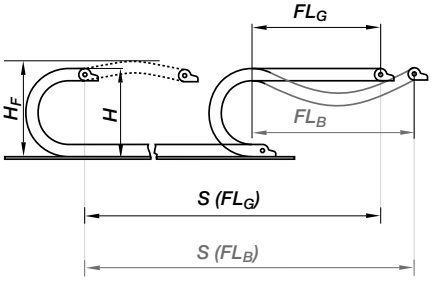
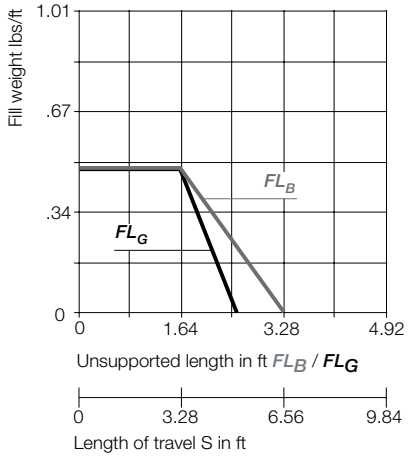
E-Chain System® E-Z Chain Series E08/Z08 Installation Dimensions

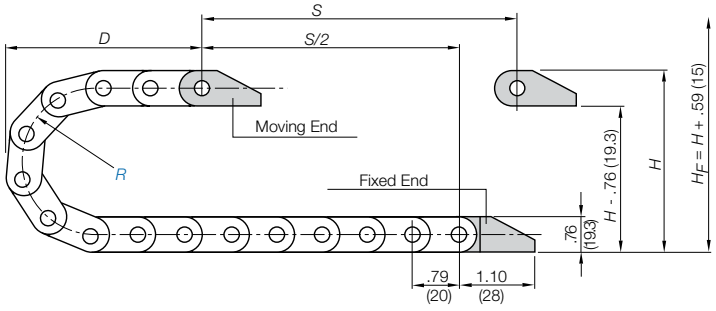
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: H_F = **H + .59 in. (15 mm)** (with .20 lbs/ft (0.3 kg/m) fill weight. Please consult igus® if space is particularly restricted.

Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $\frac{S}{2} + K$

R	1.10 (028)	1.50 (038)	1.89 (048)
H	2.95 (75)	3.74 (95)	4.53 (115)
D	2.68 (68)	3.07 (78)	3.46 (88)
K	5.12 (130)	6.30 (160)	7.68 (195)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material (E-Chain®) - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class (E-Chain®), igumid NB	VDE 0304 IIC UL94 V2
Flammability Class (mounting brackets), igumid G*	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ **Chapter 1**

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

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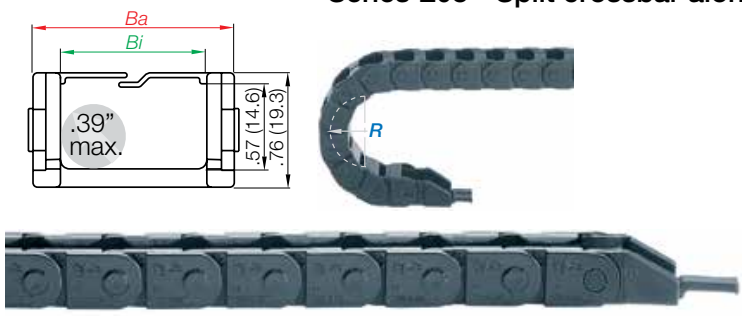
igus®

E-Chain System® E-Z Chain
Series E08/Z08

Telephone 1-800-521-2747
Fax 1-401-438-7270

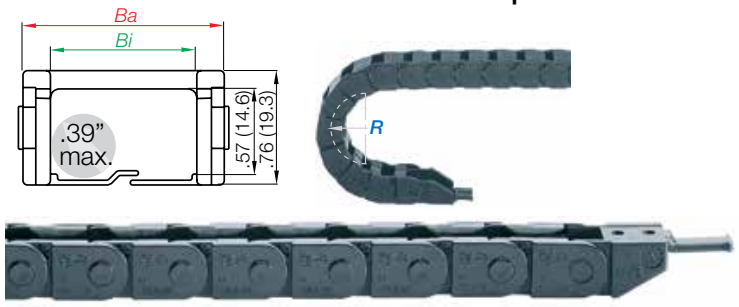
Series E08 - Split crossbar along the outer radius



Part Number Structure

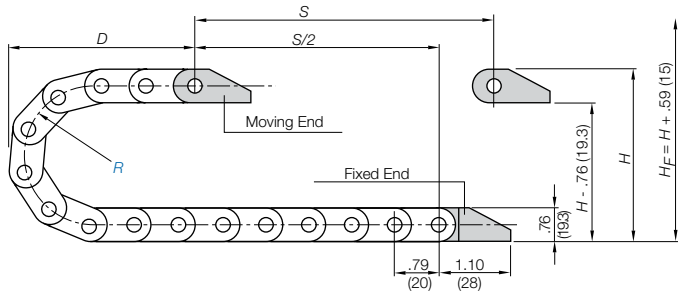
E08- 30- 038- 0
- Color - Black
- Bending radius
- Width
- Series

Series Z08 - Split crossbar along the inner radius



Part Number Structure

Z08- 30- 038- 0
- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: E08-10-[038]-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Part Number Split Crossbar Outer Radius	Split Crossbar Inner Radius		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E08-10	Z08-10	-0	.39 (10)	.72 (18.2)	≈ 0.14 (0.21)
E08-16-	Z08-16	-0	.63 (16)	.95 (24.2)	≈ 0.16 (0.24)
E08-20-	Z08-20	-0	.79 (20)	1.11 (28.2)	≈ 0.17 (0.25)
E08-30-	Z08-30	-0	1.18 (30)	1.50 (38.2)	≈ 0.19 (0.28)
E08-40-	Z08-40	-0	1.57 (40)	1.90 (48.2)	≈ 0.21 (0.31)
E08-50-	Z08-50	-0	1.97 (50)	2.29 (58.2)	≈ 0.25 (0.37)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E08-10-[038]-0

	028	038	048
R	1.10 (028)	1.50 (038)	1.89 (048)
H	2.95 (75)	3.74 (95)	4.53 (115)
D	2.68 (68)	3.07 (78)	3.46 (88)
K	5.12 (130)	6.30 (160)	7.68 (195)

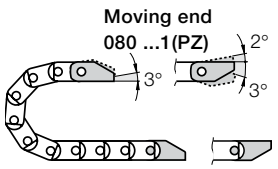
0=Standard color black. For other colors see Chapter 1

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

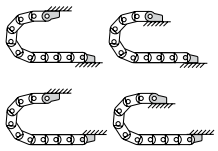
E-Chain System® E-Z Chain Series E08/Z08 Mounting Brackets

Plastic, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without integrated strain relief tiewrap plates



Fixed end
080...2(PZ)

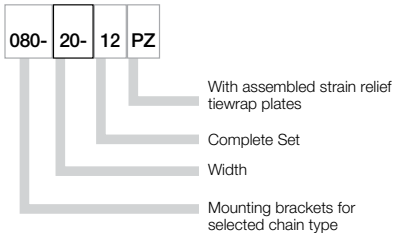


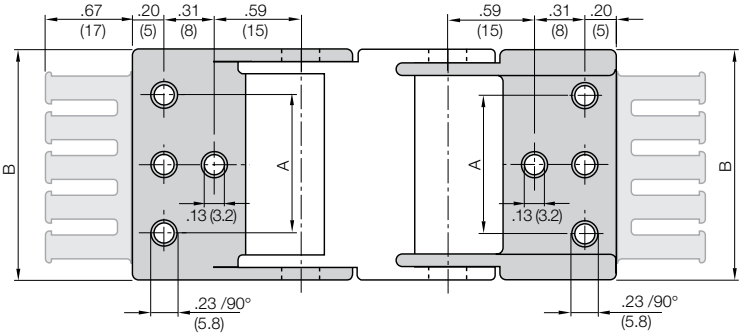
Possible installation configurations -

Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.

Part Number Structure





Full set, for both ends:
080- 20- 12 PZ Full set, **each part with pin/bore**

Single-part order:
080- 20- 1 PZ Mounting bracket **with bore**
080- 20- 2 PZ Mounting bracket **with pin**

080-10-12 - 080-20-12:
Center bores only
080-30-12 – 080-50-12:
Outer bores only

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
E08/Z08-10	**080-10-12PZ**	**080-10-12**	—	—	.72	(18.2)	1
E08/Z08-16	**080-16-12PZ**	**080-16-12**	—	—	.95	(24.2)	2
E08/Z08-20	**080-20-12PZ**	**080-20-12**	—	—	1.11	(28.2)	2
E08/Z08-30	**080-30-12PZ**	**080-30-12**	.87	(22)	1.50	(38.2)	3
E08/Z08-40	**080-40-12PZ**	**080-40-12**	1.26	(32)	1.90	(48.2)	4
E08/Z08-50	**080-50-12PZ**	**080-50-12**	1.65	(42)	2.29	(58.2)	5

Additional Accessories

Quicksnap - the complete, detachable mounting unit, upon request
Part No.
080-20-QS
080-30-QS

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

E14
Z14

igus®

E-Chain System® E-Z Chain Series E14/Z14

.75 .75

Features & Benefits

1. Small pitch for low-noise and smooth operation
2. Cable-friendly interior
3. Limited torsion tolerance
4. Very easy to fill - ideal for harnessed cable assemblies
5. Integrated strain relief option
6. Patented push button design holds the links together
7. "E" Series features split crossbar along the outer radius
8. "Z" Series features split crossbar along the inner radius

Price Index

Series E14/Z14

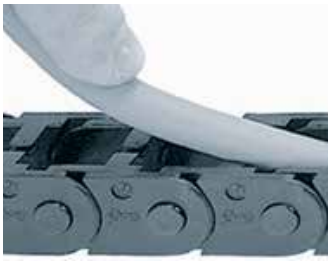
Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

IPA Qualification Certificate: ESD Classification Level 1 (for Series E14-3-038). Special equipment: Electrically conductive ESD/ATEX version upon request

Assembly Tips



Just push the cables into the E-Chain using your thumb

Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- "Z" Series is unsuitable for gliding applications
  ➤ **Series B15 E2 Mini**
- If a long unsupported length is required
  ➤ **Series B15 E2 Mini**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **E14-3-038-0**	E-Chain®
1 Set **114-3-12PZ**	Mounting Bracket

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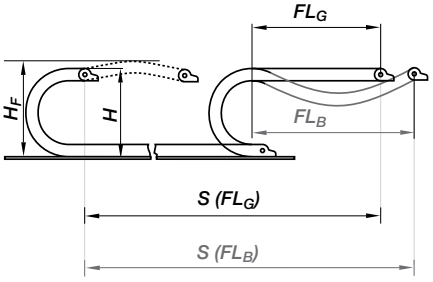
www.edfluidos.com

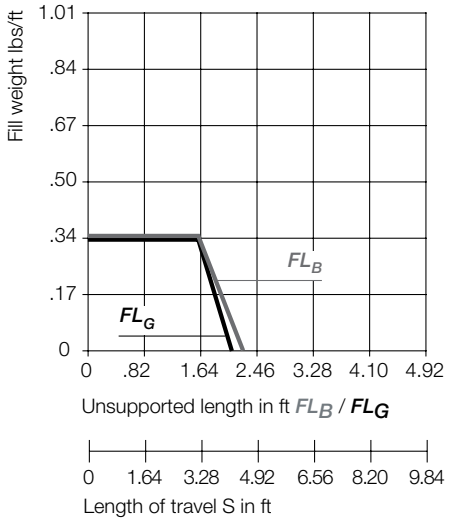
E-Chain System® E-Z Chain Series E14/Z14 Installation Dimensions

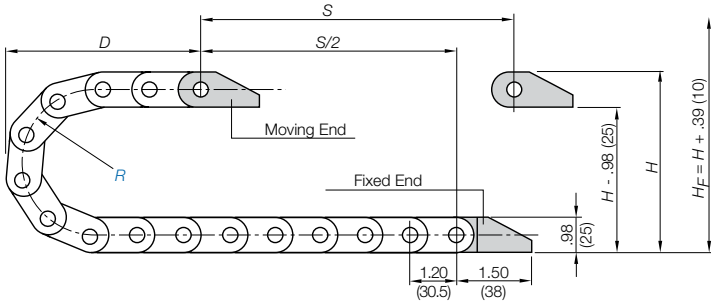
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: $H_F = H + .39$ **in. (10 mm)** (with .13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.10 (028)	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.92 (125)
H	3.19 (81)	3.98 (101)	4.76 (121)	6.89 (175)	8.86 (225)	10.83 (275)
D	3.35 (86)	3.78 (96)	4.17 (106)	5.24 (133)	6.22 (158)	7.20 (183)
K	5.91 (150)	7.28 (185)	8.46 (215)	11.81 (300)	14.96 (380)	17.91 (455)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material (E-Chain®) - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class (E-Chain®), igumid NB	VDE 0304 IIC UL94 V2
Flammability Class (mounting brackets), igumid G*	VDE 0304 IIC UL94 HB

*Available in igumid NB upon request, please consult igus® for delivery time

Technical Data

Details of material properties
➤ **Chapter 1**

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

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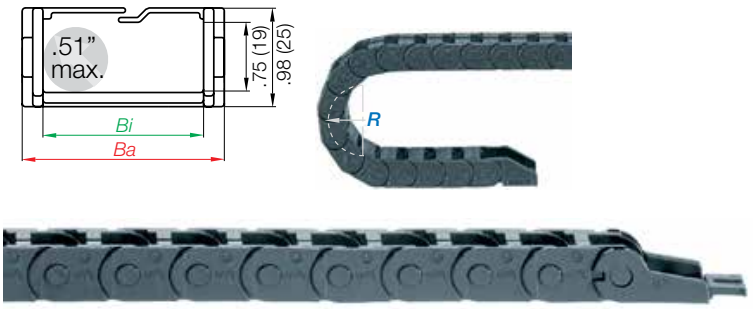
igus®

E-Chain System® E-Z Chain
Series E14/Z14

Series E14 - Split crossbar along the outer radius

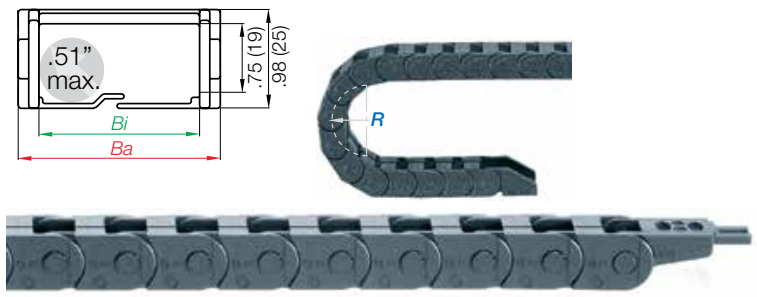


Part Number Structure

E14- 3- 038- 0

- Color - Black
- Bending radius
- Width
- Series

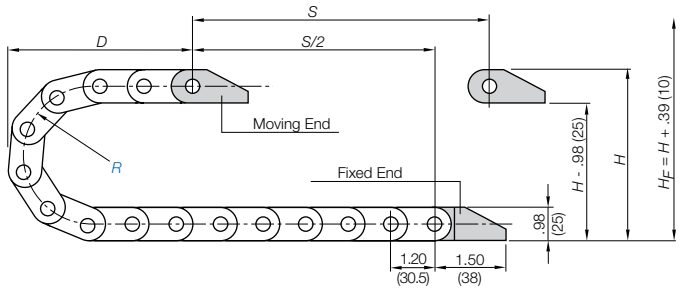
Series Z14 - Split crossbar along the inner radius



Part Number Structure

Z14- 3- 038- 0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: E14-3-[038]-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

Part Number Split Crossbar Outer Radius	Split Crossbar Inner Radius		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E14-1-	Z14-1-	-0	.59 (15)	1.06 (27)	≈ 0.21 (0.31)
E14-2-	Z14-2-	-0	.98 (25)	1.46 (37)	≈ 0.22 (0.32)
E14-3-	Z14-3-	-0	1.50 (38)	1.97 (50)	≈ 0.27 (0.40)
E14-4-	Z14-4-	-0	1.97 (50)	2.44 (62)	≈ 0.30 (0.44)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E14-3-[038]-0

	028	038	048	075	100	125
R	1.10 (028)	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.92 (125)
H	3.19 (81)	3.98 (101)	4.76 (121)	6.89 (175)	8.86 (225)	10.83 (275)
D	3.35 (86)	3.78 (96)	4.17 (106)	5.24 (133)	6.22 (158)	7.20 (183)
K	5.91 (150)	7.28 (185)	8.46 (215)	11.81 (300)	14.96 (380)	17.91 (455)

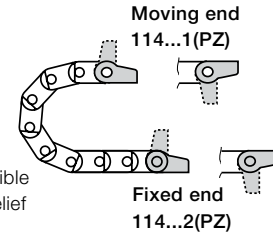
0=Standard color black. For other colors see Chapter 1

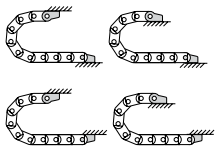
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E-Z Chain Series E14/Z14 Mounting Brackets

Plastic, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates



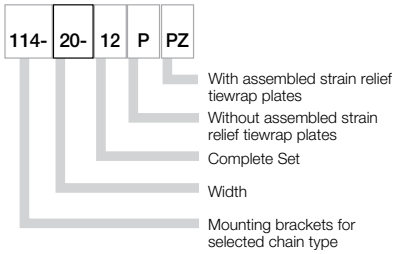


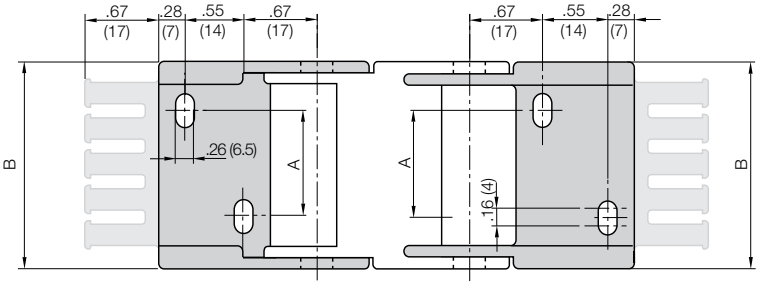
Possible installation configurations -

Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.

Part Number Structure





Full set, for both ends:
114- 20- 12 PZ
Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
114- 20- 1 PZ
Mounting bracket **with bore + tiewrap plate**
114- 20- 2 PZ
Mounting bracket **with pin + tiewrap plate**

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
E14/Z14-1	**114-1-12PZ**	**114-1-12P**	—	—	1.04	(26.3)	2
E14/Z14-2	**114-2-12PZ**	**114-2-12P**	.39	(10)	1.43	(36.3)	3
E14/Z14-3	**114-3-12PZ**	**114-3-12P**	.91	(23)	1.94	(49.3)	4
E14/Z14-4	**114-4-12PZ**	**114-4-12P**	1.38	(35)	2.45	(62.3)	5

Additional Accessories

Quickfix - mounting bracket with dowel, upon request
Part No.
114-3-12QZ

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

E200
Z200

igus®

E-Chain System® E-Z Chain Series E200/Z200

.96 .96

Price Index

Series E200/Z200

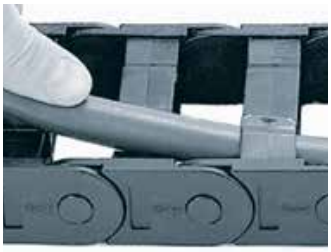
Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

Assembly Tips



Just push the cables into the E-Chain using your thumb

Other Installation Methods

Vertical, hanging ≤ 32.8 ft (10 m)
Vertical, standing ≤ 4.92 ft (1.5 m)
Side-mounted, unsupp. ≤ 1.64 ft (0.5 m)
Rotary requires further calculation

Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- If a long unsupported length is required
  ➤ **Series 200/240/250 E2 Medium**
- If single extrusion crossbars are required
  ➤ **Series 200/240/250 E2 Medium**

Features & Benefits

1. Mounting bracket with integrated strain relief
2. Large pins for long service life
3. Patented push button design holds the links together
4. Limited torsion tolerance
5. "E" Series features split crossbar along the outer radius
6. Dirt-repellant exterior
7. Cable-friendly interior
8. "Z" Series features split crossbar along the inner radius
9. Very easy to fill - cables only have to be pushed in
10. 1- or 2-chamber system available

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

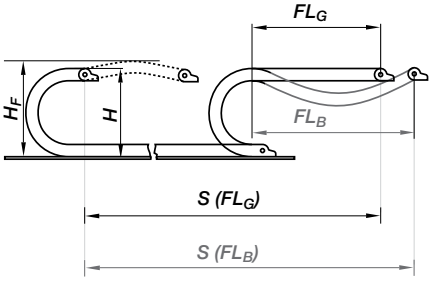
3.28 ft (1 m) **E200-05-100-0**	E-Chain®
1 Set **2050-34PZB**	Mounting Bracket

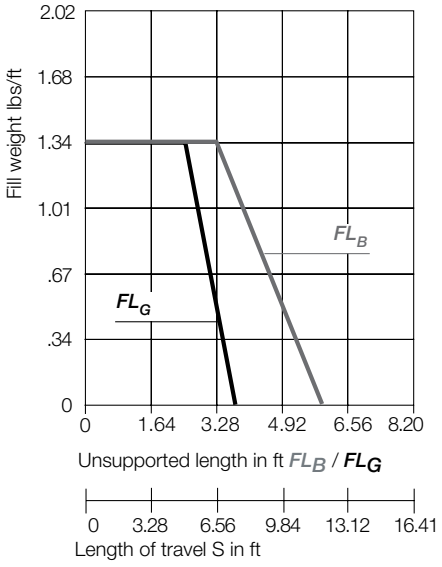
E-Chain System® E-Z Chain Series E200/Z200 Installation Dimensions

Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1



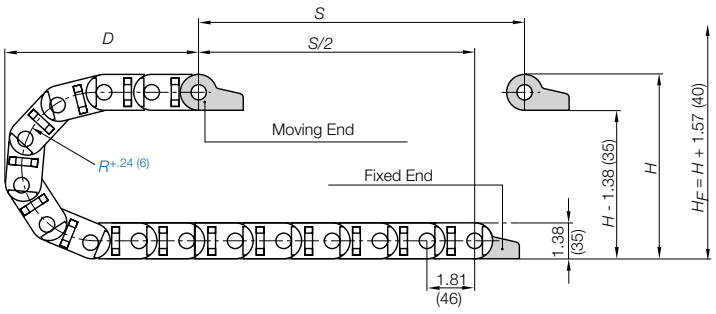


Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
$K = \pi \bullet R + safety\ buffer$
H_F = Required clearance height



Pitch per link: = 1.81" (46 mm)
Links per ft (m): = 6.71 (22)
For center mount applications:
Chain length = $S/2 + K$

The required clearance height: $H_F = H + 1.57$ in. (40 mm) (with 1.68 lbs/ft (2.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.16 (055)	2.95 (075)	3.94 (100)	5.91 (150)	7.87 (200)
H +4	5.71 (145)	7.28 (185)	9.25 (235)	13.19 (335)	17.12 (435)
D	5.59 (142)	6.38 (162)	7.36 (187)	9.33 (237)	11.30 (287)
K	10.43 (265)	12.99 (330)	16.14 (410)	22.24 (565)	28.54 (725)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material (E-Chain®) - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class (E-Chain®), igumid NB	VDE 0304 IIC UL94 V2
Flammability Class (mounting brackets), igumid G*	VDE 0304 IIC UL94 HB

*Available in igumid NB upon request, please consult igus® for delivery time

Technical Data

Details of material properties
➤ **Chapter 1**

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E-Chain System® E-Z Chain
Series E200/Z200

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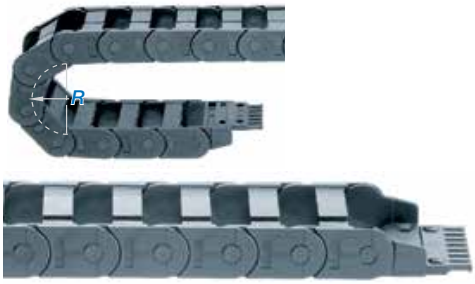
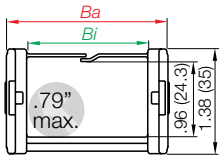
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

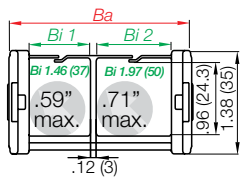
Series E200
Split crossbar along the outer radius



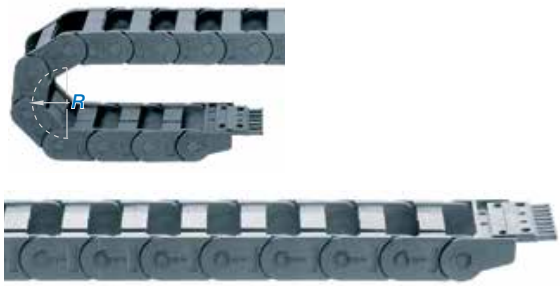
Single Chamber System



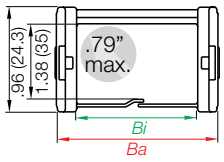
2 Chamber System
1 chamber from each width is shown
Actual carrier will have 2 chambers of the same size.



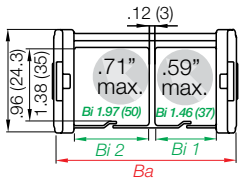
Series Z200
Split crossbar along the inner radius



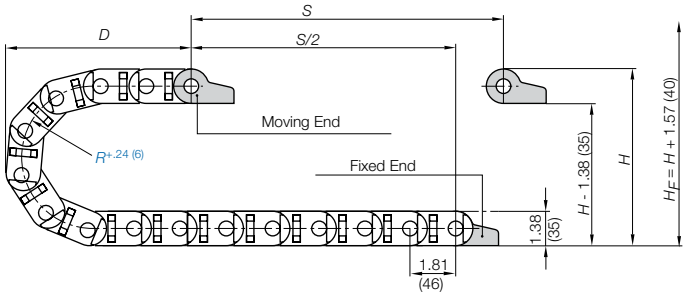
Single Chamber System



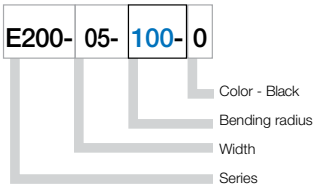
2 Chamber System
1 chamber from each width is shown
Actual carrier will have 2 chambers of the same size.



Supplement part number with required radius. Example: E200-05-100-0
Pitch: 1.81 in. (46 mm) per link links/ft (m) = 6.71 (22)



Part Number Structure



Part Number
Single Chamber System

Split Crossbar Outer radius	Split Crossbar Inner Radius		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E200-05-	Z200-05-	-0	2.24 (57)	2.93 (74.4)	≈ 0.47 (0.70)

Part Number
2 Chamber System

Split Crossbar Outer radius	Split Crossbar Inner Radius		Bi 1 in. (mm)	Bi 2 in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E200-2/35-	Z200-2/35-	-0	1.46 (37)	1.46 (37)	3.72 (94.4)	≈ 0.53 (0.79)
E200-2/50-	Z200-2/50-	-0	1.97 (50)	1.97 (50)	4.74 (120.4)	≈ 0.55 (0.82)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E200-05-100-0

	055	075	100	150	200
R	2.16 (055)	2.95 (075)	3.94 (100)	5.91 (150)	7.87 (200)
H +4	5.71 (145)	7.28 (185)	9.25 (235)	13.19 (335)	17.12 (435)
D	5.59 (142)	6.38 (162)	7.36 (187)	9.33 (237)	11.30 (287)
K	10.43 (265)	12.99 (330)	16.14 (410)	22.24 (565)	28.54 (725)

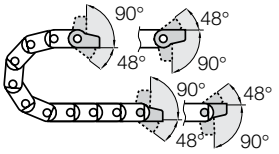
0=Standard color black. For other colors see Chapter 1

E-Chain System® E-Z Chain Series E200/Z200 Mounting Brackets

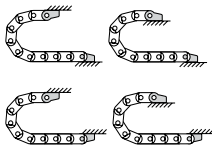
Standard

Option 1: pivoting

Short and long travels
Space-restricted conditions
Corrosion resistant



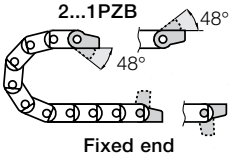
Fixed end
2...4PZB



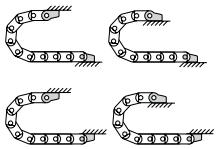
Possible installation configurations -

- Vertical hanging/standing travels
- High accelerations
- Corrosion resistant

Moving end
2...1PZB



Fixed end
2...2PZB

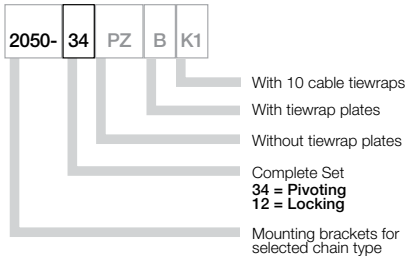


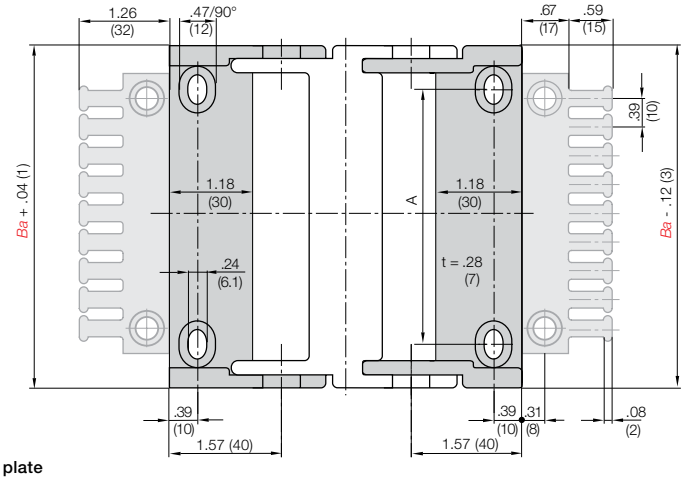
Possible installation configurations -

Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.

Part Number Structure





Full set, for both ends:
2050- 34 PZB Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
2050- 3 PZB Mounting bracket **with bore + tiewrap plate**
2050- 4 PZB Mounting bracket **with pin + tiewrap plate**

For Chain Type	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Number of teeth
E200/Z200-05	2050- ☐ PZB	2050- ☐ PZBK1	2050- ☐ PZ	1.73	(44)	6
E200/Z200-2/35	2070- ☐ PZB	2070- ☐ PZBK1	2070- ☐ PZ	2.52	(64)	8
E200/Z200-2/50	2100- ☐ PZB	2100- ☐ PZBK1	2100- ☐ PZ	3.54	(90)	10

☐ = 34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 2050- 34 PZB

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

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E-Chain System® E-Z Chain Series E200/Z200 Strain Relief

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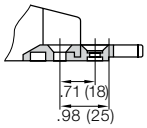
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

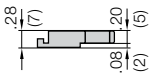
Strain relief for polymer mounting brackets (pivoting or locking)

The strain relief tiewrap plates can be snapped directly onto the mounting bracket. After bolting the mounting brackets to the machine, the strain relief tiewrap plates are firmly connected to the base. There is no need to bolt them on separately. Cable tiewraps secured to the cable and the tiewrap plate (teeth) provide proper strain relief and save time.

Tiewrap Plates



Shown assembled

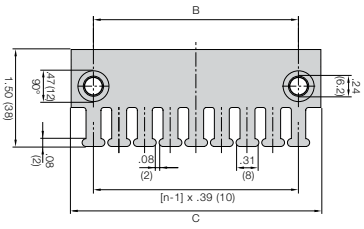


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket.

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2100-ZB	10	3.94 (100)	3.15 (80)



For more information please refer to strain relief section of Chapter 10

Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **20XX-ZB** can be also used here. **Details chapter 10**

Cable tiewraps as individual parts

Cable tiewraps 100 pieces/bag	Width x Length in.	(mm)	Maximum Ø in.	(mm)	Tensile Strength lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)

Option 2:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
2050-Z	6	2.44	(62)

For more information please refer to strain relief section of Chapter 10

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E-Chain System® E-Z Chain Series E200/Z200

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

E16
Z16

igus®

E-Chain System® E-Z Chain Series E16/Z16

1.26 1.26

Price Index

Series E16/Z16

Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

Assembly Tips

Just push the cables into the E-Chain using your thumb

Features & Benefits

1. Cable-friendly interior
2. Limited torsion tolerance
3. Small pitch for low-noise and smooth operation
4. Very easy to fill - cables only have to be pushed in
5. Mounting bracket with integrated strain relief
6. Patented push button design holds the links together
7. "E" Series features split crossbar along the outer radius
8. "Z" Series features split crossbar along the inner radius

Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- If a long unsupported length is required
  ➤ **Series 26/27/27i E2 Medium**
- If an E-Chain with a high locking crossbar is needed
  ➤ **Series 26/27/27i E2 Medium**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **E16-3-060-0**	E-Chain®
1 Set **117-3-12PZ**	Mounting Bracket

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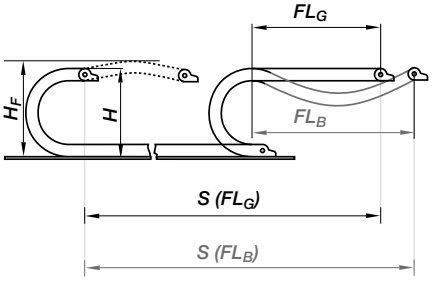
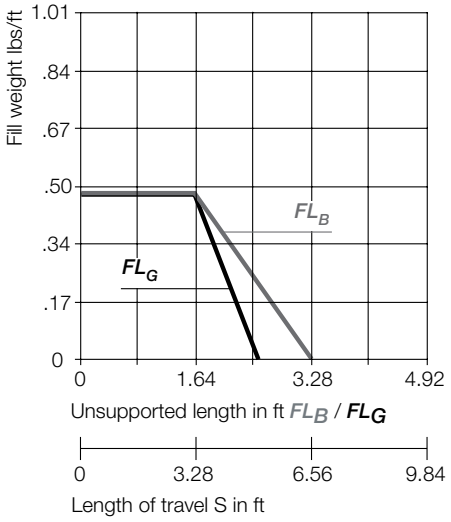
E-Chain System® E-Z Chain Series E16/Z16 Installation Dimensions

Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1



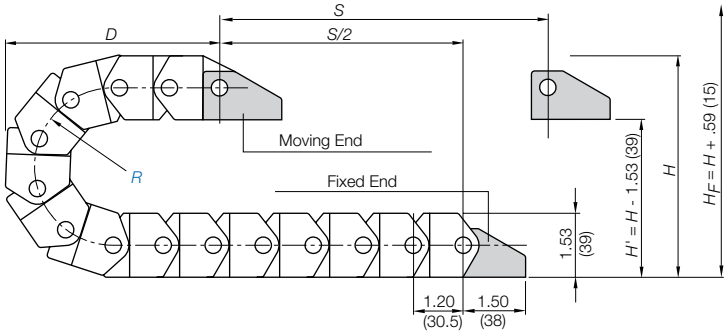


Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height



Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: ***HF = H + .59 in. (15 mm)*** (with .20 lbs/ft (0.3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.57 (040)*	2.36 (060)	2.95 (075)	3.94 (100)
H	4.69 (119)	6.26 (159)	7.44 (189)	9.41 (239)
D	4.13 (105)	4.92 (125)	5.51 (140)	6.50 (165)
K	7.48 (190)	9.84 (250)	11.81 (300)	14.96 (380)

*This radius is only available for the E16-2, Z16-3, Z16-4 Series

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material (E-Chain®) - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class (E-Chain®), igumid NB	VDE 0304 IIC UL94 V2
Flammability Class (mounting brackets), igumid G*	VDE 0304 IIC UL94 HB

*Available in igumid NB upon request, please consult igus® for delivery time

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

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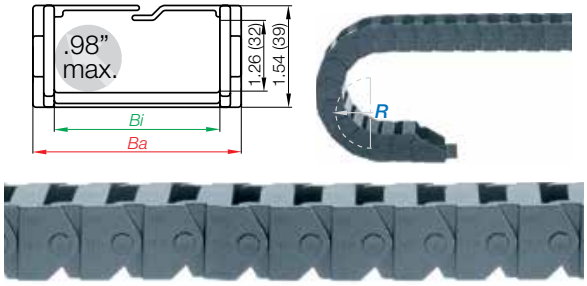
igus®

E-Chain System® E-Z Chain
Series E16/Z16

Telephone 1-800-521-2747
Fax 1-401-438-7270

STANDARD

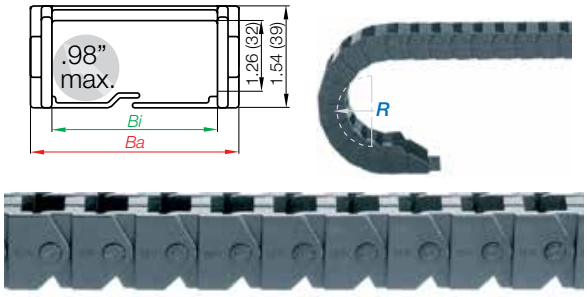
Series E16 - Split crossbar along the outer radius



Part Number Structure

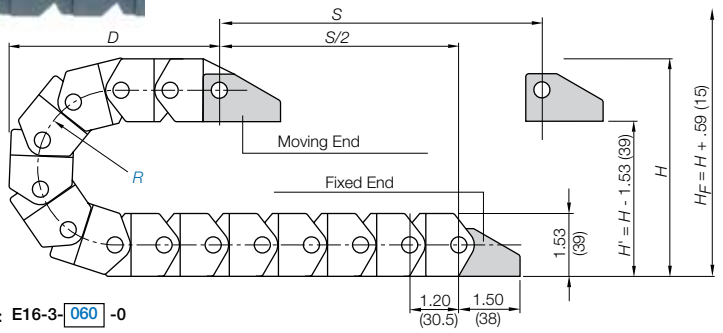
E16- 3- 060- 0
- Color - Black
- Bending radius
- Width
- Series

Series Z16 - Split crossbar along the inner radius



Part Number Structure

Z16- 3- 060- 0
- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: E16-3-[060]-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

Part Number Split Crossbar Outer radius	Part Number Split Crossbar Inner radius		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E16-2-	Z16-2-	[ ] -0	.91 (23)	1.48 (37.5)	≈ 0.34 (0.51)
E16-3-	Z16-3-	[ ] -0	1.42 (36)	1.99 (50.5)	≈ 0.38 (0.57)
E16-4-	Z16-4-	[ ] -0	1.89 (48)	2.46 (62.5)	≈ 0.42 (0.62)
E16-5-	Z16-5-	[ ] -0	2.48 (63)	3.09 (78.5)	≈ 0.50 (0.75)
E16-6-	Z16-6-	[ ] -0	3.15 (80)	3.76 (95.5)	≈ 0.56 (0.83)
E16-7-	Z16-7-	[ ] -0	3.94 (100)	4.54 (115.3)	≈ 0.61 (0.91)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E16-3-[060]-0

	040*	060	075	100
R	1.57 (040)	2.36 (060)	2.95 (075)	3.94 (100)
H	4.69 (119)	6.26 (159)	7.44 (189)	9.41 (239)
D	4.13 (105)	4.92 (125)	5.51 (140)	6.50 (165)
K	7.48 (190)	9.84 (250)	11.81 (300)	14.96 (380)

0=Standard color black. For other colors see Chapter 1
*This radius is only available for the E16-2, Z16-3, Z16-4 Series

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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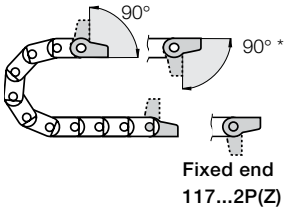
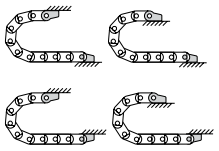
E-Chain System® E-Z Chain Series E16/Z16 Mounting Brackets

Standard

Option 1: pivoting

- One-piece mounting bracket
- Corrosion resistant
- Available pre-assembled
- Inner and outer attachment possible
- With our without strain relief tiewrap plates

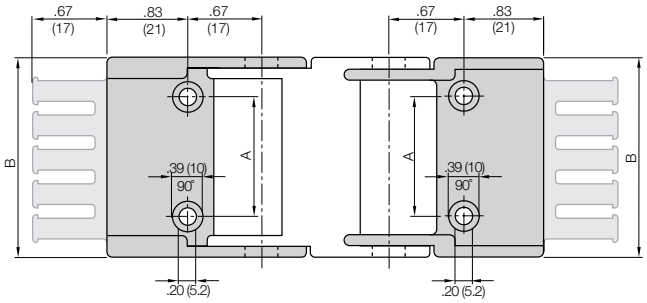




Possible installation configurations -

Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.



Part Number Structure

117-2-	12	P	PZ

- With tiewrap plate
- Without tiewrap plate
- Complete Set **12 = Pivoting**
- Mounting brackets for selected chain type

Full set, for both ends:
117-2-12-PZ Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
117-2-1-PZ Mounting bracket **with bore + tiewrap plate**
117-2-2-PZ Mounting bracket **with pin + tiewrap plate**

For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Number of Teeth	Dimension A in.	(mm)	Dimensions B in.	(mm)
E16/Z16-2	**117-2-12PZ**	**117-2-12P**	3	.47	(12)	1.40	(35.5)
E16/Z16-3	**117-3-12PZ**	**117-3-12P**	4	.98	(25)	1.91	(48.5)
E16/Z16-4	**117-4-12PZ**	**117-4-12P**	5	1.46	(37)	2.38	(60.5)
E16/Z16-5	**117-5-12PZ**	**117-5-12P**	6	1.89	(48)	2.99	(76.0)
E16/Z16-6	**117-6-12PZ**	**117-6-12P**	8	2.56	(65)	3.66	(93.0)
E16/Z16-7	**117-7-12PZ**	**117-7-12P**	10	3.35	(85)	4.45	(113.0)

Additional Accessories

Quicksnap - the complete, detachable mounting unit, upon request

Quickfix - mounting bracket with dowel, upon request

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

E26
Z26

igus®

E-Chain System® E-Z Chain Series E26/Z26

1.44 1.44

Features & Benefits

1. Integrated strain relief option
2. Very easy to fill - cables only have to be pushed in
3. Cable-friendly interior
4. Limited torsion tolerance
5. Large pins for long service life
6. "E" Series features split crossbar along the outer radius
7. Dirt-repellent exterior
8. Patented push button design holds the links together
9. "Z" Series features split crossbar along the inner radius
10. 1-, 2- or 3-chamber system available

Price Index

Series E26/Z26

Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

Assembly Tips

Just push the cables into the E-Chain using your thumb

Other Installation Methods

Vertical, hanging ≤ 32.8 ft (10 m)
Vertical, standing ≤ 4.92 ft (1.5 m)
Side-mounted, unsupp. ≤ 1.64 ft (0.5 m)
Rotary requires further calculation

Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- If a long unsupported length is required
  ➤ **Series 26/27/27i E2 Medium**
- If an E-Chain with a high locking crossbar is needed
  ➤ **Series 26/27/27i E2 Medium**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **E26-07-150-0**	E-Chain®
1 Set **2607-34PZB**	Mounting Bracket

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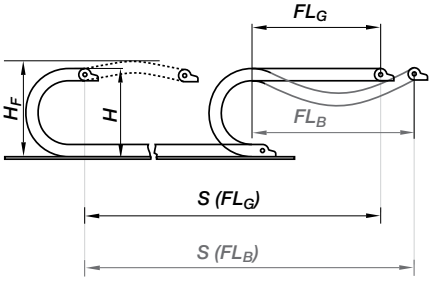
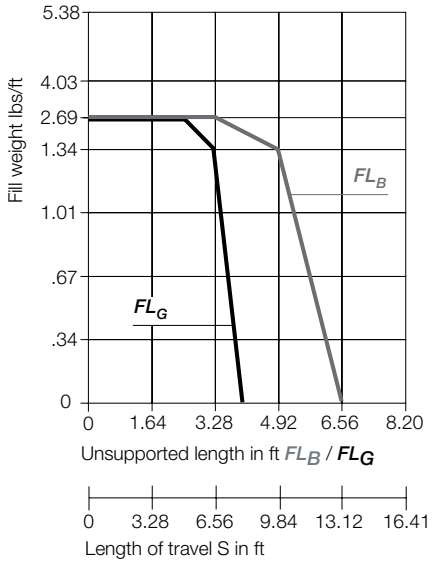
E-Chain System® E-Z Chain Series E26/Z26 Installation Dimensions

Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1



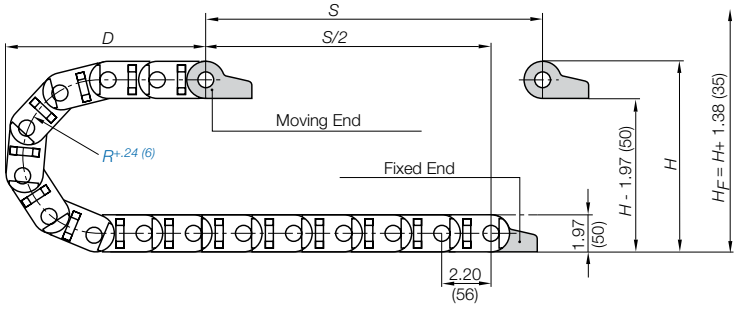


Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height



Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.49 (18)
For center mount applications:
Chain length = $^{S}/_{2}$ + K

The required clearance height: ***HF* = *H* + 1.38 in. (35 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H +5	6.93 (176)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	21.65 (550)
D	6.77 (172)	7.24 (184)	8.23 (209)	9.21 (234)	10.20 (259)	11.18 (284)	12.17 (309)	14.13 (359)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.90 (505)	23.03 (585)	26.18 (665)	29.33 (745)	35.43 (900)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material (E-Chain®) - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class (E-Chain®), igumid NB	VDE 0304 IIC UL94 V2
Flammability Class (mounting brackets), igumid G*	VDE 0304 IIC UL94 HB

*Available in igumid NB upon request, please consult igus® for delivery time

Technical Data

Details of material properties
➤ Chapter 1

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Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

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E-Chain System® E-Z Chain
Series E26/Z26

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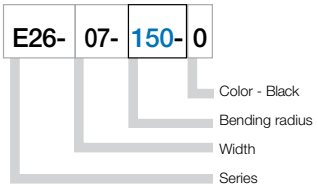
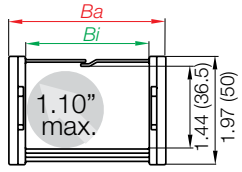
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Series E26
Split crossbar along the outer radius

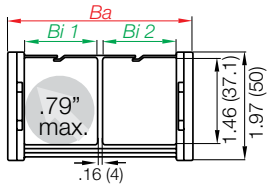
Part Number Structure



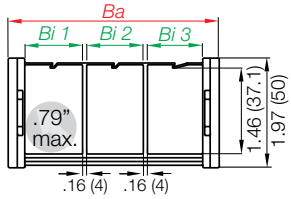
1 Chamber System



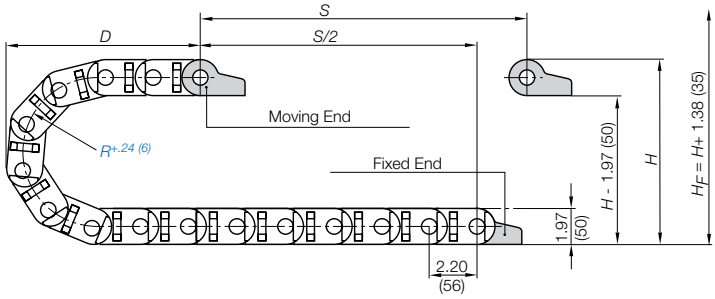
2 Chamber System



3 Chamber System



Supplement part number with required radius. Example: E26-07-150-0
Pitch: 2.20 in. (56 mm) per link links/ft (m) = 5.49 (18)



Part Number 1 Chamber System	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E26-07- ☐ -0	2.95 (75)	3.62 (92)	≈ 0.65 (0.96)
Part Number 2 Chamber System			
E26-2/45- ☐ -0	1.89/1.89 (48/48)	4.61 (117)	≈ 0.77 (1.14)
Part Number 3 Chamber System			
E26-3/45- ☐ -0	1.85/1.89/1.85 (47/48/47)	6.57 (167)	≈ 0.87 (1.30)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E26-07-100-0

	063	075	100	125	150	175	200	250
R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H +5	6.93 (176)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	21.65 (550)
D	6.77 (172)	7.24 (184)	8.23 (209)	9.21 (234)	10.20 (259)	11.18 (284)	12.17 (309)	14.13 (359)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.88 (505)	23.03 (585)	26.18 (665)	29.33 (745)	35.43 (900)

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E-Chain System® E-Z Chain
Series E26/Z26

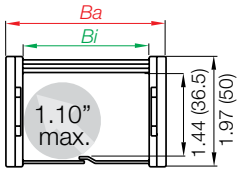
Series Z26
Split crossbar along the inner radius

Part Number Structure

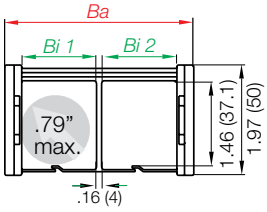
Z26- 07- 150- 0

- Color - Black
- Bending radius
- Width
- Series

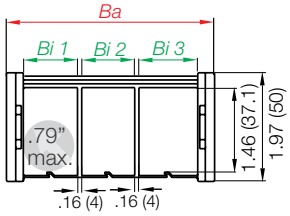
1 Chamber System



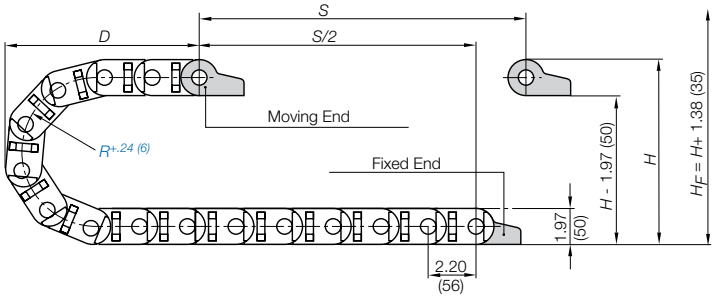
2 Chamber System



3 Chamber System



Supplement part number with required radius. Example: Z26-07-150-0
Pitch: 2.20 in. (56 mm) per link links/ft (m) = 5.49 (18)



Part Number 1 Chamber System	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
Z26-07- ☐ -0	2.95 (75)	3.62 (92)	≈ 0.65 (0.96)

Part Number 2 Chamber System			
Z26-2/45- ☐ -0	1.89/1.89 (48/48)	4.61 (117)	≈ 0.77 (1.14)

Part Number 3 Chamber System			
Z26-3/45- ☐ -0	1.85/1.89/1.85 (47/48/47)	6.57 (167)	≈ 0.87 (1.30)

Choose from the radii below for all of the above sizes
Radius (mm) Example: Z26-07-100-0

	063	075	100	125	150	175	200	250
R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H +5	6.93 (176)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	21.65 (550)
D	6.77 (172)	7.24 (184)	8.23 (209)	9.21 (234)	10.20 (259)	11.18 (284)	12.17 (309)	14.13 (359)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.88 (505)	23.03 (585)	26.18 (665)	29.33 (745)	35.43 (900)

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E-Z Chain Series E26/Z26 Mounting Brackets

Telephone 1-800-521-2747
Fax 1-401-438-7270

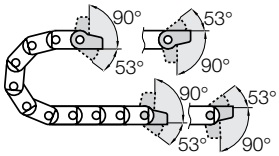
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Standard

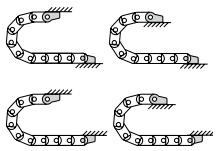
Option 1: pivoting

- Recommended for unsupported and gliding applications
- Space-restricted conditions
- Available with or without strain relief tiewrap plates
- Corrosion resistant

Moving end
26...3PZB



Fixed end
26...4PZB

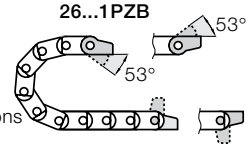


Possible installation configurations -

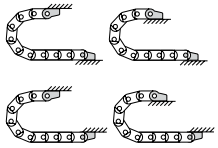
Option 2: locking

- Recommended for unsupported and gliding applications
- For high speed and/or accelerations
- Corrosion resistant

Moving end
26...1PZB



Fixed end
26...2PZB



Possible installation configurations -

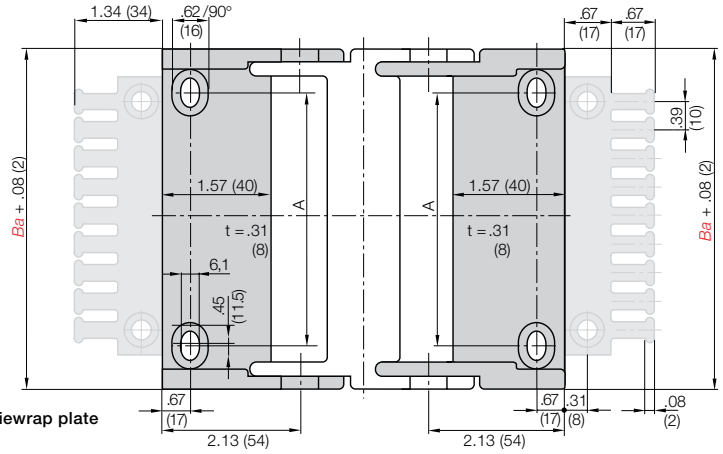
Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.

Part Number Structure

2607-	34	PZB	K1

- With 10 cable tiewraps
- With tiewrap plates
- Complete Set
  34 = Pivoting
  12 = Locking
- Mounting brackets for selected chain type



Full set, for both ends:
2607- 34 PZB Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
2607- 3 PZB Mounting bracket **with bore + tiewrap plate**
2607- 4 PZB Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
With Tiewrap Plates
Series E26/Z26:
2607-34PZB

Part No. Full Set (pivoting)
With Tiewrap Plates + 10 cable ties
Series E26/Z26:
2607-34PZBK1

Part No. Full Set (pivoting)
Without Tiewrap Plates
Series E26/Z26:
2607-34PZ

For Chain Type	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Number of Teeth
E26/Z26-07	2607- ☐ PZB	2607- ☐ PZBK1	2607- ☐ PZ	2.17	(55)	7
E26/Z26-2/45	2610- ☐ PZB	2610- ☐ PZBK1	2610- ☐ PZ	3.15	(80)	10
E26/Z26-3/45	2615- ☐ PZB	2615- ☐ PZBK1	2615- ☐ PZ	5.12	(130)	15

34 or 12

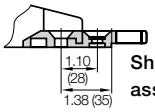
For pivoting brackets choose 34
For locking brackets choose 12
Example: 2607- 34 PZB

E-Chain System® E-Z Chain Series E26/Z26 Strain Relief

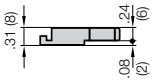
Strain relief for polymer mounting brackets (pivoting or locking)

The strain relief tiewrap plates can be snapped directly onto the mounting bracket. After bolting the mounting brackets to the machine, the strain relief tiewrap plates are firmly connected to the base. There is no need to bolt them on separately. Cable tiewraps secured to the cable and the tiewrap plate (teeth) provide proper strain relief and save time.

Tiewrap Plates



Shown assembled

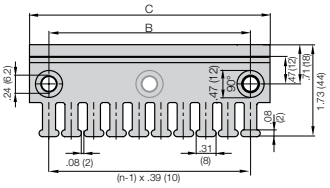


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



For more information please refer to strain relief section of Chapter 10

Cable tiewraps as individual parts

Cable tiewraps 100 pieces/bag	Width x Length in.	(mm)	Maximum Ø in.	(mm)	Tensile Strength lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)

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Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

E300
Z300

igus®

E-Chain System® E-Z Chain Series E300/Z300

1.91 1.91

Price Index

Series E300/Z300

Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

Assembly Tips

Just push the cables into the E-Chain using your thumb

Other Installation Methods

Vertical, hanging ≤ 32.8 ft (10 m)
Vertical, standing ≤ 4.92 ft (1.5 m)
Side-mounted, unsupp. ≤ 1.64 ft (0.5 m)
Rotary requires further calculation

Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- If high loads and long unsupported lengths are present
  ➤ **Series 340/350 E2 Medium**

Features & Benefits

1. Limited torsion tolerance
2. Cable-friendly interior
3. Large pins for long service life
4. Very easy to fill - cables only have to be pushed in
5. Dirt-repellent exterior
6. "E" Series features split crossbar along the outer radius
7. Integrated strain relief option
8. Patented push button design holds the links together
9. "Z" Series features split crossbar along the inner radius
10. Interior separation possible
11. 1-, 2- or 3-chamber system available

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **E300-075-100-0**	E-Chain®
1 Set **3075-34PZB**	Mounting Bracket

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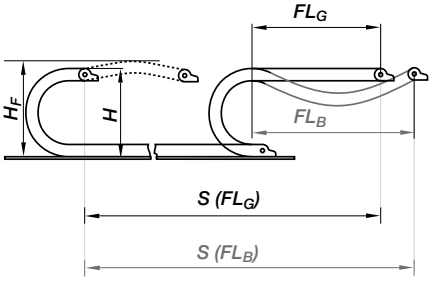
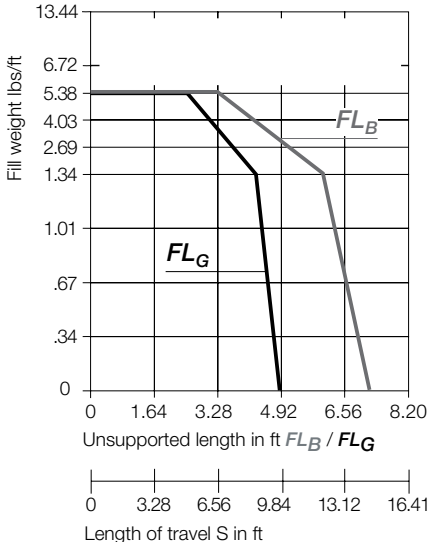
E-Chain System® E-Z Chain
Series E300/Z300
Installation Dimensions

Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1



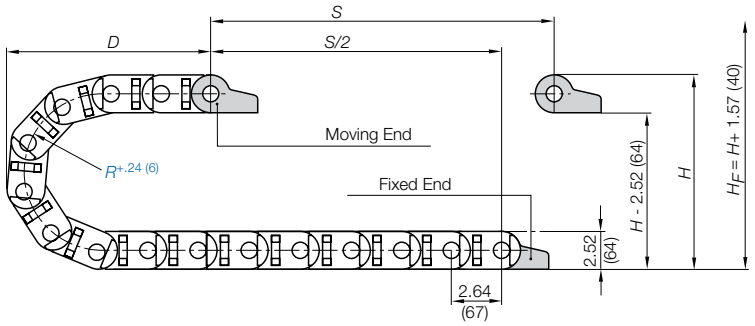


Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height



Pitch per link: = 2.64" (67 mm)
Links per ft (m): = 4.57 (15)
For center mount applications:
Chain length = $_{-}^{S}/2 + K$

The required clearance height: ***H_F* = *H* + 1.57 in. (40 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)
H^{+4}	8.43 (214)	10.39 (264)	12.36 (314)	14.33 (364)	18.27 (464)	22.20 (564)	26.14 (664)
D	8.19 (208)	9.17 (233)	10.16 (258)	11.14 (283)	13.11 (333)	15.08 (383)	17.05 (433)
K	14.57 (370)	17.72 (450)	20.87 (530)	24.02 (610)	30.12 (765)	36.22 (920)	42.52 (1080)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material (E-Chain®) - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class (E-Chain®), igumid NB	VDE 0304 IIC UL94 V2
Flammability Class (mounting brackets), igumid G*	VDE 0304 IIC UL94 HB

*Available in igumid NB upon request, please consult igus® for delivery time

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

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E-Chain System® E-Z Chain
Series E300/Z300

Telephone 1-800-521-2747
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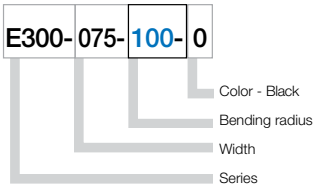
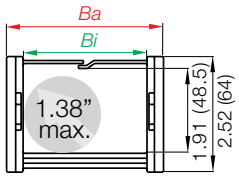
Series E300
Split crossbar along the outer radius

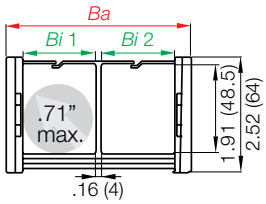
Part Number Structure



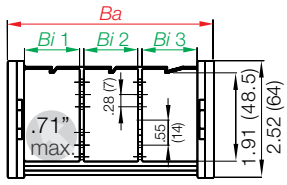
Single Chamber System



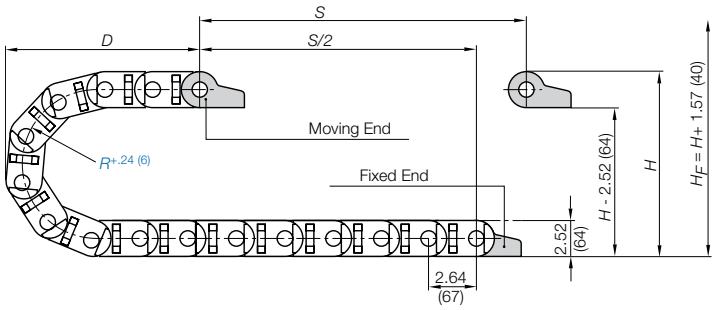
2 Chamber System



3 Chamber System with optional shelving



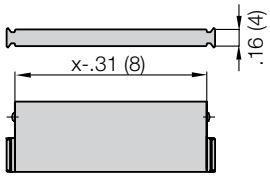
Supplement part number with required radius. Example: E300-075-100-0
Pitch: 2.64 in. (67 mm) per link links/ft (m) = 4.57 (15)



Shelving

Unassembled
Part number 386-54

Assembled
Part number 387-54



Part Number 1 Chamber System	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E300-075-☐-0	2.95 (75)	3.74 (95)	≈ 1.08 (1.60)
Part Number 2 Chamber System			
E300-2/45-☐-0	1.89/1.89 (48/48)	4.72 (120)	≈ 1.20 (1.78)
Part Number 3 Chamber System			
E300-3/45-☐-0	1.85/1.81/1.85 (47/46/47)	6.69 (170)	≈ 1.29 (1.92)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E300-075-100-0

	075	100	125	150	200	250	300
R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)
H +5	8.43 (214)	10.39 (264)	12.36 (314)	14.33 (364)	18.27 (464)	22.20 (564)	26.14 (664)
D	8.19 (208)	9.17 (233)	10.16 (258)	11.14 (283)	13.11 (333)	15.08 (383)	17.05 (433)
K	14.57 (370)	17.72 (450)	20.87 (530)	24.02 (610)	30.12 (765)	36.22 (920)	42.52 (1080)

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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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E-Chain System® E-Z Chain
Series E300/Z300

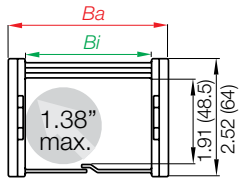
Series Z300
Split crossbar along the inner radius

Part Number Structure

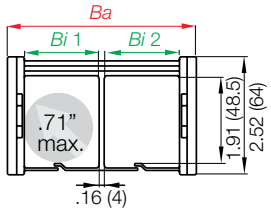
Z300- 075- 100- 0

- Color - Black
- Bending radius
- Width
- Series

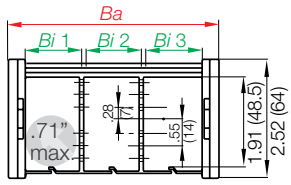
Single Chamber System



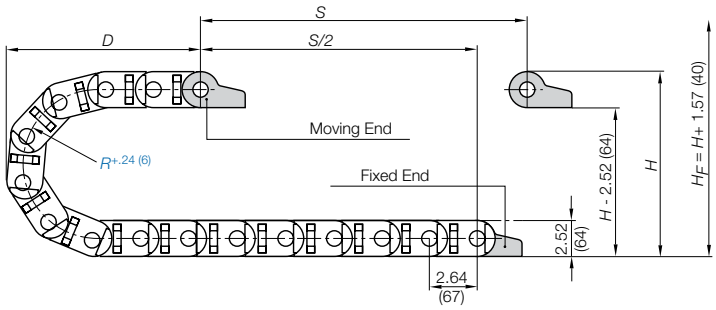
2 Chamber System



3 Chamber System



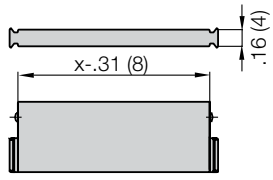
Supplement part number with required radius. Example: Z300-075-100-0
Pitch: 2.64 in. (67 mm) per link links/ft (m) = 4.57 (15)



Shelving

Unassembled
Part number 386-54

Assembled
Part number 387-54



Part Number 1 Chamber System	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
Z300-075-☐-0	2.95 (75)	3.74 (95)	≈ 1.08 (1.60)
Part Number 2 Chamber System			
Z300-2/45-☐-0	1.89/1.89 (48/48)	4.72 (120)	≈ 1.20 (1.78)
Part Number 3 Chamber System			
Z300-3/45-☐-0	1.85/1.81/1.85 (47/46/47)	6.69 (170)	≈ 1.29 (1.92)

Choose from the radii below for all of the above sizes
Radius (mm) Example: Z300-075-100-0

	075	100	125	150	200	250	300
R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)
H +5	8.43 (214)	10.39 (264)	12.36 (314)	14.33 (364)	18.27 (464)	22.20 (564)	26.14 (664)
D	8.19 (208)	9.17 (233)	10.16 (258)	11.14 (283)	13.11 (333)	15.08 (383)	17.05 (433)
K	14.57 (370)	17.72 (450)	20.87 (530)	24.02 (610)	30.12 (765)	36.22 (920)	42.52 (1080)

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

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igus®

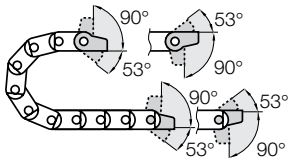
E-Chain System® E-Z Chain Series E300/Z300 Mounting Brackets

Standard

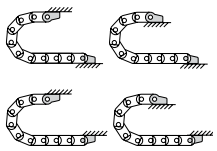
Option 1: pivoting

- Recommended for unsupported and gliding applications
- Space-restricted conditions
- Available with or without strain relief tiewrap plates
- Corrosion resistant

Moving end
3...3PZB



Fixed end
3...4PZB

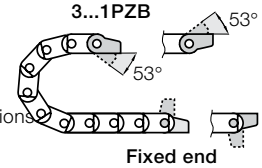


Possible installation configurations -

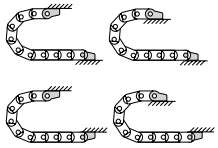
Option 2: locking

- Recommended for unsupported and gliding applications
- For high speed and/or accelerations
- Corrosion resistant

Moving end
3...1PZB



Fixed end
3...2PZB



Possible installation configurations -

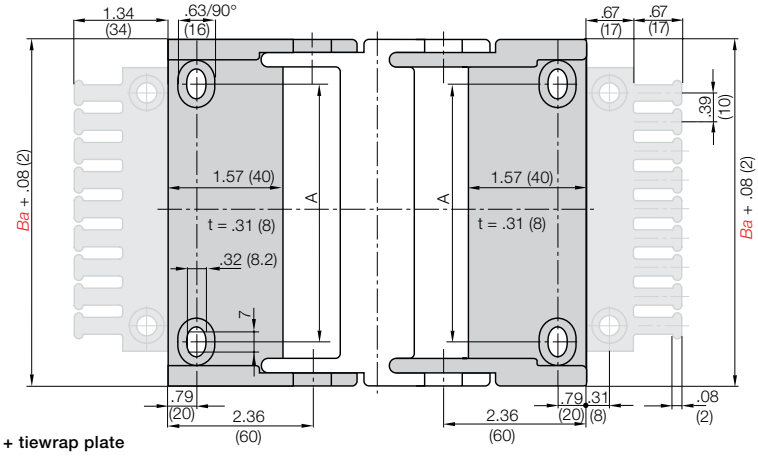
Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.

Part Number Structure

3075- | 34 | PZB | K1

- With 10 cable tiewraps
- With tiewrap plates
- Complete Set
  34 = Pivoting
  12 = Locking
- Mounting brackets for selected chain type



Full set, for both ends:
3075- 34 PZB Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
3075- 3 PZB Mounting bracket **with bore + tiewrap plate**
3075- 4 PZB Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
With Tiewrap Plates
Series E300, Z300:
3075-34PZB

Part No. Full Set (pivoting)
With Tiewrap Plates + 10 cable ties
Series E300, Z300:
3075-34PZBK1

Part No. Full Set (pivoting)
Without Tiewrap Plates
Series E300, Z300:
3075-34PZ

For Chain Type	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Number of Teeth
E300/Z300-075	3075- ☐ PZB	3075- ☐ PZBK1	3075- ☐ PZ	2.09	(53)	7
E300/Z300-2/45	3100- ☐ PZB	3100- ☐ PZBK1	3100- ☐ PZ	3.07	(78)	10
E300/Z300-3/45	3150- ☐ PZB	3150- ☐ PZBK1	3150- ☐ PZ	5.04	(128)	15

34 or 12

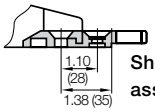
For pivoting brackets choose 34
For locking brackets choose 12
Example: 3075- 34 PZB

E-Chain System® E-Z Chain Series E300/Z300 Strain Relief

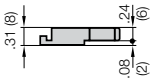
Strain relief for polymer mounting brackets (pivoting or locking)

The strain relief tiewrap plates can be snapped directly onto the mounting bracket. After bolting the mounting brackets to the machine, the strain relief tiewrap plates are firmly connected to the base. There is no need to bolt them on separately. Cable tiewraps secured to the cable and the tiewrap plate (teeth) provide proper strain relief and save time.

Tiewrap Plates



Shown assembled

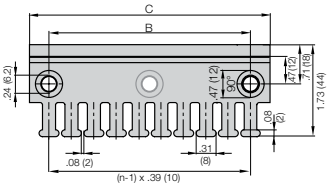


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



For more information please refer to strain relief section of Chapter 10

Cable tiewraps as individual parts

Cable tiewraps 100 pieces/bag	Width x Length in.	(mm)	Maximum Ø in.	(mm)	Tensile Strength lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

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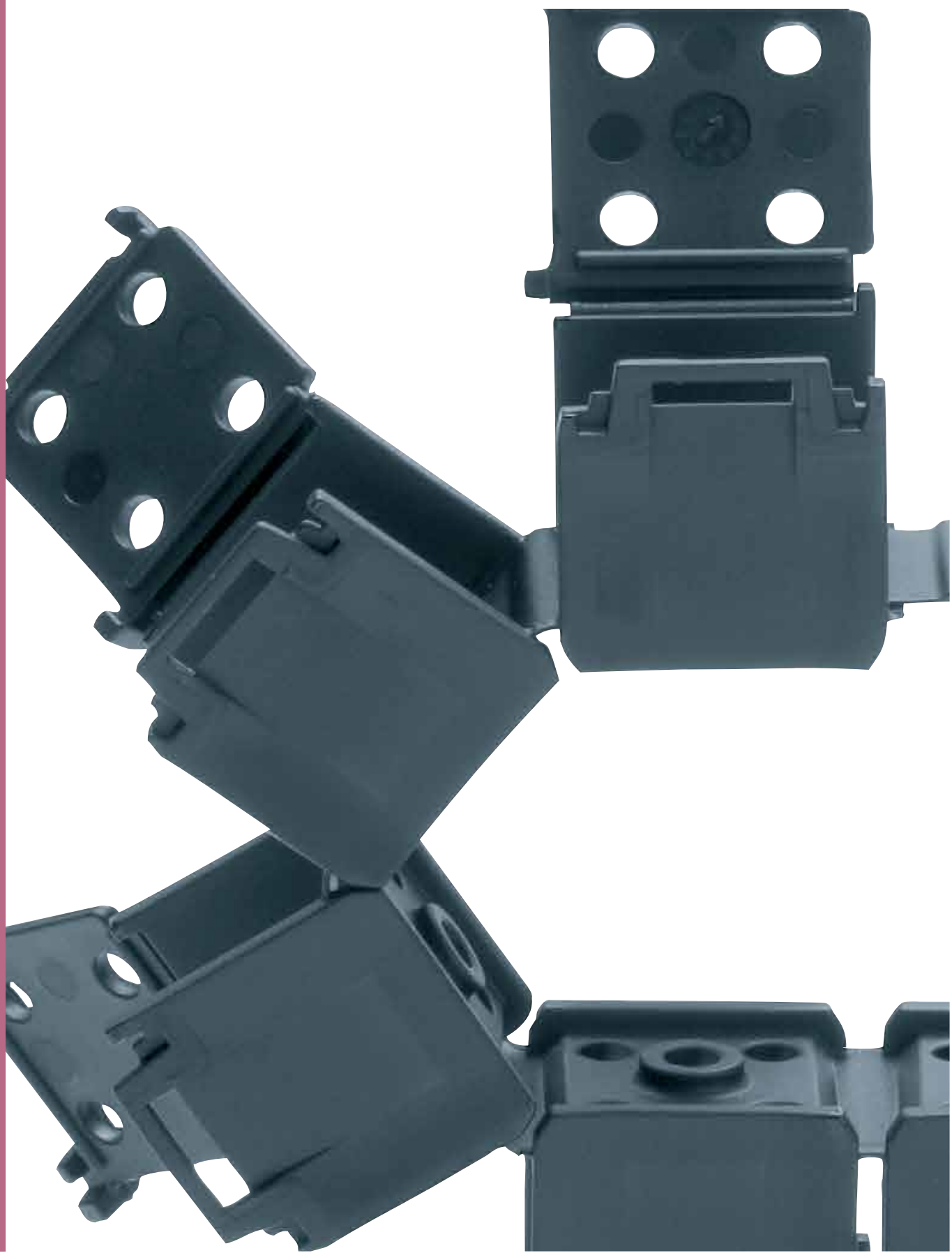

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igus®

System E-1

E-Chain® Band, Modular

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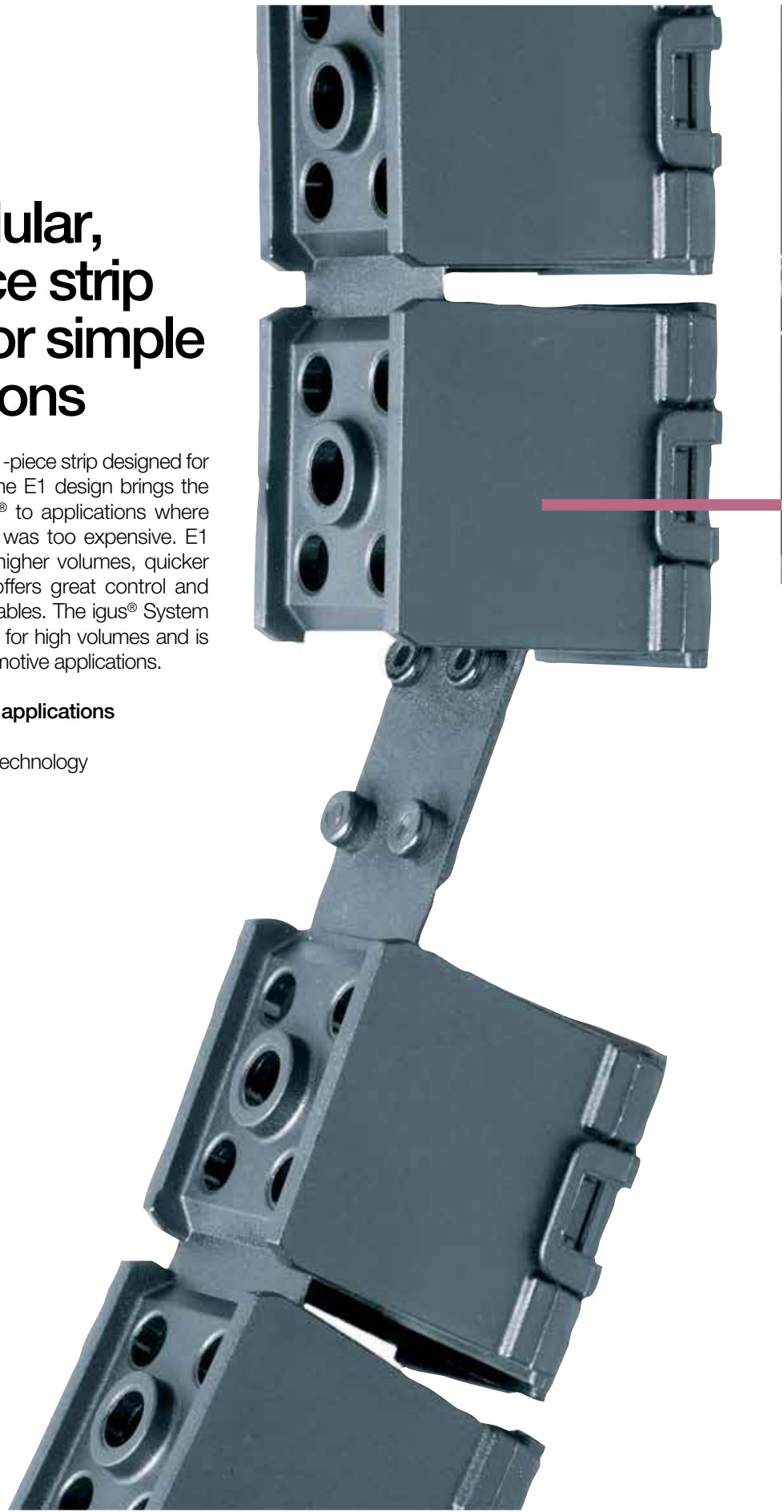
E1- Modular, one-piece strip design for simple applications

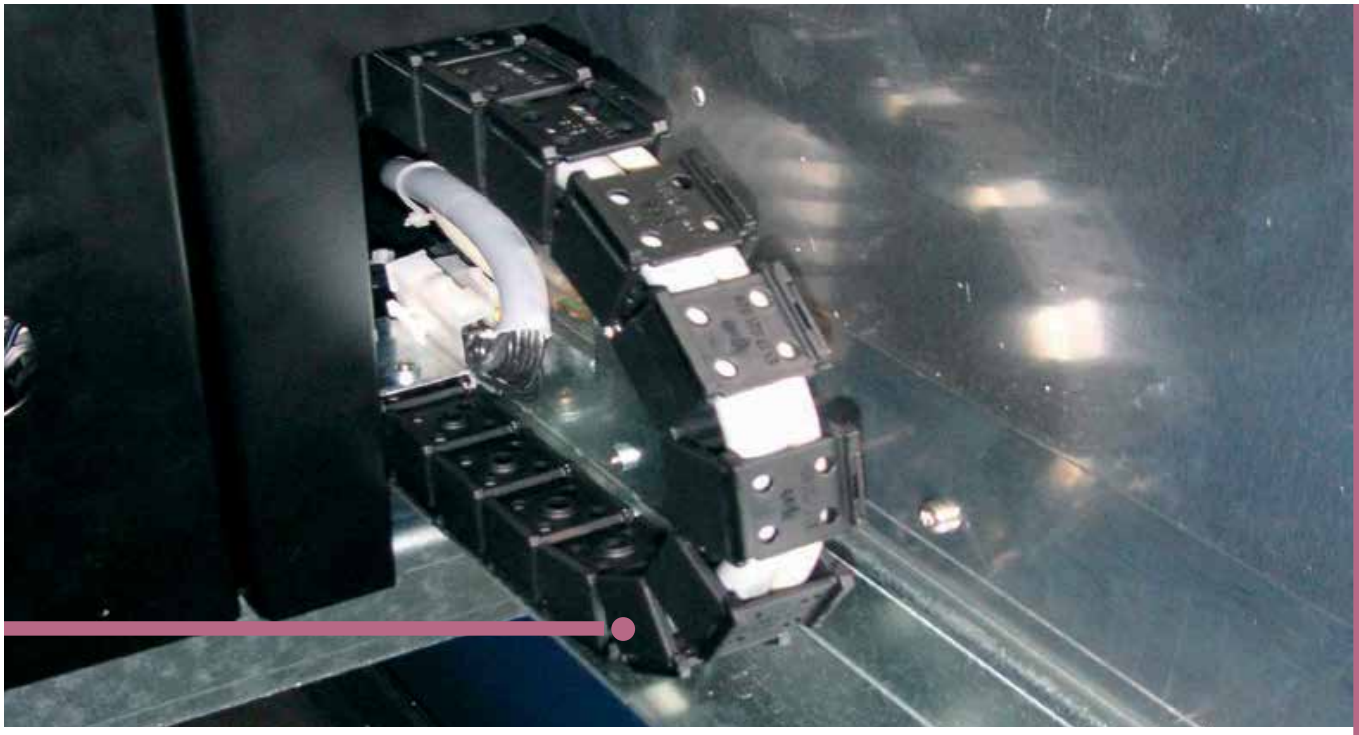
E1: E-Chain® modular, 1-piece strip designed for simple applications - The E1 design brings the benefits of an E-Chain® to applications where this solution previously was too expensive. E1 is more economic for higher volumes, quicker to assemble and still offers great control and protection for moving cables. The igus® System E1 is very cost effective for high volumes and is especially ideal for automotive applications.

Typical industries and applications

- Automotive
- Office Solutions and technology
- Automation
- Electric equipment
- Machine-building

UL94-V2 classifications

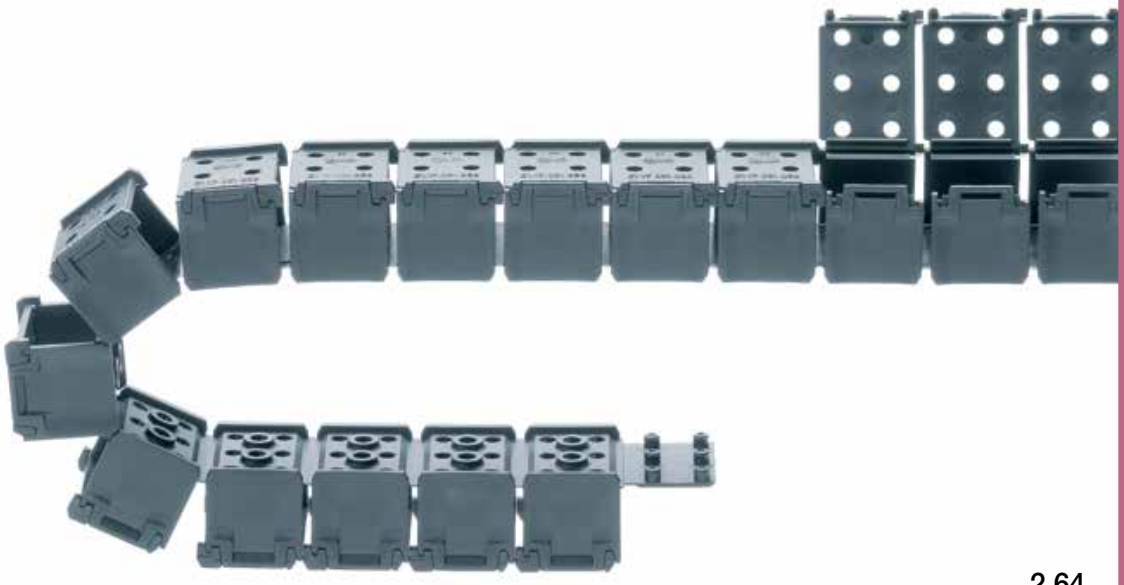




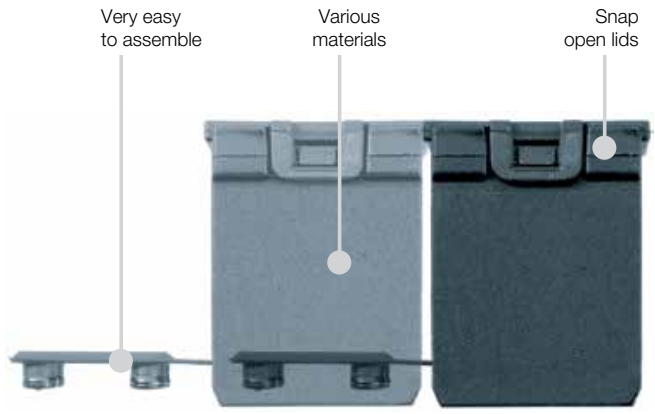
Harnessed igus® System E1 in a bottle deposit machine

Series E1-17-021-028 in an electric wheelchair - cable supply on the scissor lifting system

The igus®-System E1 is very cost-effective at high quantities and ideal for automotive applications



E-Chain System®
System E1

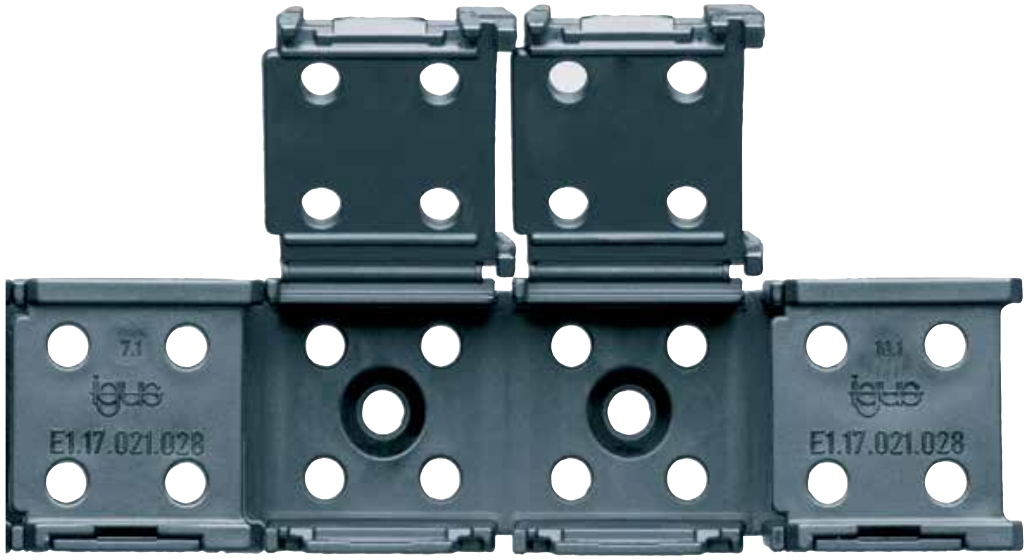


Modular, 1-piece strip design for simple applications

- Economic solution for high volumes
- A universal and easily adaptable E-Chain® concept
- E1: E-Chain® on one strip
- Easy shortening/lengthening through modular strip design
- Easy to snap open
- Strip connectors
- Easy attachment at each end
- Various materials available
- You can find more technical data about the material, chemical resistance, temperatures

➤ **Design, Chapter 1**

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*		Segment length
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	*in.*	(mm)	mm
E1-10-013-	.39	10	.51	13	.65	16.5	.61	15.5	.71	18	200
E1-17-021-	.67	17	.83	21	1.02	26	.98	25	1.10	28	255
E1-17-031-	.67	17	1.22	31	1.42	36	.98	25	1.10	28	204
E1-17-044-	.67	17	1.73	44	1.93	49	.98	25	1.10	28	255
E1-18-015-	.71	18	.59	15	.79	20	1.02	26	1.10	28	127.5
E1-20-015-	.79	20	.59	15	.87	22	1.06	27	1.10	28	250

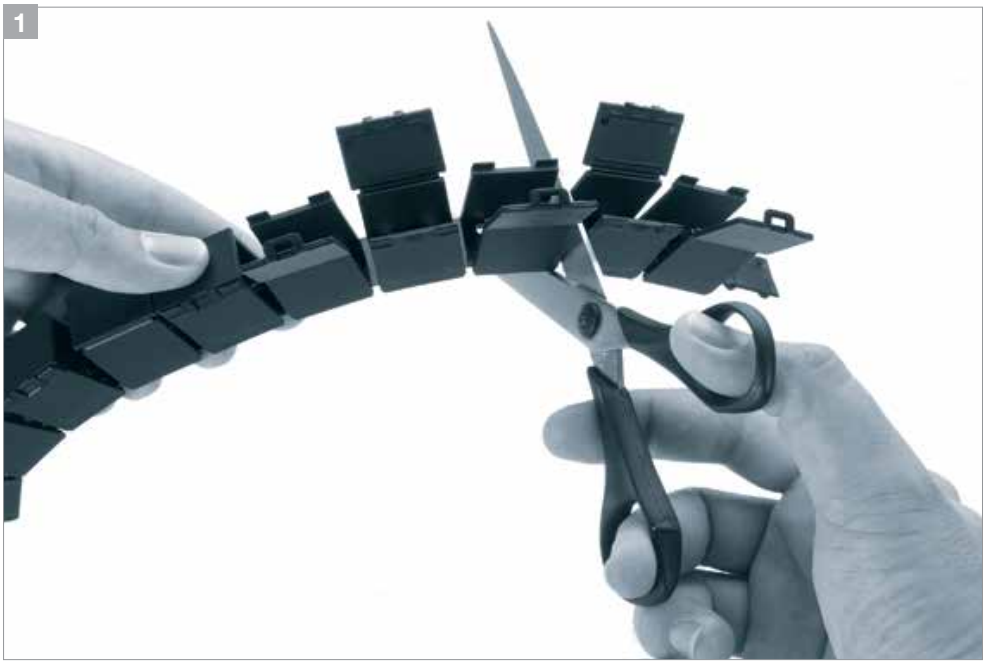


System E1 - E-Chain® - snap-open along outer radius

E-Chain System®
System E1

Shortening

1



Push and click...

Lengthening

2

Press in cable

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E1

igus®

E-Chain System® E1
Series E1-10, E1-17, E1-18, E1-20

.39 .67 .71 .79

Price Index

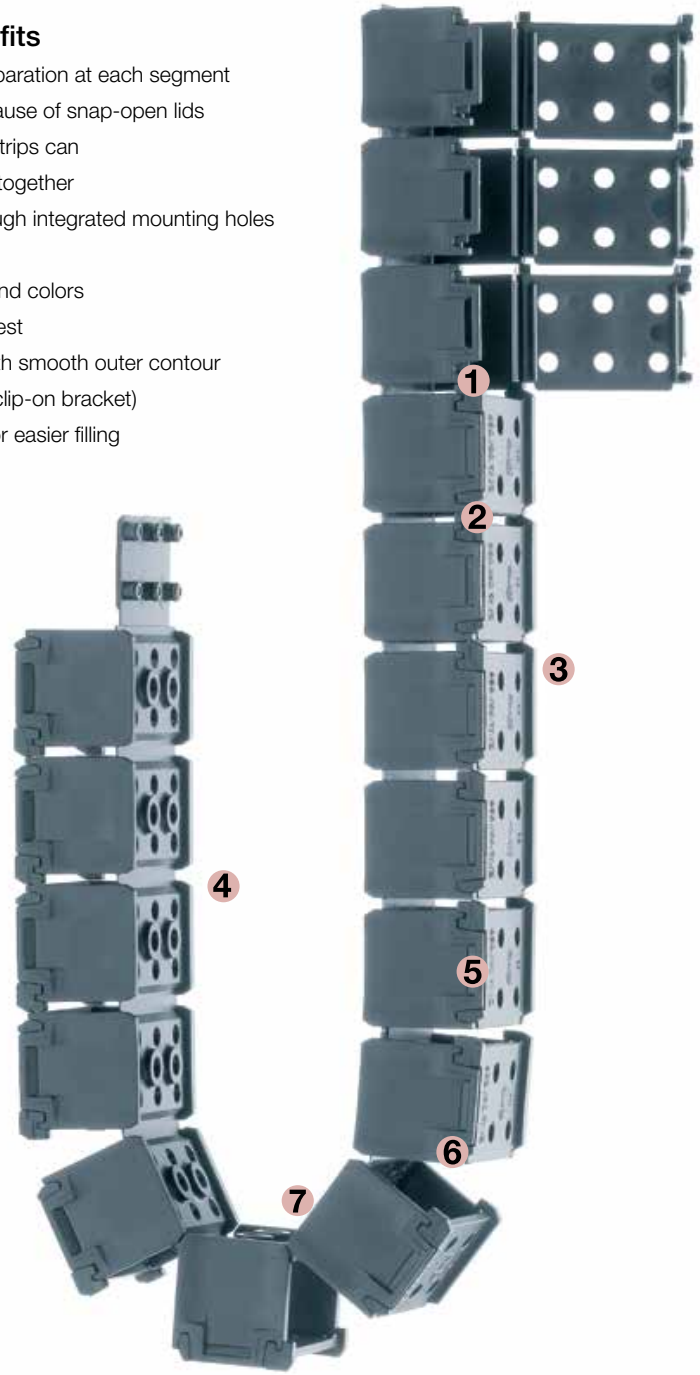
Series E1

Special Features / Options

Flammability Class
VDE 0304 IIC UL94 V2

Features & Benefits

1. Easy to shorten - separation at each segment
2. Very easy to fill because of snap-open lids
3. Easy to lengthen - strips can simply be snapped together
4. Easy fastening through integrated mounting holes
5. Low-price E-Chain®
6. Different materials and colors available upon request
7. Compact design with smooth outer contour
8. Strain relief option (clip-on bracket)
9. All lids snap open for easier filling



Usage Guidelines

- If simple filling is required
- If an economical E-Chain® is required
- If low assembly cost is required
- For lower duty or cycle life

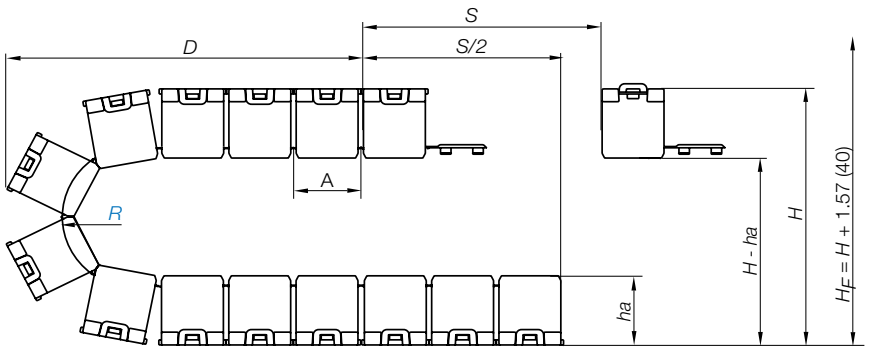
- High load or high cycle applications
  - ➤ **Series E-Z Chain**
  - ➤ **Series Zipper**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

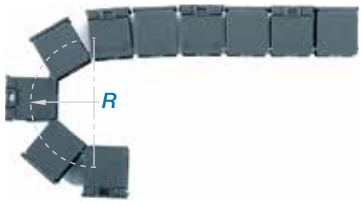
3.28 ft (1 m) **E1-17-021-028-0** = 4 x 10.04” (255 mm) band		**E-Chain®**

E-Chain System® E1
Series E1-10, E1-17, E1-18, E1-20
Installation Dimensions



The required clearance height: $H_F = H + 1.57$ in. (40 mm)

Bending Radius for Series	E1-10	E1-17	E1-18	E1-20
R	.71 (018)	1.10 (028)	1.10 (028)	1.10 (028)
H	2.44 (62)	3.62 (92)	3.62 (92)	3.62 (92)
D	2.60 (66)	2.99 (76)	2.99 (76)	2.99 (76)
K	3.94 (100)	4.72 (120)	4.72 (120)	4.72 (120)



Part No. structure

E1-17- 021- 028- 0

- Color black
- Bending radius
- Width
- *hi*
- Series

Material (E-Chain®) - permitted temperature °F	application oriented, upon request
Flammability Class (E-Chain®), igumid NB	VDE 0304 IIC UL94 V2

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Technical Data

Details of material properties
➤ Chapter 1

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igus®

E-Chain System® E1
Series E1-10
Product Range

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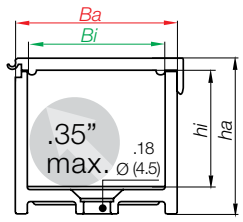
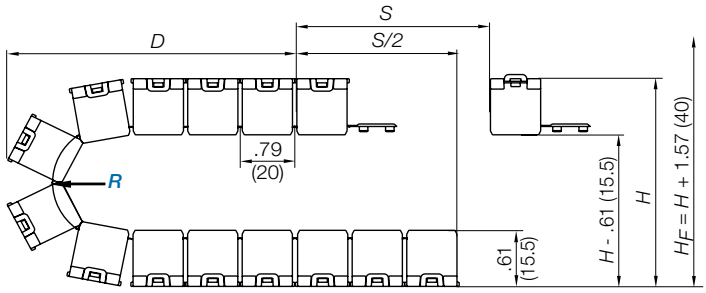
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Series E1-10 - Snap-open along the outer radius





Pitch per link: = .79" (20 mm)
Chain length = $_{S}/_{2}$ + K

Supplement part number with required radius. Example: E1-10-013-018-0
Pitch: .79 in. (20 mm) per link)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/segment (kg/segment)
E1-10-013-[ ]-0	.20 (13)	.34 (16.5)	≈ 0.0362 (0.0164)

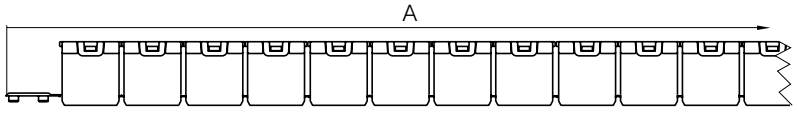
Choose from the radii below for the above size
Radius (mm) Example: E1-10-013-018-0

018

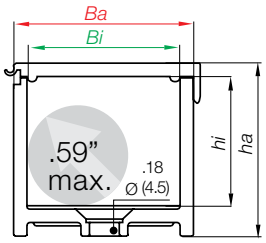
R	.71 (018)
H	2.44 (62)
D	2.60 (66)
K	3.94 (100)

0=Standard color black. For other colors see Chapter 1

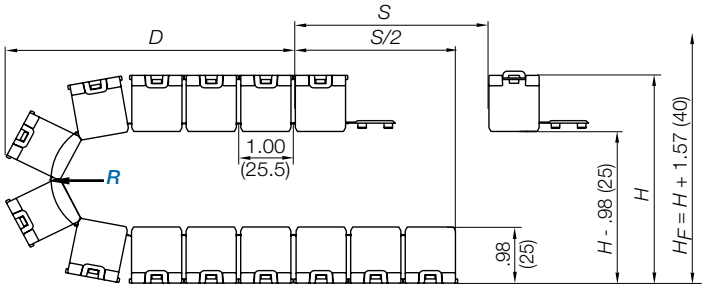
Part Number	Segment Length Dimension A mm	No. of links/segment	No. of segments/m
E1-10-013-018-0	200	10	5 (1000 mm)



E-Chain System® E1
Series E1-17
Product Range



Series E1-17 - Snap-open along the outer radius



Pitch per link: = 1.00" (25.5 mm)
Chain length = $_{S}/_{2}$ + K

Supplement part number with required radius. Example: E1-17-021-028-0
Pitch: 1.00 in. (25.5 mm) per link

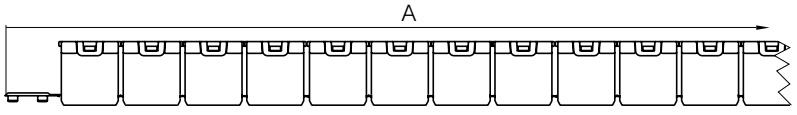
Part Number	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/segment (kg/segment)
E1-17-021-☐-0	.83 (21)	1.02 (26)	≈ 0.1054 (0.0478)
E1-17-031-☐-0	1.22 (31)	1.42 (36)	≈ 0.1014 (0.0460)
E1-17-044-☐-0	1.73 (44)	1.93 (49)	≈ 0.1532 (0.0695)

Choose from the radii below for the above size
Radius (mm) Example: E1-17-021-028-0

028	
R	1.10 (028)
H	3.62 (92)
D	2.99 (76)
K	4.72 (120)

0=Standard color black. For other colors see Chapter 1

Part Number	Segment Length Dimension A mm	No. of links/segment	No. of segments/m
E1-10-021-028-0	255	10	4 (1020 mm)
E1-17-031-028-0	204	8	5 (1020 mm)
E1-17-044-028-0	255	10	4 (1020 mm)



Mounting brackets for the Series E1-17-021

Compact, universal mounting bracket for E1-17-021: **Part No. E1-170-021-TS** - easy attachment

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

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E-Chain System® E1
Series E1-18
Product Range

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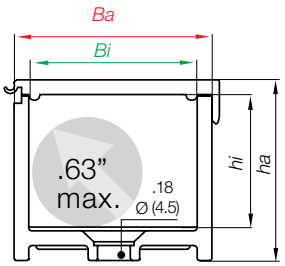
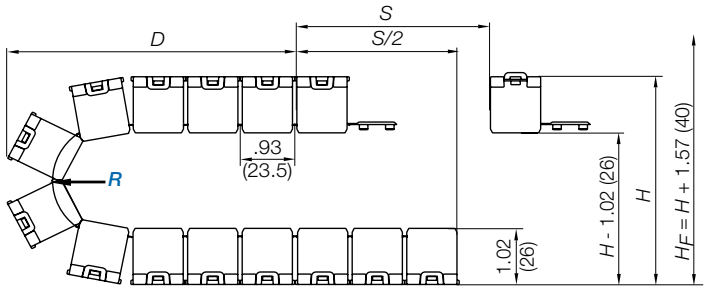
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Series E1-10 - Snap-open along the outer radius





Pitch per link: = .93" (23.5 mm)
Chain length = $\frac{S}{2}$ + K

Supplement part number with required radius. Example: E1-18-015-028-0
Pitch: .93 in. (23.5 mm) per link)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/segment (kg/segment)
E1-18-015-[ ]-0	.59 (15)	.79 (20)	≈ 0.0373 (0.0169)

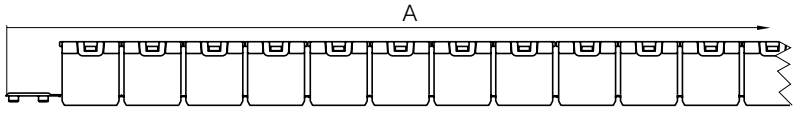
Choose from the radii below for the above size
Radius (mm) Example: E1-18-015-028-0

028

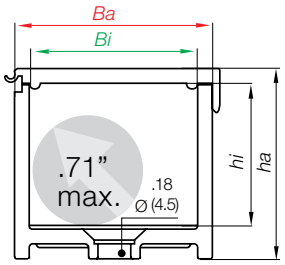
R	1.10 (028)
H	3.62 (92)
D	2.99 (76)
K	4.72 (120)

0=Standard color black. For other colors see Chapter 1

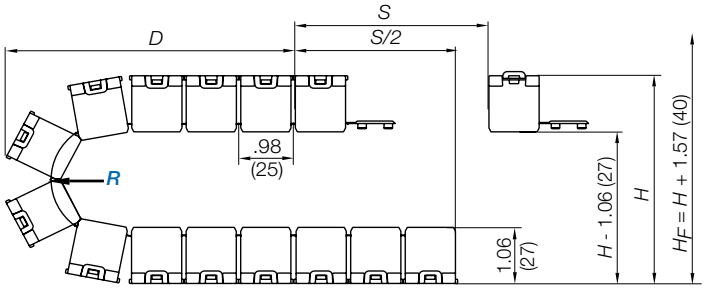
Part Number	Segment Length Dimension A mm	No. of links/segment	No. of segments/m
E1-18-015-028-0	101	4	10 (1010 mm)



E-Chain System® E1
Series E1-20
Product Range



Series E1-20 - Snap-open along the outer radius
Lids open in alternate directions



Pitch per link: = .98" (25 mm)
Chain length = $\frac{S}{2}$ + K

Supplement part number with required radius. Example: E1-20-015-028-0
Pitch: .98 in. (25 mm) per link

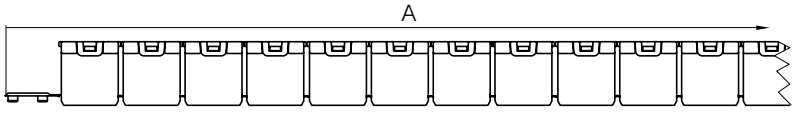
Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/segment (kg/segment)
E1-20-015-□-0	.59 (15)	.87 (22)	≈ 0.0977 (0.0443)

Choose from the radii below for the above size
Radius (mm) Example: E1-20-015-028-0

028	
R	1.10 (028)
H	3.62 (92)
D	2.99 (76)
K	4.72 (120)

0=Standard color black. For other colors see Chapter 1

Part Number	Segment Length Dimension A mm	No. of links/segment	No. of segments/m
E1-20-015-028-0	250	10	4 (1000 mm)



PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

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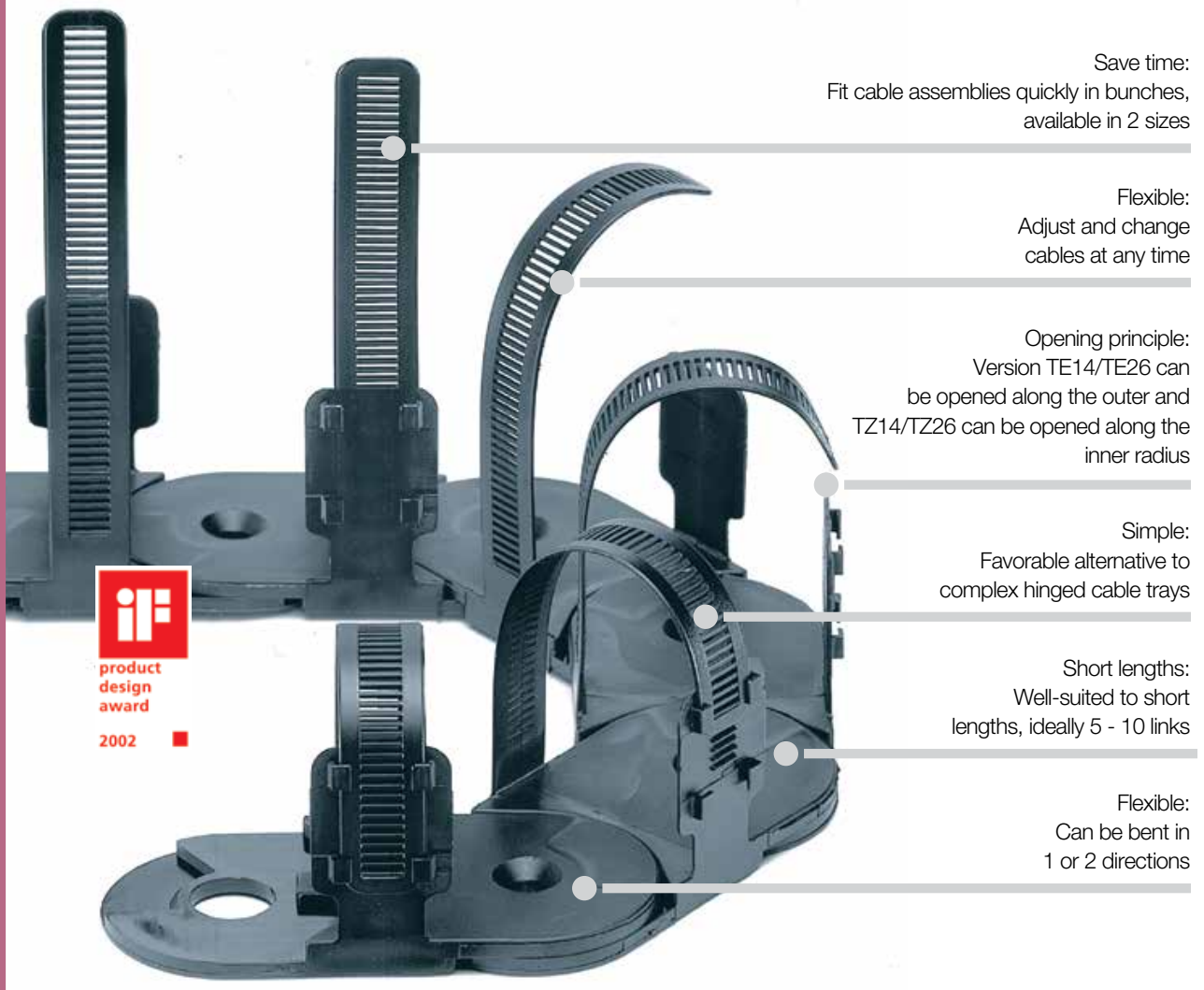
igus®

SnapChain

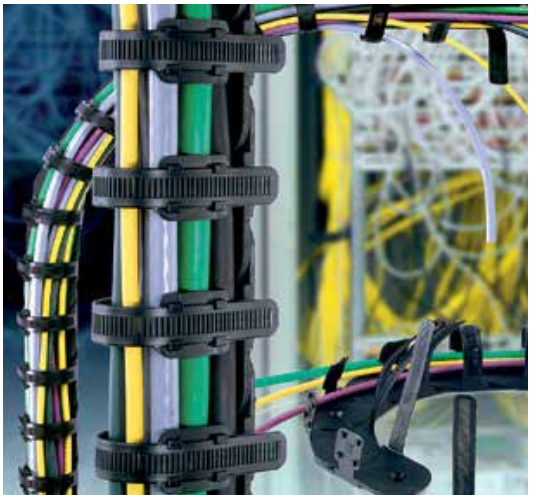


Fit cable assemblies quickly in bunches - SnapChain

igus® SnapChain is an economical E-Chain® for low-duty applications. SnapChains are easy to assemble and cost-effective. An ideal solution for less demanding applications.

Typical industries and applications

- Control cabinets
- Electrical equipment
- Computer cubicles
- Office furniture
- Wherever cables are moved infrequently



E-Chain System® - SnapChain
Series TE-14/TZ-14, TE-26/TZ-26
Product Range

Version TE -
Loops to be opened along the outer radius

Version TZ -
Loops to be opened along the inner radius

Series	Loop length		Pitch		Bending radius *R*	
	in.	(mm)	in.	(mm)	*in.*	(mm)
TE14-50	1.97	(50)	1.20	(30.5)	1.10 - 4.92	(028-125)
TE26-120	4.72	(120)	2.20	(56)	2.48 - 7.87	(063-200)
TZ14-50	1.97	(50)	1.20	(30.5)	1.10 - 4.92	(028-125)
TZ26-120	4.72	(120)	2.20	(56)	2.48 - 7.87	(063-200)

Material (E-Chain®) - permitted temperature °F	-40°F up to +176°F (-40°C up to +80°C)
Flammability Class (E-Chain®), igumid NB	VDE 0304 IIC UL94 V2

Technical Data

Details of material properties
➤ **Chapter 1**

Order example | Order key and color options based on Series TE26.

Order example for complete E-Chain® 3.28 ft. (1.0 m), color black:

E-Chain® 3.28 ft. (1.0 m) Please indicate chain-lengths or number of links

Order text: 1.0 m TE26-120-100-0

Part No. Structure

TE26-120-100-0 Version TE to be opened along the outer radius
TZ26-120-100-0 Version TZ to be opened along the inner radius

Color index (standard black)
Bending radius *R*
Length of loops
Series / Type
Version „TE“ or „TZ“

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E-Chain System® - SnapChain
Series TE-14, TZ-14
Product Range

Opens along the outer radius

Part Number	Weight lbs/ft (kg/m)
TE14-50-□-0	≈ 0.1008 (0.15)

Choose from the radii below for the above size

Radius (mm) Example: TE14-50-028-0

	028	038	048	075	100	125
R	1.10 (028)	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.92 (125)

0 = Standard color black.
For other colors see Chapter 1

Opens along the inner radius

Part Number	Weight lbs/ft (kg/m)
TZ14-50-□-0	≈ 0.1008 (0.15)

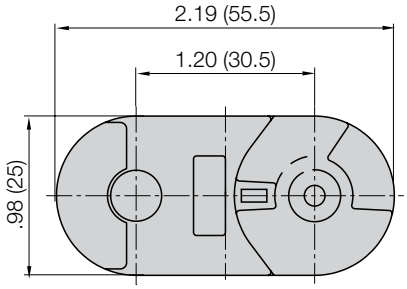
Choose from the radii below for the above size

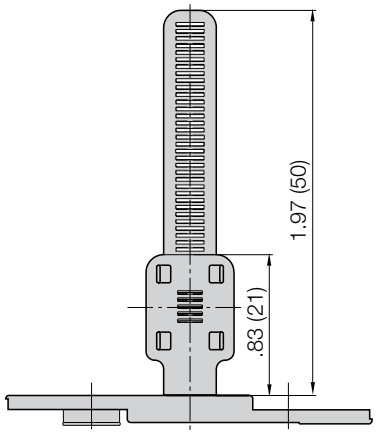
Radius (mm) Example: TE14-50-028-0

	075	100	125	150	200	250
R	1.10 (028)	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.92 (125)

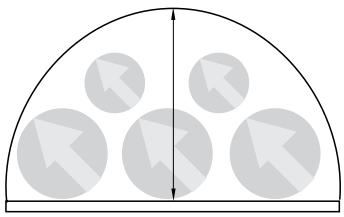
0 = Standard color black.
For other colors see Chapter 1

Dimensions





Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10 (33)
Chain length = $\frac{s}{2} + K$



Cable package max.: 18 mm

Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® - SnapChain
Series TE-26, TZ-26
Product Range

Opens along the outer radius

Part Number	Weight lbs/ft (kg/m)
TE26-120-☐-0	≈ 0.2889 (0.43)

Choose from the radii below for the above size

Radius (mm) Example: TE14-50-028-0

063	075	100	125	150	200
2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)

0 = Standard color black.
For other colors see Chapter 1

Opens along the inner radius

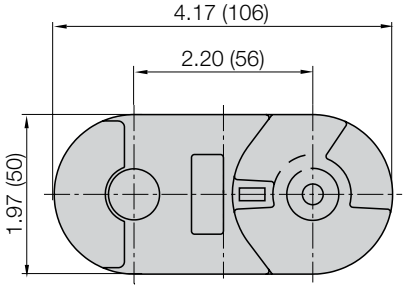
Part Number	Weight lbs/ft (kg/m)
TZ26-120-☐-0	≈ 0.2889 (0.15)

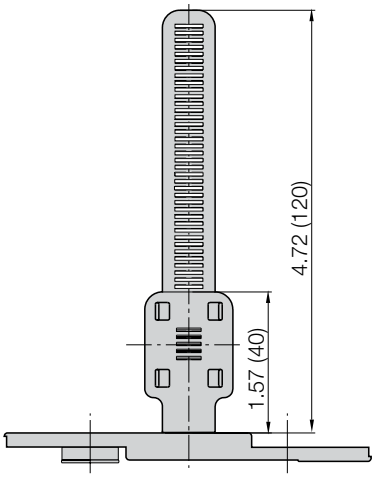
Choose from the radii below for the above size

Radius (mm) Example: TE14-50-028-0

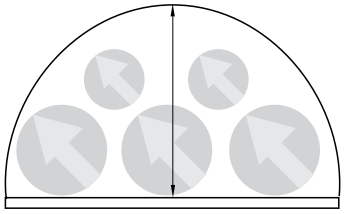
063	075	100	125	150	200
2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)

0 = Standard color black.
For other colors see Chapter 1





Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.45 (18)
Chain length = $_{-}^{s}/_{2}$ +K



Cable package max.: 47 mm

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

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igus®

Zipper Chain

Zipper - Fast and easy access to cables and hoses

iF-Design Award

Zipper E-Chains® enable lightning-fast opening and closing of lids. Different from the typical E-Chain® design, which features side links and crossbars, Zipper chains are built with interconnected lids. These lids pull back like a zipper, removing the top section of the E-Chain® in one uniform piece at any point along the length of the carrier. Cable installation and removal—especially for cables equipped with preassembled connectors—is both fast and simple because the unique design eliminates the need to snake cables through the carrier.

Typical industries and applications

- Pick & place robots
- Semi-conductor machines
- Linear motors, actuators
- Measuring equipment
- Machine tools (Zipper E-Tube)

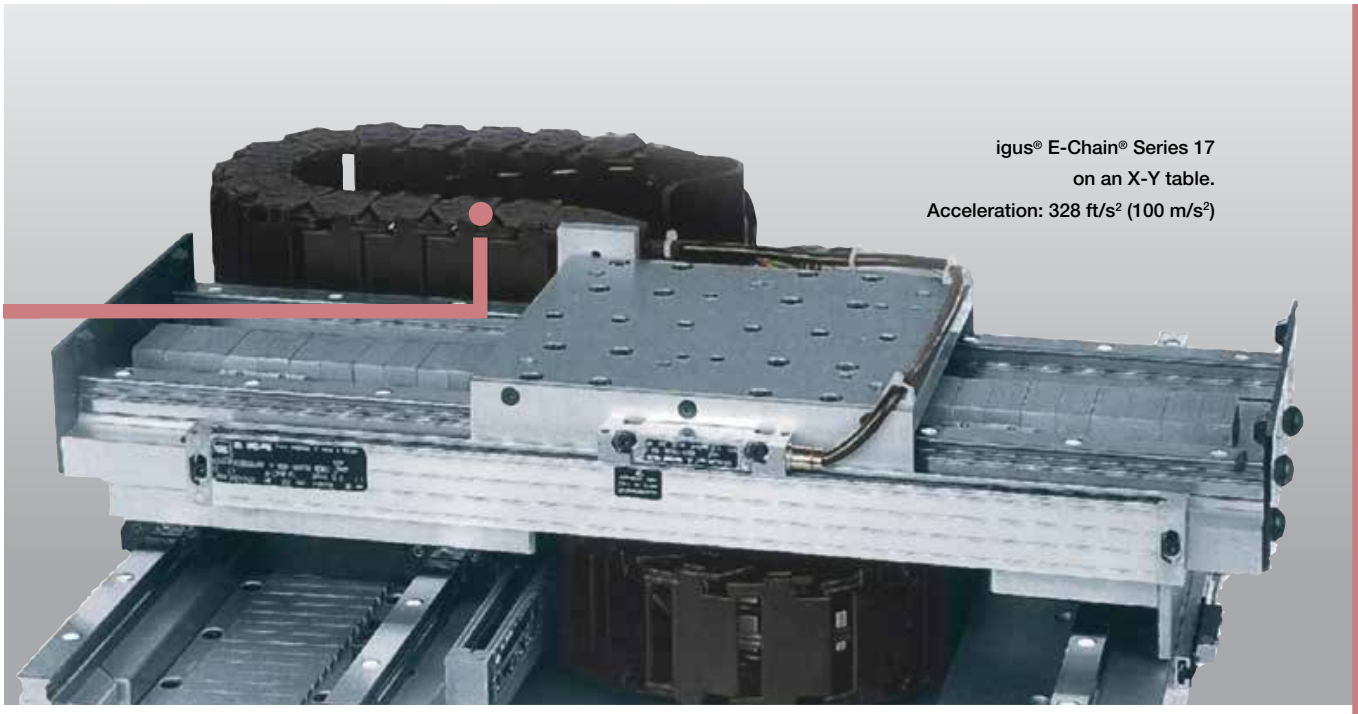
Clean-Room — Cleanroom Class 1 (ISO class 3) for Zipper Series 15, tested by the Dryden Engineering Company, CA

Flammability Class VDE 0304 IIC UL94 HB

iF-Design Award Winner

Low-noise

Zipper — Fast Opening and Closing with “Zipper”

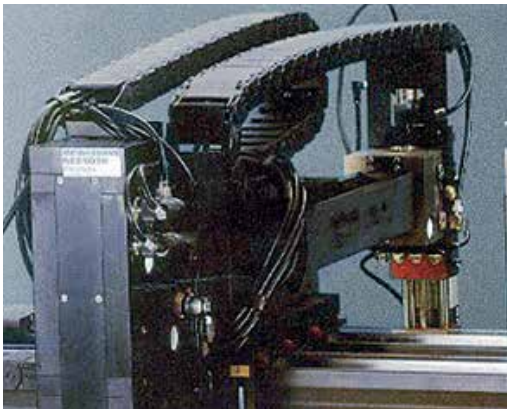


igus® E-Chain® Series 17
on an X-Y table.
Acceleration: 328 ft/s² (100 m/s²)

Lightning fast opening and closing with “Zipper”

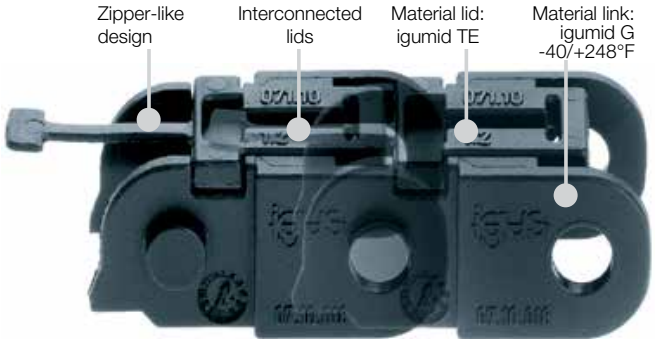
- Reduced assembly-time
- Zipper-like design for quick opening and closing of lids
- Zipper lids can be separated and joined at each chain link
- Small pitch for low noise and smooth operation
- High accelerations: 328 ft/s² (100 m/s²) and more are possible
- Interior separation possible for larger versions (Series 15 and 17)

igus® E-Chain® Series 15 Zipper in
automatic equipment - reduce assembly time



Series 15 with acceleration of 328 ft/s² (100 m/s²)
on pick-and-place robots, low noise

E-Chain System® Zipper Selection Guide



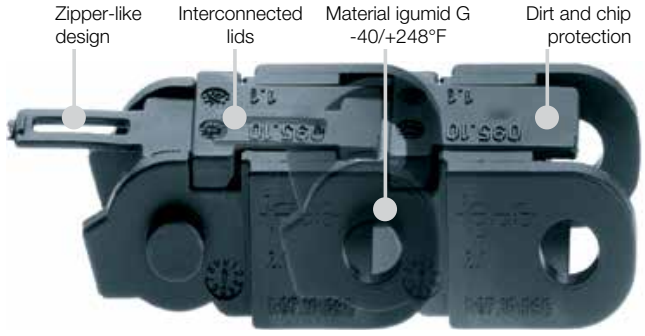
Zipper E-Chains®

- Reduced assembly-time: Zipper-like design for quick opening and closing of lids
- Zipper lids can be separated and joined at each chain link
- Small pitch for low noise, smooth operation
- High acceleration: 328 ft/s² (100 m/s²) and more
- Interior separation possible for larger versions
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
047	.35	(9.0)	.39- .63	(10 - 16)	.63- .87	(16.0 - 22.0)	.49	(12.5)	.71- 1.50	(18 - 38)
07	.41	(10.3)	.24- 2.52	(6 - 64)	.49- 2.80	(12.5 - 71.0)	.59	(15.0)	.71- 1.50	(18 - 38)
09	.59	(15.0)	.39- 1.97	(10 - 50)	.72- 2.29	(18.2 - 58.2)	.76	(19.3)	1.10- 1.89	(28 - 48)
15	.67	(17.0)	.59- 3.94	(15 - 100)	1.02- 4.45	(26.0 - 113.0)	.94	(24.0)	1.50- 7.09	(38 - 180)
17	1.26	(32.0)	.59- 3.94	(15 - 100)	1.02- 4.45	(26.0 - 113.0)	1.54	(39.0)	2.48- 4.92	(63 - 125)

For protection against dirt and debris

For information about this zipper series please refer to the Tubes section of the catalog ➤ **Tubes, Chapter 5**



Zipper E-Tubes against chips and dirt

- Fully enclosed E-Tube with zipper opening mechanism
- Protection against dirt and chips
- Superfast opening of interconnected lids
- Modular design - tool-free lengthening and shortening
- Small pitch for low noise, smooth operation, high acceleration
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
R07	.41	(10.3)	.39 - 1.97	(10 - 50)	.65 - 2.24	(16.5 - 57.0)	.59	(15.0)	1.50 - 1.89	(38 - 48)
R09	.59	(15.0)	.39 - 1.97	(10 - 50)	.72 - 2.29	(18.2 - 58.2)	.76	(19.3)	1.89 - 3.94	(48 - 100)
R15	.67	(17.0)	.98 - 3.15	(25 - 80)	1.42 - 3.70	(36.0 - 94.0)	.94	(24.0)	2.48 - 7.09	(63 - 180)
R17	1.26	(32.0)	.59 - 2.48	(15 - 63)	1.02 - 2.99	(26.0 - 76.0)	1.54	(39.0)	2.48 - 4.92	(63 - 125)

E-Chain System® Zipper
Assembly Instructions

Assembling | Zipper

1

Push and click

2

Snap lids together

3

Position and...

4

...push and snap

Separating | Zipper

1

Zipp - upward . All lids fit like a “Zipper”

2

Separate lids

3

Release side-link

4

Twist and pull apart

047

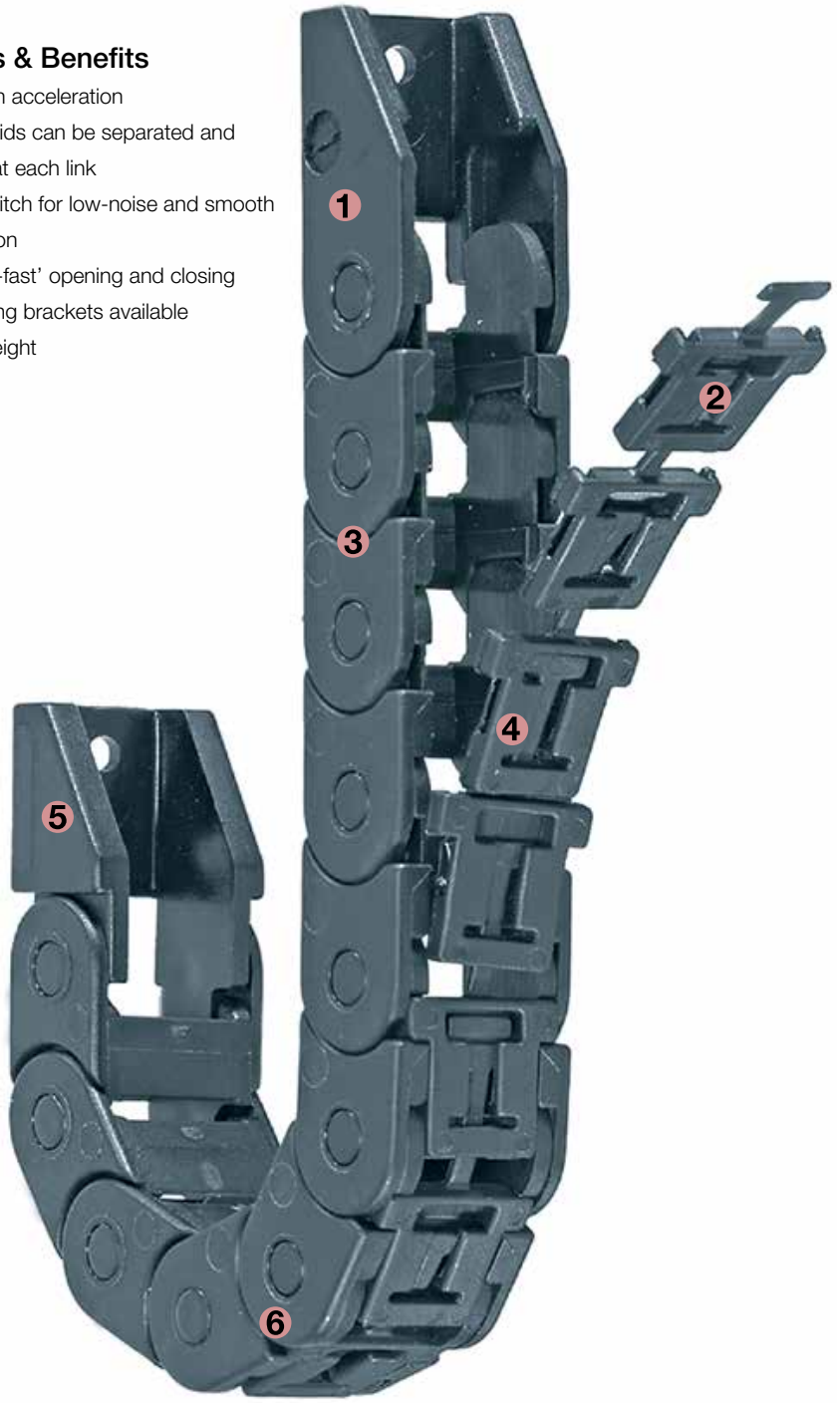
igus®

E-Chain System® Zipper Series 047

.35

Features & Benefits

1. For high acceleration
2. Zipper lids can be separated and joined at each link
3. Small pitch for low-noise and smooth operation
4. 'Zipper-fast' opening and closing
5. Mounting brackets available
6. Lightweight



Price Index

Series 047

Special Features / Options

Clean-Room — Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

Flammability Class VDE 0304 IIC UL94 HB

Low-noise

Assembly Tips

"Zipper-fast" opening and closing

Usage Guidelines

- If fast, zipper-like accessibility to cables is required
- If quiet operation is required
- If aesthetic design is required
- If excellent service life is required
- If cost is a factor

- If easy filling without opening and closing is required
  ➤ **Series E04 E-Z Chain**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **047-10-038-0**	E-Chain®
1 Set **0450-10-12**	Mounting Bracket

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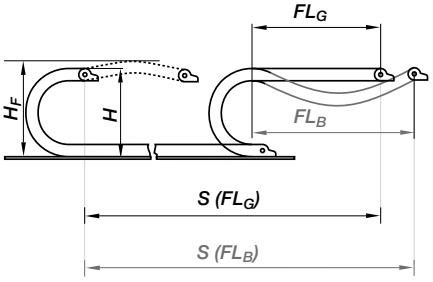
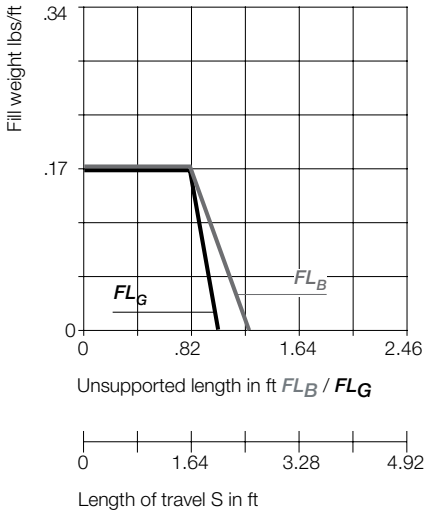
E-Chain System® Zipper Series 047 Installation Dimensions

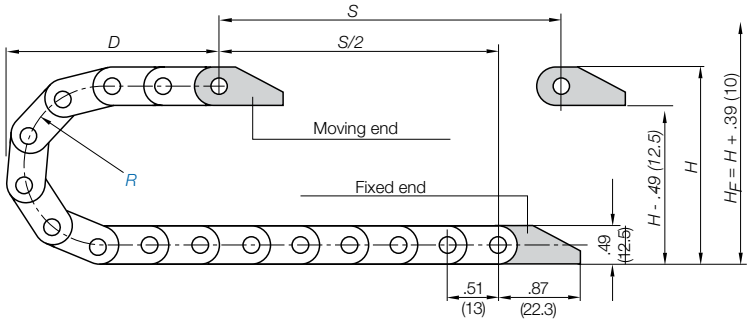
Short travel, unsupported length

- ● FL_B = unsupported with permitted sag
- ● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: ***HF = H* + .39 in. (10 mm)** (with .13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.71 (018)	1.10 (028)	1.50 (038)
H*	1.91 (48.5)	2.70 (68.5)	3.48 (88.5)
D	1.73 (44)	2.13 (54)	2.52 (64)
K	3.35 (85)	4.53 (115)	5.91 (150)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Pitch per link: = .51" (13 mm)
Links per ft (m): = 23.46 (77)
For center mount applications:
Chain length = $_{S}/_{2}$ + K

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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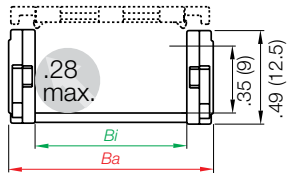
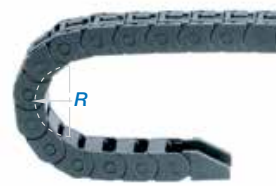
E-Chain System® Zipper Series 047

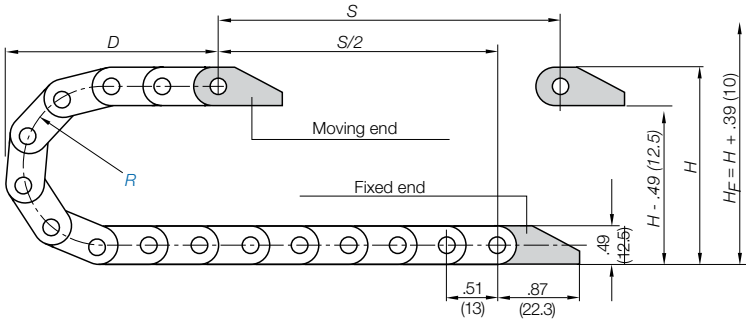
Series 047 - zip open along the outer radius





Part Number Structure

047-	10-	038-	0
			Color - Black
		Bending radius	
	Width		
Series			



Supplement part number with required radius. Example: 047-10-[038]-0
Pitch: .51 in. (13 mm) per link links/ft (m) = 23.46 (77)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
047-10-		-0	.39 (10)	.63 (16)	≈ 0.07 (0.10)
047-16-		-0	.63 (16)	.87 (22)	≈ 0.07 (0.11)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 047-10-[038]-0

	018	028	038
R	.71 (018)	1.10 (028)	1.50 (038)
H*	1.91 (48.5)	2.70 (68.5)	3.48 (88.5)
D	1.73 (44)	2.13 (54)	2.52 (64)
K	3.35 (85)	4.53 (115)	5.91 (150)

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Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

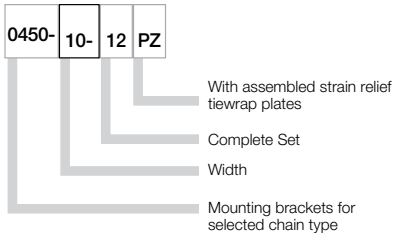
E-Chain System® Zipper
Series 047
Mounting Brackets

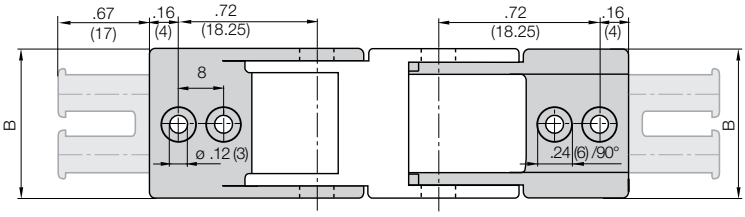
Plastic, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled

Possible installation configurations -

Part Number Structure





Full set, for both ends:
0450-10-12 Full set, **each part with pin/bore**
Single-part order:
0450-10-1 Mounting bracket **with bore**
0450-10-2 Mounting bracket **with pin**

Chain Type 08-	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimensions B in.	(mm)	Number of Teeth
047-10	**0450-10-12PZ**	**0450-10-12**	.63	(16)	1
047-16	**0450-16-12PZ**	**0450-16-12**	.87	(22)	2

Additional Accessories

Quickfix - mounting bracket with dowel, upon request
Part No.
0450-16-12Q

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

07

igus®

E-Chain System® Zipper Series 07

.41

Price Index

Series 07

Special Features / Options

Clean-Room — Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

Flammability Class VDE 0304 IIC UL94 HB

Low-noise

Assembly Tips

"Zipper-fast" opening and closing

Features & Benefits

1. Mounting bracket with integrated strain relief
2. Zipper lids can be separated and joined at each link
3. Small pitch for low-noise and smooth operation
4. 'Zipper-fast' opening and closing
5. For high acceleration
6. Lightweight

Usage Guidelines

- If fast, zipper-like accessibility to cables is required
- If quiet operation is required
- If aesthetic design is required
- If excellent service life is required

- If a more cost-effective, openable E-Chain is required
  ➤ **Series B07 E2 Micro**
- If cable installation without opening lids is possible
  ➤ **Series E06 E-Z Chain**
- If a closed tube system is required
  ➤ **Series R07 E2 Zipper Tube**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **07-20-038-0**	E-Chain®
1 Set **060-20-12PZ**	Mounting Bracket

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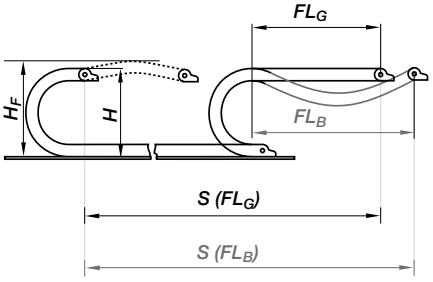
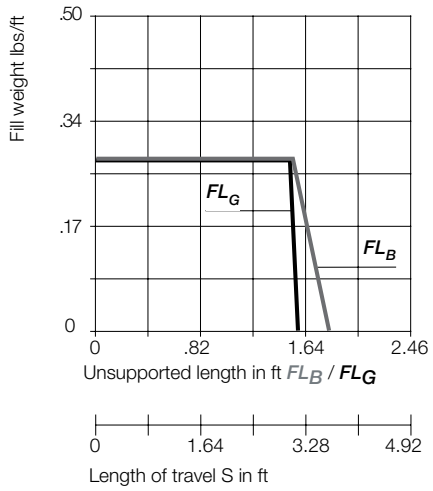
E-Chain System® Zipper Series 07 Installation Dimensions

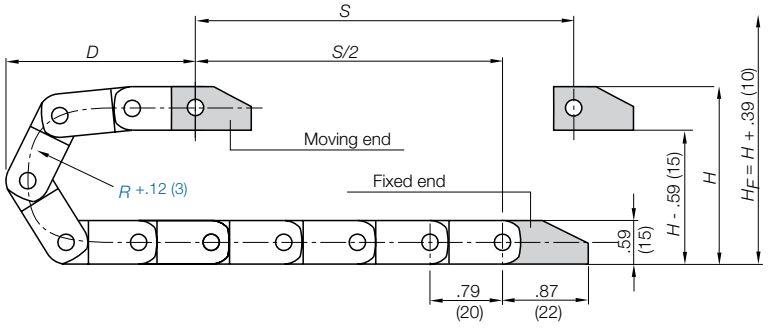
Short travel, unsupported length

- ● FL_B = unsupported with permitted sag
- ● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: ***HF = H* + .39 in. (10 mm)** (with .13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.71 (018)	1.10 (028)	1.50 (038)
H*	2.01 (51)	2.80 (71)	3.58 (91)
D	2.20 (56)	2.60 (66)	2.99 (76)
K	3.94 (100)	5.12 (130)	6.30 (160)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + safety buffer
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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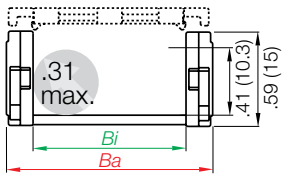
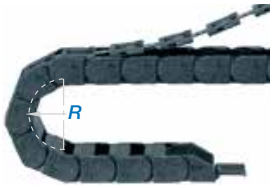
igus®

E-Chain System® Zipper Series 07

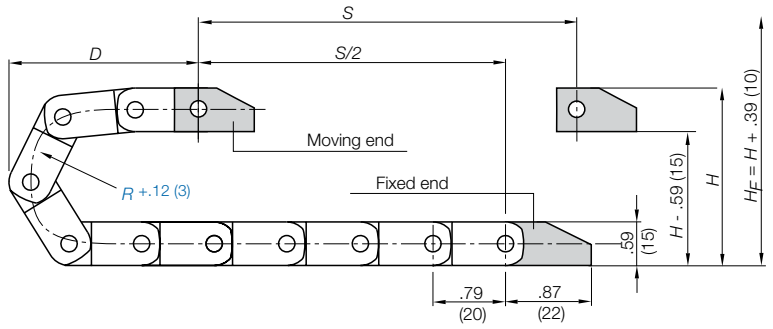
Series 07 - zip open along the outer radius





Part Number Structure

07-	20-	038-	0
Series	Width	Bending radius	Color - Black



Supplement part number with required radius. Example: 07-20-038-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
07-06-		-0	.24 (6)	.49 (12.5)	≈ 0.09 (0.13)
07-10-		-0	.39 (10)	.65 (16.5)	≈ 0.09 (0.14)
07-16-		-0	.63 (16)	.89 (22.5)	≈ 0.11 (0.16)
07-20-		-0	.79 (20)	1.06 (27.0)	≈ 0.11 (0.17)
07-30-		-0	1.18 (30)	1.46 (37.0)	≈ 0.13 (0.20)
07-40-		-0	1.57 (40)	1.85 (47.0)	≈ 0.15 (0.23)
07-50-		-0	1.97 (50)	2.24 (57.0)	≈ 0.17 (0.26)
07-64-		-0	2.52 (64)	2.80 (71.0)	≈ 0.20 (0.30)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 07-20-038-0

	018	028	038
R	.71 (018)	1.10 (028)	1.50 (038)
H*	2.01 (51)	2.80 (71)	3.58 (91)
D	2.20 (56)	2.60 (66)	2.99 (76)
K	3.94 (100)	5.12 (130)	6.30 (160)

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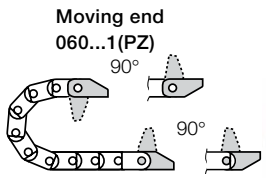
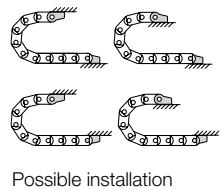
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® Zipper
Series 07
Mounting Brackets

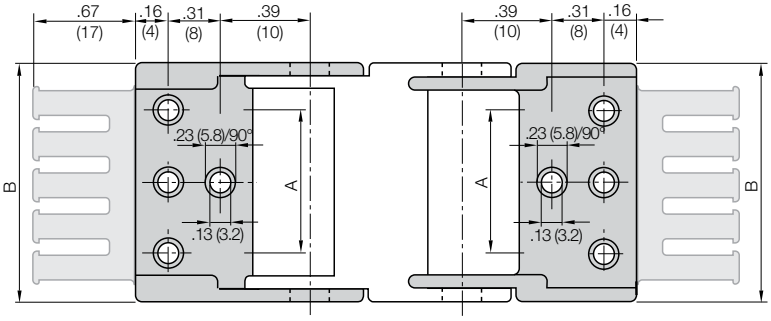
Plastic, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without integrated strain relief tiewrap plates

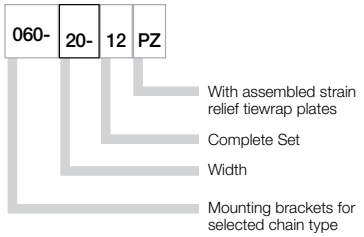




Possible installation configurations -



Part Number Structure



Full set, for both ends:
060- 20- 12 Full set, **each part with pin/bore**
Single-part order:
060- 20- 1 Mounting bracket **with bore**
060- 20- 2 Mounting bracket **with pin**

060-06-12 - 060-20-12:
Center bores only
060-30-12 – 060-64-12:
Outer bores only

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
07-06	**060-06-12PZ**	**060-06-12**	—	—	.49	(12.5)	1
07-10	**060-10-12PZ**	**060-10-12**	—	—	.65	(16.5)	1
07-16	**060-16-12PZ**	**060-16-12**	—	—	.89	(22.5)	2
07-20	**060-20-12PZ**	**060-20-12**	—	—	1.06	(27.0)	2
07-30	**060-30-12PZ**	**060-30-12**	.87	(22)	1.46	(37.0)	3
07-40	**060-40-12PZ**	**060-40-12**	1.26	(32)	1.85	(47.0)	4
07-50	**060-50-12PZ**	**060-50-12**	1.65	(42)	2.24	(57.0)	5
07-64	**060-64-12PZ**	**060-64-12**	2.20	(56)	2.80	(71.0)	6

Additional Accessories

Quicksnap - the complete, detachable mounting unit, upon request
Part No.
060-10-QS
060-16-QS
060-20-QS
060-40-QS

Quickfix - mounting bracket with dowel, upon request
Part No.
060-10-34QZ
060-20-34QZ

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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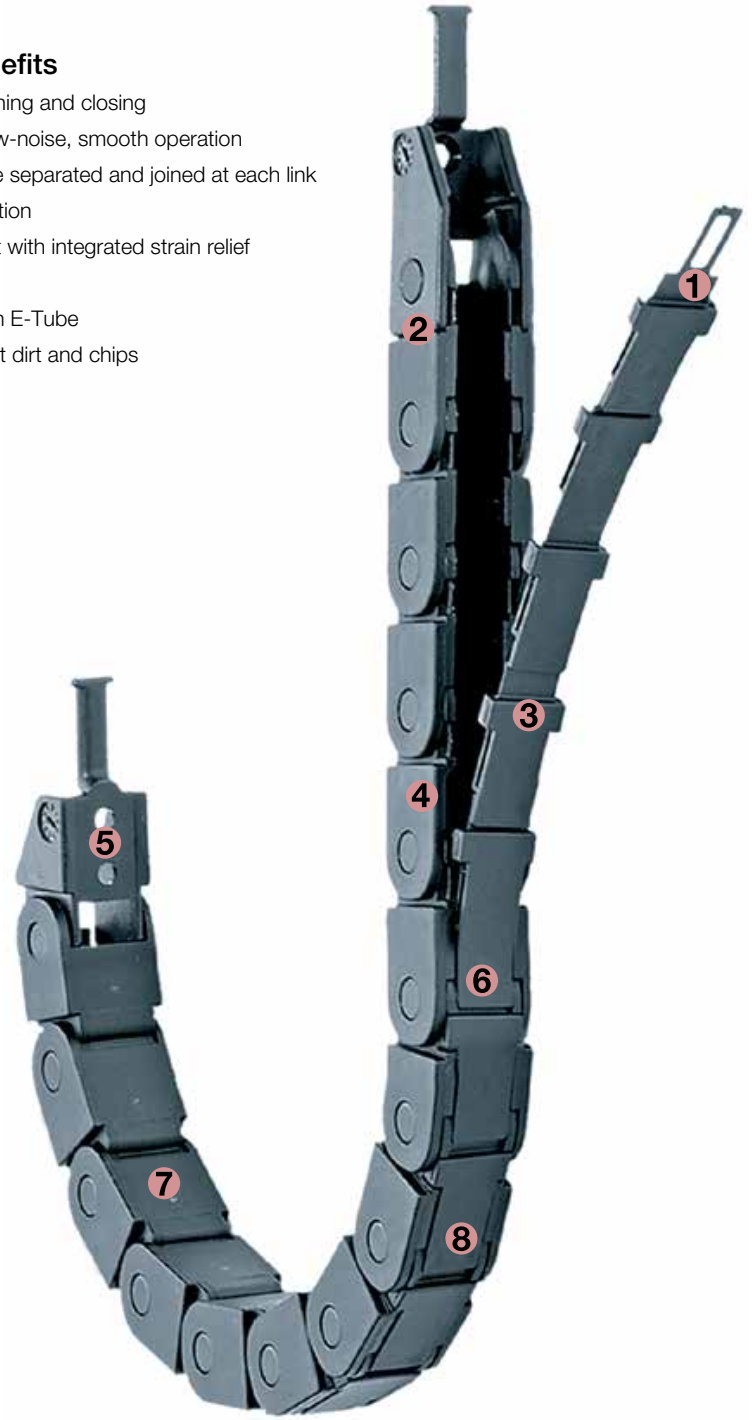
E-Chain System® E2 Tubes
Series R07

.41

Features & Benefits

1. "Zipper" fast opening and closing
2. Small pitch for low-noise, smooth operation
3. Zipper lids can be separated and joined at each link
4. For high acceleration
5. Mounting bracket with integrated strain relief
6. Lightweight
7. Smallest zip-open E-Tube
8. Protection against dirt and chips



Price Index

Series R07

Special Features / Options

Clean-Room — Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

EX — ESD classification: Electrically conductive ESD/ ATEX version upon request

Flammability Class VDE 0304 IIC UL94 HB

Low-noise

Assembly Tips

"Zipper" fast opening and closing

Usage Guidelines

- If fast installation using zipper lids is required
- If protection against dust and dirt is required
- If quick insertion o f cables with preassembled connectors is required

- If opening of the link is not necessary
  ➤ **Series 06 E2 Micro**
- If cable installation without opening lids is possible
  ➤ **Series E06 E-Z Chain**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **R07-20-038-0**	**E-Chain®**
1 Set **060-20-12PZ**	**Mounting Bracket**

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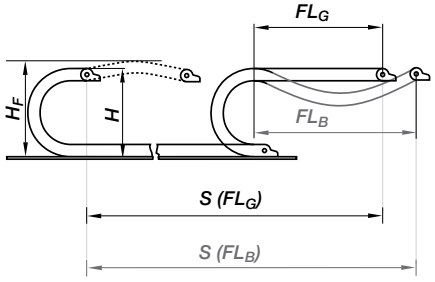
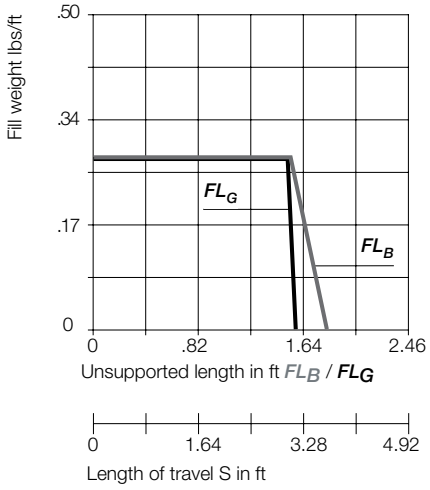
E-Chain System® E2 Tubes
Series R07
Installation Dimensions

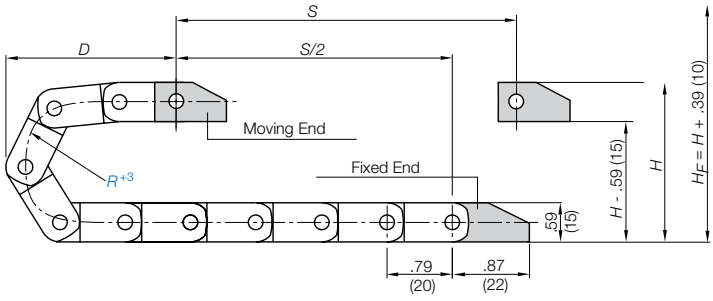
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: ***HF = H + .39 in. (10 mm)*** (with .13 lbs/ft (0.2 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	1.50 (038)	1.89 (048)
H	3.58 (91)	4.37 (111)
D	2.99 (76)	3.39 (86)
K	6.30 (160)	7.68 (195)

Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $_{S}/_{2}$ + K

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *Safety buffer*
HF = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

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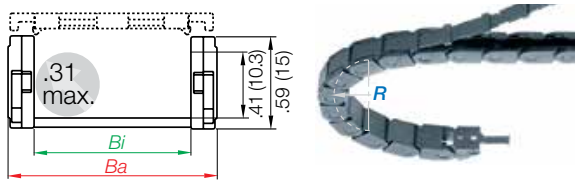
igus®

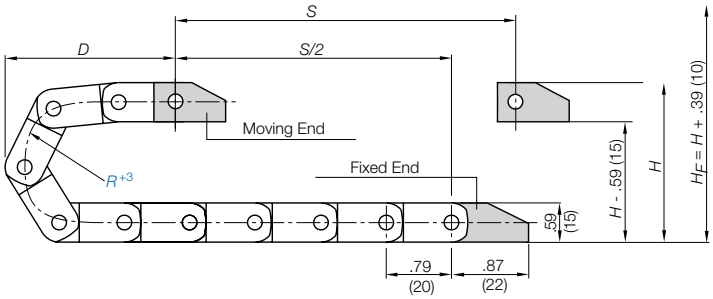
E-Chain System® E2 Tubes
Series R07

Series R07 - E-Tube zip open along the outer radius



Part Number Structure

R07-	20-	038-	0
			Color - Black
			Bending radius
			Width
			Series



Supplement part number with required radius. Example: R07-20-038-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
R07-10-		-0	.39 (10)	.65 (16.5)	≈ 0.09 (0.14)
R07-16-		-0	.63 (16)	.89 (22.5)	≈ 0.11 (0.16)
R07-20-		-0	.79 (20)	1.06 (27.0)	≈ 0.11 (0.17)
R07-30-		-0	1.18 (30)	1.46 (37.0)	≈ 0.13 (0.20)
R07-40-		-0	1.57 (40)	1.85 (47.0)	≈ 0.15 (0.23)
R07-50-		-0	1.97 (50)	2.24 (57.0)	≈ 0.17 (0.26)

Choose from the radii below for all of the above sizes
Radius (mm) Example: R07-20-038-0

	038	048
R	1.50 (038)	1.89 (048)
H	3.58 (91)	4.37 (111)
D	2.99 (76)	3.39 (86)
K	6.30 (160)	7.68 (195)

igus® E-Chain System®
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Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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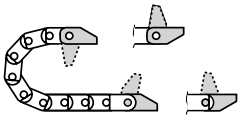
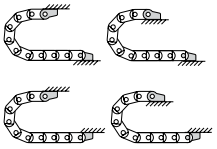
E-Chain System® E2 Tubes
Series R07
Mounting Brackets - Plastic

Plastic, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

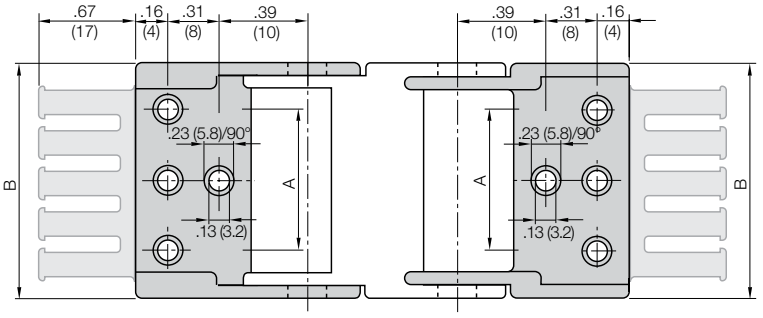



Possible installation configurations -

Part Number Structure

060- | 10- | 12 | PZ

- With assembled strain relief tiewrap plates
- Complete Set
- Width
- Mounting brackets for selected chain type



Full set, for both ends:
060- 10- 12 Full set, **each part with pin/bore**

Single-part order:
060- 10- 1 Mounting bracket **with bore**
060- 10- 2 Mounting bracket **with pin**

060-10-12 - 060-20-12:
Center bores only
060-30-12 – 060-50-12:
Outer bores only

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
R07-10	**060-10-12PZ**	**060-10-12**	—	—	.65	(16.5)	1
R07-16	**060-16-12PZ**	**060-16-12**	—	—	.89	(22.5)	2
R07-20	**060-20-12PZ**	**060-20-12**	—	—	1.06	(27.0)	2
R07-30	**060-30-12PZ**	**060-30-12**	.87	(22)	1.46	(37.0)	3
R07-40	**060-40-12PZ**	**060-40-12**	1.26	(32)	1.85	(47.0)	4
R07-50	**060-50-12PZ**	**060-50-12**	1.65	(42)	2.24	(57.0)	5

Additional Accessories

Quicksnap - the complete, detachable mounting unit, upon request
Part No.
060-10-QS
060-16-QS
060-20-QS
060-40-QS

Quickfix - mounting bracket with dowel, upon request
Part No.
060-10-34QZ
060-20-34QZ

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

09

igus®

E-Chain System® Zipper Series 09

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Price Index

Series 09

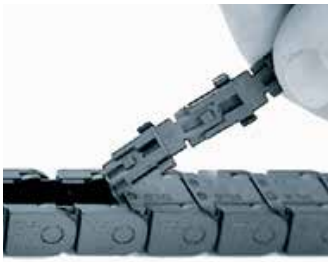
Special Features / Options

Clean-Room — Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

Flammability Class VDE 0304 IIC UL94 HB

Low-noise

Assembly Tips



"Zipper-fast" opening and closing

Features & Benefits

1. Zipper lids can be separated and joined at each link
2. Small pitch for low-noise and smooth operation
3. 'Zipper-fast' opening and closing
4. For high acceleration
5. Mounting bracket with integrated strain relief
6. Lightweight

Usage Guidelines

- If fast, zipper-like accessibility to cables is required
- If quick, easy insertion of cables with preassembled connectors is required
- If quiet operation is required
- If aesthetic design is required
- If high acceleration and travel speed is present

- If a more cost-effective, openable E-Chain is required
  ➤ **Series B09 E2 Micro**
- If cable installation without opening lids is possible
  ➤ **Series E08 E-Z Chain**
- If a closed tube system is required
  ➤ **Series R09 E2 Zipper Tube**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **09-20-038-0**	E-Chain®
1 Set **080-20-12PZ**	Mounting Bracket

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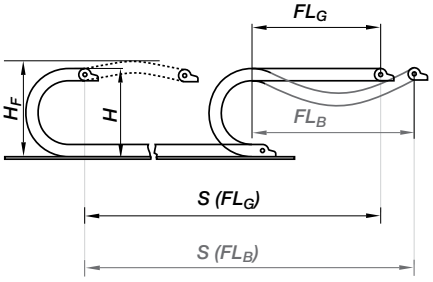
www.edfluidos.com

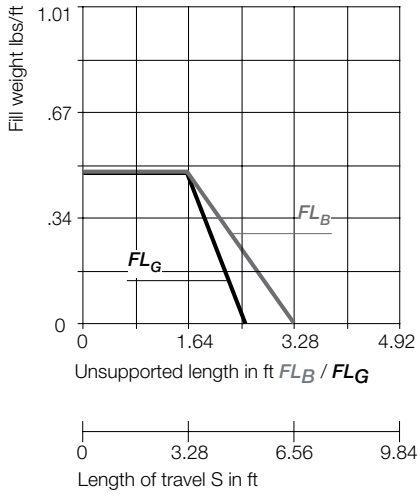
E-Chain System® Zipper Series 09 Installation Dimensions

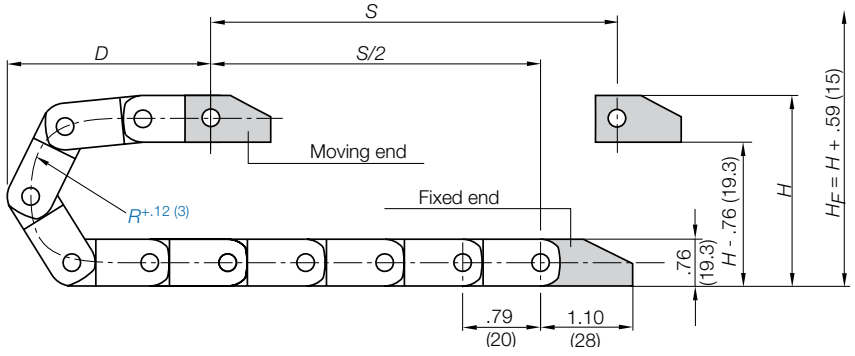
Short travel, unsupported length

- ● FL_B = unsupported with permitted sag
- ● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: $H_F = H$ + .59 in. (15 mm) (with .20 lbs/ft (0.3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.10 (028)	1.50 (038)	1.89 (048)
H*	2.95 (75)	3.74 (95)	4.53 (115)
D	2.68 (68)	3.07 (78)	3.46 (88)
K	5.12 (130)	6.30 (160)	7.68 (195)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + safety buffer
H_F = Required clearance height

Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $S/2 + K$

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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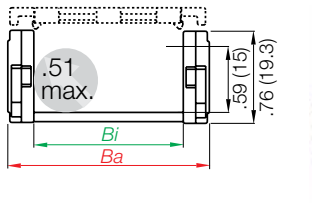
igus®

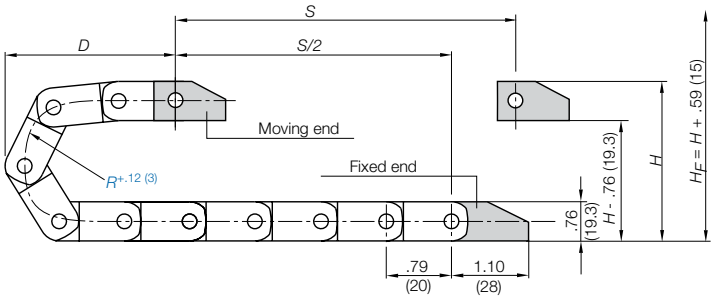
E-Chain System® Zipper Series 09

Series 09 - zip open along the outer radius



Part Number Structure

09-	20-	038-	0
			Color - Black
		Bending radius	
	Width		
Series			



Supplement part number with required radius. Example: 09-20-038-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Part Number			*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
09-10-	☐	-0	.39 (10)	.72 (18.2)	≈ 0.14 (0.21)
09-16-	☐	-0	.63 (16)	.95 (24.2)	≈ 0.16 (0.24)
09-20-	☐	-0	.79 (20)	1.11 (28.2)	≈ 0.17 (0.25)
09-30-	☐	-0	1.18 (30)	1.50 (38.2)	≈ 0.19 (0.28)
09-40-	☐	-0	1.57 (40)	1.90 (48.2)	≈ 0.21 (0.31)
09-50-	☐	-0	1.97 (50)	2.29 (58.2)	≈ 0.23 (0.34)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 09-20-038-0

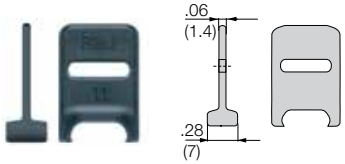
	028	038	048
R	1.10 (028)	1.50 (038)	1.89 (048)
H*	2.95 (75)	3.74 (95)	4.53 (115)
D	2.68 (68)	3.07 (78)	3.46 (88)
K	5.12 (130)	6.30 (160)	7.68 (195)

Additional Accessories

Quicksnap - the complete, detachable mounting unit, upon request
Part No.
080-20-QS
080-30-QS

E-Chain System® Zipper
Series 09
Mounting Brackets

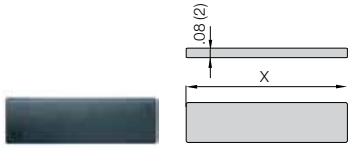
Interior Separation



Slotted separator	
Unassembled	**Part No. B09-2**
Assembled	**Part No. B09-2-1**

- **Separator B09-2**
  is used when vertical separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Full-width shelves - for the standard interior separation



Full width shelf	
Unassembled	**Part No. 110-X**
Assembled	**Part No. 111-X**

- **Full width shelf**
  is used in applications with many thin cables with similar diameters.

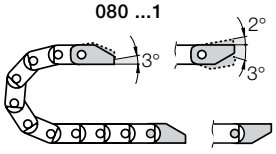
Width X in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
0.63	(16)	**110-16**	**111-16**	1.18	(30)	**110-30**	**111-30**	1.97	(50)	**110-50**	**111-50**
0.79	(20)	**110-20**	**111-20**	1.57	(40)	**110-40**	**111-40**				

Mounting Brackets - Plastic

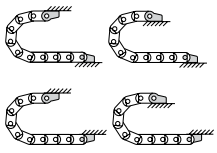
Plastic, pivoting

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

Moving end
080 ...1

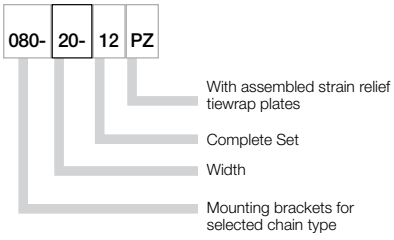


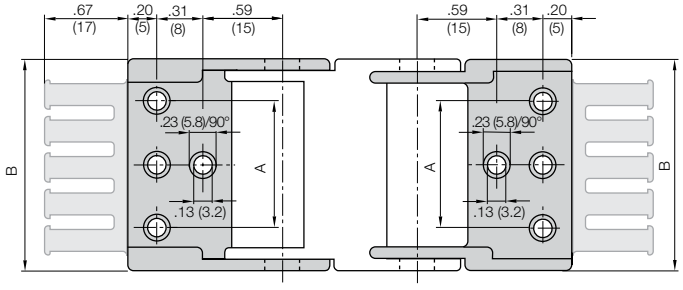
Fixed end
080...2



Possible installation configurations -

Part Number Structure





Full set, for both ends:
080- 20- 12 Full set, **each part with pin/bore**
Single-part order:
080- 20- 1 Mounting bracket **with bore**
080- 20- 2 Mounting bracket **with pin**

080-10-12 - 080-20-12:
Center bores only
080-30-12 – 080-50-12:
Outer bores only

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
09-10	**080-10-12PZ**	**080-10-12**	—	—	.72	(18.2)	1
09-16	**080-16-12PZ**	**080-16-12**	—	—	.95	(24.2)	2
09-20	**080-20-12PZ**	**080-20-12**	—	—	1.11	(28.2)	2
09-30	**080-30-12PZ**	**080-30-12**	.87	(22)	1.50	(38.2)	3
09-40	**080-40-12PZ**	**080-40-12**	1.26	(32)	1.90	(48.2)	4
09-50	**080-50-12PZ**	**080-50-12**	1.65	(42)	2.29	(58.2)	5

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

R09

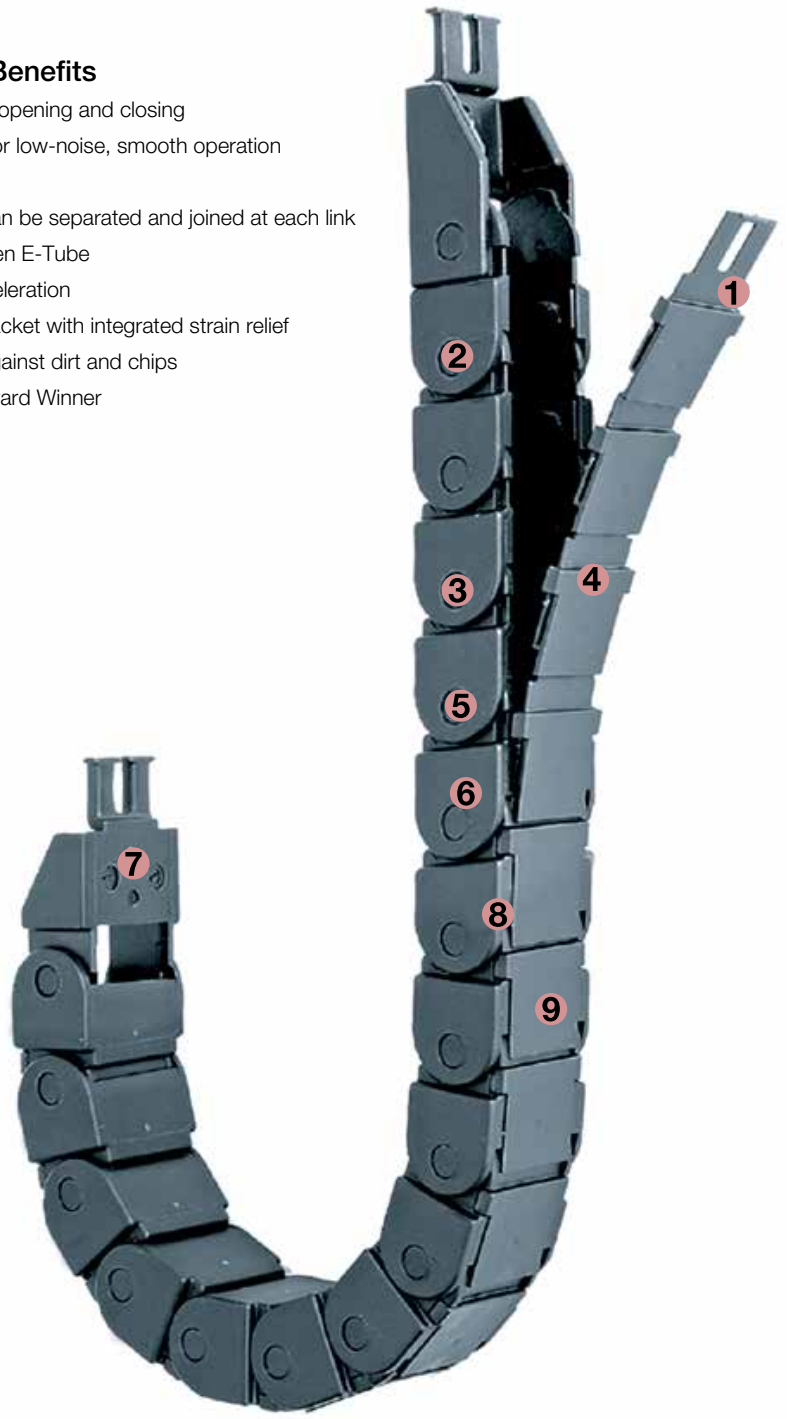
igus®

E-Chain System® E2 Tubes Series R09

.59

Features & Benefits

1. "Zipper" fast opening and closing
2. Small pitch for low-noise, smooth operation
3. Lightweight
4. Zipper lids can be separated and joined at each link
5. Small zip-open E-Tube
6. For high acceleration
7. Mounting bracket with integrated strain relief
8. Protection against dirt and chips
9. iF-Design Award Winner



Price Index

Series R09

Special Features / Options

Clean-Room — Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

iF-Design Award Winner

Flammability Class VDE 0304 IIC UL94 HB

Low-noise

Assembly Tips

"Zipper" fast opening and closing

Usage Guidelines

- If fast installation using zipper lids is required
- If protection against dust and dirt is required
- If quick insertion of cables with preassembled connectors is required

- If opening of the link is not necessary
  ➤ **Series 08 E2 Micro**
- If cable installation without opening lids is necessary
  ➤ **Series E08 E-Z Chain**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **R09-20-048-0**	E-Chain®
1 Set **080-20-12PZ**	Mounting Bracket

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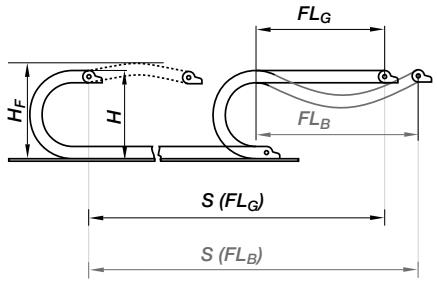
www.edfluidos.com

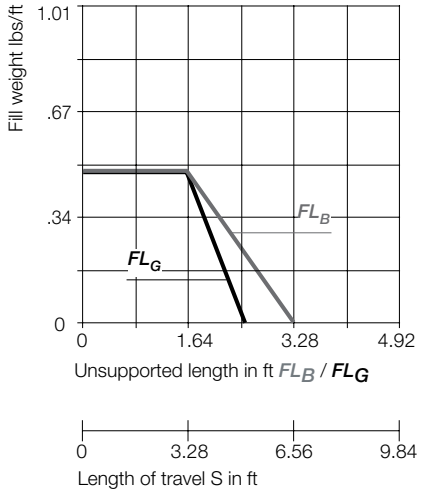
E-Chain System® E2 Tubes
Series R09
Installation Dimensions

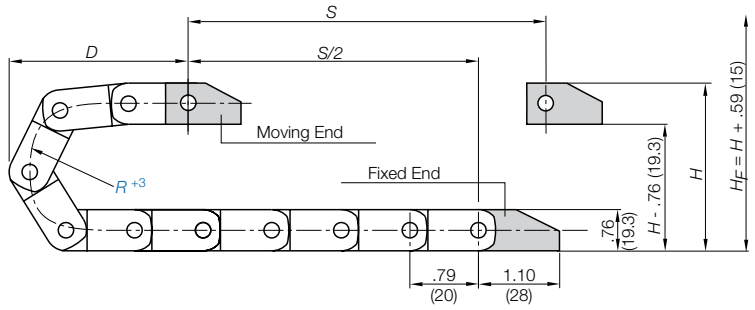
Short travel, unsupported length

- ● FL_B = unsupported with permitted sag
- ● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $_{-}{}^{S}/_{2} + K$

The required clearance height: $H_F = H + .59$ in. (15 mm) (with .20 lbs/ft (0.3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.89 (048)	2.95 (075)	3.94 (100)
H	4.53 (115)	6.65 (169)	8.62 (219)
D	3.46 (88)	4.53 (115)	5.51 (140)
K	7.68 (195)	11.02 (280)	13.98 (355)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
$K = \pi \bullet R +$ *Safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

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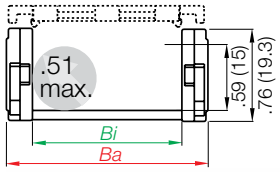
igus®

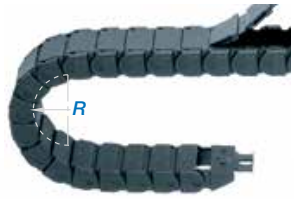
E-Chain System® E2 Tubes
Series R09

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Series R09 - E-Tube zip open along the outer radius

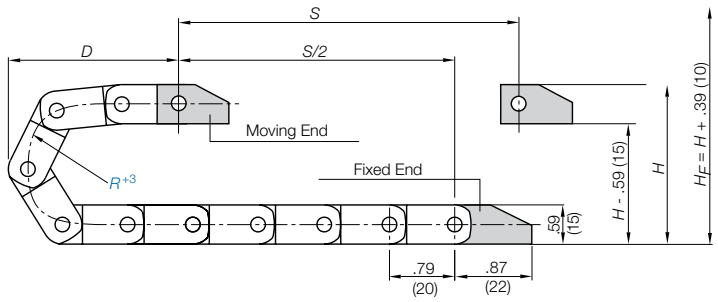




Part Number Structure

R09- 20- 048- 0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: R09-20-[048]-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
R09-10-	☐	-0	.39 (10)	.72 (18.2)	≈0.15 (0.23)
R09-16-	☐	-0	.63 (16)	.95 (24.2)	≈0.17 (0.26)
R09-20-	☐	-0	.79 (20)	1.11 (28.2)	≈0.18 (0.27)
R09-30-	☐	-0	1.18 (30)	1.50 (38.2)	≈0.20 (0.30)
R09-40-	☐	-0	1.57 (40)	1.90 (48.2)	≈0.22 (0.33)
R09-50-	☐	-0	1.97 (50)	2.29 (58.2)	≈0.24 (0.36)

Choose from the radii below for all of the above sizes
Radius (mm) Example: R09-20-[038]-0

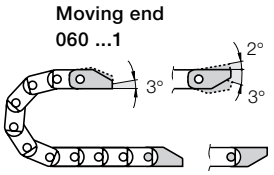
	048	075	100
R	1.89 (048)	2.95 (075)	3.94 (100)
H	4.53 (115)	6.65 (169)	8.62 (219)
D	3.46 (88)	4.53 (115)	5.51 (140)
K	7.68 (195)	11.02 (280)	13.98 (355)

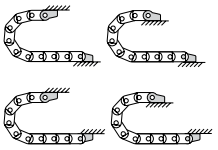
E-Chain System® E2 Tubes
Series R09
Interior Separation / Mounting Brackets - Plastic

Mounting Brackets - Plastic

Plastic, one-piece

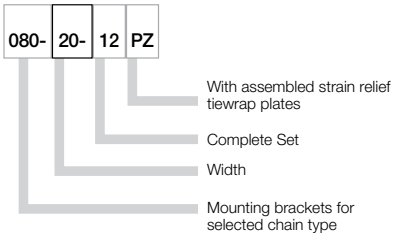
- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

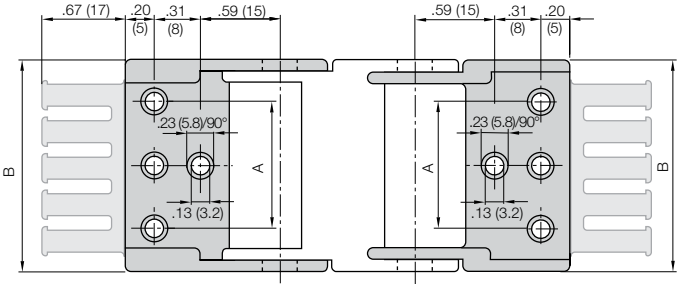




Possible installation configurations -

Part Number Structure





Full set, for both ends:
080- 20- 12 Full set, **each part with pin/bore**
Single-part order:
080- 20- 1 Mounting bracket **with bore**
080- 20- 2 Mounting bracket **with pin**

080-10-12 - 080-20-12:
Center bores only
080-30-12 – 080-50-12:
Outer bores only

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
08-10	**080-10-12PZ**	**080-10-12**	—	—	.72	(18.2)	1
08-16	**080-16-12PZ**	**080-16-12**	—	—	.95	(24.2)	2
08-20	**080-20-12PZ**	**080-20-12**	—	—	1.11	(28.2)	2
08-30	**080-30-12PZ**	**080-30-12**	.87	(22)	1.50	(38.2)	3
08-40	**080-40-12PZ**	**080-40-12**	1.26	(32)	1.90	(48.2)	4
08-50	**080-50-12PZ**	**080-50-12**	1.65	(42)	2.29	(58.2)	5

Additional Accessories

Quicksnap - the complete, detachable mounting unit, upon request
Part No.
080-20-QS
080-30-QS

Quickfix - mounting bracket with dowel, upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E-Chain System® Zipper Series 15

.66

Features & Benefits

1. Large pins and double stop dog for superior life and long unsupported length
2. 'Zipper-fast' opening and closing
3. Small pitch for low-noise, smooth
4. operation
   Zipper lids can be separated and joined at
5. each link
   Mounting bracket with integrated strain
6. relief
   For high acceleration

Price Index

Series 15

Special Features / Options

Clean-Room — Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

Flammability Class VDE 0304 IIC UL94 HB

Low-noise

Assembly Tips

"Zipper-fast" opening and closing

Usage Guidelines

- If fast, zipper-like accessibility to cables is required
- If interior separation is required
- If high stability and long service life are required

- If opening of the link is not necessary
  ➤ **Series 10 E2 Mini**
- If torsion occurs
  ➤ **Series E14 E-Z Chain**
- If the chain must snap-open along the inner radius
  ➤ **Series B15i E2 Mini**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **15-025-038-0**	E-Chain®
With 2 separators **154** assembled every 2nd link	Interior Separation
1 Set **1025-12PZ**	Mounting Bracket

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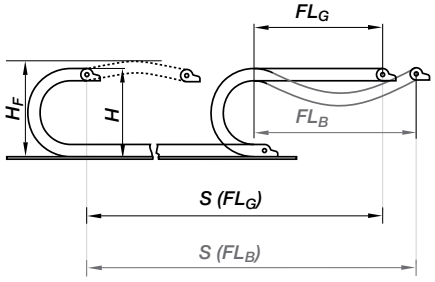
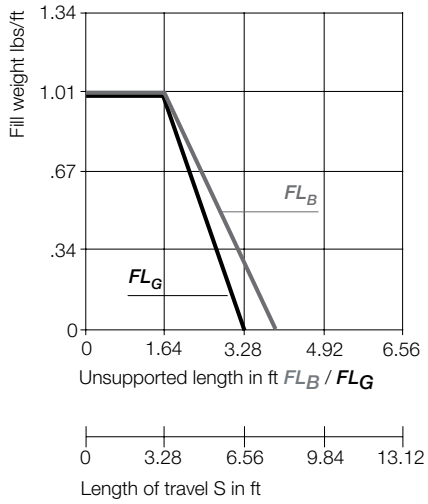
E-Chain System® Zipper
Series 15
Installation Dimensions

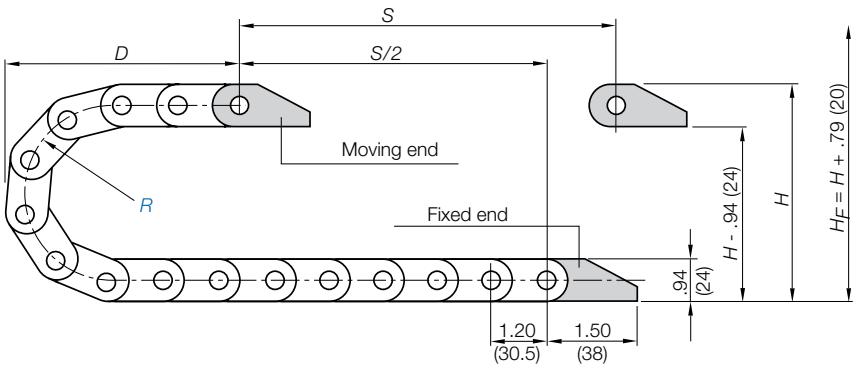
Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: $H_F = H + .79$ in. (20 mm) (with .67 lbs/ft (1.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.33 (110)	4.92 (125)	5.71 (145)	7.09 (180)
H	3.90 (99)	4.69 (119)	6.81 (173)	8.78 (223)	9.57 (243)	10.75 (273)	12.32 (313)	15.08 (383)
D	3.74 (95)	4.13 (105)	5.20 (132)	6.18 (157)	6.57 (167)	7.17 (182)	7.95 (202)	9.33 (237)
K	7.28 (185)	8.46 (215)	11.81 (300)	14.96 (380)	16.14 (410)	17.91 (455)	20.47 (520)	24.80 (630)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $S/2 + K$

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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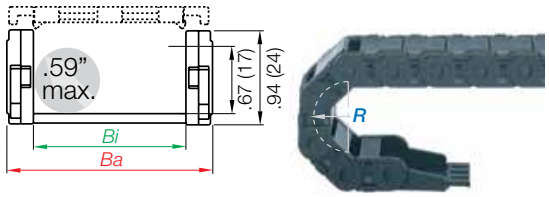
igus®

E-Chain System® Zipper Series 15

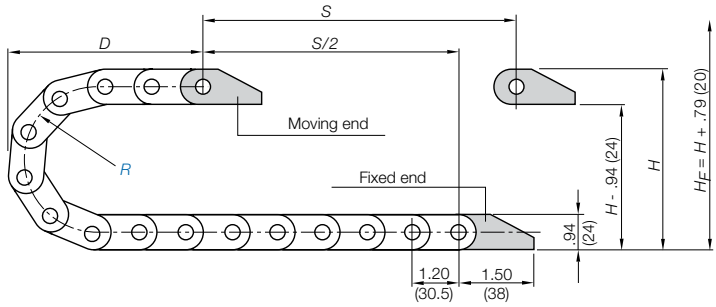
Series 15 - Zip-open along the outer radius



Part Number Structure

15- 025- 038- 0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: 15-025-038-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

Part Number Snap-open outer radius			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
15-015-	☐	-0	.59 (15)	1.02 (26)	≈ 0.24 (0.35)
15-025-	☐	-0	.98 (25)	1.42 (36)	≈ 0.27 (0.40)
15-038-	☐	-0	1.50 (38)	1.93 (49)	≈ 0.31 (0.46)
15-050-	☐	-0	1.97 (50)	2.40 (61)	≈ 0.35 (0.52)
15-5-	☐	-0	2.48 (63)	2.99 (76)	≈ 0.42 (0.63)
15-6	☐	-0	3.15 (80)	3.70 (94)	≈ 0.47 (0.70)
15-7	☐	-0	3.94 (100)	4.45 (113)	≈ 0.51 (0.76)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 15-025-038-0

	038	048	075	100	110	125	145	180
R	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.33 (110)	4.92 (125)	5.71 (145)	7.09 (180)
H	3.90 (99)	4.69 (119)	6.81 (173)	8.78 (223)	9.57 (243)	10.75 (273)	12.32 (313)	15.08 (383)
D	3.74 (95)	4.13 (105)	5.20 (132)	6.18 (157)	6.57 (167)	7.17 (182)	7.95 (202)	9.33 (237)
K	7.28 (185)	8.46 (215)	11.81 (300)	14.96 (380)	16.14 (410)	17.91 (455)	20.47 (520)	24.80 (630)

0=Standard color black. For other colors see Chapter 1

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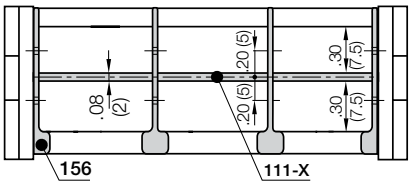
QuickSpec: http://www.igus.com/quickspec

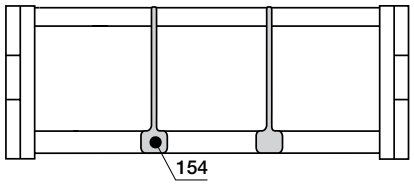
E-Chain System® Zipper
Series 15

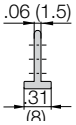
Interior Separation

Option 1: Vertical separators

Vertical separators are used if only a vertical subdivision of the E-Chain® interior is required. A slotted separator is used for this subdivision. This separator can also be used with full-width shelves for a continuous horizontal subdivision. By standard, vertical separators are assembled every other E-Chain® link.

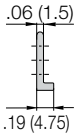






Vertical separator, slotted

Unassembled	**Part No. 153**
Assembled	**Part No. 154**

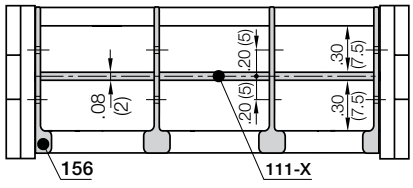


Side plate

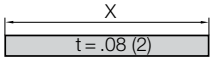
Unassembled	**Part No. 155**
Assembled	**Part No. 156**

Option 2: Full-width shelf

Interior separation with continuous horizontal subdivision is practical is using a large number of thin cables with similar or identical diameters.



Width X in. (mm)	Part No. Unassembled	Part No. Assembled
.59 (015)	**110-15**	**111-15**
.98 (025)	**110-25**	**111-25**
1.50 (038)	**110-38**	**111-38**
1.97 (050)	**110-50**	**111-50**
2.48 (063)	**110-63**	**111-63**
3.15 (080)	**110-80**	**111-80**
3.94 (100)	**110-100**	**111-100**



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igus®

E-Chain System® Zipper
Series 15
Mounting Brackets

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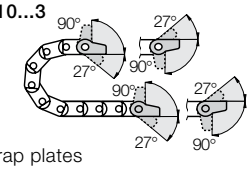
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

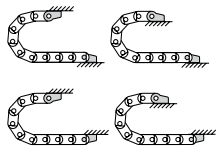
Option 1: pivoting

- Well suited for space-restricted conditions
- Strain relief with detachable tiewrap plates
- Can be mounted on either the fixed or moving end of the chain
- Variable traverse angle for flexible assembly

Moving end
10...3



Fixed end
10...4

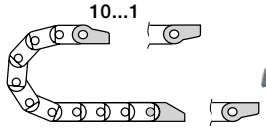


Possible installation configurations -

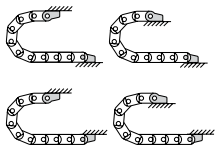
Option 2: locking

- Extreme accelerations
- If space is limited for height
- Can be mounted on either the fixed or moving end of the chain

Moving end
10...1

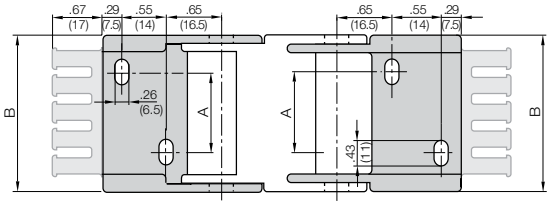


Fixed end
10...2

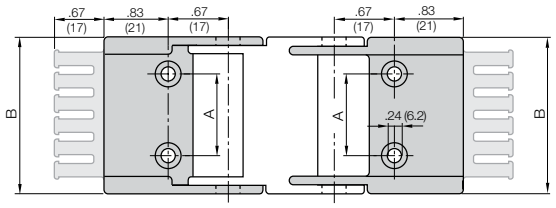


Possible installation configurations -

For E-Chain
15-015 to 15-050



For E-Chain
15-5 to 15-7



Part Number Structure

1025- 34- P PZ

- With tiewrap plate
- Without tiewrap plate
- Complete Set
  12 = Locking
  34 = Pivoting
- Mounting brackets for selected chain type

Part number examples are shown for pivoting brackets. For locking brackets fill in the blank with 12

Part No. Full Set (pivoting)
with Tiewrap Plate
Series 15 with 25mm inner width
1025-34PZ

Part No. Full Set (pivoting)
without Tiewrap Plate
Series 15 with 25 mm inner width
1025-34P

Full set, for both ends:
1025- 34- PZ Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
1025- 3- PZ Mounting bracket **with bore + tiewrap plate**
1025- 4- PZ Mounting bracket **with pin + tiewrap plate**

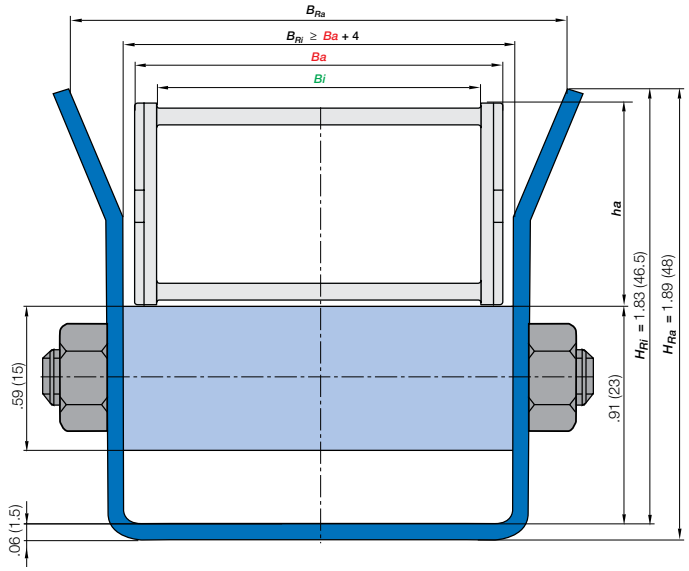
For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	Dimension A (mm)	Dimensions B in.	Dimensions B (mm)	Number of Teeth
15-015	1015- ☐ PZ	1015- ☐ P	—	—	1.00	(25.5)	2
15-025	1025- ☐ PZ	1025- ☐ P	.39	(10)	1.40	(35.5)	3
15-038	1038- ☐ PZ	1038- ☐ P	.91	(23)	1.91	(48.5)	4
15-050	1050- ☐ PZ	1050- ☐ P	1.38	(35)	2.38	(60.5)	5
15-5	105- ☐ PZ	105- ☐ P	1.89	(48)	2.95	(75.0)	6
15-6	106- ☐ PZ	106- ☐ P	2.56	(65)	3.62	(92.0)	8
15-7	107- ☐ PZ	107- ☐ P	3.35	(85)	4.41	(112.0)	10

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 1025- 34 PZ

E-Chain System® Zipper
Series 15
Guide Trough

One-piece guide troughs made of steel are available for the Series 15 Zipper E-Chains®. These guide troughs are available from stock for outer chain widths up to 4.45 in. (113 mm). For wider E-Chains® and Tubes, special solutions are possible with short lead times. No installation sets are required for these trough sizes since the guide troughs consist of a one-piece U-profile. The joint connection with this type of guide trough is specified individually for every application.



Dimensions Guide troughs 91-10 — 91-71

For Series	Part No.	B_{Ra} in.	B_{Ra} (mm)	B_{Ri} in.	B_{Ri} (mm)	Weight lbs/ft	Weight (kg/m)
15-015							
Trough **without** glide bar 6.56 ft. (2m section)	**91-10**	1.59	(40.5)	1.18	(30)	1.01	(1.50)
Glide bar 6.56 ft. (2m section)	**91-11**	1.59	(40.5)	1.18	(30)	.30	(.45)
15-025							
Trough **without** glide bar 6.56 ft. (2m section)	**91-20**	1.99	(50.5)	1.57	(40)	1.11	(1.65)
Glide bar 6.56 ft. (2m section)	**91-21**	1.99	(50.5)	1.57	(40)	.38	(.57)
15-038							
Trough **without** glide bar 6.56 ft. (2m section)	**91-30**	2.46	(62.5)	2.05	(52)	1.21	(1.80)
Glide bar 6.56 ft. (2m section)	**91-31**	2.46	(62.5)	2.05	(52)	.46	(.68)
15-050							
Trough **without** glide bar 6.56 ft. (2m section)	**91-40**	2.85	(72.5)	2.44	(62)	1.28	(1.90)
Glide bar 6.56 ft. (2m section)	**91-41**	2.85	(72.5)	2.44	(62)	.61	(.91)
15-5							
Trough **without** glide bar 6.56 ft. (2m section)	**91-50**	3.60	(91.5)	3.19	(81)	1.52	(2.26)
Glide bar 6.56 ft. (2m section)	**91-51**	3.60	(91.5)	3.19	(81)	.84	(1.25)
15-6							
Trough **without** glide bar 6.56 ft. (2m section)	**91-60**	4.27	(108.5)	3.86	(98)	1.83	(2.72)
Glide bar 6.56 ft. (2m section)	**91-61**	4.27	(108.5)	3.86	(98)	.91	(1.35)
15-7							
Trough **without** glide bar 6.56 ft. (2m section)	**91-70**	5.06	(128.5)	4.65	(118)	2.13	(3.17)
Glide bar 6.56 ft. (2m section)	**91-71**	5.06	(128.5)	4.65	(118)	1.14	(1.70)

Trough material in general: St 1203 galvanized

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

R15

igus®

E-Chain System® E2 Tubes
Series R15

.67

Price Index

Series R15

Special Features / Options

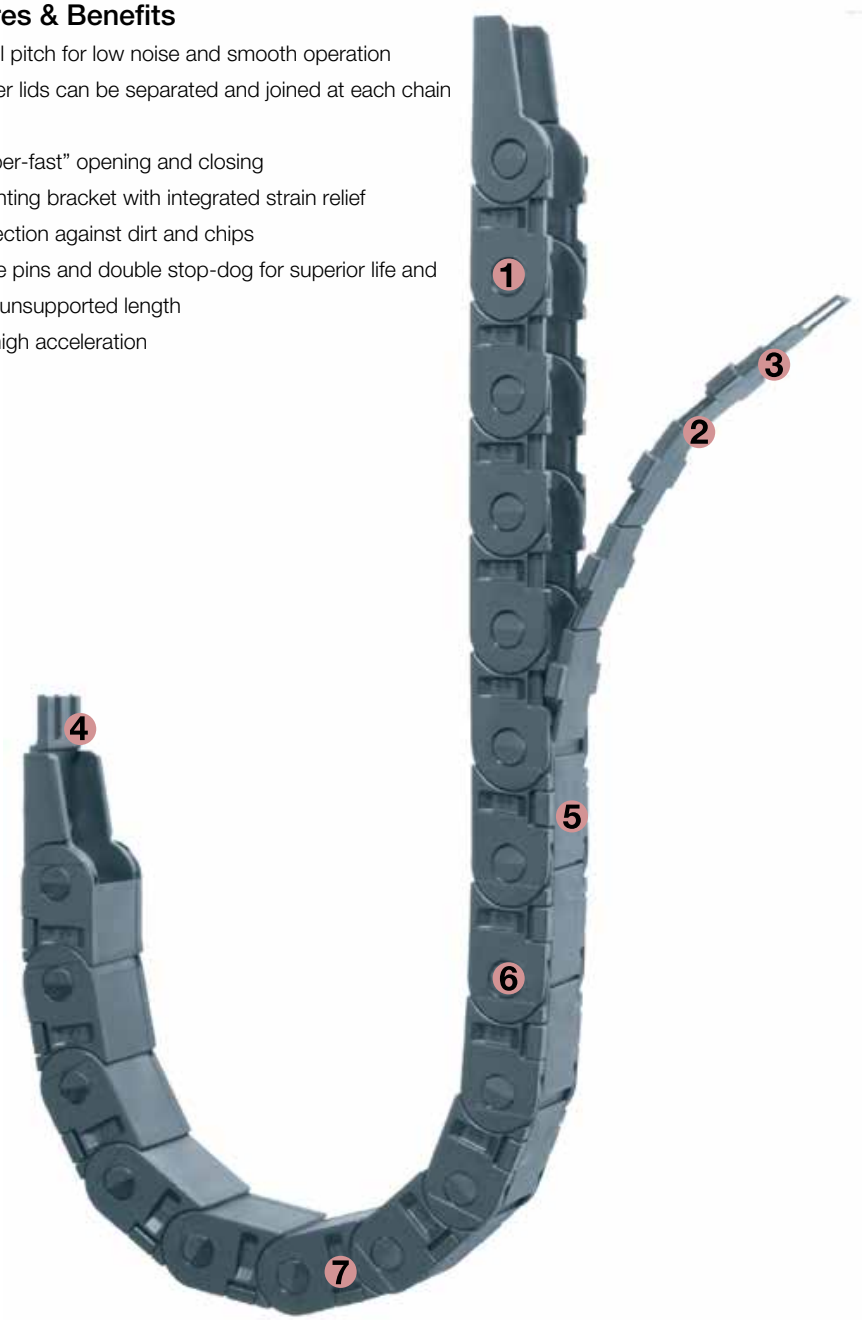
- Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA
- ESD classification: Electrically conductive ESD/ ATEX version upon request
- UL94-V2 classifications upon request
- Low-noise

Assembly Tips

"Zipper-fast" opening and closing

Features & Benefits

1. Small pitch for low noise and smooth operation
2. Zipper lids can be separated and joined at each chain link
3. "Zipper-fast" opening and closing
4. Mounting bracket with integrated strain relief
5. Protection against dirt and chips
6. Large pins and double stop-dog for superior life and long unsupported length
7. For high acceleration



Usage Guidelines

- If extremely quick, zipper-like access to cables is required
- If chip protection is required
- If quick, easy insertion of cables with preassembled connectors is required
- If aesthetic design is required

- If opening of the link is not necessary
  ➤ **Series 10 E2 mini**
- If the chain must snap-open along the inner radius
  ➤ **Series B15i E2 mini**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **R15-025-063-0**	**E-Chain®**
With 2 separators **R154** assembled every 2nd link	**Interior Separation**
1 Set **1025-12PZ**	**Mounting Bracket**

Estudio de Fluidos
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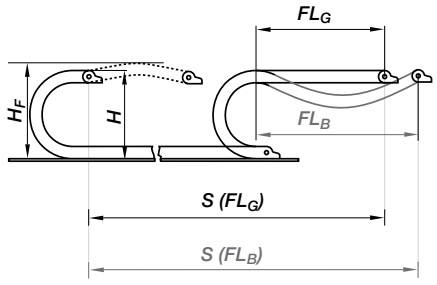
39611 GUARNIZO (Cantabria), España
942 25 27 50
edf@edfluidos.com
www.edfluidos.com

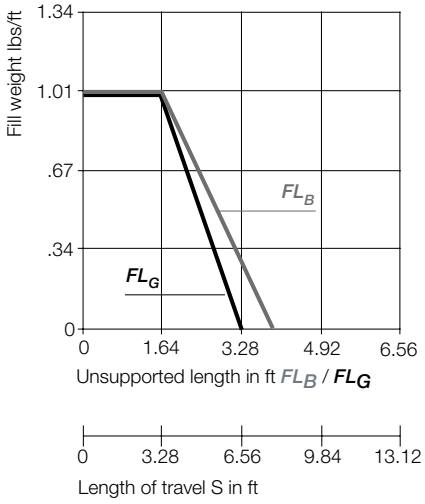
E-Chain System® E2 Tubes
Series R15
Installation Dimensions

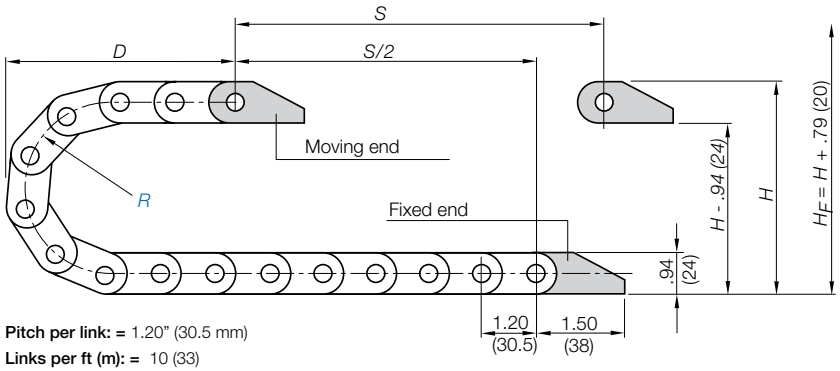
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10 (33)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: ***HF = H + .79 in. (20 mm)*** (with .67 lbs/ft (1.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.48 (063)	2.95 (075)	3.94 (100)	4.33 (110)	4.92 (125)	5.71 (145)	7.09 (180)
H	5.91 (150)	6.89 (175)	8.86 (225)	9.65 (245)	10.83 (275)	12.40 (315)	15.16 (385)
D	4.72 (120)	5.71 (145)	6.10 (155)	6.69 (170)	7.48 (190)	8.86 (225)	10.98 (279)
K	10.24 (260)	11.81 (300)	14.96 (380)	16.14 (410)	17.91 (455)	20.47 (520)	24.80 (630)

Speed / acceleration FL_G	max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + safety buffer
HF = Required clearance height

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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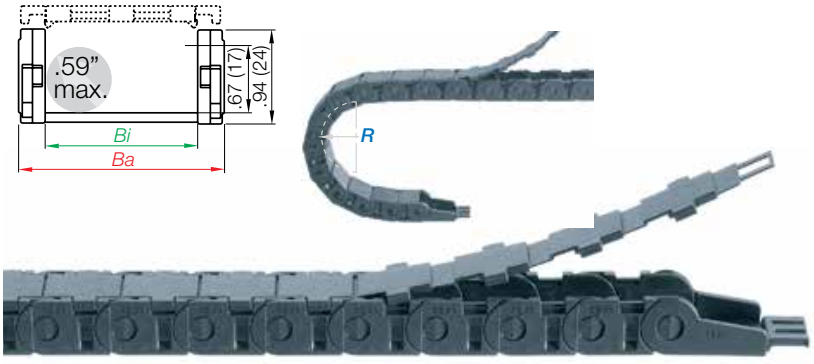
igus®

E-Chain System® E2 Tubes
Series R15

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

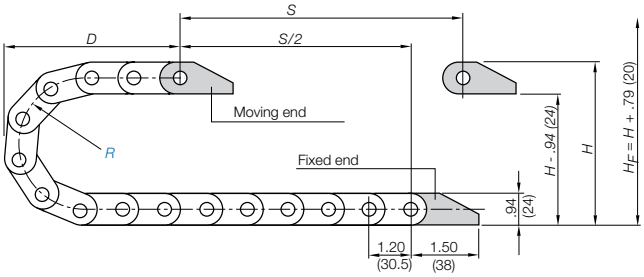
Series R15 - E-Tube snap-open along the outer radius



Part Number Structure

R15- 025- 063- 0

- Color - Black
- Bending radius
- Width
- Series



Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10 (33)
For center mount applications:
Chain length = $^{S}/_{2} + K$

Supplement part number with required radius. Example: R15-025- 063 **-0**
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10 (33)

Part Number			*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
R15-025-		-0	.98 (25)	1.42 (36)	≈ 0.27 (0.40)
R15-038-		-0	1.50 (38)	1.93 (49)	≈ 0.31 (0.46)
R15-063-		-0	2.48 (63)	2.99 (76)	≈ 0.42 (0.63)
R15-080-		-0	3.15 (80)	3.70 (94)	≈ 0.47 (0.70)

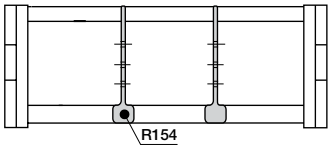
Choose from the radii below for all of the above sizes
Radius (mm) Example: R15-025- 063 -0

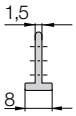
	063	075	100	110	125	145	180
R	2.48 (063)	2.95 (075)	3.94 (100)	4.33 (110)	4.92 (125)	5.71 (145)	7.09 (180)
H	5.91 (150)	6.89 (175)	8.86 (225)	9.65 (245)	10.83 (275)	12.40 (315)	15.16 (385)
D	4.72 (120)	5.71 (145)	6.10 (155)	6.69 (170)	7.48 (190)	8.86 (225)	10.98 (279)
K	10.24 (260)	11.81 (300)	14.96 (380)	16.14 (410)	17.91 (455)	20.47 (520)	24.80 (630)

E-Chain System® E2 Tubes
Series R15
Interior Separation

Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link. .





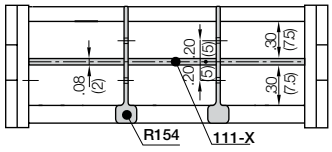
Vertical separator R153

Vertical Separator	
Unassembled	**Part No. R153**
Assembled	**Part No. R154**

- **Standard separator R153 for E-Chains®**
  This separator is used for general subdivision of E-Chain®.

Option 2: Full-width shelf

It is ideal for use in applications involving many thin cables with similar or identical diameters. This shelf slides into place and spans the entire width of the chain.



Shelves 110-XX
Shelves can be inserted at 3 different heights in .20" (5mm) increments

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
0.98	(25)	**110-25**	**111-25**
1.50	(38)	**110-38**	**111-38**
2.68	(63)	**110-63**	**111-63**
3.15	(80)	**110-80**	**111-80**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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www.edfluidos.com

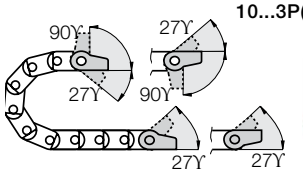
igus®

E-Chain System® E2 Tubes
Series R15
Mounting Bracket - Plastic

Telephone 1-800-521-2747
Fax 1-401-438-7270

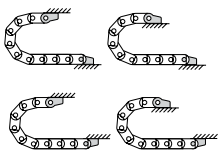
Option 1: pivoting

- Recommended for unsupported and gliding applications
- Well suited for tight installation conditions
- Available with or without strain relief tiewrap plates
- Variable traverse angle for flexible assembly



Moving end
10...3P(Z)

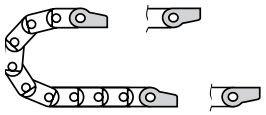
Fixed end
10...4



Possible installation configurations -

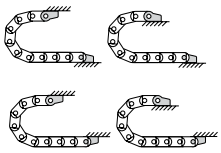
Option 2: locking

- Recommended for unsupported and gliding applications
- Extreme speed and/or accelerations
- For height restricted applications



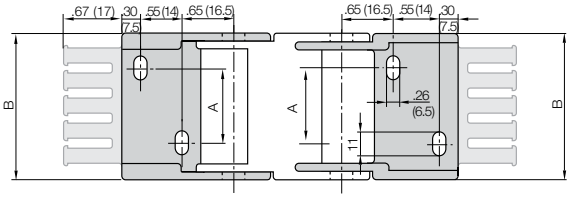
Moving end
10...1

Fixed end
10...2

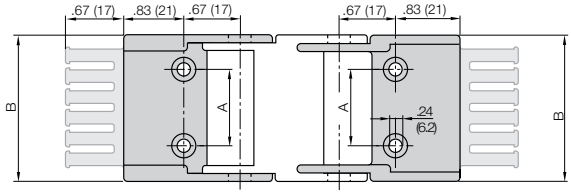


Possible installation configurations -

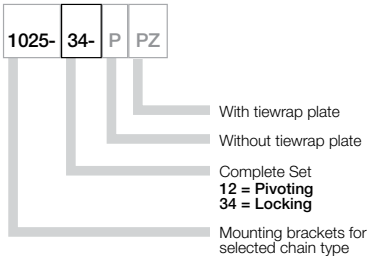
For E-Chain
R15-015 to R15-050



For E-Chain
R15-063 to R15-100



Part Number Structure



Part number examples are shown for pivoting brackets. For locking brackets fill in the blank with 12

Part No. Full Set (pivoting)
with Tiewrap Plate
Series R15 with 25mm inner width
1025-34PZ

Part No. Full Set (pivoting)
without Tiewrap Plate
Series R15 with 25 mm inner width
1025-34P

Full set, for both ends:
1025- 34- PZ Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
1025- 3- PZ Mounting bracket **with bore + tiewrap plate**
1025- 4- PZ Mounting bracket **with pin + tiewrap plate**

For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
R15-025	1025- ☐ PZ	1025- ☐ P	.39	(10)	1.40	(35.5)	3
R15-038	1038- ☐ PZ	1038- ☐ P	.91	(23)	1.91	(48.5)	4
R15-063	105- ☐ PZ	105- ☐ P	1.89	(48)	2.95	(75.0)	6
R15-080	106- ☐ PZ	106- ☐ P	2.56	(65)	3.62	(92.0)	8

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 1025- 34 PZ

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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E-Chain System® E2 Tubes Series

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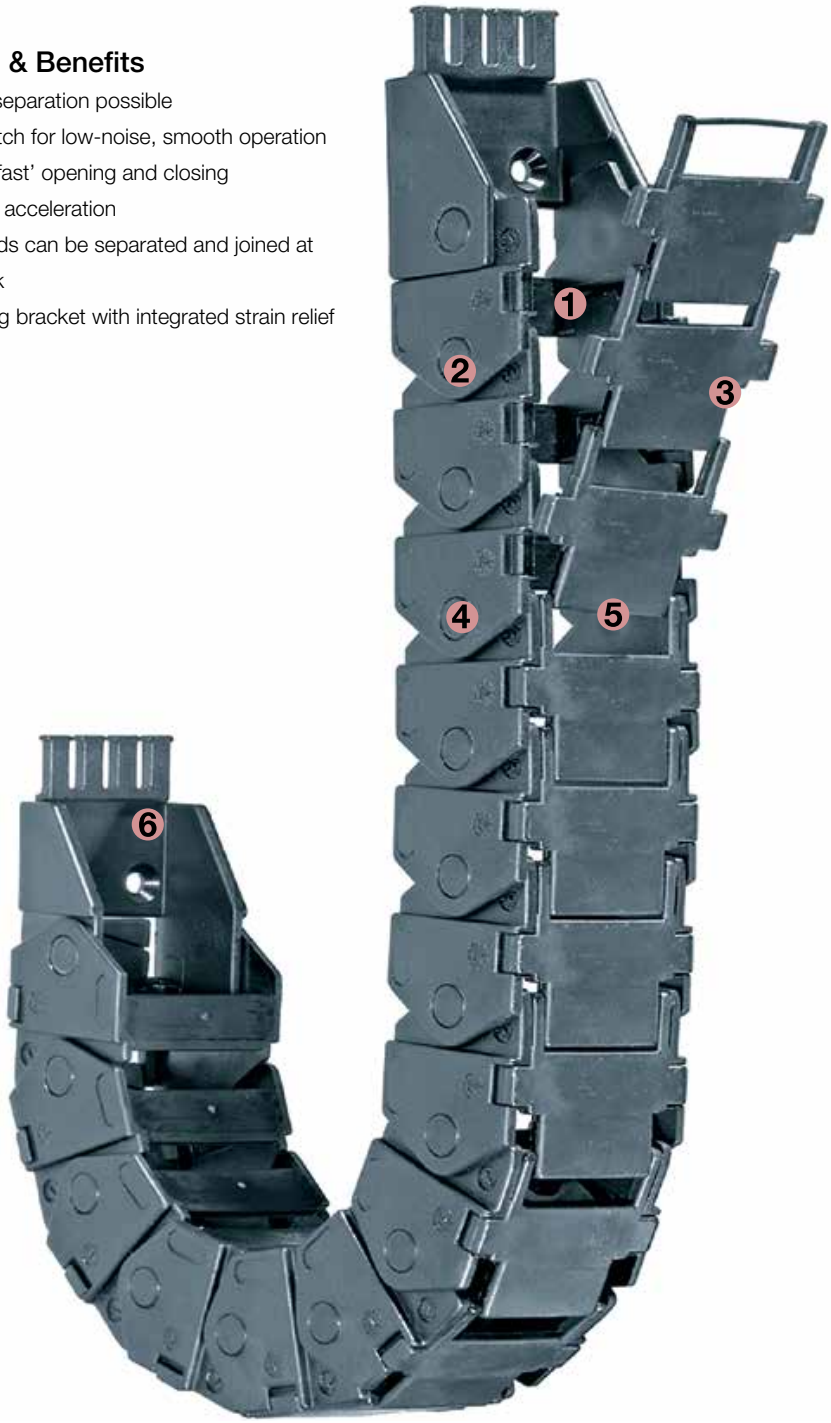
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® Zipper Series 17

1.26

Features & Benefits

1. Interior separation possible
2. Small pitch for low-noise, smooth operation
3. 'Zipper-fast' opening and closing
4. For high acceleration
5. Zipper lids can be separated and joined at each link
6. Mounting bracket with integrated strain relief



Price Index

Series 17

Special Features / Options

Clean-Room — Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

Flammability Class VDE 0304 IIC UL94 HB

Low-noise

Assembly Tips

"Zipper-fast" opening and closing

Usage Guidelines

- If fast, zipper-like accessibility to cables is required
- If interior separation is required
- If quiet operation is required

- If individual links must open as opposed to 'zipping' open
  ➤ **Series B17 E2 Mini**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

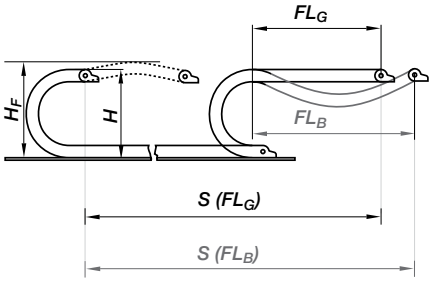
3.28 ft (1 m) **17-2-063-0**	**E-Chain®**
With 2 separators **172** assembled every 2nd link	**Interior Separation**
1 Set **117-2-12PZ**	**Mounting Bracket**

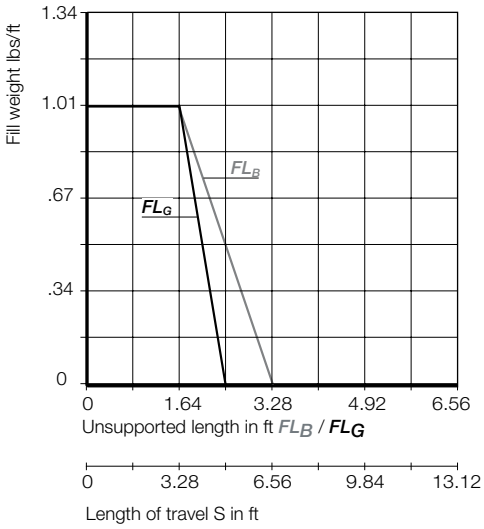
E-Chain System® Zipper Series 17 Installation Dimensions

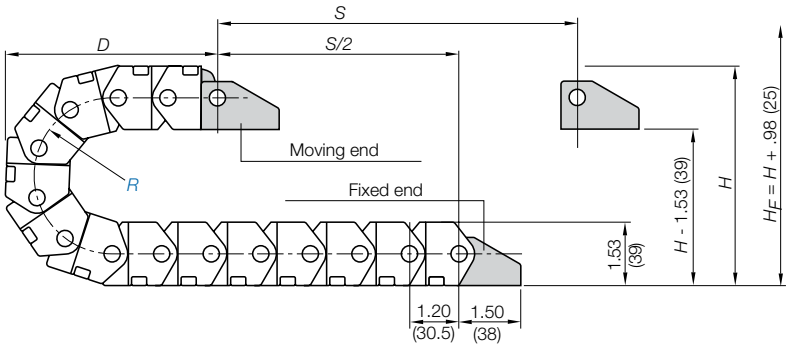
Short travel, unsupported length

- ● FL_B = unsupported with permitted sag
- ● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: H_F **= H + .98 in. (25 mm)** (with 1.01 lbs/ft (1.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)
H	6.50 (165)	7.44 (189)	9.41 (239)	11.38 (289)
D	5.04 (128)	5.51 (140)	6.50 (165)	7.48 (190)
K	10.24 (260)	11.81 (300)	14.96 (380)	17.91 (455)

Speed / acceleration FL_G	max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Technical Data

Details of material properties
➤ Chapter 1

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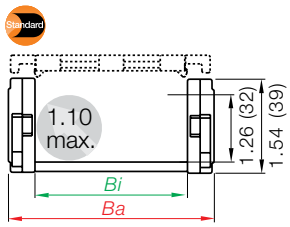
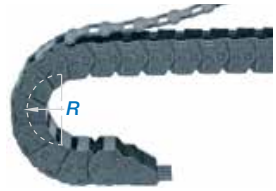
www.edfluidos.com

igus®

E-Chain System® Zipper
Series 17

Series 17 - Zip-open along the outer radius - Standard

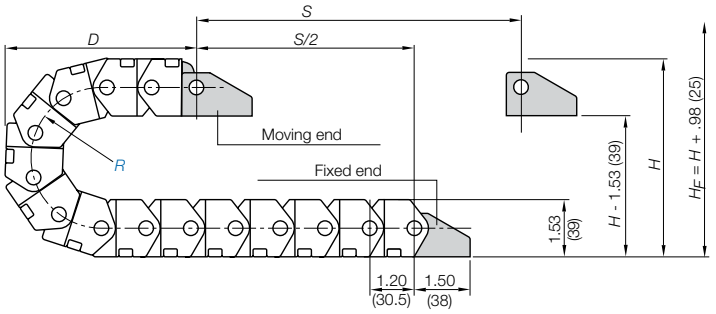




Part Number Structure

17-	2-	063-	0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: 17-1-063-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
17-1-		-0	.59 (15)	1.02 (26)	≈ 0.35 (0.52)
17-2-		-0	.98 (25)	1.42 (36)	≈ 0.40 (0.59)
17-3-		-0	1.50 (38)	1.93 (49)	≈ 0.44 (0.65)
17-4-		-0	1.97 (50)	2.40 (61)	≈ 0.47 (0.70)
17-5-		-0	2.48 (63)	2.99 (76)	≈ 0.56 (0.83)
17-6		-0	3.15 (80)	3.66 (93)	≈ 0.62 (0.92)
17-7		-0	3.94 (100)	4.45 (113)	≈ 0.71 (1.06)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 17-1-063-0

	063	075	100	125
R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)
H	6.50 (165)	7.44 (189)	9.41 (239)	11.38 (289)
D	5.04 (128)	5.51 (140)	6.50 (165)	7.48 (190)
K	10.24 (260)	11.81 (300)	14.96 (380)	17.91 (455)

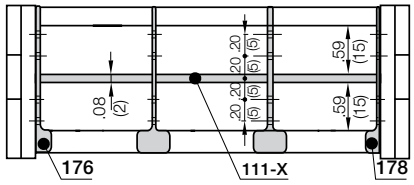
0=Standard color black. For other colors see Chapter 1

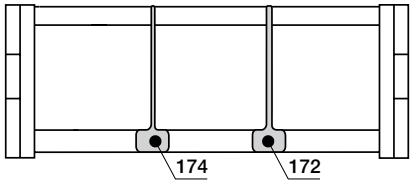
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

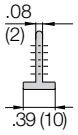
E-Chain System® Zipper
Series 17
Interior Separation

Option 1: Vertical separators

Vertical separators are used if only a vertical subdivision of the E-Chain® interior is required. A slotted separator is used for this subdivision. This separator can also be used with full-width shelves for a continuous horizontal subdivision. By standard, vertical separators are assembled every other E-Chain® link.

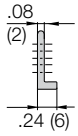






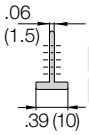
Vertical Separator for 17-1 to 17-4

Unassembled	**Part No. 171**
Assembled	**Part No. 172**



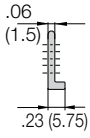
Side Plate for 17-1 to 17-4

Unassembled	**Part No. 175**
Assembled	**Part No. 176**



Vertical Separator for 17-5 to 17-7

Unassembled	**Part No. 173**
Assembled	**Part No. 174**

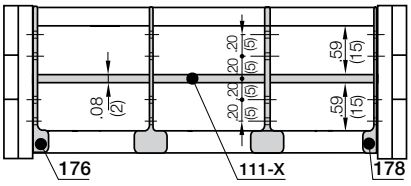


Side plate for 17-5 to 17-7

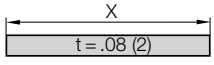
Unassembled	**Part No. 177**
Assembled	**Part No. 178**

Option 2: Full-width shelf

Interior separation with continuous horizontal subdivision is practical is using a large number of thin cables with similar or identical diameters.



Width X in. (mm)	Part No. Unassembled	Part No. Assembled
.59 (015)	**110-15**	**111-15**
.98 (025)	**110-25**	**111-25**
1.50 (038)	**110-38**	**111-38**
1.97 (050)	**110-50**	**111-50**
2.48 (063)	**110-63**	**111-63**
3.15 (080)	**110-80**	**111-80**
3.94 (100)	**110-100**	**111-100**



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

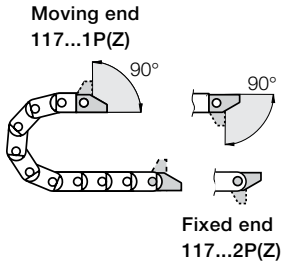
E-Chain System® Zipper Series 17 Mounting Brackets

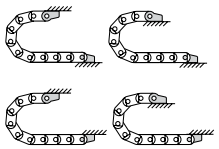
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

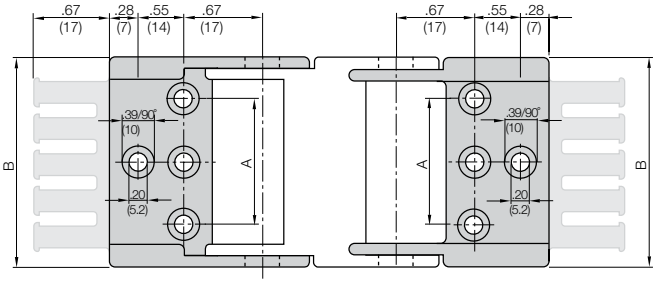
Option 1: pivoting

- One-piece mounting bracket
- Corrosion resistant
- Available pre-assembled
- Inner and outer attachment possible
- With our without strain relief tiewrap plates

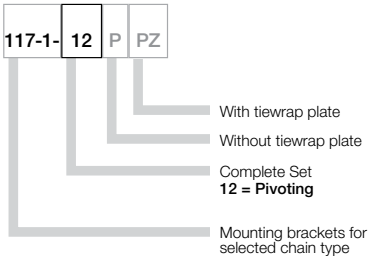




Possible installation configurations -



Part Number Structure



Full set, for both ends:
117-1-12-PZ Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
117-1-1-PZ Mounting bracket **with bore + tiewrap plate**
117-1-2-PZ Mounting bracket **with pin + tiewrap plate**

For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Number of Teeth	Dimension A in.	(mm)	Dimensions B in.	(mm)
17-1	**117-1-12PZ**	**117-1-12P**	2	—	—	1.00	(25.5)
17-2	**117-2-12PZ**	**117-2-12P**	3	.47	(12)	1.40	(35.5)
17-3	**117-3-12PZ**	**117-3-12P**	4	.98	(25)	1.91	(48.5)
17-4	**117-4-12PZ**	**117-4-12P**	5	1.46	(37)	2.38	(60.5)
17-5	**117-5-12PZ**	**117-5-12P**	6	1.89	(48)	2.99	(76.0)
17-6	**117-6-12PZ**	**117-6-12P**	8	2.56	(65)	3.66	(93.0)
17-7	**117-7-12PZ**	**117-7-12P**	10	3.35	(85)	4.45	(113.0)

E-Chain System® Zipper
Series 17

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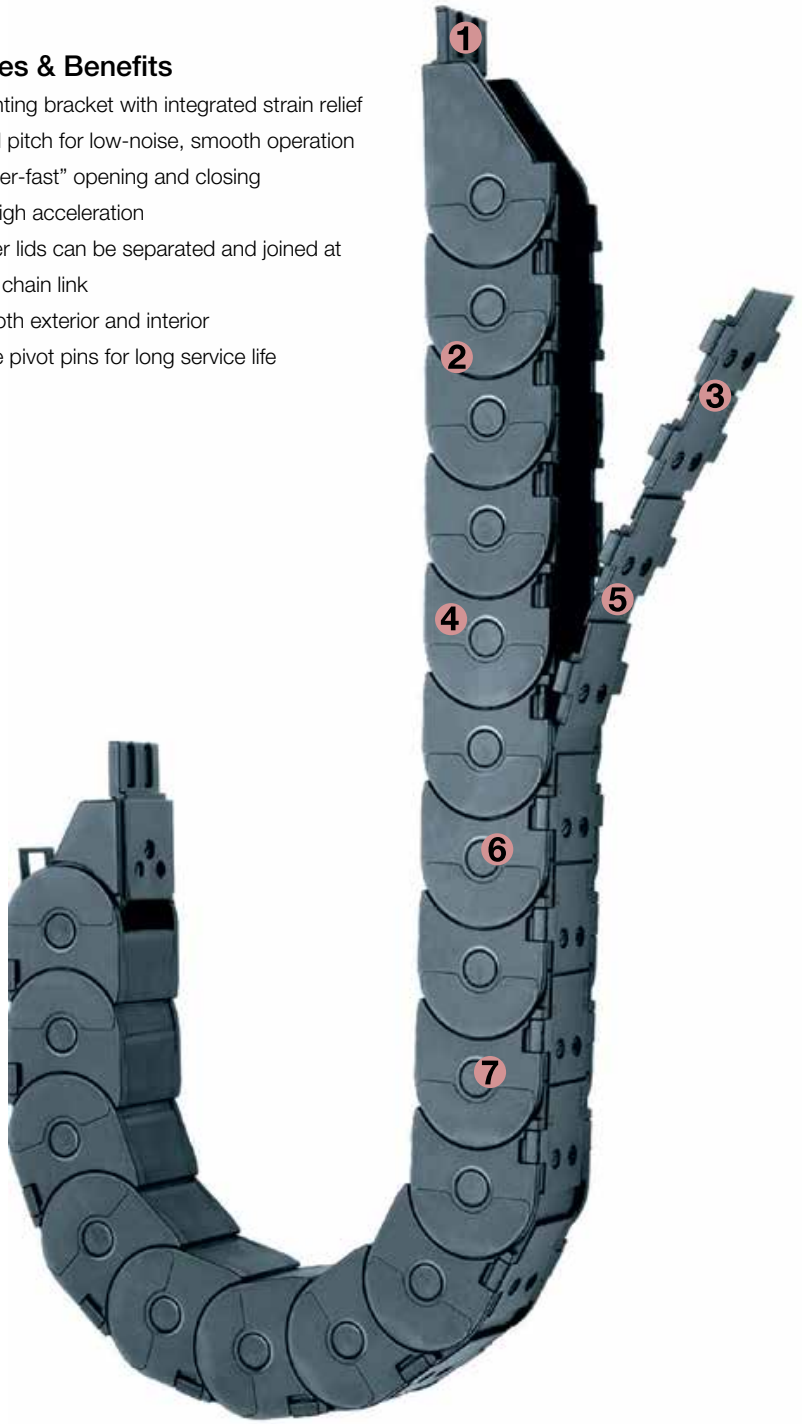
E-Chain System® E2 Tubes R17

1.26

Features & Benefits

1. Mounting bracket with integrated strain relief
2. Small pitch for low-noise, smooth operation
3. "Zipper-fast" opening and closing
4. For high acceleration
5. Zipper lids can be separated and joined at each chain link
6. Smooth exterior and interior
7. Large pivot pins for long service life



Price Index

Series R17

Special Features / Options

Clean-Room — Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

EX — ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94-V2 classifications upon request

Low-noise

Assembly Tips

"Zipper-fast" opening and closing

Usage Guidelines

- If extremely quick, zipper-like access to cables is required
- If chip protection is required
- If quick, easy insertion of cables with preassembled connectors is required
- If aesthetic design is required

- If cable installation without opening lids is possible
  ➤ **Series E16 E-Z Chain**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **R17-025-063-0**	**E-Chain®**
With 2 separators **R172** assembled every 2nd link	**Interior Separation**
1 Set **117-025-12PZ**	**Mounting Bracket**

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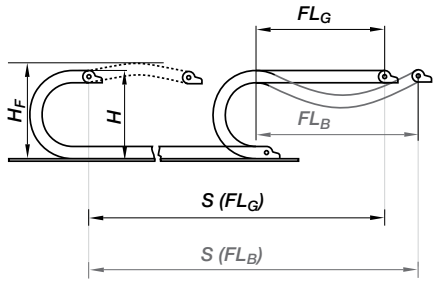
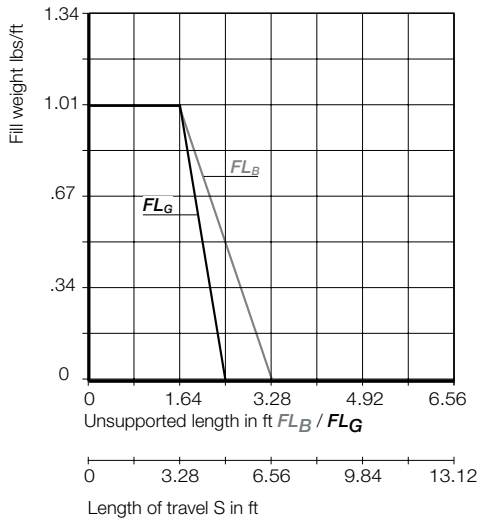
E-Chain System® E2 Tubes
R17
Installation Dimensions

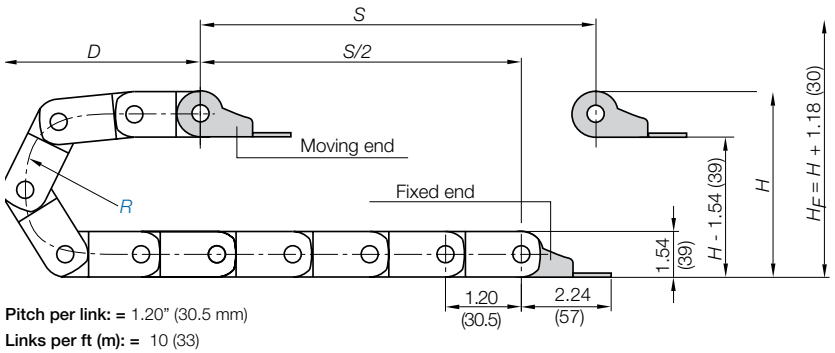
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10 (33)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: $H_F = H$ **+ 1.18 in. (30 mm)** (with .67 lbs/ft (1.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)
H	6.50 (165)	7.44 (189)	9.41 (239)	11.38 (289)
D	4.53 (115)	5.12 (130)	6.10 (155)	7.09 (180)
K	10.83 (275)	12.01 (305)	15.55 (395)	18.70 (475)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + safety buffer
H_F = Required clearance height

Speed / acceleration FL_G	max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.81 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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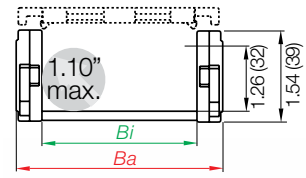
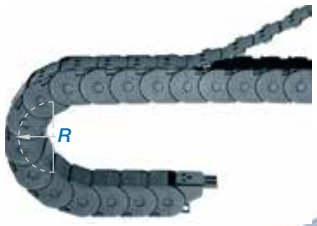
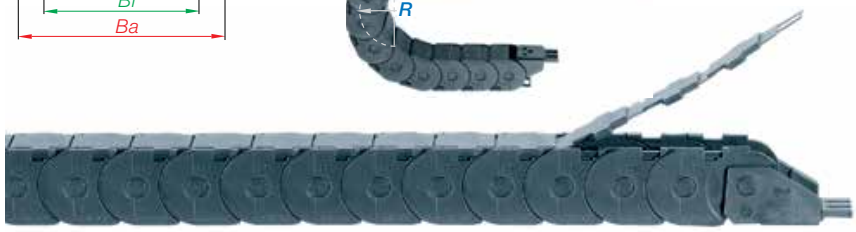
igus®

E-Chain System® E2 Tubes
R17

Series R17 - E-Tube snap-open along the outer radius



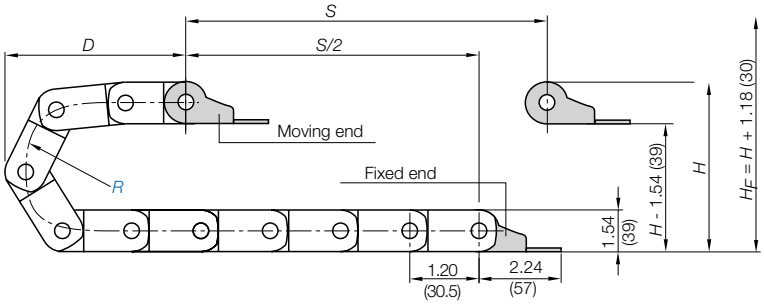




Part Number Structure

R17- 025- 063- 0

- Color - Black
- Bending radius
- Width
- Series



Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10 (33)
For center mount applications:
Chain length = $\frac{S}{2} + K$

Supplement part number with required radius. Example: R17-025-063-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10 (33)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
R17-015-☐-0	.59 (15)	1.02 (26)	≈ 0.35 (0.52)
R17-025-☐-0	.98 (25)	1.93 (49)	≈ 0.40 (0.59)
R17-063-☐-0	2.48 (63)	2.99 (76)	≈ 0.42 (0.83)

Choose from the radii below for all of the above sizes
Radius (mm) Example: R17-025-063-0

	063	075	100	125
R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)
H	6.50 (165)	7.44 (189)	9.41 (239)	11.38 (289)
D	4.53 (115)	5.12 (130)	6.10 (155)	7.09 (180)
K	10.83 (275)	12.01 (305)	15.55 (395)	18.70 (475)

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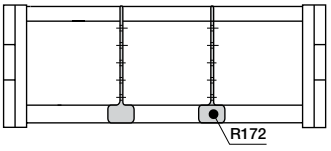
QuickSpec: http://www.igus.com/quickspec

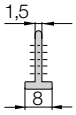
E-Chain System® E2 Tubes
R17
Interior Separation

Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link. .



Vertical separator R171



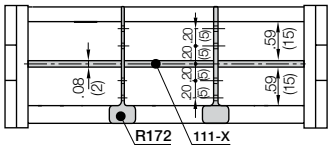
Vertical Separator

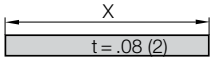
Unassembled	**Part No. R171**
Assembled	**Part No. R172**

- **Standard separator R171 for E-Chains®**
  This separator is used for general subdivision of E-Chain®.

Option 2: Full-width shelf

It is ideal for use in applications involving many thin cables with similar or identical diameters. This shelf slides into place and spans the entire width of the chain.





Shelves 110-XX
Shelves can be inserted at 5 different heights in .20" (5mm) increments

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
0.59	(15)	**110-15**	**111-15**
0.98	(25)	**110-25**	**111-25**
1.50	(38)	**110-38**	**111-38**
2.68	(63)	**110-63**	**111-63**
3.15	(80)	**110-80**	**111-80**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
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igus®

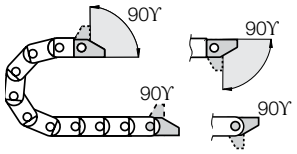
E-Chain System® E2 Tubes
Series R17
Mounting Brackets

Telephone 1-800-521-2747
Fax 1-401-438-7270

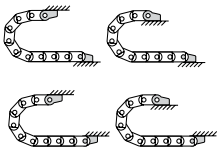
Option: locking

- One piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without integrated strain relief tiewrap plates

Moving end
117...1P(Z)

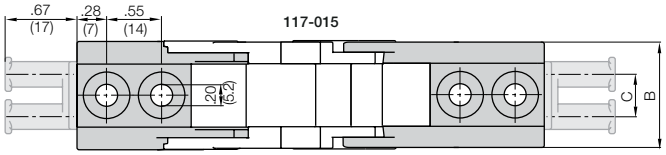


Fixed end
117...2P(Z)

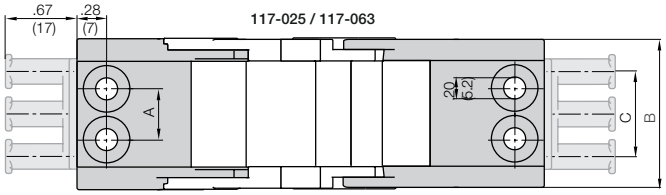


Possible installation configurations -

117...1P(Z)
Moving end



117...2P(Z)
Fixed end



Part Number Structure

117-	015-	12	PZ

PZ - With tiewrap plate
P - Without tiewrap plate
Full set
Width index
Mounting brackets for selected chain type

Part number examples are shown for pivoting brackets. For locking brackets fill in the blank with 12

Part No. Full Set (pivoting)
with Tiewrap Plate
Series R17 with 25mm inner width
117-025-12PZ

Part No. Full Set (pivoting)
without Tiewrap Plate
Series R17 with 25 mm inner width
117-025-12P

Full set, for both ends:
117- 025- 12 PZ Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
117- 025- 12 PZ Mounting bracket **with bore + tiewrap plate**
117- 025- 12 PZ Mounting bracket **with pin + tiewrap plate**

For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimension B in.	(mm)	Dimension C in.	(mm)	Number of Teeth
R17-015	**117-015-12PZ**	**117-015-12P**	–	–	1.01	(25.7)	.39	(10)	2
R17-025	**117-025-12PZ**	**117-025-12P**	.47	(12)	1.41	(35.7)	.79	(20)	3
R17-063	**117-063-12PZ**	**117-063-12P**	1.89	(48)	2.91	(73.7)	1.18	(30)	6

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E-Chain System® E2 Tubes
Series R17

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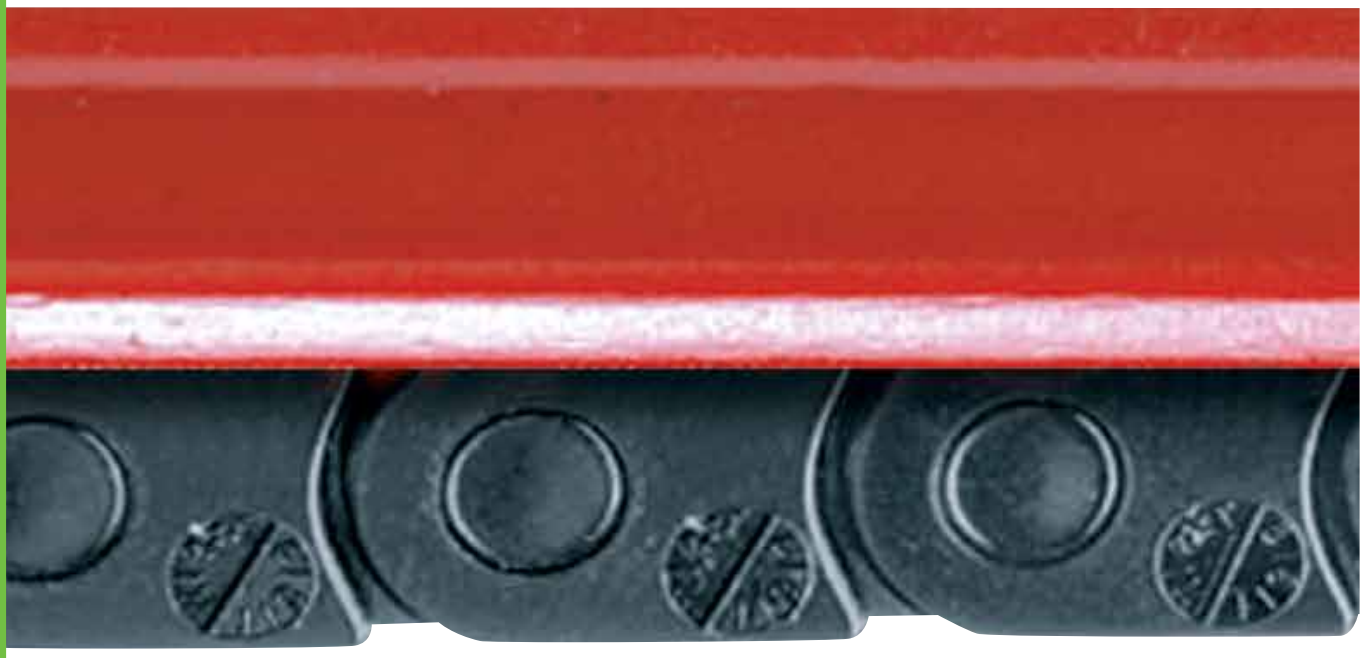

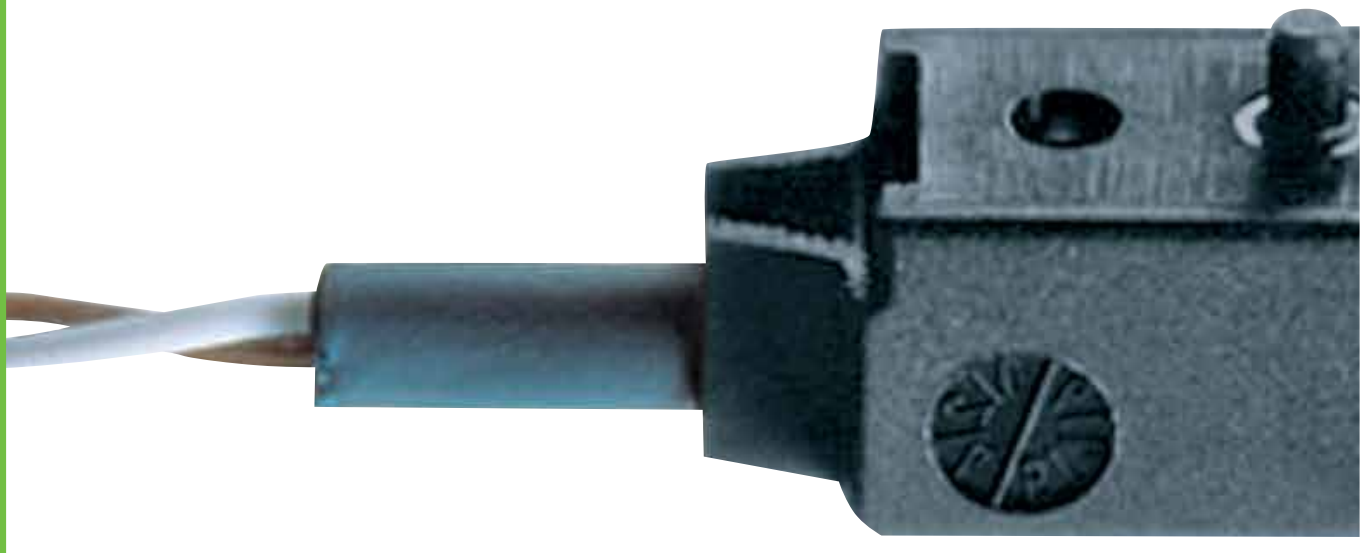

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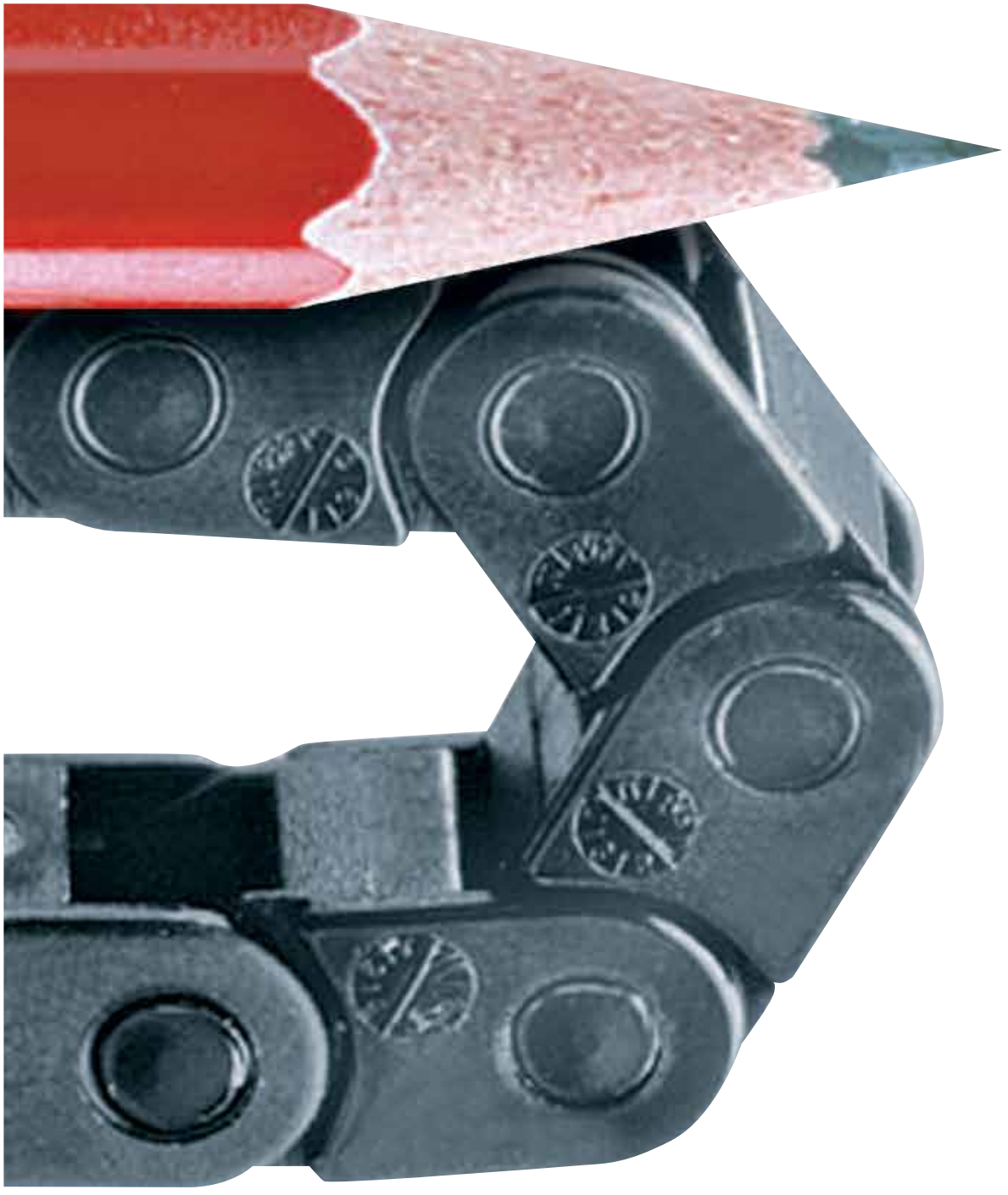
igus®
E2 Micro



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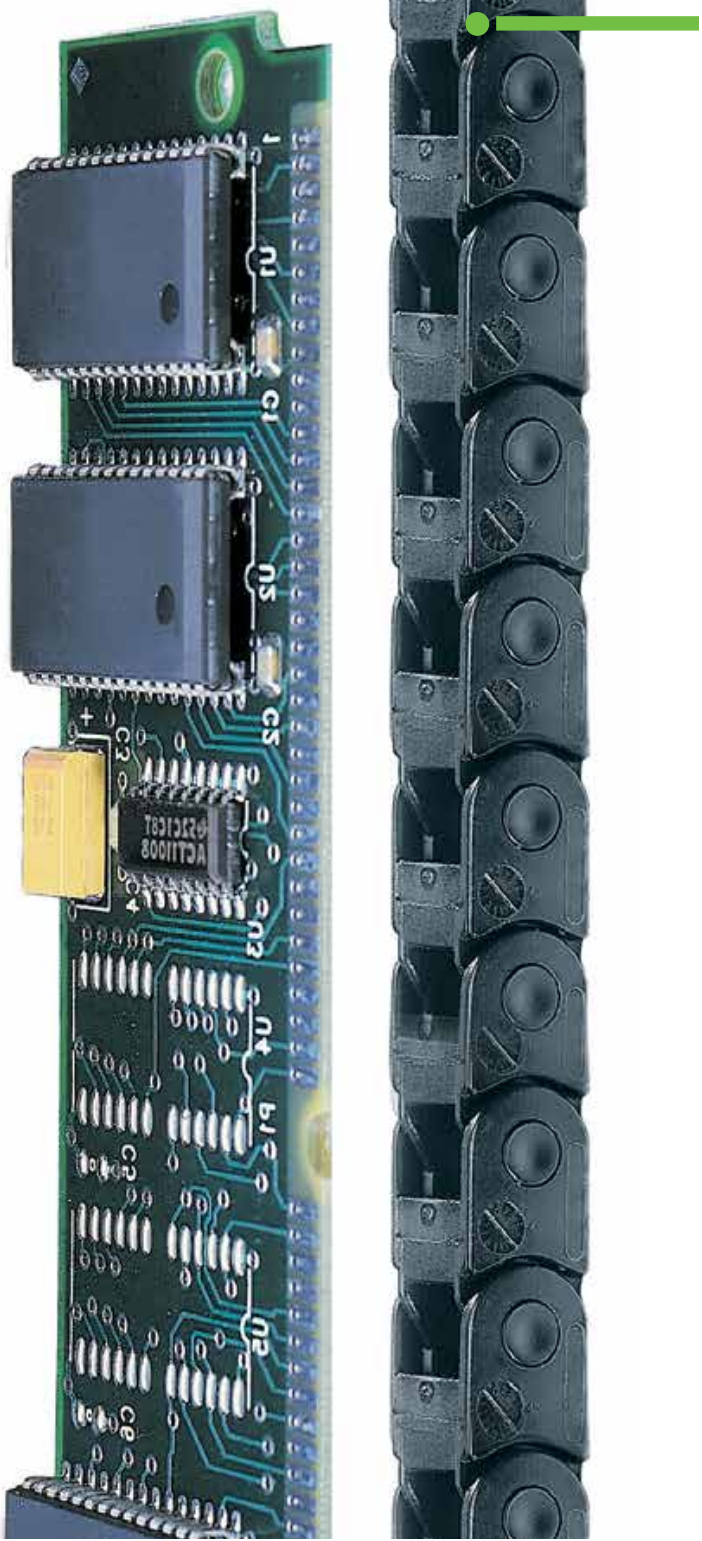
E2 Micro igus®' smallest E-Chain® cable carrier

System E2 Micro—considered one of the world's smallest cable carriers—can fit into almost any application, including those with tight space restrictions and small bending radii. System E2 Micro is cost-effective and available in many styles and sizes with various accessory options.

Typical industries and applications

- Models (Micro E-Chains®)
- Automatic doors
- Vehicles
- Measuring machines
- Electric equipment
- Pick and place robots
- General machinery



iF-Design Award - for E2 Micro - Series 05

Special equipment: Electrically conductive ESD/ATEX version upon request

IPA Qualification Certificate: Cleanroom test upon request

UL94 - V2 class for Series 03 and UL94 - HB class for all other Micro Series

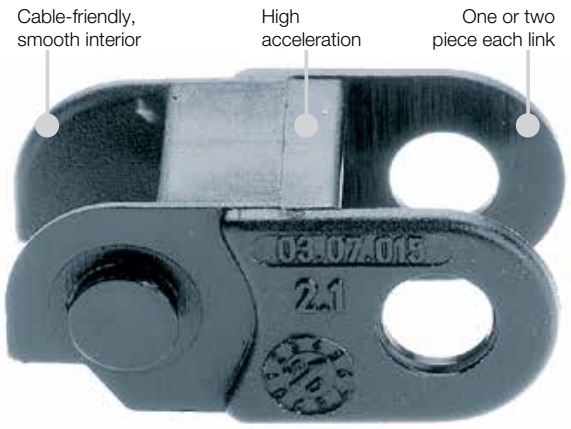
Smallest inner heights 5 mm: Series 03 E2 Micro

igus® E2 micro E-Chains® are robust for standing applications

Sliding door in train - UL 94-V2 version

Sliding door in subway with igus® Chainflex® CF9 cable for smallest spaces

E-Chain System® E2 Micro Selection Guide



- One-piece E-Chains®, from inner height of .20 (5 mm)
- High torsional rigidity
- Smallest inner heights and bending radii
- Mounting brackets with optional strain relief
- Small pitch for smooth running
- Cable-friendly, smooth interior
- Low weight
- Large pins for longer life
- Space-saving ratio of inner-to-outer dimensions
- To find more technical data about the material, chemical resistance and temperatures ➤ **Design, Chapter 1**

E2 Micro - one-piece E-Chains®

One-piece, non snap-open

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
03	.20	(5)	.20-.39	(5-10)	.34-.54	(8.7-13.7)	.31	(8)	.39-1.10	(10-28)
04	.28	(7)	.28-1.18	(7-30)	.47-1.38	(12-35)	.39	(10)	.59-1.89	(15-48)
05	.39	(10)	.24-2.52	(6-64)	.39-2.68	(10-68)	.47	(12)	.71-1.50	(18-38)
045	.41	(10.3)	.24-2.52	(6-64)	.47-2.76	(12-70)	.49	(12.5)	.71-1.50	(18-38)
06[1)]	.41	(10.5)	.24-2.52	(6-64)	.49-2.80	(12.5-71)	.59	(15)	.71-1.50	(18-38)
E2C-10	.42	(10.6)	.24-1.97	(6-50)	.53-2.26	(13.4-57.4)	.59	(15)	.71-1.50	(18-38)
E2C-15	.59	(14.9)	.39-1.97	(10-50)	.70-2.28	(17.8-57.8)	.76	(19.3)	1.10-2.95	(28-75)
08[2)]	.59	(15)	.39-1.97	(10-50)	.72-2.29	(18.2-58.2)	.76	(19.3)	.98-1.89	(25-48)

E2 Micro - two-piece E-Chains®

Snap-open along the inner radius

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
E2i-10	.41	(10.3)	.63-1.57	(16-40)	.89-1.85	(22.5-47.0)	.59	(15)	.71-1.50	(18-38)
E2i-15	.56	(14.3)	.63-1.57	(16-40)	.95-1.90	(24.2-48.2)	.76	(19.3)	1.10-1.89	(28-48)

E2 Micro - two-piece E-Chains®

Snap-open along the outer radius

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
E2-10	.40	(10.1)	.24-1.97	(6-50)	.53-2.26	(13.4-57.4)	.59	(15)	.71-1.50	(18-38)
B07[3)]	.41	(10.3)	.63-1.57	(16-40)	.89-1.85	(22.5-47.0)	.59	(15)	.71-1.50	(18-38)
B09[4)]	.56	(14.3)	.63-1.57	(16-40)	.95-1.90	(24.2-48.2)	.76	(19.3)	1.10-1.89	(28-48)
E2-15	.57	(14.4)	.39-1.97	(10-50)	.70-2.28	(17.8-57.8)	.76	(19.3)	1.10-2.95	(28-75)

For new designs we recommend E2 micro new generation series **1)** E2C-10, **2)** E2C-15, **3)** E2-10, **4)** E2-15

E-Chain System® E2 Micro
Assembly Instructions

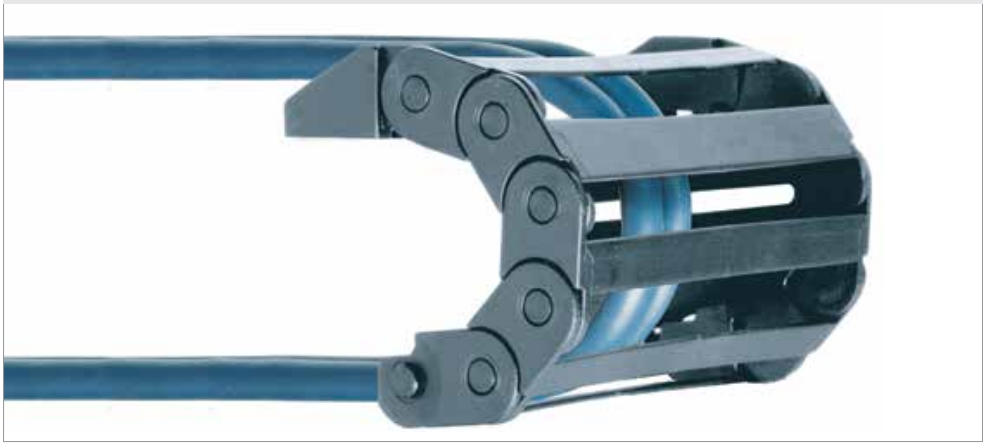
Assembling | E2 micro

Twist and click

Separating | E2 micro

Twist and separate

Specialty | E2 micro



igus® Micro E-Chains® - for smallest bending radii with Chainflex® CF98 and CF99 - 4 x d!

Specialty | B07 and B09

B07 and B09: two-piece - Snap-open along outer radius with film-hinge

03

igus®

E-Chain System® E2 Micro Series 03

.20

Price Index

Series 03

Special Features / Options

IPA Qualification Certificate: Cleanroom test upon request

ESD Classification: Electrically conductive ESD/ ATEX version upon request

Smallest inner height .20" (5 mm)

Flammability Class VDE 0304 IIC UL94 V2

Assembly Tips

Easy to assemble and disassemble

Features & Benefits

1. Mounting bracket with integrated strain relief
2. One-piece, non snap-open E-Chain®
3. Very lightweight - low price
4. igus® smallest E-Chain® - interior dimensions .20" x .20" (5 x 5 mm)
5. Dirt-repellant exterior
6. Available as E-Z style E-Chain, See Chapter 2
7. Patented push-button design for better stability

Usage Guidelines

- If quieter operation is required
- If cost is a factor
- If snap-open links are not necessary

- If snap-open links are required
  ➤ **Series 047 "Zipper"**
- If quick insertion of cables with preassembled connector is required
  ➤ **Series E03 E-Z Chain**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **03-05-028-0**	E-Chain®
1 Set **03-05-12Z**	Mounting Bracket

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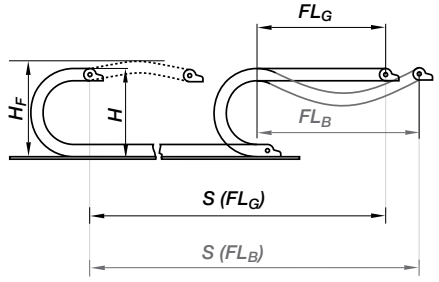
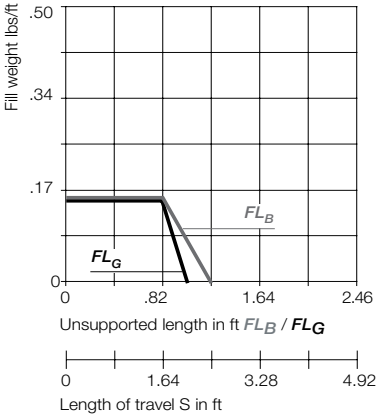
E-Chain System® E2 Micro
Series 03
Installation Dimensions

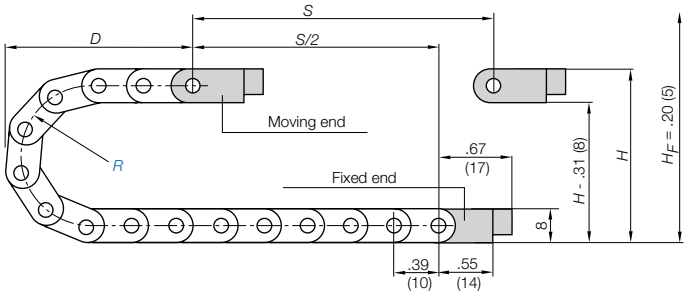
Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .39" (10 mm)
Links per ft (m): = 30.47 (100)
For center mount applications:
Chain length = $^{S}/_{2} + K$

The required clearance height: $H_F = H + .20$ **in. (5 mm)** (with .067 lbs/ft (0.1 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.39 (010)	.47 (012)	.59 (015)	.71 (018)	1.10 (028)
H	1.10 (28)	1.26 (32)	1.50 (38)	1.73 (44)	2.52 (64)
D	1.14 (29)	1.22 (31)	1.34 (34)	1.46 (37)	1.85 (47)
K	2.17 (55)	2.36 (60)	2.76 (70)	3.15 (80)	4.33 (110)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

*If the mounting bracket location is set lower

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Flammability Class, igumid NB	VDE 0304 IIC UL94 V2

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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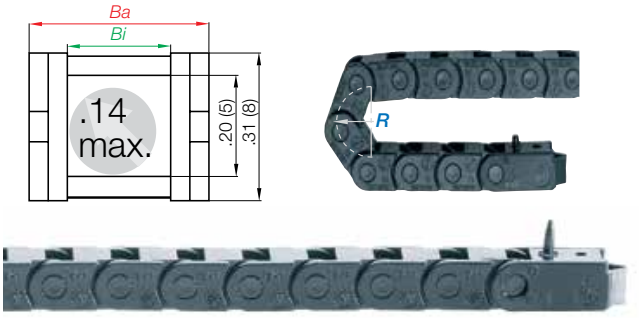
igus®

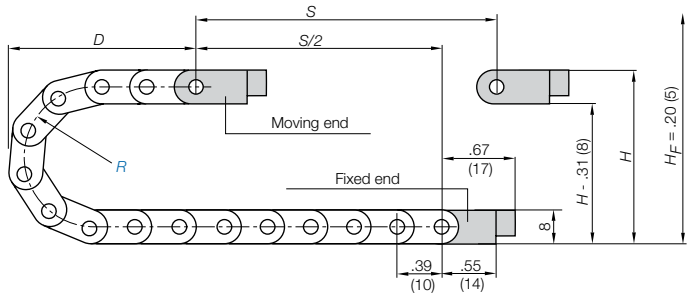
E-Chain System® E2 Micro Series 03

Series 03 - E-Chain® non snap-open



Part Number Structure

03-	05-	028-	0
			Color - Black
		Bending radius	
	Width		
Series			



Supplement part number with required radius. Example: 03-05-028-0
Pitch: .39 in. (10 mm) per link links/ft (m) = 30.47 (100)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
03-05-	□	-0	.20 (5)	.34 (8.7)	≈ 0.027 (0.04)
03-07-	□	-0	.28 (7)	.42 (10.7)	≈ 0.034 (0.05)
03-10-	□	-0	.39 (10)	.54 (13.7)	≈ 0.040 (0.06)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 03-05-028-0

	010	012	015	018	028
R	.39 (010)	.47 (012)	.59 (015)	.71 (018)	1.10 (028)
H	1.10 (28)	1.26 (32)	1.50 (38)	1.73 (44)	2.52 (64)
D	1.14 (29)	1.22 (31)	1.34 (34)	1.46 (37)	1.85 (47)
K	2.17 (55)	2.36 (60)	2.76 (70)	3.15 (80)	4.33 (110)

0=Standard color black. For other colors see Chapter 1

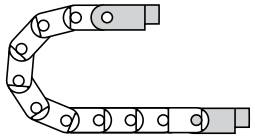
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E2 Micro
Series 03
Mounting Brackets

Polymer, one-piece

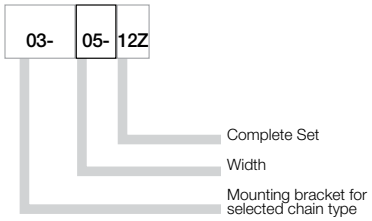
- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Rapid installation through adaptor plate

Moving end
03 ...1Z

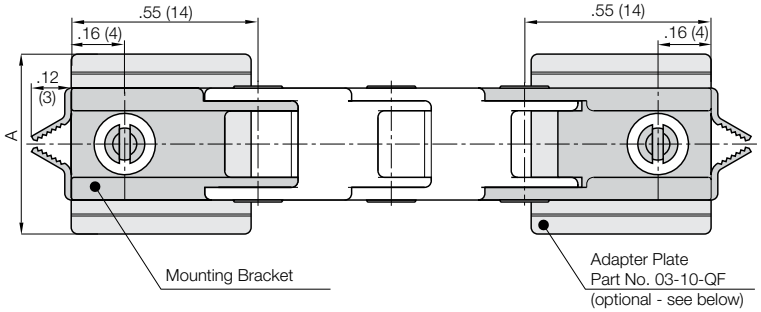


Fixed end
03...2Z

Part Number Structure



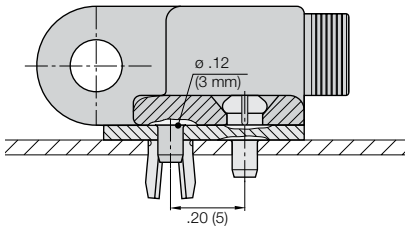
Full set, for both ends:
03- 05- 12Z Full set, **each part with pin/bore**
Single-part order:
03- 05- 1Z Mounting bracket **with bore**
03- 05- 2Z Mounting bracket **with pin**



Chain Width	Part No. Full Set	Dimension A in.	(mm)
-05	03-05-12Z	.34	(8.7)
-07	03-07-12Z	.42	(10.7)
-10	03-10-12Z	.54	(13.7)

Additional Accessories

03-10-QF = Adapter plate for all sizes
The adapter has broken edges, so that it can be adapted to the respective chain width. It is not absolutely necessary for attaching the mounting brackets. The mounting brackets can also be screwed on without the adapter plate.



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

04

igus®

E-Chain System® E2 Micro Series 04

.28

Price Index

Series 04

Special Features / Options

IPA Qualification Certificate: Cleanroom test upon request

ESD Classification: Electrically conductive ESD/ ATEX version upon request

Flammability Class VDE 0304 IIC UL94 HB

Assembly Tips

Easy to assemble and disassemble

Features & Benefits

1. Very lightweight - low price
2. One-piece, non snap-open E-Chain®
3. Small E-Chain® - interior dimensions .28" x .28" (7 x 7 mm)
4. Dirt-repellant exterior

Usage Guidelines

- If quieter operation is required
- If cost is a factor
- If snap-open links are not necessary

- If snap-open links are required
  ➤ **Series 047 "Zipper"**
- If quick insertion of cables with preassembled connector is required
  ➤ **Series E04 E-Z Chain**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **04-07-038-0**	E-Chain®
1 Set **040-07-12**	Mounting Bracket

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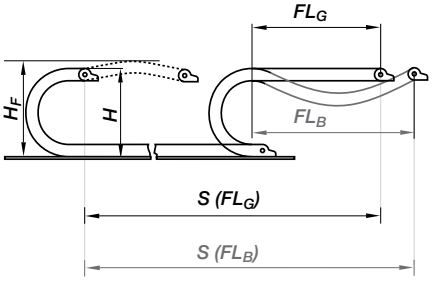
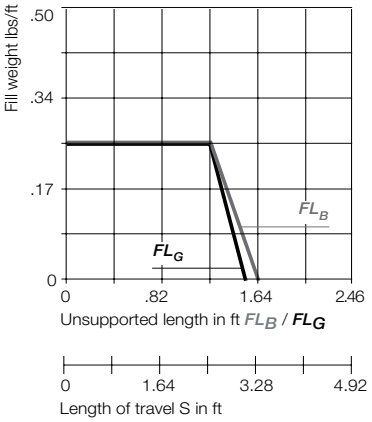
E-Chain System® E2 Micro
Series 04
Installation Dimensions

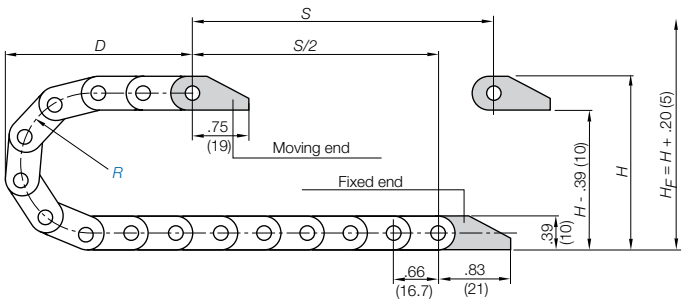
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .66" (16.7 mm)
Links per ft (m): = 18.28 (60)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: $H_F = H + .20$ **in. (5 mm)** (with .067 lbs/ft (0.1 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.59 (015)	.71 (018)	1.10 (028)	1.50 (038)	1.89 (048)
H	1.57 (40)	1.81 (46)	2.60 (66)	3.39 (86)	4.17 (106)
D	1.77 (45)	1.89 (48)	2.28 (58)	2.68 (68)	3.07 (78)
K	3.35 (85)	3.54 (90)	4.92 (125)	6.10 (155)	7.28 (185)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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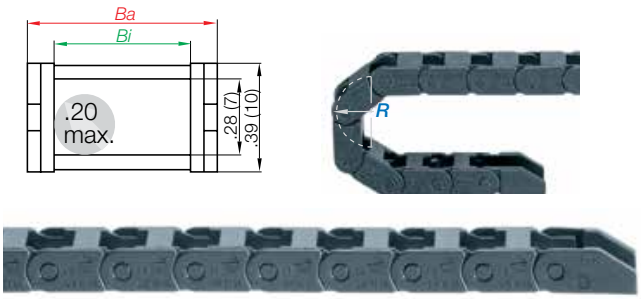
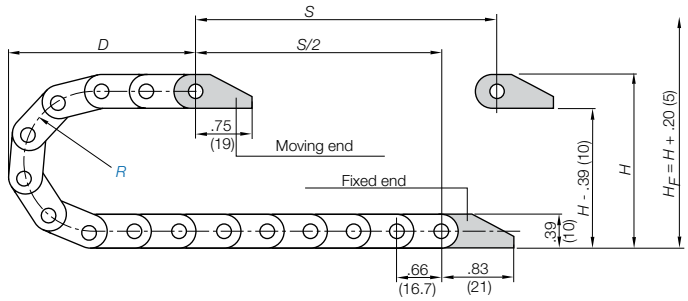
E-Chain System® E2 Micro Series 04

Series 04 - E-Chain® non snap-open



Part Number Structure

04-	07-	038-	0
			Color - Black
		Bending radius	
	Width		
Series			



Supplement part number with required radius. Example: 04-07-038 -0
Pitch: .66 in. (16.7 mm) per link links/ft (m) = 18.28 (60)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
04-07-		-0	.28 (7)	.47 (12)	≈ 0.047 (0.07)
04-10-		-0	.39 (10)	.59 (15)	≈ 0.053 (0.08)
04-16-		-0	.63 (16)	.83 (21)	≈ 0.060 (0.09)
04-20-		-0	.79 (20)	.98 (25)	≈ 0.067 (0.10)
04-30-		-0	1.18 (30)	1.38 (35)	≈ 0.073 (0.11)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 04-07-038 -0

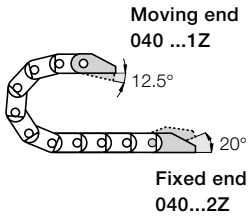
	015	018	028	038	048
R	.59 (015)	.71 (018)	1.10 (028)	1.50 (038)	1.89 (048)
H	1.57 (40)	1.81 (46)	2.60 (66)	3.39 (86)	4.17 (106)
D	1.77 (45)	1.89 (48)	2.28 (58)	2.68 (68)	3.07 (78)
K	3.35 (85)	3.54 (90)	4.92 (125)	6.10 (155)	7.28 (185)

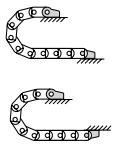
0=Standard color black. For other colors see Chapter 1

E-Chain System® E2 Micro
Series 04
Mounting Brackets

Polymer, one-piece

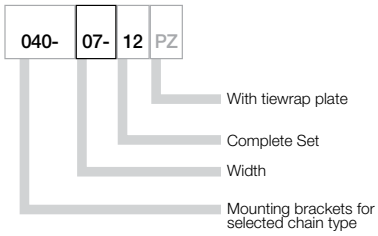
- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible

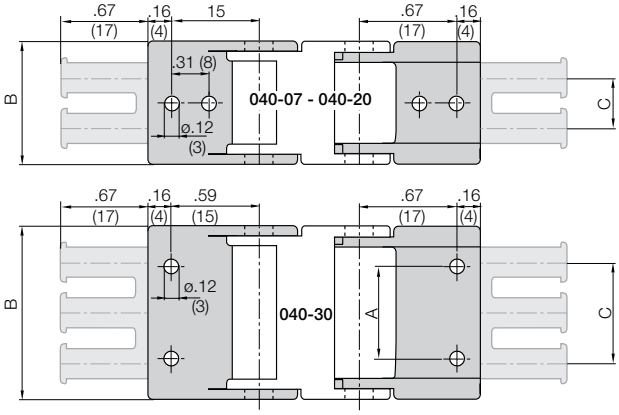




Possible installation configurations -

Part Number Structure





Full set, for both ends:
040-07-12PZ Full set, **each part with pin/bore**

Single-part order:
040-07-1PZ Mounting bracket **with bore**
040-07-2PZ Mounting bracket **with pin**

Chain Type	Part No. Full set without Tiewrap Plate	Part No. Full set with Tiewrap plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Dimension C in.	(mm)	Number of Teeth
04-07	**040-07-12**	**040-07-12PZ**	—	—	.47	(12)	—	—	1
04-10	**040-10-12**	**040-07-12PZ**	—	—	.59	(15)	—	—	1
04-16	**040-16-12**	**040-07-12PZ**	—	—	.83	(21)	.39	(10)	2
04-20	**040-20-12**	**040-07-12PZ**	—	—	.98	(25)	.39	(10)	2
04-30	**040-30-12**	**040-07-12PZ**	.87	(22)	1.38	(35)	.79	(20)	3

Additional accessories

Quicksnap - the complete, detachable mounting unit, upon request
Only available for the 040-07 E-Chain - **Part No. 040-07-QS**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

05

igus®

E-Chain System® E2 Micro Series 05

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Price Index

Series 05

Special Features / Options

IPA Qualification Certificate: Cleanroom test upon request

ESD Classification: Electrically conductive ESD/ ATEX version upon request

Flammability Class VDE 0304 IIC UL94 V2

iF-Design Award - for E2 micro - Series 05

Assembly Tips

East to assemble and disassemble

Features & Benefits

1. Very lightweight - ideal for low inertia applications
2. iF-Design Award
3. One-piece, non snap-open E-Chain®

Usage Guidelines

- If lightweight construction is required
- If minimal height and width dimensions are required
- If cost is a factor

- If snap-open links are necessary
  ➤ **Series 07 "Zipper"**
- If quick insertion of cables with preassembled connectors is required
  ➤ **Series E06 E-Z Chain**
- If extra rigidity is required
  ➤ **Series 06 E2 Micro**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **05-20-038-0**	E-Chain®
1 Set **050-20-12**	Mounting Bracket

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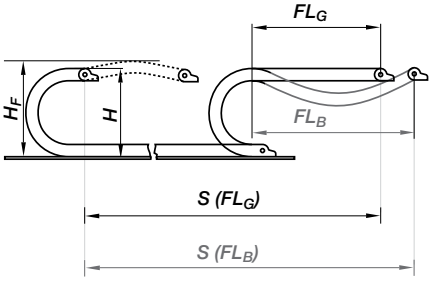
www.edfluidos.com

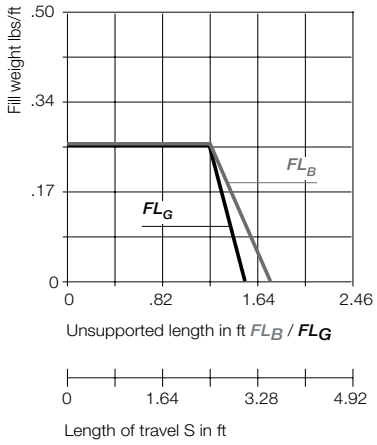
E-Chain System® E2 Micro
Series 05
Installation Dimensions

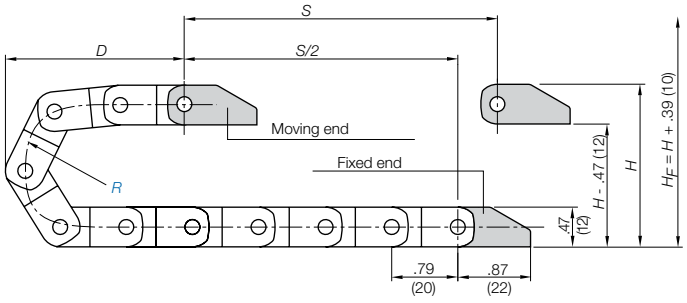
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: ***HF = H* + .39 in. (10 mm)** (with .13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.71 (018)	1.10 (028)	1.50 (038)
H	1.89 (48)	2.68 (68)	3.46 (88)
D	2.13 (54)	2.52 (64)	2.91 (74)
K	3.94 (100)	5.12 (130)	6.30 (160)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

*If the mounting bracket location is set lower

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

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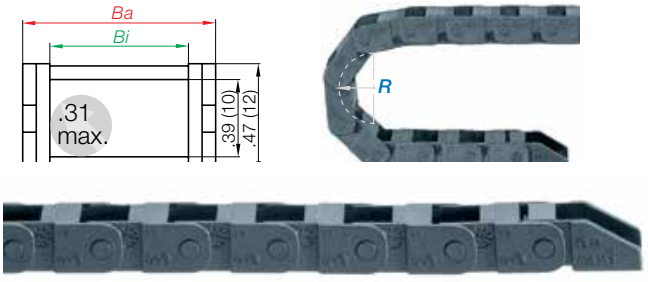
igus®

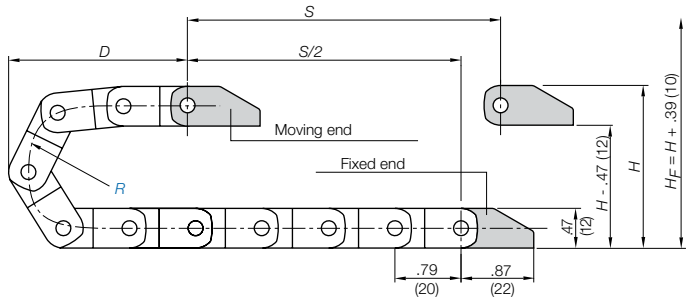
E-Chain System® E2 Micro Series 05

Series 05 - E-Chain® non snap-open



Part Number Structure

05-	20-	038-	0
			Color - Black
		Bending radius	
	Width		
Series			



Supplement part number with required radius. Example: 05-20-038-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
05-06- (05-1)		-0	.28 (6)	.39 (10)	≈ 0.040 (0.06)
05-10- (05-2)		-0	.39 (10)	.55 (14)	≈ 0.047 (0.07)
05-16- (05-3)		-0	.63 (16)	.79 (20)	≈ 0.047 (0.07)
05-20- (05-4)		-0	.79 (20)	94 (24)	≈ 0.054 (0.08)
05-30- (05-5)		-0	1.18 (30)	1.34 (34)	≈ 0.060 (0.09)
05-64-		-0	2.52 (64)	2.68 (68)	≈ 0.128 (0.19)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 05-20-038-0

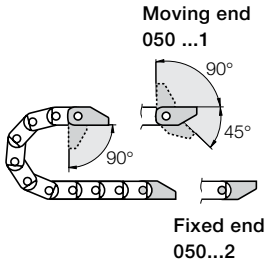
	018	028	038
R	.71 (018)	1.10 (028)	1.50 (038)
H	1.89 (48)	2.68 (68)	3.46 (88)
D	2.13 (54)	2.52 (64)	2.91 (74)
K	3.94 (100)	5.12 (130)	6.30 (160)

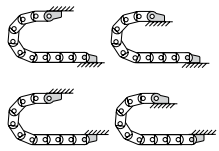
0=Standard color black. For other colors see Chapter 1

E-Chain System® E2 Micro
Series 05
Mounting Brackets

Polymer, one-piece

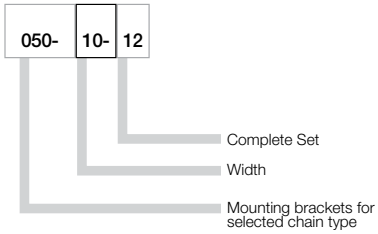
- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible

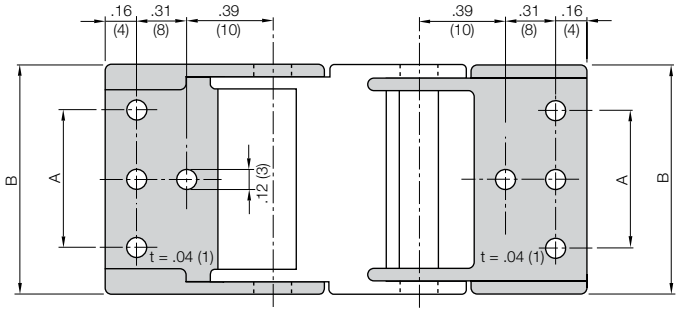




Possible installation configurations -

Part Number Structure





Full set, for both ends:
050- 10- 12 Full set, **each part with pin/bore**
Single-part order:
050- 10- 1 Mounting bracket **with bore**
050- 10- 2 Mounting bracket **with pin**

Chain Type	Part No. Full set	Dimension A in.	(mm)	Dimensions B in.	(mm)
05-06 (05-1)	**050-06-12**	—	—	.42	(10.7)
05-10 (05-2)	**050-10-12**	—	—	.58	(14.7)
05-16 (05-3)	**050-16-12**	—	—	.81	(20.7)
05-20 (05-4)	**050-20-12**	—	—	.97	(24.7)
05-30 (05-5)	**050-30-12**	.87	(22)	1.57	(34.7)
05-64	**050-64-12**	2.20	(56)	2.70	(68.7)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

045

igus®

E-Chain System® E2 Micro Series 045

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Price Index

Series 045

Special Features / Options

IPA Qualification Certificate: Cleanroom test upon request

ESD Classification: Electrically conductive ESD/ ATEX version upon request

Flammability Class VDE 0304 IIC UL94 HB

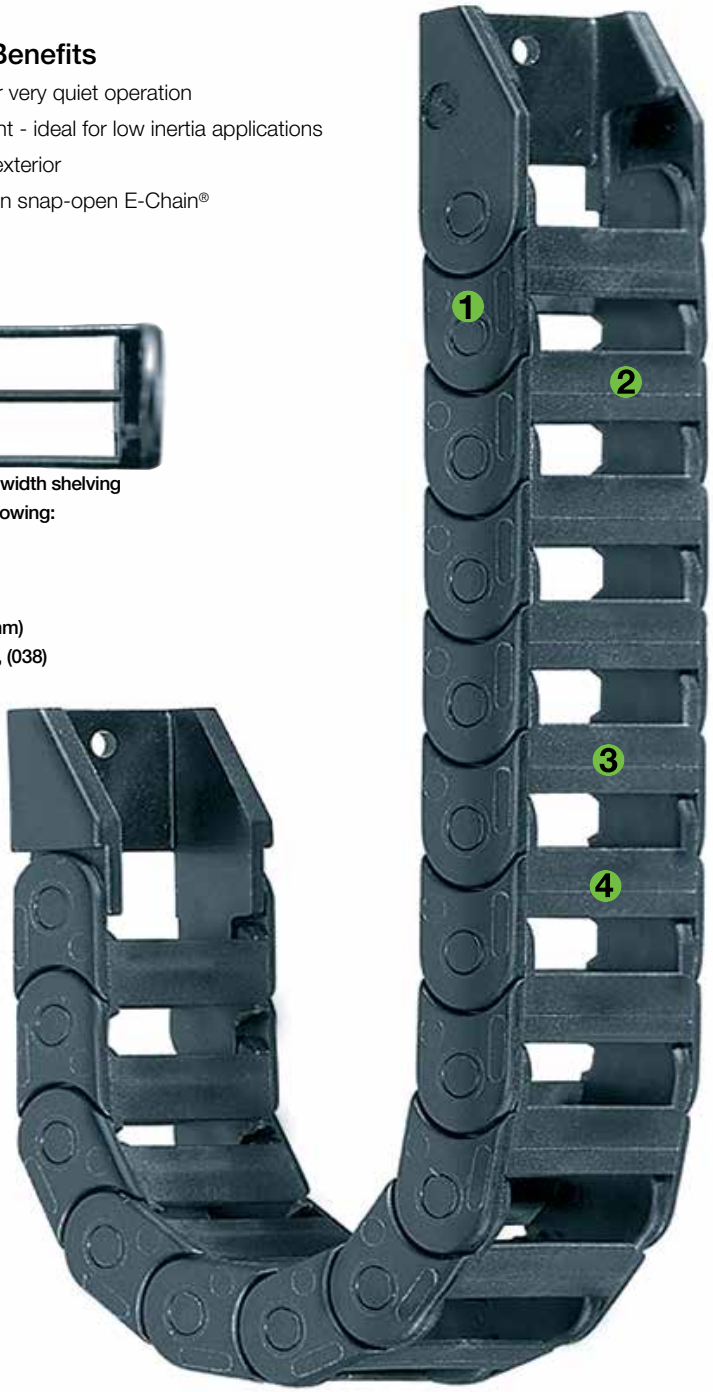
Assembly Tips

Easy to assemble and disassemble

Features & Benefits

1. Small pitch for very quiet operation
2. Very lightweight - ideal for low inertia applications
3. Dirt-repellant exterior
4. One-piece, non snap-open E-Chain®

Series 046 with full-width shelving available for the following:
046-16-018
046-16-028
046-16-038
Width Bi: .63" (16 mm)
Radii R: (018), (028), (038)



Usage Guidelines

- If very quiet operation is required
- Aesthetic design
- If excellent service life is required
- If cost is a factor
- If small bending radii are required

- If snap-open links are required
  ➤ **Series 047 "Zipper"**
- If quick insertion of cables with preassembled connector is required
  ➤ **Series E06 E-Z Chain**
- If extra rigidity is required
  ➤ **Series 06 E2 Micro**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **045-20-038-0**	E-Chain®
1 Set **0450-20-12**	Mounting Bracket

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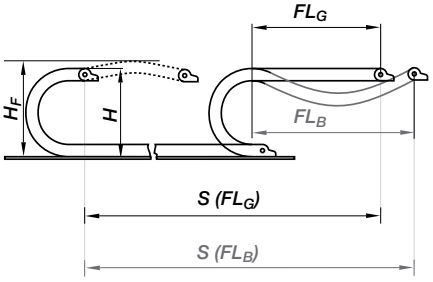
942 25 27 50
edf@edfluidos.com

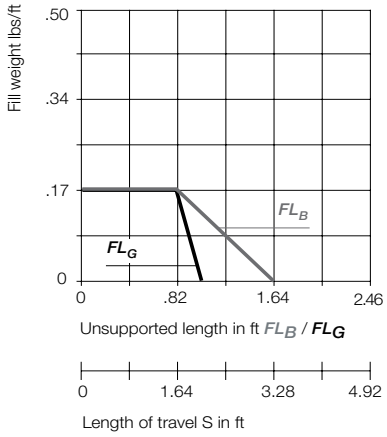
E-Chain System® E2 Micro Series 045 Installation Dimensions

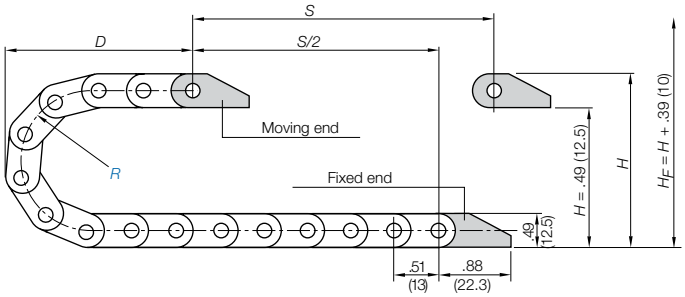
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .51" (13 mm)
Links per ft (m): = 23.47 (77)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: ***HF = H* + .39 in. (10 mm)** (with .13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.71 (018)	1.10 (028)	1.50 (038)
H	1.91 (48.5)	2.70 (68.5)	3.48 (88.5)
D	1.73 (44)	2.13 (54)	2.52 (64)
K	3.35 (85)	4.53 (115)	5.91 (150)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

*If the mounting bracket location is set lower

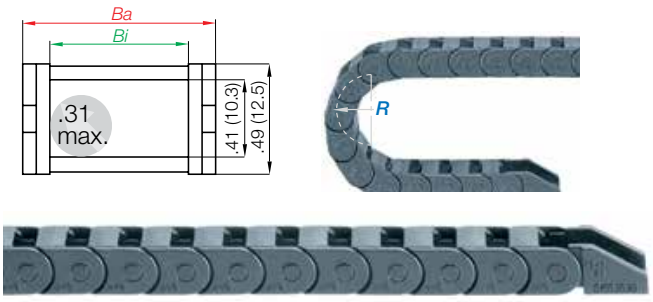
Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

E-Chain System® E2 Micro
Series 045

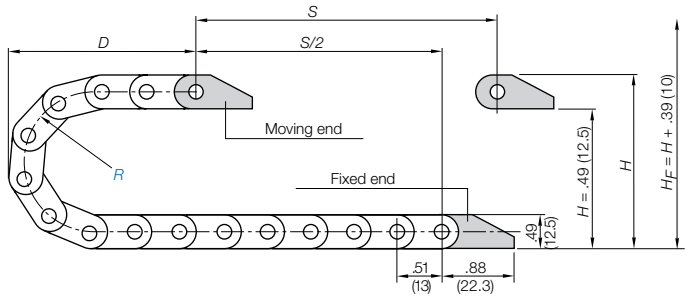
Series 045 - E-Chain® non snap-open



Part Number Structure

045- 20- 038- 0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: 045-20-[038]-0
Pitch: .51 in. (13 mm) per link links/ft (m) = 23.47 (77)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
045-06-	☐	-0	.24 (6)	.47 (12)	≈ 0.060 (0.09)
045-10-	☐	-0	.39 (10)	.63 (16)	≈ 0.067 (0.10)
045-16-	☐	-0	.63 (16)	.87 (22)	≈ 0.074 (0.11)
045-20-	☐	-0	.79 (20)	1.02 (26)	≈ 0.087 (0.13)
045-30-	☐	-0	1.18 (30)	1.42 (36)	≈ 0.108 (0.16)
045-64-	☐	-0	2.52 (64)	2.76 (70)	≈ 0.128 (0.19)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 045-20-[038]-0

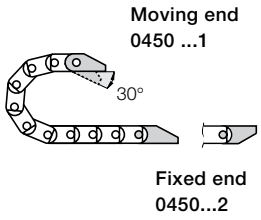
	018	028	038
R	.71 (018)	1.10 (028)	1.50 (038)
H	1.91 (48.5)	2.70 (68.5)	3.48 (88.5)
D	1.73 (44)	2.13 (54)	2.52 (64)
K	3.35 (85)	4.53 (115)	5.91 (150)

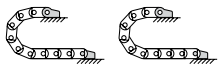
0=Standard color black. For other colors see Chapter 1

E-Chain System® E2 Micro
Series 045
Mounting Brackets

Polymer, one-piece

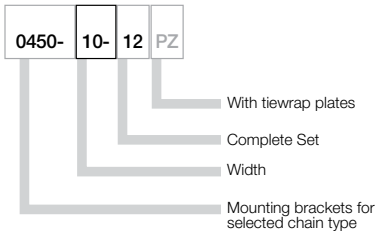
- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible



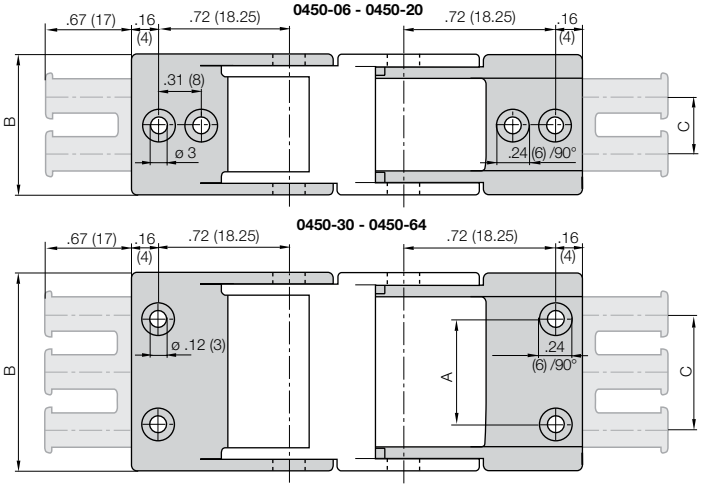


Possible installation configurations -

Part Number Structure



Full set, for both ends:
0450-10-12PZ
Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
0450-10-1PZ
Mounting bracket **with bore + tiewrap plate**
0450-10-2PZ
Mounting bracket **with pin + tiewrap plate**



Chain Type	Part No. Full set without Tiewrap Plate	Part No. Full Set with Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Dimensions C in.	(mm)	Number of Teeth
045-06	**0450-06-12**	**0450-06-12PZ**	—	—	.47	(12)	—	—	1
045-10	**0450-10-12**	**0450-10-12PZ**	—	—	.63	(16)	—	—	1
045-16	**0450-16-12**	**0450-16-12PZ**	—	—	.87	(22)	.39	(10)	2
045-20	**0450-20-12**	**0450-20-12PZ**	—	—	1.02	(26)	.39	(10)	2
045-30	**0450-30-12**	**0450-30-12PZ**	.87	(22)	1.42	(36)	.79	(20)	3
045-64	**0450-64-12**	**0450-64-12PZ**	2.20	(56)	2.76	(70)	1.97	(50)	6

Additional Accessories

Quickfix - mounting bracket with dowel, upon request
Part No.
0450-16-12Q

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

06

igus®

E-Chain System® E2 Micro Series 06

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For new designs we recommend E2 Micro “New Generation: E2C-10

Price Index

Series 06

Special Features / Options

IPA Qualification Certificate: Cleanroom test upon request

ESD Classification: Electrically conductive ESD/ ATEX version upon request

Flammability Class VDE 0304 IIC UL94 HB

Assembly Tips

East to assemble and disassemble

Features & Benefits

1. High torsional rigidity
2. Very lightweight - low price
3. Dirt repellant exterior
4. Mounting bracket with integrated strain relief
5. Molded in separator available

Usage Guidelines

- If high torsional rigidity is required
- If cost is a factor
- If connection options are required - (Quicksnap & Quickfix)

- If snap-open links are required
  ➤ **Series 07 “Zipper”**
- If quick insertion of cables with preassembled connectors is required
  ➤ **Series E06/Z06 E-Z Chain**
- If very quiet operation is required
  ➤ **Series 045 E2 Micro**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **06-20-038-0**	E-Chain®
1 Set **060-20-12PZ**	Mounting Bracket

Estudio de Fluidos
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39611 GUARNIZO (Cantabria), España
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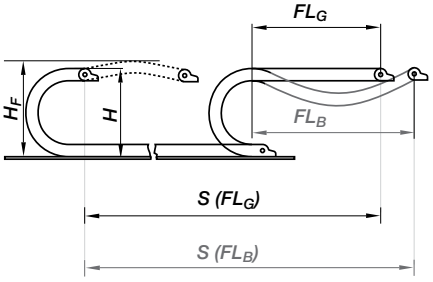
edf@edfluidos.com
www.edfluidos.com

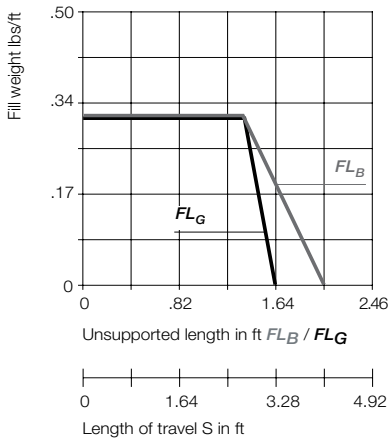
E-Chain System® E2 Micro
Series 06
Installation Dimensions

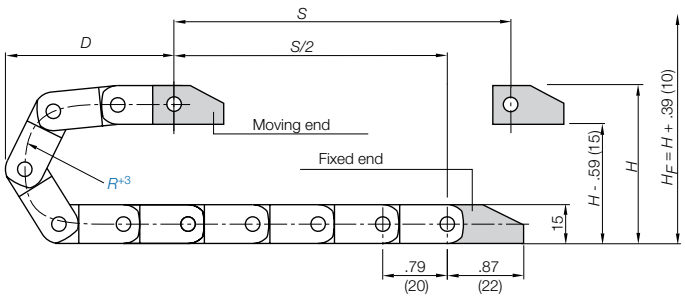
Short travel, unsupported length

- ● FL_B = unsupported with permitted sag
- ● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: ***HF = H* + .39 in. (10 mm)** (with .13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.71 (018)	1.10 (028)	1.50 (038)
H*	2.01 (51)	2.80 (71)	3.58 (91)
D	2.20 (56)	2.60 (66)	2.99 (76)
K	3.94 (100)	5.12 (130)	6.30 (160)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

*If the mounting bracket location is set lower

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

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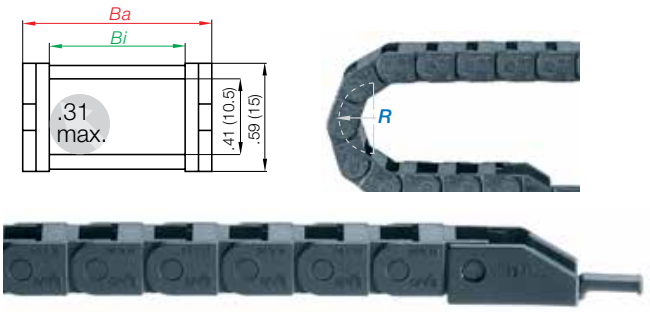
igus®

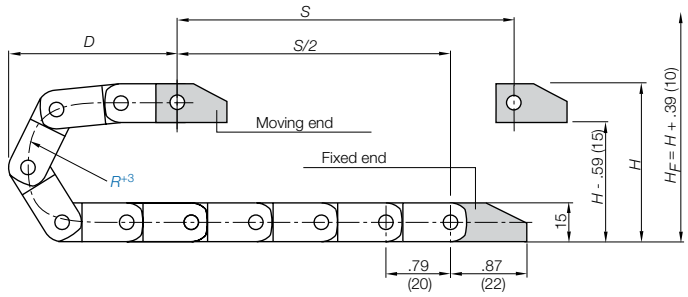
E-Chain System® E2 Micro Series 06

Series 06 - E-Chain® non snap-open



Part Number Structure

06-	20-	038-	0
			Color - Black
		Bending radius	
	Width		
Series			



Supplement part number with required radius. Example: 06-20-038-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
06-06-		-0	.28 (6)	.49 (12.5)	≈ 0.087 (0.13)
06-10-		-0	.39 (10)	.65 (16.5)	≈ 0.094 (0.14)
06-16-		-0	.63 (16)	.89 (22.5)	≈ 0.107 (0.16)
06-20-		-0	.79 (20)	1.06 (27.0)	≈ 0.114 (0.17)
06-30-		-0	1.18 (30)	1.46 (37.0)	≈ 0.134 (0.20)
06-40-		-0	1.57 (40)	1.85 (47.0)	≈ 0.155 (0.23)
06-50-		-0	1.97 (50)	2.24 (57.0)	≈ 0.175 (0.26)
06-64-		-0	2.52 (64)	2.80 (71.0)	≈ 0.202 (0.30)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 06-20-038-0

	018	028	038
R	.71 (018)	1.10 (028)	1.50 (038)
H*	2.01 (51)	2.80 (71)	3.58 (91)
D	2.20 (56)	2.60 (66)	2.99 (76)
K	3.94 (100)	5.12 (130)	6.30 (160)

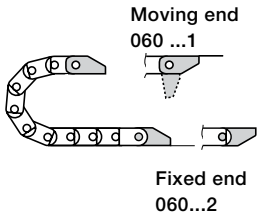
0=Standard color black. For other colors see Chapter 1

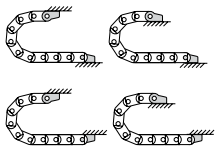
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E2 Micro
Series 06
Mounting Brackets

Polymer, one-piece

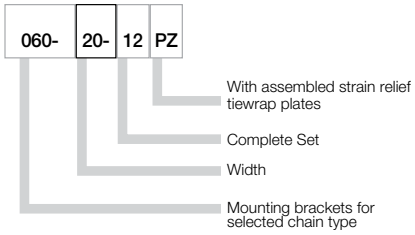
- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

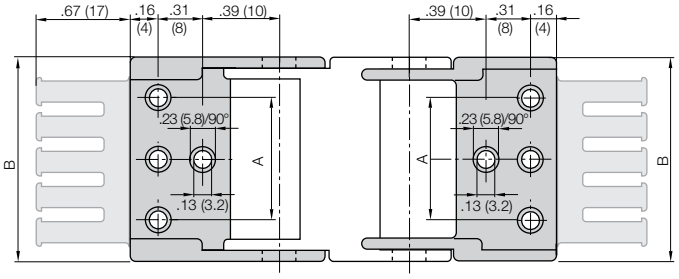




Possible installation configurations -

Part Number Structure





Full set, for both ends:
060- 20- 12 Full set, **each part with pin/bore**
Single-part order:
060- 20- 1 Mounting bracket **with bore**
060- 20- 2 Mounting bracket **with pin**

060-06-12 - 060-20-12:
Center bores only
060-30-12 – 060-64-12:
Outer bores only

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
06-06	**060-06-12PZ**	**060-06-12**	—	—	.42	(12.5)	1
06-10	**060-10-12PZ**	**060-10-12**	—	—	.65	(16.5)	1
06-16	**060-16-12PZ**	**060-16-12**	—	—	.89	(22.5)	2
06-20	**060-20-12PZ**	**060-20-12**	—	—	1.06	(27.0)	2
06-30	**060-30-12PZ**	**060-30-12**	.87	(22)	1.46	(37.0)	3
06-40	**060-40-12PZ**	**060-40-12**	1.26	(32)	1.85	(47.0)	4
06-50	**060-50-12PZ**	**060-50-12**	1.65	(42)	2.24	(57.0)	5
06-64	**060-64-12PZ**	**060-64-12**	2.20	(56)	2.70	(71.0)	6

Additional Accessories

Quicksnap - the complete, detachable mounting unit, upon request
Part No.
060-10-QS
060-16-QS
060-20-QS
060-40-QS

Quickfix - mounting bracket with dowel, upon request
Part No.
060-10-34QZ
060-20-34QZ

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

E2-10
E2i-10
E2C-10

igus®

E-Chain System® E2 Micro
Series E2-10/E2i-10/E2C-10

.40 .40 .41

Price Index

Series E2-10

Special Features / Options

IPA Qualification Certificate:
Cleanroom test upon request

ESD Classification:
Electrically conductive ESD/
ATEX version upon request

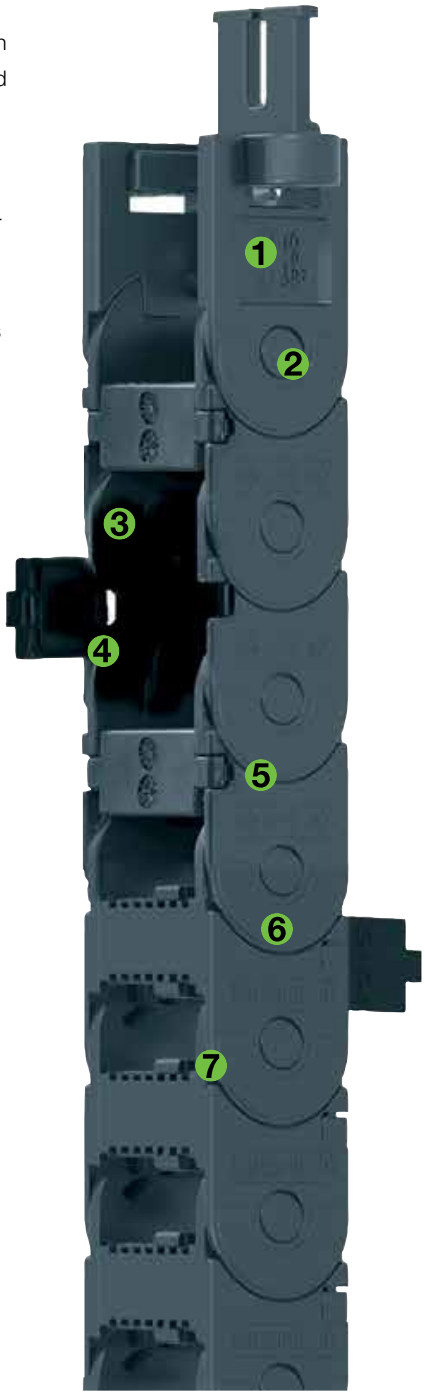
Flammability Class
VDE 0304 IIC UL94 HB

Assembly Tips

Easy to assemble and disassemble

Features & Benefits

1. Universal mounting bracket with strain relief option
2. Large, assembly friendly pins for long unsupported lengths
3. Very smooth contours ensure the best possible cable life
4. Non snap-open or snap-open in the inner or outer radius
5. Lightweight, low price
6. Square stop-dog system for large additional loads
7. Brake feature reduces noise



Usage Guidelines

- When long unsupported lengths and high additional loads are required with a small E-Chain®
- For smooth, quiet operation due to small pitch
- If a large modular system in various designs is desired

- If a closed Energy Tube is required
  ➤ **Series R07 "Zipper"**
- If torsional rigidity is very important
  ➤ **Series E2C-10 E2 Micro**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **E2-10-20-038-0**	E-Chain®
1 Set **E2-100-20-34PZ**	Mounting Bracket

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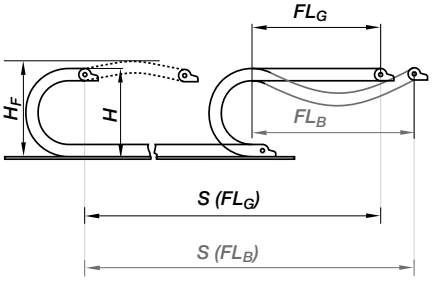
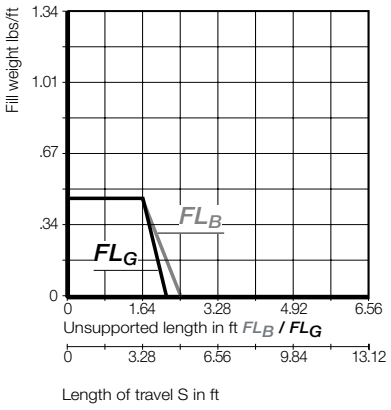
E-Chain System® E2 Micro Series E2-10/E2i-10/E2C-10 Installation Dimensions

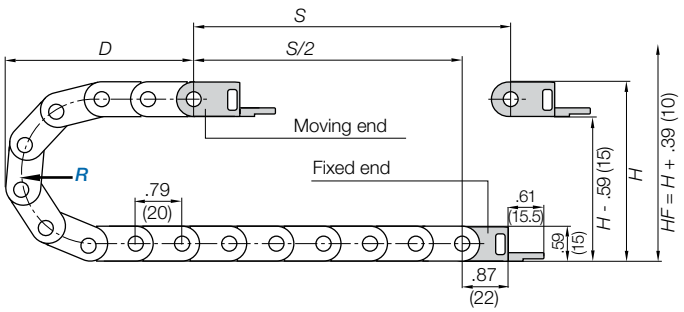
Short travel, unsupported length

- ● FL_B = unsupported with permitted sag
- ● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: ***HF = H* + .39 in. (10 mm)** (with .13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.71 (018)	1.10 (028)	1.50 (038)
H	2.01 (51)	2.80 (71)	3.58 (91)
D	2.20 (56)	2.60 (66)	2.99 (76)
K	3.94 (100)	5.12 (130)	6.30 (160)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

*If the mounting bracket location is set lower

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E2 Micro
Series E2-10/E2i-10/E2C-10

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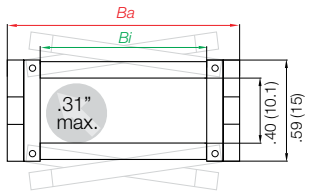
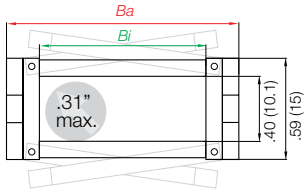
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



Series E2-10 - Snap-open along the outer radius from both sides

Part Number Structure

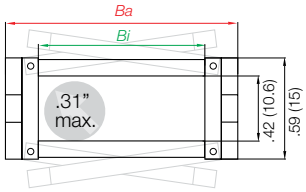
E2-10- 20- 038- 0
- Color - Black
- Bending radius
- Width
- Series



Series E2i-10 - Snap-open along the inner radius from both sides

Part Number Structure

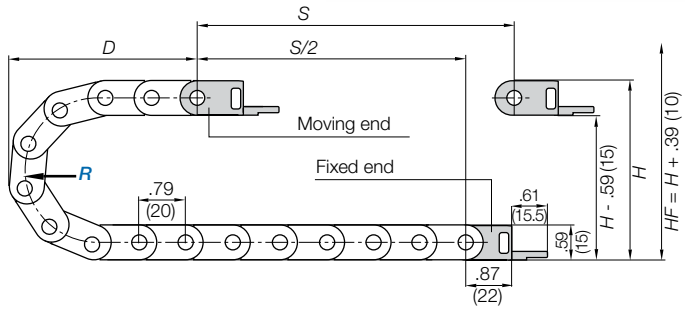
E2i-10- 20- 038- 0
- Color - Black
- Bending radius
- Width
- Series



Series E2C-10 - One-piece, non snap-open

Part Number Structure

E2C-10- 20- 038- 0
- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: E2-10-20- 038 -0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

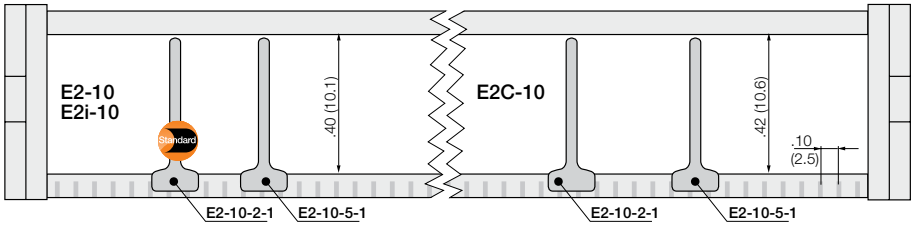
Snap-open along outer radius	Snap-open along inner radius	One-piece non snap-open		Bi in. (mm)	Ba in. (mm)	Weight E2-10 lbs/ft (kg/m)	Weight E2i-10 lbs/ft (kg/m)	Weight E2C-10 lbs/ft (kg/m)
E2-10-06-	E2i-10-06-	E2C-10-06-	-0	.28 (6)	.53 (13.4)	≈ 0.087 (0.13)	≈ 0.087 (0.13)	≈ 0.094 (0.14)
E2-10-10-	E2i-10-10-	E2C-10-10-	-0	.39 (10)	.69 (17.4)	≈ 0.094 (0.14)	≈ 0.094 (0.14)	≈ 0.094 (0.14)
E2-10-16-	E2i-10-16-	E2C-10-16-	-0	.63 (16)	.92 (23.4)	≈ 0.107 (0.16)	≈ 0.107 (0.16)	≈ 0.107 (0.16)
E2-10-20-	E2i-10-20-	E2C-10-20-	-0	.79 (20)	1.08 (27.4)	≈ 0.114 (0.17)	≈ 0.114 (0.17)	≈ 0.114 (0.17)
E2-10-30-	E2i-10-30-	E2C-10-30-	-0	1.18 (30)	1.47 (37.4)	≈ 0.128 (0.19)	≈ 0.128 (0.19)	≈ 0.134 (0.20)
E2-10-40-	E2i-10-40-	E2C-10-40-	-0	1.57 (40)	1.87 (47.4)	≈ 0.148 (0.22)	≈ 0.148 (0.22)	≈ 0.154 (0.23)
E2-10-50-	E2i-10-50-	E2C-10-50-	-0	1.97 (50)	2.26 (57.4)	≈ 0.168 (0.25)	≈ 0.168 (0.25)	≈ 0.168 (0.25)

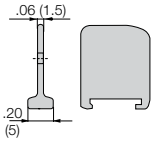
Choose from the radii below for all of the above sizes
Radius (mm) Example: E2-10-20- 038 -0

0=Standard color black.
For other colors see Chapter 1

	018	028	038
R	.71 (018)	1.10 (028)	1.50 (038)
H	2.01 (51)	2.80 (71)	3.58 (91)
D	2.20 (56)	2.60 (66)	2.99 (76)
K	3.94 (100)	5.12 (130)	6.30 (160)

E-Chain System® E2 Micro
Series E2-10/E2i-10/E2C-10
Interior Separation

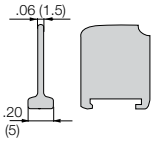




Separator

Unassembled	**Part No. E2-10-2**
Assembled	**Part No. E2-10-2-1**

- **Separator E2-10-2**
  Standard - for all applications
  For a simple vertical subdivision on E-Chains®. Separators can be arranged anywhere in the Energy cross section.



Notch separator
For notch crossbar

Unassembled	**Part No. E2-10-5**
Assembled	**Part No. E2-10-5-1**

- **Notch separator E2-10-5**
  Locks safely in .10" (2.5 mm) increments
  For exact positioning in E-Chains®. Recommended for side-mounted applications.

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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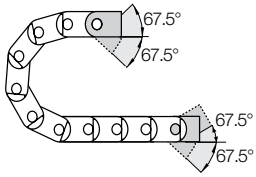
igus®

E-Chain System® E2 Micro Series E2-10/E2i-10/E2C-10 Mounting Brackets

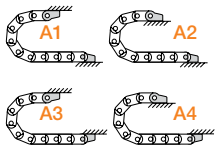
Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

Moving end
E2-100-...-3PZ two side pivoting
E2-100-...-5PZ one side• pivoting
E2-100-...-1PZ locking



Fixed end
E2-100-...-4PZ two side pivoting
E2-100-...-6PZ one side• pivoting
E2-100-...-2PZ locking

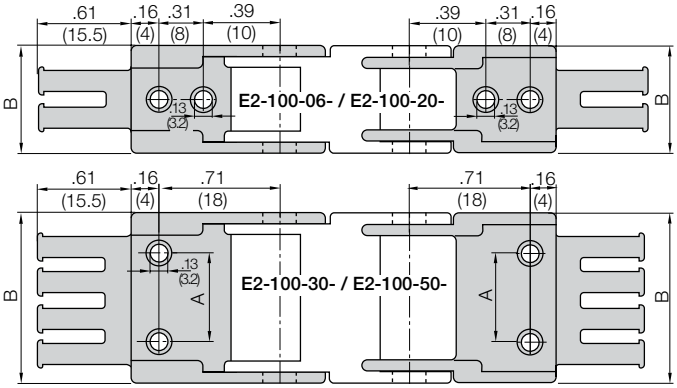


Possible installation configurations -

Part Number Structure

E2-100- | 20- | 34 | PZ

- With assembled strain relief tiewrap plates
- Complete Set - two side pivoting
- Width
- Mounting brackets for selected chain type



Full set, for both ends:
E2-100- | 20- | 34 Full set, **each part with pin/bore**
Single-part order:
E2-100- | 20- | 3 Mounting bracket **with bore**
E2-100- | 20- | 4 Mounting bracket **with pin**

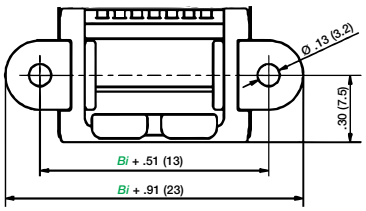
E2-100-06-12 - E2-100-20-12: Center bores only
E2-100-30-12 – E2-100-64-12: Outer bores only

Chain Width	Part No. full set with tiewrap plate two side pivoting	Part No. full set with tiewrap plate one side* pivoting	Part No. full set with tiewrap plate locking	Dimension A in.	Dimension A (mm)	Dimension B in.	Dimension B (mm)	Number of Teeth
-06	E2-100-06-34PZ	E2-100-06-56PZ	E2-100-06-12PZ	—	—	.53	(13.4)	1
-10	E2-100-10-34PZ	E2-100-10-56PZ	E2-100-10-12PZ	—	—	.69	(17.4)	1
-16	E2-100-16-34PZ	E2-100-16-56PZ	E2-100-16-12PZ	—	—	.92	(23.4)	2
-20	E2-100-20-34PZ	E2-100-20-56PZ	E2-100-20-12PZ	—	—	1.08	(27.4)	2
-30	E2-100-30-34PZ	E2-100-30-56PZ	E2-100-30-12PZ	.87	(22)	1.47	(37.4)	3
-40	E2-100-40-34PZ	E2-100-40-56PZ	E2-100-40-12PZ	1.26	(32)	1.87	(47.4)	4
-50	E2-100-50-34PZ	E2-100-50-56PZ	E2-100-50-12PZ	1.65	(42)	2.26	(57.4)	5

*One-side pivoting: Pivot angle = Bending radius.
One side pivoting only to the inner radius - whether mounted to A1 or A4

Additional Accessories

Quick flange- the quick flange can be clipped-in laterally in all mounting brackets. Housing for haxagonal nut or M3 socket head screws M3.
Single:
Part no. E2-150-QF
Includes mounting bracket:
Part No. E2-100-20-34PZQF



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PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

B07

igus®

E-Chain System® E2 Micro Series B07

.41

For new designs we recommend E2 Micro “New Generation: E2-10

Price Index

Series B07

Special Features / Options

ESD Classification: Electrically conductive ESD/ ATEX version upon request

UL94 -V2 classifications upon request

Features & Benefits

1. Lightweight
2. Small pitch for low-noise, smooth operation
3. Mounting bracket with integrated strain relief
4. For high acceleration
5. Snap-open along outer radius with film-hinge
6. Modular 2-piece link design - saves assembly time
7. Easy to shorten and lengthen at any given point

Assembly Tips

Easy to assemble and disassemble

Usage Guidelines

- If a small lightweight E-Chain® is required
- If an small, openable, reasonably priced E-Chain® is required
- Perfect for handling machines and pick-and-place tools

- If opening of the link is not necessary
  ➤ **Series 06 E2 micro**
- If cable installation without opening lids is possible

➤ **Series E06 E-Z Chain**

- If a fast openable Energy Tube system is required

➤ **Series R07 E2 Tubes**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **B07-20-038-0**	E-Chain®
1 Set **060-20-12PZ**	Mounting Bracket

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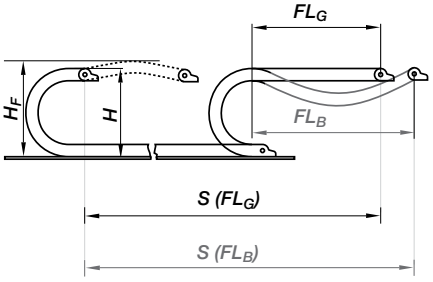
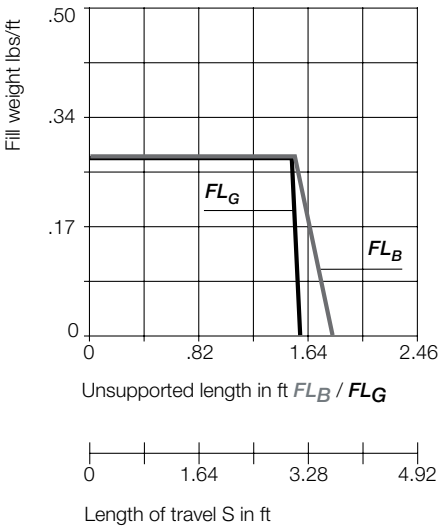
E-Chain System® E2 Micro
Series B07

Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1





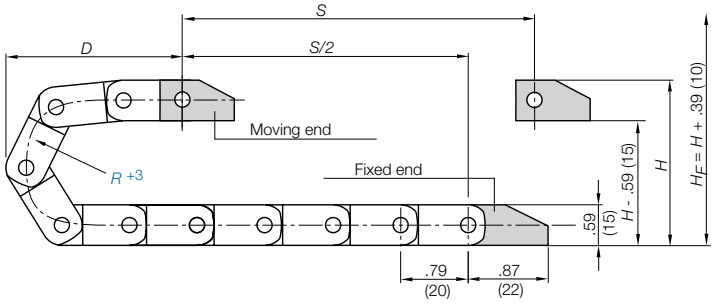
Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

*If the mounting bracket location is set lower



Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $S/2 + K$

The required clearance height: ***H_F = H* + .39 in. (10 mm)** (with .13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.71 (018)	1.10 (028)	1.50 (038)
H*	2.01 (51)	2.80 (71)	3.58 (91)
D	2.20 (56)	2.60 (66)	2.99 (76)
K	3.94 (100)	5.12 (130)	6.30 (160)

Speed / acceleration FL_G	max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.81 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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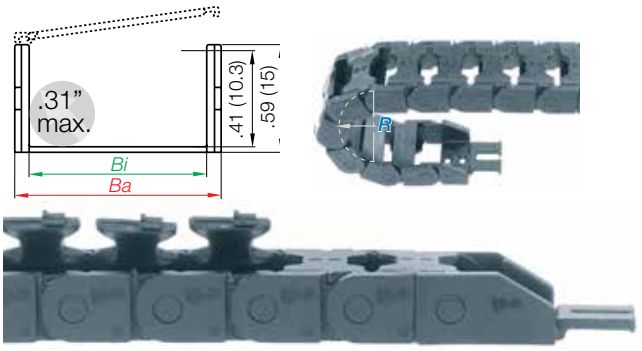
igus®

E-Chain System® E2 Micro
Series B07

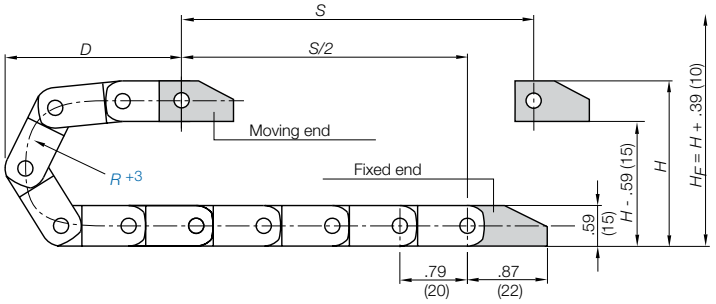
Series B07 - E-Chain® snap-open along the outer radius



Part Number Structure

B07- 20- 038- 0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: B07-20-038-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
B07-16-	☐	-0	.63 (16)	.89 (22.5)	≈ 0.107 (0.16)
B07-20-	☐	-0	.79 (20)	1.06 (27.0)	≈ 0.114 (0.17)
B07-30-	☐	-0	1.18 (30)	1.46 (37.0)	≈ 0.134 (0.20)
B07-40-	☐	-0	1.57 (40)	1.85 (47.0)	≈ 0.155 (0.23)

Choose from the radii below for all of the above sizes
Radius (mm) Example: B07-20-038-0

	018	028	038
R	.71 (018)	1.10 (028)	1.50 (038)
H*	2.01 (51)	2.80 (71)	3.58 (91)
D	2.20 (56)	2.60 (66)	2.99 (76)
K	3.94 (100)	5.12 (130)	6.30 (160)

0=Standard color black. For other colors see Chapter 1

igus® E-Chain System®
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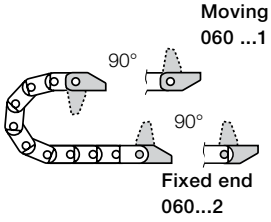
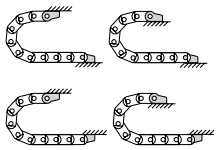
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E2 Micro
Series B07

Polymer, one-piece

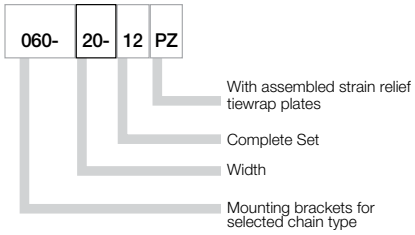
- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

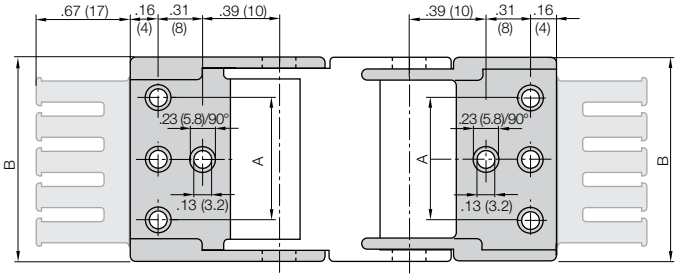




Possible installation configurations -

Part Number Structure





Full set, for both ends:
060- 20- 12 Full set, **each part with pin/bore**
Single-part order:
060- 20- 1 Mounting bracket **with bore**
060- 20- 2 Mounting bracket **with pin**

060-06-12 - 060-20-12:
Center bores only
060-30-12 – 060-64-12:
Outer bores only

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
B07-16	**060-16-12PZ**	**060-16-12**	—	—	.89	(22.5)	2
B07-20	**060-20-12PZ**	**060-20-12**	—	—	1.06	(27.0)	2
B07-30	**060-30-12PZ**	**060-30-12**	.87	(22)	1.46	(37.0)	3
B07-40	**060-40-12PZ**	**060-40-12**	1.26	(32)	1.85	(47.0)	4

Additional Accessories

Quicksnap - the complete, detachable mounting unit, upon request
Part No.
060-16-QS
060-20-QS
060-40-QS

Quickfix - mounting bracket with dowel, upon request
Part No.
060-20-34QZ

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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B09

igus®

E-Chain System® E2 Micro Series B09

.49

For new designs we recommend E2 Micro "New Generation: E2-15

Price Index

Series B09

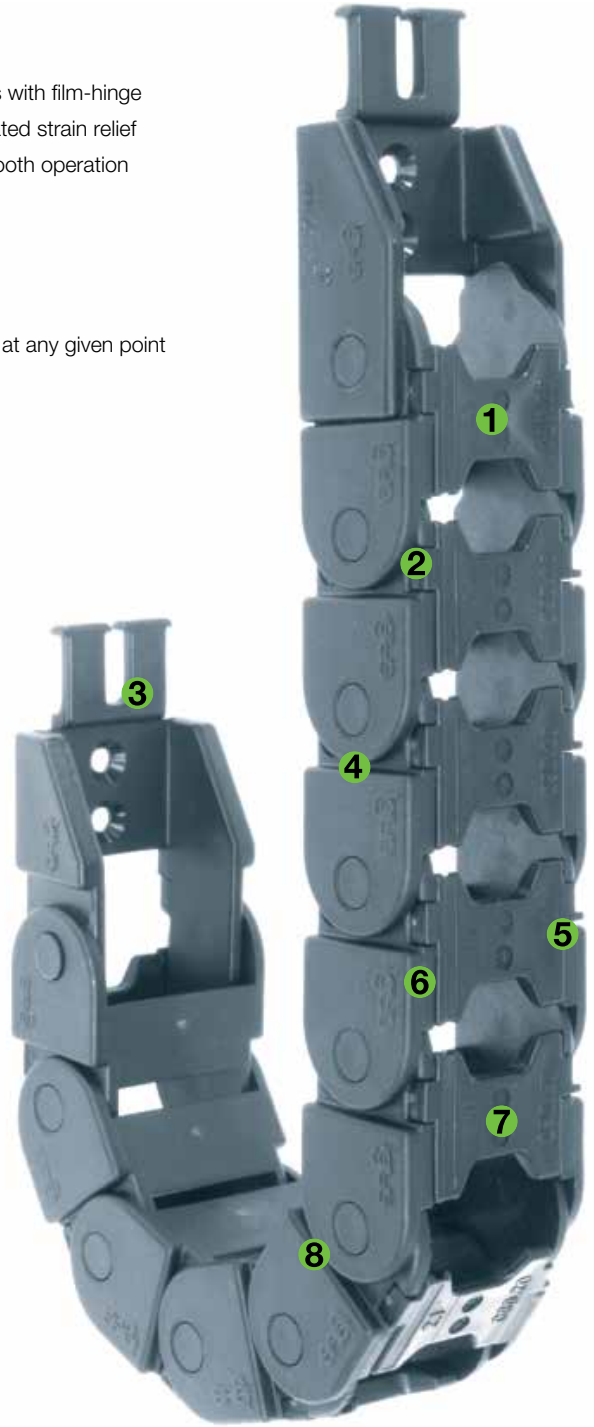
Special Features / Options

ESD Classification: Electrically conductive ESD/ ATEX version upon request

UL94 -V2 classification version upon request

Features & Benefits

1. Lightweight
2. Snap-open along outer radius with film-hinge
3. Mounting bracket with integrated strain relief
4. Small pitch for low-noise, smooth operation
5. Closed, easy to open version
6. Modular 2-piece link design - saves assembly time
7. For high acceleration
8. Easy to shorten and lengthen at any given point



Assembly Tips

Easy to assemble and disassemble

Usage Guidelines

- If a small and lightweight E-Chain® is required
- If an small, openable, reasonably priced E-Chain® is required
- Perfect for handling machines and pick-and-place robots

- If opening of the link is not necessary
  ➤ **Series 08 E2 Micro**
- If cable installation without opening lids is possible
  ➤ **Series E08 E-Z Chain**
- If a fast, openable Energy Tube system is required
  ➤ **Series R09 Energy Tube**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **B09-20-038-0**	E-Chain®
1 Set **080-20-12PZ**	Mounting Bracket

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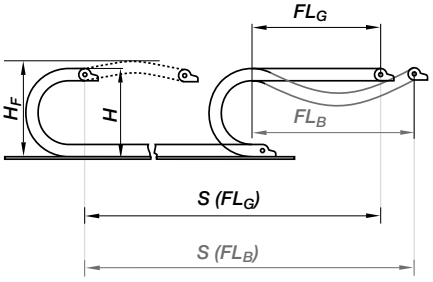
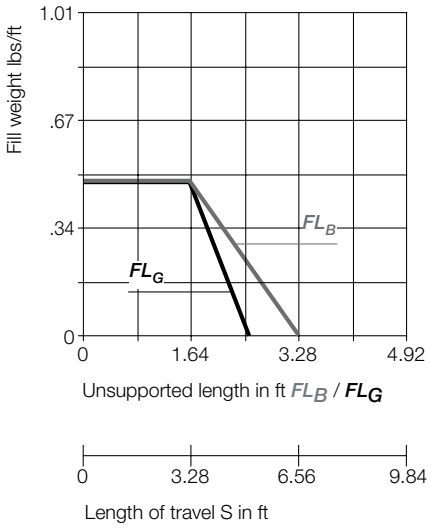
E-Chain System® E2 Micro Series B09

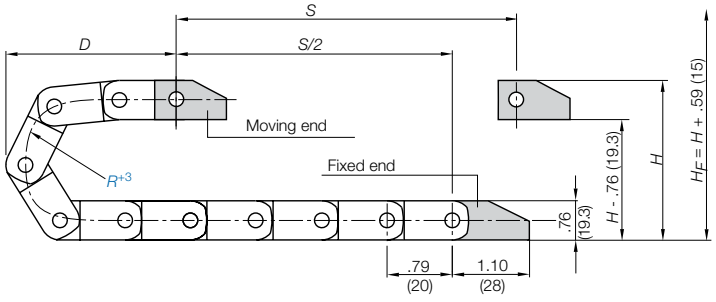
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $\frac{S}{2}$ + K

The required clearance height: ***HF = H* + .59 in. (15 mm)** (with .20 lbs/ft (0.3 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	1.10 (028)	1.50 (038)	1.89 (048)
H*	2.95 (75)	3.74 (95)	4.53 (115)
D	2.68 (68)	3.07 (78)	3.46 (88)
K	5.21 (130)	6.41 (160)	7.68 (195)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

*If the mounting bracket location is set lower

Speed / acceleration FL_G	max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.81 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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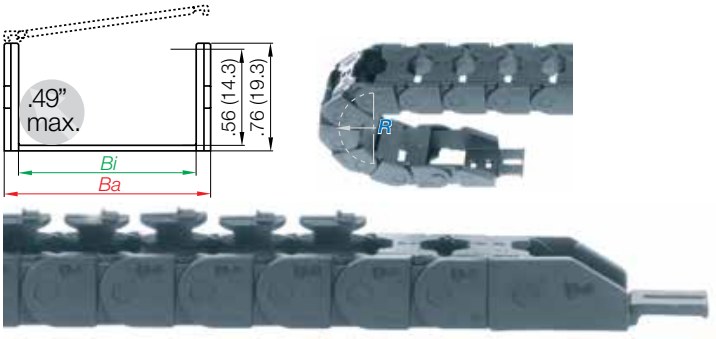
igus®

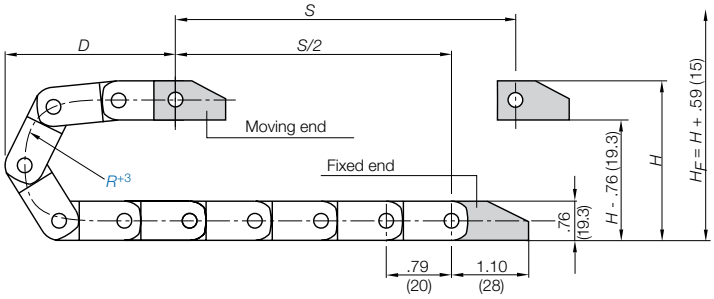
E-Chain System® E2 Micro
Series B09

Series B09 - E-Chain® snap-open along the outer radius



Part Number Structure

B09-	20-	038-	0
			Color - Black
		Bending radius	
	Width		
Series			



Supplement part number with required radius. Example: B09-20-[038]-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
B09-16-	☐	-0	.63 (16)	.95 (24.2)	≈ 0.16 (0.24)
B09-20-	☐	-0	.79 (20)	1.11 (28.2)	≈ 0.17 (0.25)
B09-30-	☐	-0	1.18 (30)	1.50 (38.2)	≈ 0.19 (0.28)
B09-40-	☐	-0	1.57 (40)	1.90 (48.2)	≈ 0.21 (0.31)

Choose from the radii below for all of the above sizes
Radius (mm) Example: B09-20-[038]-0

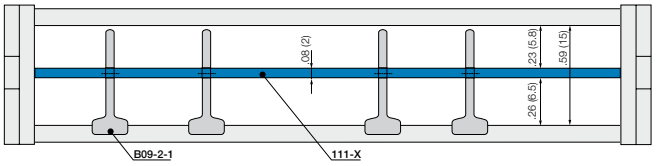
	018	028	038
R	1.10 (028)	1.50 (038)	1.89 (048)
H*	2.95 (75)	3.74 (95)	4.53 (115)
D	2.68 (68)	3.07 (78)	3.46 (88)
K	5.21 (130)	6.41 (160)	7.68 (195)

0=Standard color black. For other colors see Chapter 1

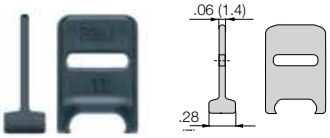
Additional Accessories

Quicksnap - the complete, detachable mounting unit, upon request
Part No.
080-20-QS
080-30-QS

E-Chain System® E2 Micro
Series B09
Interior Separation - Mounting Brackets



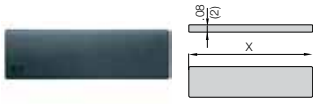
Separators, full-width shelves -
In the standard configuration separators are assembled every other Energy-Chain® link!



Vertical Separator, slotted

Unassembled	**Part No. B09-2**
Assembled	**Part No. B09-2-1**

- **Slotted separator B09-2**
  This component is used when vertical separation is required. Due to its slot, it allows basic vertical/ horizontal shelving arrangements



Full width shelf

Unassembled	**Part No. 110-X**
Assembled	**Part No. 111-X**

- **Full width shelf 110-X**
  This component is used in applications with many thin cables with similar diameters.

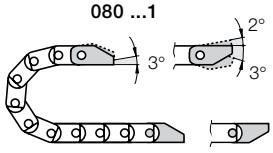
Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.39	(010)	**110-10**	**111-10**
.51	(013)	**110-13**	**111-13**
.63	(016)	**110-16**	**111-16**
.79	(020)	**110-20**	**111-20**

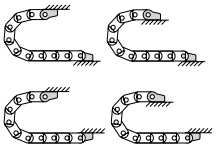
Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.18	(030)	**110-30**	**111-30**
1.57	(040)	**110-40**	**111-40**
1.97	(050)	**110-50**	**111-50**

Mounting Brackets

Plastic, one-piece

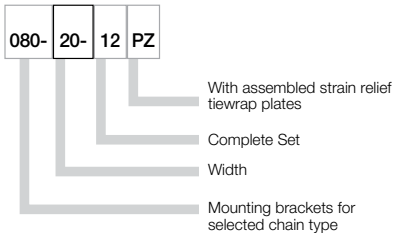
- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

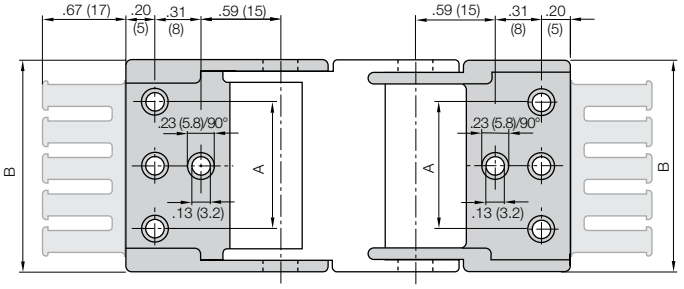




Possible installation configurations -

Part Number Structure





Full set, for both ends:
080- 20- 12 Full set, **each part with pin/bore**
Single-part order:
080- 20- 1 Mounting bracket **with bore**
080- 20- 2 Mounting bracket **with pin**

080-10-12 - 080-20-12:
Center bores only
080-30-12 – 080-50-12:
Outer bores only

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
B09-16	**080-16-12PZ**	**080-16-12**	—	—	.95	(24.2)	2
B09-20	**080-20-12PZ**	**080-20-12**	—	—	1.11	(28.2)	2
B09-30	**080-30-12PZ**	**080-30-12**	.87	(22)	1.50	(38.2)	3
B09-40	**080-40-12PZ**	**080-40-12**	1.26	(32)	1.90	(48.2)	4

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

E2-15
E2i-15
E2C-15

igus®

E-Chain System® E2 Micro
Series E2-15/E2i-15/E2C-15

.57 .57 .59

Price Index

Series E2-15

Special Features / Options

IPA Qualification Certificate: Cleanroom test upon request

ESD Classification: Electrically conductive ESD/ ATEX version upon request

Flammability Class VDE 0304 IIC UL94 HB

Assembly Tips

Easy to assemble and disassemble Series 06 shown for demonstration purposes only

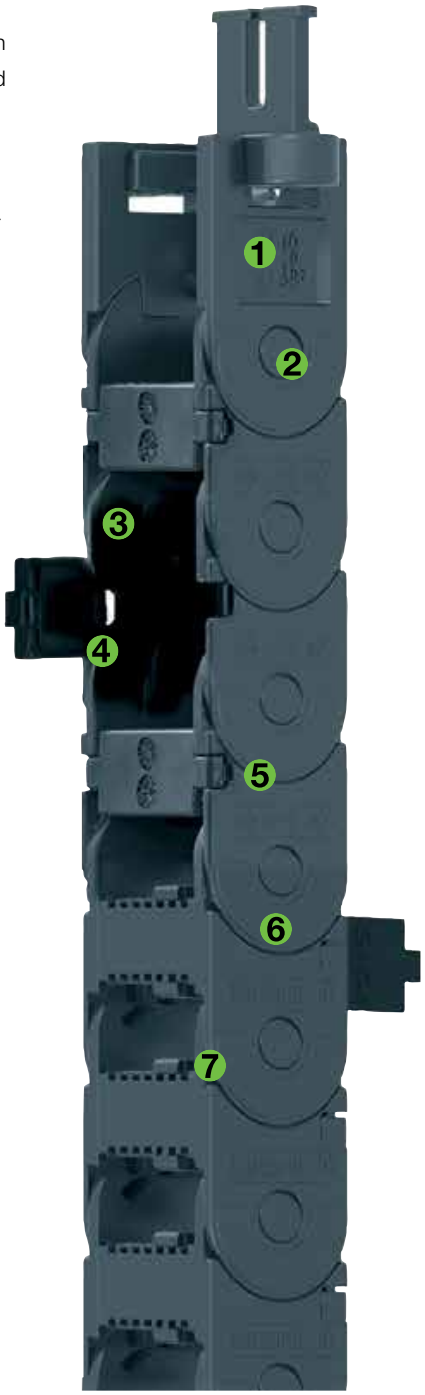
Usage Guidelines

- When large unsupported lengths and high additional loads are required with a small E-Chain®
- For smooth, quiet operation due to small pitch
- If a large modular system in various designs is desired

- If a closed Energy Tube is required
  ➤ **Series R09 "Zipper"**
- If filling without opening lids is required
  ➤ **Series 08 E-Z Chain**

Features & Benefits

1. Universal mounting bracket with strain relief option
2. Large, assembly friendly pins for long unsupported lengths
3. Very smooth contours ensure the best possible cable life
4. Non snap-open or snap-open in the inner or outer radius
5. Lightweight, low price
6. Square stop-dog system for large additional loads
7. Brake feature reduces noise



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **E2-15-20-038-0**	E-Chain®
1 Set **E2-150-20-34PZ**	Mounting Bracket

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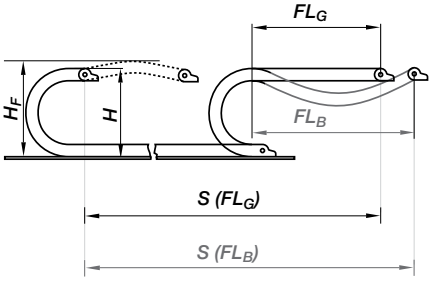
www.edfluidos.com

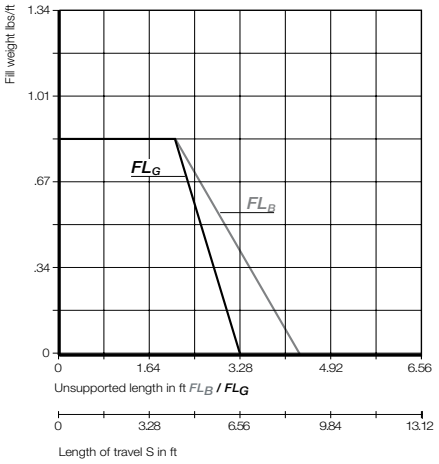
E-Chain System® E2 Micro Series E2-15/E2i-15/E2C-15 Installation Dimensions

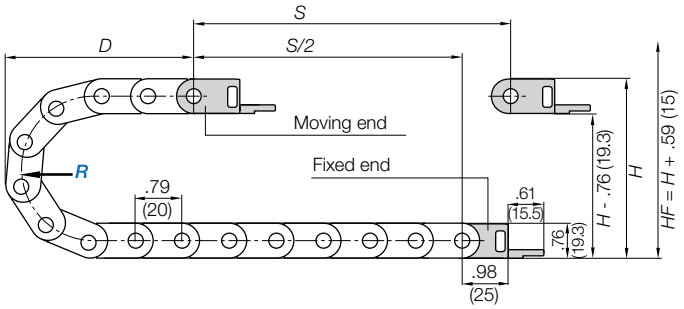
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: ***HF = H* + .59 in. (15 mm)** (with .20 lbs/ft (0.3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.10 (028)	1.50 (038)	1.89 (048)	2.95 (075*)
H	2.95 (75)	3.74 (95)	4.53 (115)	6.65 (169)
D	2.68 (68)	3.07 (78)	3.46 (88)	4.53 (115)
K	5.12 (130)	6.30 (160)	7.68 (195)	11.02 (280)

*Radius 075 is only available for the E2C-15-40

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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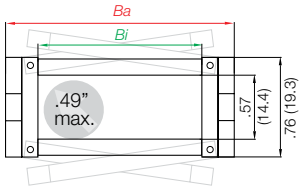
igus®

E-Chain System® E2 Micro
Series E2-15/E2i-15/E2C-15

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

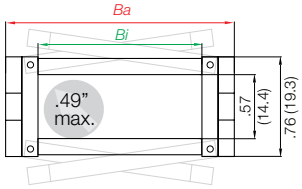
Series E2-15 - Snap-open along the outer radius from both sides



Part Number Structure

E2-15- | 20- | 038- | 0
- Color - Black
- Bending radius
- Width
- Series

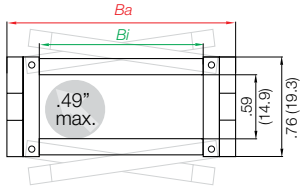
Series E2i-15 - Snap-open along the inner radius from both sides



Part Number Structure

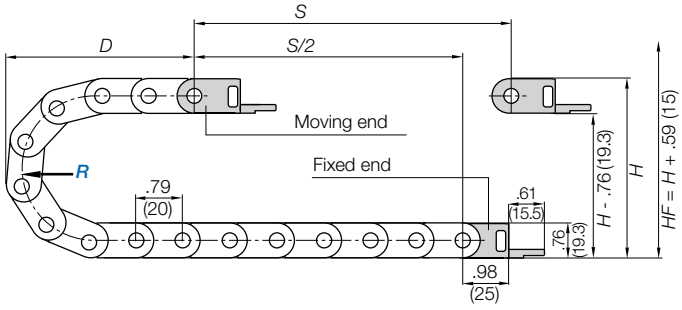
E2i-15- | 20- | 038- | 0
- Color - Black
- Bending radius
- Width
- Series

Series E2C-15 - One-piece, non snap-open



Part Number Structure

E2C-15- | 20- | 038- | 0
- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: E2-15-20-[038]-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Snap-open along outer radius	Snap-open along inner radius	One-piece non snap-open		Bi in. (mm)	Ba in. (mm)	Weight E2-15 lbs/ft (kg/m)	Weight E2i-15 lbs/ft (kg/m)	Weight E2C-15 lbs/ft (kg/m)
E2-15-10-	E2i-15-10-	E2C-15-10-	-0	.39 (10)	.69 (17.4)	≈ 0.120 (0.18)	≈ 0.120 (0.18)	≈ 0.128 (0.19)
E2-15-13-	E2i-15-13-	E2C-15-13-	-0	.51 (13)	.69 (17.4)	≈ 0.128 (0.19)	≈ 0.128 (0.19)	≈ 0.134 (0.20)
E2-15-16-	E2i-15-16-	E2C-15-16-	-0	.63 (16)	.92 (23.4)	≈ 0.134 (0.20)	≈ 0.134 (0.20)	≈ 0.134 (0.20)
E2-15-20-	E2i-15-20-	E2C-15-20-	-0	.79 (20)	1.08 (27.4)	≈ 0.141 (0.21)	≈ 0.141 (0.21)	≈ 0.141 (0.21)
E2-15-30-	E2i-15-30-	E2C-15-30-	-0	1.18 (30)	1.47 (37.4)	≈ 0.161 (0.24)	≈ 0.161 (0.24)	≈ 0.161 (0.24)
E2-15-40-	E2i-15-40-	E2C-15-40-	-0	1.57 (40)	1.87 (47.4)	≈ 0.175 (0.26)	≈ 0.175 (0.26)	≈ 0.175 (0.26)
E2-15-50-	E2i-15-50-	E2C-15-50-	-0	1.97 (50)	2.26 (57.4)	≈ 0.195 (0.29)	≈ 0.195 (0.29)	≈ 0.195 (0.29)

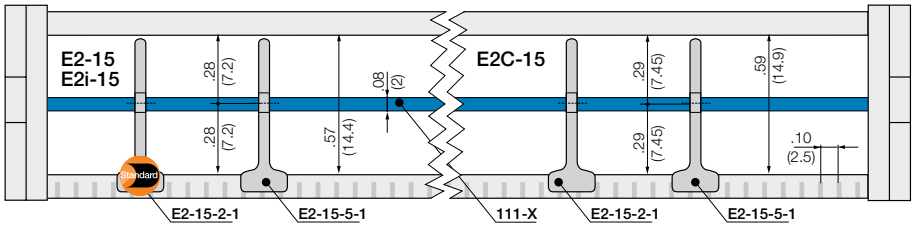
Choose from the radii below for all of the above sizes
Radius (mm) Example: E2-15-20-[038]-0

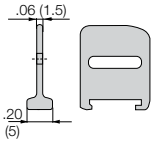
0=Standard color black.
For other colors see Chapter 1

	028	038	048	075*
R	1.10 (028)	1.50 (038)	1.89 (048)	2.95 (075*)
H	2.95 (75)	3.74 (95)	4.53 (115)	6.65 (169)
D	2.68 (68)	3.07 (78)	3.46 (88)	4.53 (115)
K	5.12 (130)	6.30 (160)	7.68 (195)	11.02 (280)

*Radius 075 is only available for the E2C-15-40

E-Chain System® E2 Micro
Series E2-15/E2i-15/E2C-15
Interior Separation

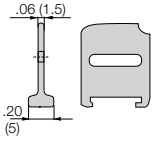




Separator

Unassembled	**Part No. E2-15-2**
Assembled	**Part No. E2-15-2-1**

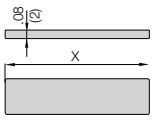
- **Separator E2-10-2**
  Standard - for all applications
  For a simple vertical subdivision on E-Chains®. Separators can be arranged anywhere in the Energy cross section.



Notch separator
for notch crossbar

Unassembled	**Part No. E2-15-5**
Assembled	**Part No. E2-15-5-1**

- **Notch separator E2-15-5**
  Locks safely in .10" (2.5 mm) increments
  For exact positioning in E-Chains®. Recommended for side-mounted applications.



Full width shelf

Unassembled	**Part No. 110-X**
Assembled	**Part No. 111-X**

- **Full width shelf 110-X**
  This component is used in applications with many thin cables with similar diameters.

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.39	(010)	**110-10**	**111-10**
.51	(013)	**110-13**	**111-13**
.63	(016)	**110-16**	**111-16**
.79	(020)	**110-20**	**111-20**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.18	(030)	**110-30**	**111-30**
1.57	(040)	**110-40**	**111-40**
1.97	(050)	**110-50**	**111-50**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E2 Micro Series E2-15/E2i-15/E2C-15 Mounting Brackets

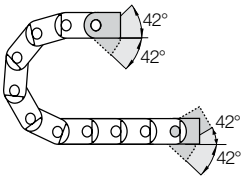
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

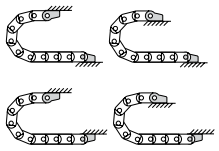
Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

Moving end
E2-150-...-3PZ two side pivoting
E2-150-...-5PZ one side• pivoting
E2-150-...-1PZ locking



Fixed end
E2-150-...-4PZ two side pivoting
E2-150-...-6PZ one side• pivoting
E2-150-...-2PZ locking

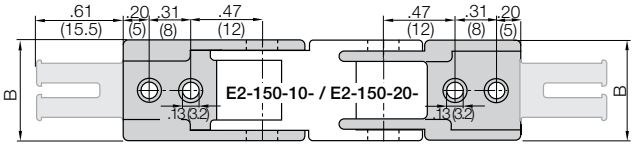


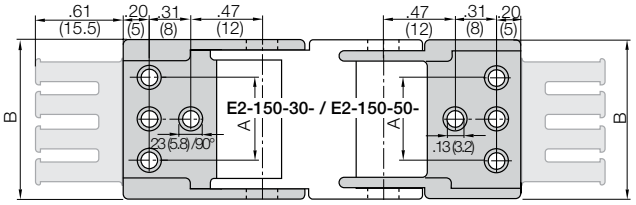
Possible installation configurations -

Part Number Structure

E2-150- | 20- | 34 | PZ

- PZ: With assembled strain relief tiewrap plates
- 34: Complete Set - two side pivoting
- 20-: Width
- E2-150-: Mounting brackets for selected chain type





Full set, for both ends:
E2-150- | 20- | 34 Full set, **each part with pin/bore**
Single-part order:
E2-150- | 20- | 3 Mounting bracket **with bore**
E2-150- | 20- | 4 Mounting bracket **with pin**

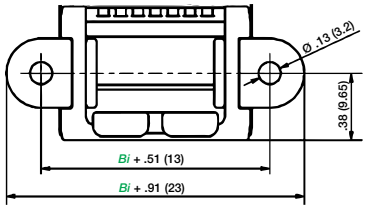
E2-150-10-12 - E2-150-20-12: Center bores only
E2-150-30-12 – E2-150-64-12: Outer bores only

Chain Width	Part No. full set with tiewrap plate two side pivoting	Part No. full set with tiewrap plate one side* pivoting	Part No. full set with tiewrap plate locking	Dimension A in.	(mm)	Dimension B in.	(mm)	Number of Teeth
-10	**E2-100-10-34PZ**	**E2-100-10-56PZ**	**E2-100-10-12PZ**	—	—	.70	(17.8)	1
-13	**E2-100-13-34PZ**	**E2-100-13-56PZ**	**E2-100-13-12PZ**	—	—	.82	(20.8)	1
-16	**E2-100-16-34PZ**	**E2-100-16-56PZ**	**E2-100-06-12PZ**	—	—	.94	(23.8)	2
-20	**E2-100-20-34PZ**	**E2-100-20-56PZ**	**E2-100-06-12PZ**	—	—	1.09	(27.8)	2
-30	**E2-100-30-34PZ**	**E2-100-30-56PZ**	**E2-100-06-12PZ**	.87	(22)	1.49	(37.8)	3
-40	**E2-100-40-34PZ**	**E2-100-40-56PZ**	**E2-100-06-12PZ**	1.26	(32)	1.88	(47.8)	4
-50	**E2-100-50-34PZ**	**E2-100-50-56PZ**	**E2-100-06-12PZ**	1.65	(42)	2.27	(57.8)	5

*One-side pivoting: Pivot angle = Bending radius.
One side pivoting only to the inner radius

Additional Accessories

Quick flange- the quick flange can be clipped-in laterally in all mounting brackets. Housing for hexagonal nut or cylinder head screws M3.
Single:
Part no. E2-150-QF
Includes mounting bracket:
Part No. E2-150-20-34PZQF



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Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

08

igus®

E-Chain System® E2 Micro Series 08

.59

Price Index

Series 08

Special Features / Options

IPA Qualification Certificate: Cleanroom test upon request

ESD Classification: Electrically conductive ESD/ ATEX version upon request

Flammability Class VDE 0304 IIC UL94 HB

Assembly Tips

East to assemble and disassemble

Features & Benefits

1. Small pitch for very quiet operation
2. High torsional rigidity
3. Mounting brackets with strain relief options
4. One-piece, non snap-open E-Chain®
5. Very lightweight - low price
6. Dirt repellant exterior

Usage Guidelines

- If quiet operation is required
- If cost is a factor
- If connection options are required (Quicksnap, Quickfix, etc.)
- If high torsional rigidity is required

- If snap-open links are required
  ➤ **Series 09 "Zipper"**
- If quick insertion of cables with preassembled connectors is required
  ➤ **Series E08/Z08 E-Z Chain**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **08-30-038-0**	E-Chain®
1 Set **080-30-12PZ**	Mounting Bracket

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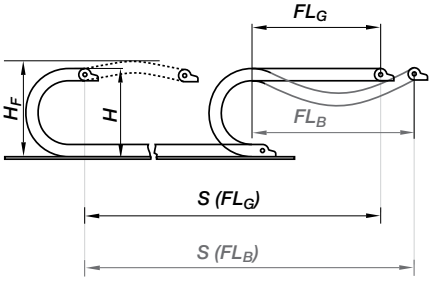
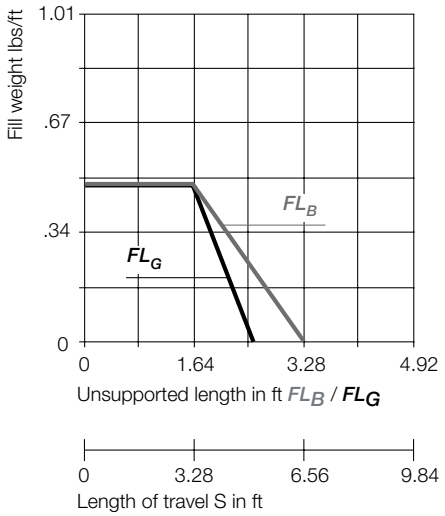
E-Chain System® E2 Micro
Series 08
Installation Dimensions

Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1





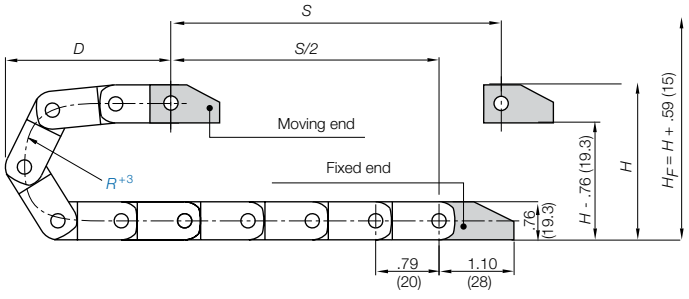
Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

*If the mounting bracket location is set lower



Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $\frac{S}{2}$ + K

The required clearance height: ***H_F = H* + .59 in. (15 mm)** (with .20 lbs/ft (0.3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.98 (025*)	1.10 (028)	1.50 (038)	1.89 (048)
H	2.72 (69)	2.95 (75)	3.74 (95)	4.53 (115)
D	2.56 (65)	2.68 (68)	3.07 (78)	3.46 (88)
K	4.72 (120)	5.12 (130)	6.30 (160)	7.48 (190)

*Only for 08-10 and 08-20 E-Chain®

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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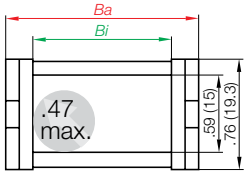
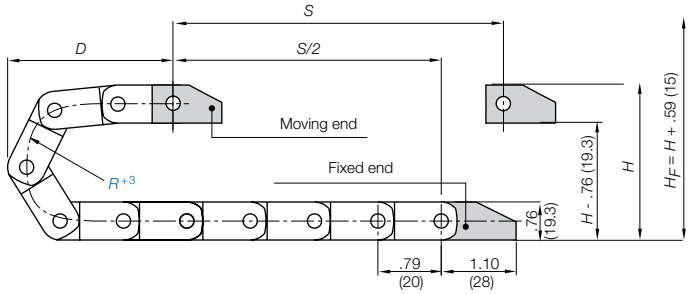
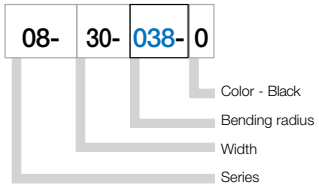
E-Chain System® E2 Micro Series 08

Series 08 - E-Chain® non snap-open





Part Number Structure



Supplement part number with required radius. Example: 08-20-[038]-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Part Number		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
08-10-	[ ] -0	.39 (10)	.72 (18.2)	≈ 0.14 (0.21)
08-13-**	[ ] -0	.51 (13)	.83 (21.2)	≈ 0.15 (0.23)
08-16-	[ ] -0	.63 (16)	.95 (24.2)	≈ 0.16 (0.24)
08-20-	[ ] -0	.79 (20)	1.11 (28.2)	≈ 0.17 (0.25)
08-30-	[ ] -0	1.18 (30)	1.50 (38.2)	≈ 0.19 (0.28)
08-40-	[ ] -0	1.57 (40)	1.90 (48.2)	≈ 0.21 (0.31)
08-50-	[ ] -0	1.97 (50)	2.29 (58.2)	≈ 0.25 (0.37)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 08-20-[038]-0

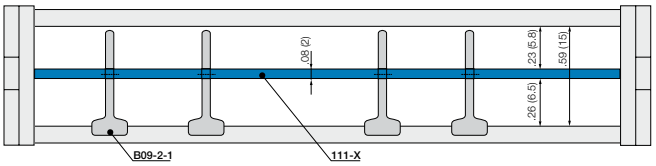
	025*	028	038	048
R	.98 (025*)	1.10 (028)	1.50 (038)	1.89 (048)
H	2.72 (69)	2.95 (75)	3.74 (95)	4.53 (115)
D	2.56 (65)	2.68 (68)	3.07 (78)	3.46 (88)
K	4.72 (120)	5.12 (130)	6.30 (160)	7.48 (190)

*Only for 08-10 and 08-20 E-Chain®
0=Standard color black. For other colors see Chapter 1
**only for 028 and 038 radius

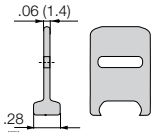
Additional Accessories

Quicksnap - the complete, detachable mounting unit, upon request
Part No.
080-20-QS
080-30-QS

E-Chain System® E2 Micro
Series 08
Interior Separation - Mounting Brackets



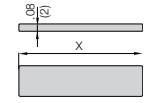
Separators, full-width shelves -
In the standard configuration separators are assembled every other Energy-Chain® link!



Vertical Separator, slotted

Unassembled	**Part No. B09-2**
Assembled	**Part No. B09-2-1**

- **Slotted separator B09-2**
  This component is used when vertical separation is required. Due to its slot, it allows basic vertical/ horizontal shelving arrangements.



Full width shelf

Unassembled	**Part No. 110-X**
Assembled	**Part No. 111-X**

- **Full width shelf 110-X**
  This component is used in applications with many thin cables with similar diamters.

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.39	(010)	**110-10**	**111-10**
.51	(013)	**110-13**	**111-13**
.63	(016)	**110-16**	**111-16**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.79	(020)	**110-20**	**111-20**
1.18	(030)	**110-30**	**111-30**
1.57	(040)	**110-40**	**111-40**

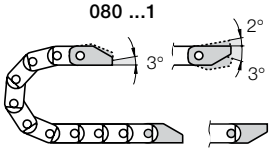
Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.97	(050)	**110-50**	**111-50**

Mounting Brackets

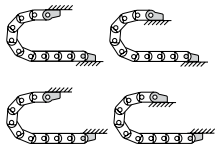
Plastic, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

Moving end
080 ...1

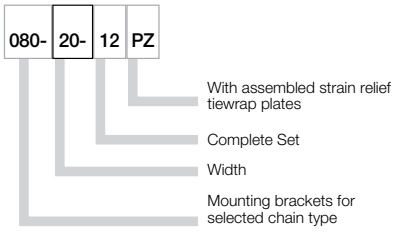


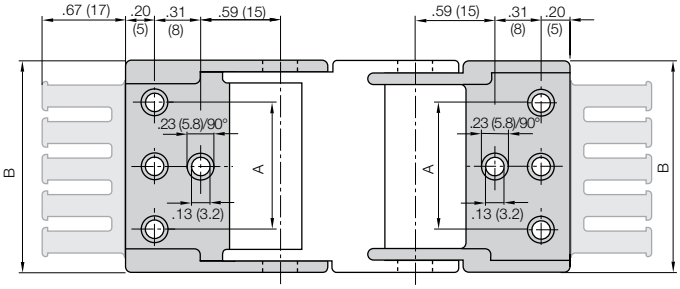
Fixed end
080...2



Possible installation configurations -

Part Number Structure





080-10-12 - 080-20-12: Center bores only
080-30-12 – 080-50-12: Outer bores only

Full set, for both ends:
080- 20- 12 Full set, **each part with pin/bore**
Single-part order:
080- 20- 1 Mounting bracket **with bore**
080- 20- 2 Mounting bracket **with pin**

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
08-10	**080-10-12PZ**	**080-10-12**	—	—	.72	(18.2)	1
08-13	—	**080-13-12**	—	—	.83	(21.2)	—
08-16	**080-16-12PZ**	**080-16-12**	—	—	.95	(24.2)	2
08-20	**080-20-12PZ**	**080-20-12**	—	—	1.11	(28.2)	2
08-30	**080-30-12PZ**	**080-30-12**	.87	(22)	1.50	(38.2)	3
08-40	**080-40-12PZ**	**080-40-12**	1.26	(32)	1.90	(48.2)	4
08-50	**080-50-12PZ**	**080-50-12**	1.65	(42)	2.29	(58.2)	5

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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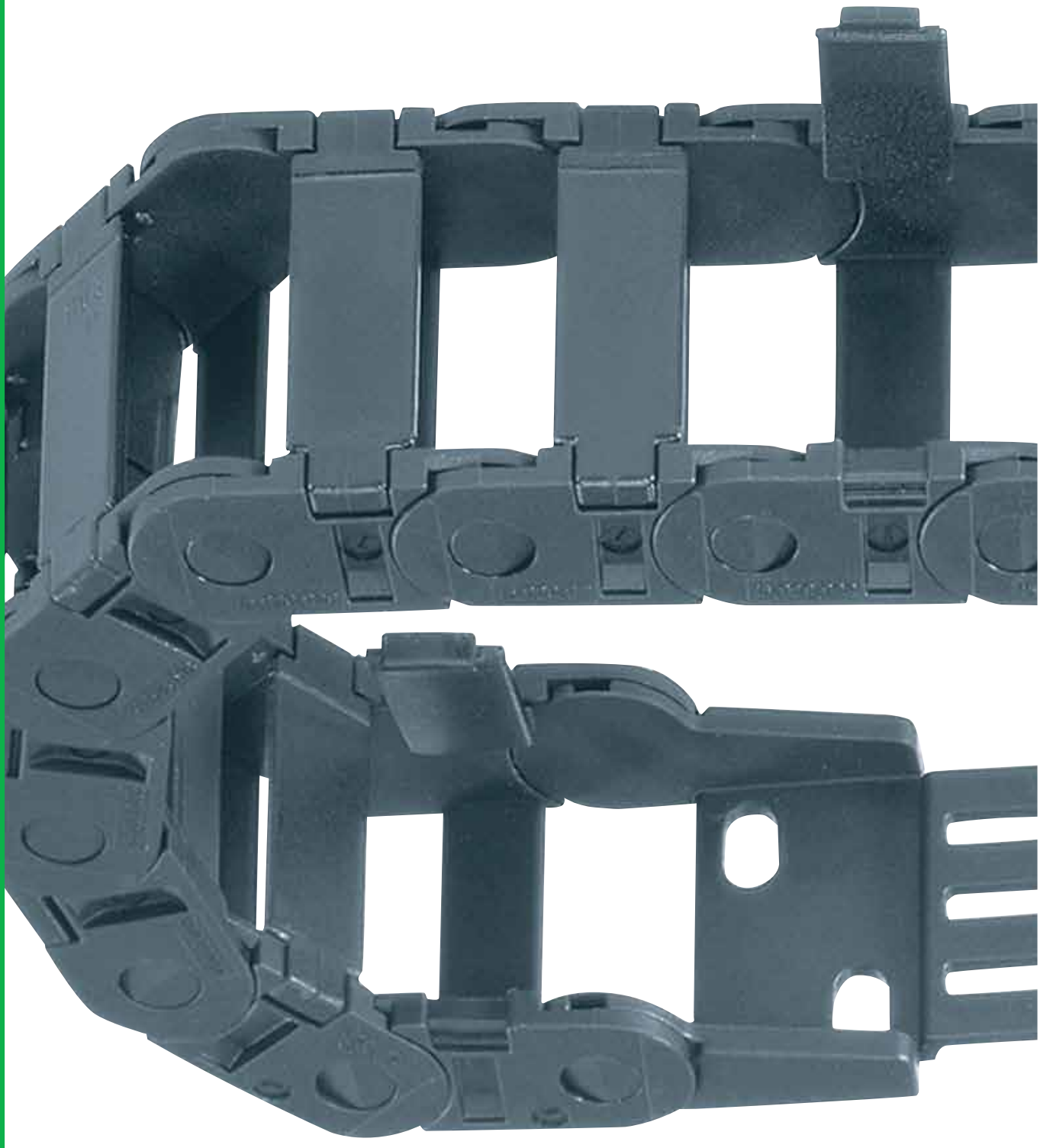

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igus®
E2 Mini

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E2 mini - Small sized E-Chains

System E2 mini is low-cost and can come equipped with interior separation to prevent cables from chaffing, twisting and corkscrewing. These E-Chains can be used in applications with long, unsupported lengths and offer a variety of different connection options

Typical industries and applications

- Construction machinery
- Furniture
- Packaging machines
- Textile machines
- Vehicle construction
- Woodworking machines
- Glass machines
- Automation
- General machinery

Special equipment: Electrically conductive
ESD/ATEX version upon request

Cleanroom Class 1 (ISO class 3) for Series 10, tested by the Dryden Engineering Company, California

Flammability Class
VDE 0304 IIC UL94 HB

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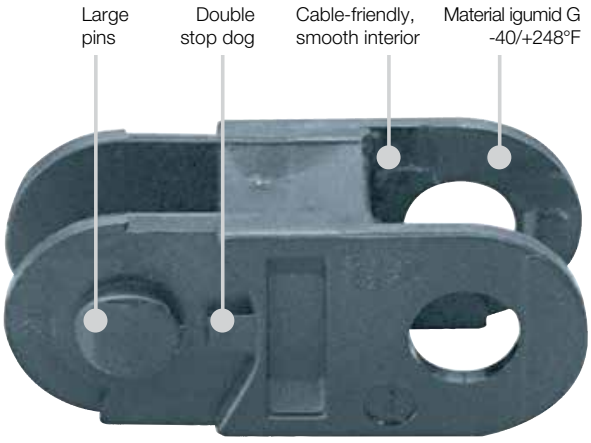
E2 mini E-Chain®, RBR-version with reverse bending radius

E2 mini E-Chain® in a tooling machine, coolant resistant

Long-travel applications up to 131 ft. (40 m) are possible - here: Series 10 in textile machine

E-Chain System® E2 Mini
Selection Guide



- Small pitch for smooth running
- High torsional rigidity
- Double stop dog and large pins for long service life
- Optimized relationship: weight - stability
- Large pins for long unsupported lengths
- Easy to assemble
- Various interior separation options
- You can find more technical data about the material, chemical resistance, temperatures **Design, Chapter 1**

E2 Mini - one-piece E-Chains®
One-piece, non snap-open

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
10	.71	(18)	.59-3.94	(15-100)	1.02-4.45	(26-113)	.91	(23)	1.10-7.09	(28-180)

E2 Mini - one-piece E-Chains®
Snap-open along the inner radius with film-hinge

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
14	.79	(20)	.59-1.97	(15-50)	1.02-2.40	(26-61)	.98	(25)	1.10-4.92	(28-125)

E2 Mini - two-piece E-Chains®
Snap-open along the outer radius

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
B15	.67	(17)	.59-3.94	(15-100)	1.02-4.45	(26-113)	.91	(23)	1.50-7.09	(38-180)
B17	1.26	(32)	.59-3.94	(15-100)	1.00-4.45	(25.5-113)	1.54	(39)	1.89-4.92	(48-125)

E2 Mini - two-piece E-Chains®
Snap-open along the inner radius

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
B15i	.67	(17)	.59-3.94	(15-100)	1.02-4.45	(26-113)	.91	(23)	1.50-7.09	(38-180)
B17i	1.26	(32)	.98-1.50	(25-38)	1.40-1.91	(35.5-48.5)	1.54	(39)	1.89-4.92	(48-125*)

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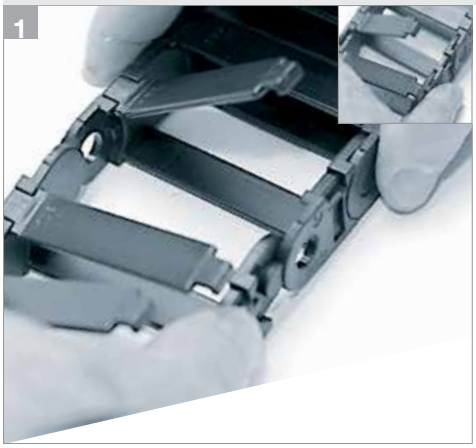
E-Chain System® E2 Mini
Assembly Instructions

Assembling | E2 mini



Push, click and snap in pin

Push and snap crossbars

Separating | E2 mini

Lever crossbars open

Open crossbars

Release side link

Twist and pull apart

10

igus®

E-Chain System® E2 Mini Series 10

.71

Price Index

Series 10

Special Features / Options

Clean-Room Cleanroom Class 1 (ISO class 3)

EX ESD Classification: Electrically conductive ESD/ ATEX version upon request

Features & Benefits

1. Large pins and double stop dog for superior life and long unsupported length
2. Dirt repellent exterior
3. Mounting bracket with integrated strain relief
4. One piece link design
5. Interior separation available
6. Molded-in separator available

Series 10-050-075-S

Assembly Tips

Easy to assemble and disassemble

Usage Guidelines

- If snap-open links are not necessary
- If a small but very stable chain is required

- If snap-open links are necessary ➤ **Series 15 "Zipper"**
- If quick insertion of cables with preassembled connector is required ➤ **Series E14 E-Z Chain**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

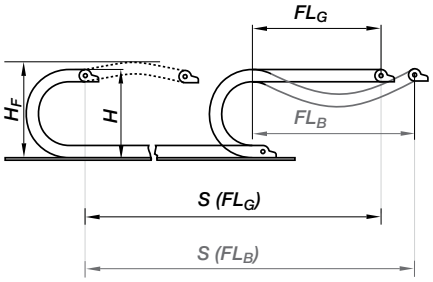
3.28 ft (1 m) **10-025-038-0**	E-Chain®
With 2 separators **111** assembled every 2nd link	Interior Separation
1 Set **1025-12PZ**	Mounting Bracket

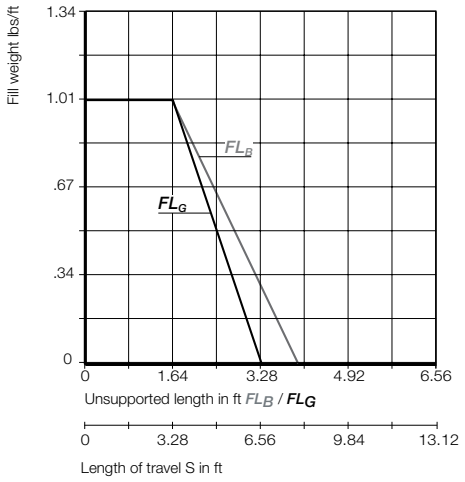
E-Chain System® E2 Mini
Series 10
Installation Dimensions

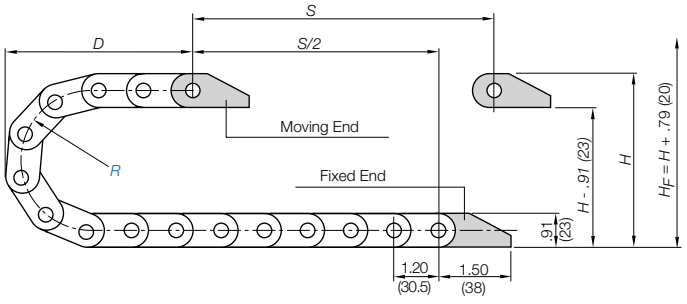
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: ***HF = H + .79 in. (20 mm)*** (with 1.01 lbs/ft (1.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.10 (028)	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.33 (110)	4.92 (125)	5.71 (145)	7.09 (180)
H	3.11 (79)	3.90 (99)	4.69 (119)	6.81 (173)	8.78 (223)	9.57 (243)	10.75 (273)	12.32 (313)	15.08 (383)
D	3.35 (85)	3.74 (95)	4.3 (105)	5.20 (132)	6.18 (157)	6.57 (167)	7.16 (182)	7.95 (202)	9.33 (237)
K	5.91 (150)	7.28 (185)	8.46 (215)	11.81 (300)	14.96 (380)	16.14 (410)	17.91 (455)	20.47 (520)	24.80 (630)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

Short Travels - Unsupported

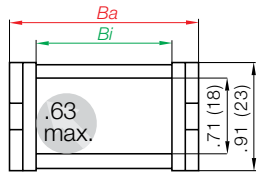
Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

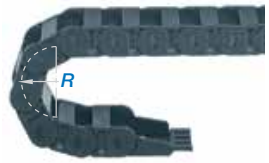
Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
HF = Required clearance height

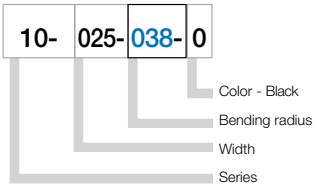
E-Chain System® E2 Mini
Series 10

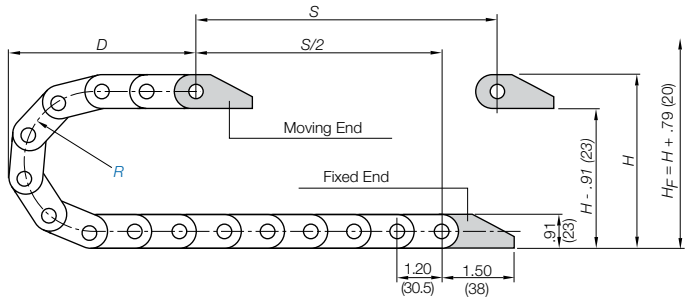
Series 10 - E-Chain® non snap-open





Part Number Structure





Supplement part number with required radius. Example: 10-025-038-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
10-015-		-0	.59 (15)	1.02 (26)	≈ 0.24 (0.35)
10-025-		-0	.98 (25)	1.42 (36)	≈ 0.27 (0.40)
10-038-		-0	1.50 (38)	1.93 (49)	≈ 0.31 (0.46)
10-050-		-0	1.97 (50)	2.40 (61)	≈ 0.35 (0.52)
10-5-		-0	2.48 (63)	2.99 (76)	≈ 0.42 (0.63)
10-6		-0	3.15 (80)	3.70 (94)	≈ 0.47 (0.70)
10-7		-0	3.94 (100)	4.45 (113)	≈ 0.51 (0.76)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 10-025-038-0

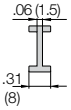
	028	038	048	075	100	110	125	145	180
R	1.10 (028)	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.33 (110)	4.92 (125)	5.71 (145)	7.09 (180)
H	3.11 (79)	3.90 (99)	4.69 (119)	6.81 (173)	8.78 (223)	9.57 (243)	10.75 (273)	12.32 (313)	15.08 (383)
D	3.35 (85)	3.74 (95)	4.3 (105)	5.20 (132)	6.18 (157)	6.57 (167)	7.16 (182)	7.95 (202)	9.33 (237)
K	5.91 (150)	7.28 (185)	8.46 (215)	11.81 (300)	14.96 (380)	16.14 (410)	17.91 (455)	20.47 (520)	24.80 (630)

0=Standard color black. For other colors see Chapter 1

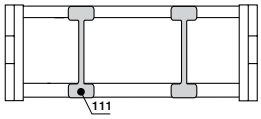
Interior Separation

Option 1: Vertical separators

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.



Separator	
Unassembled	Part No. 101
Assembled	Part No. 111



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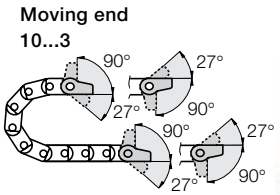
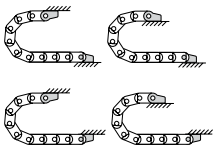
E-Chain System® E2 Mini
Series 10
Mounting Brackets - Plastic

Standard

Option 1: pivoting

- Short and long travel
- Space-restricted conditions
- Corrosion resistant

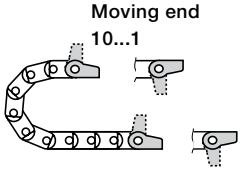


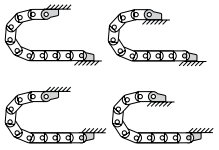


Possible installation configurations -

Option 2: locking

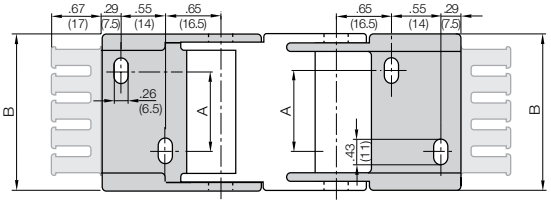
- Vertical hanging/standing travels
- Extreme accelerations
- Corrosion resistant



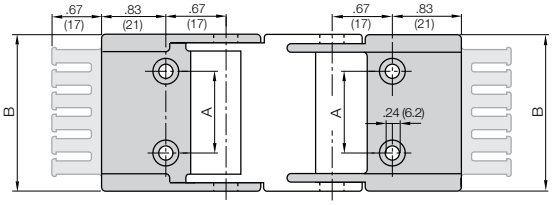


Possible installation configurations -

For E-Chain
10-015 to 10-050



For E-Chain
10-5 to 10-7



Part Number Structure

1025- | 34- | P | PZ

- With tiewrap plate
- Without tiewrap plate
- Complete Set
  12 = Locking
  34 = Pivoting
- Mounting brackets for selected chain type

Part number examples are shown for pivoting brackets. For locking brackets fill in the blank with 12

Part No. Full Set (pivoting)
with Tiewrap Plate
Series 10 with 25mm inner width
1025-34PZ

Part No. Full Set (pivoting)
without Tiewrap Plate
Series 10 with 25 mm inner width
1025-34P

Full set, for both ends:
1025- 34- PZ Full set, **each part with pin/bore + tiewrap plate**

Single-part order:
1025- 3- PZ Mounting bracket **with bore + tiewrap plate**
1025- 4- PZ Mounting bracket **with pin + tiewrap plate**

For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)
10-015	1015- ☐ PZ	1015- ☐ P	—	—	1.00	(25.5)
10-025	1025- ☐ PZ	1025- ☐ P	.39	(10)	1.40	(35.5)
10-038	1038- ☐ PZ	1038- ☐ P	.91	(23)	1.91	(48.5)
10-050	1050- ☐ PZ	1050- ☐ P	1.38	(35)	2.38	(60.5)
10-5	105- ☐ PZ	105- ☐ P	1.89	(48)	2.95	(75.0)
10-6	106- ☐ PZ	106- ☐ P	2.56	(65)	3.62	(92.0)
10-7	107- ☐ PZ	107- ☐ P	3.35	(85)	4.41	(112.0)

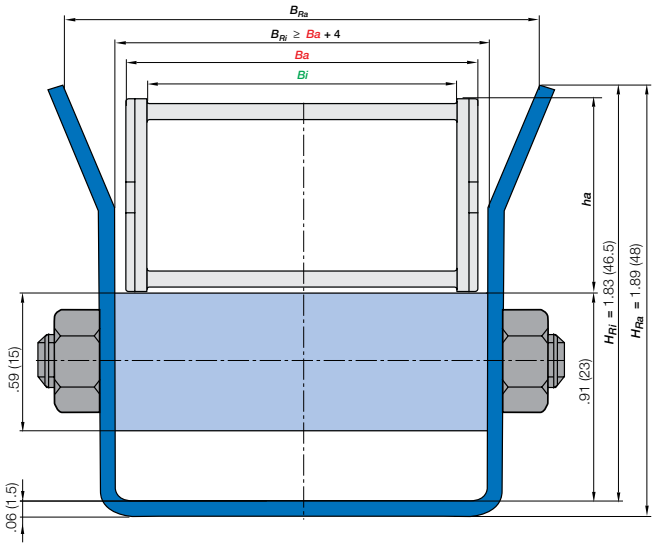
34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 1025- 34 PZ

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

E-Chain System® E2 Mini
Series 10
Guide Trough

One-piece guide troughs made of steel are available for the Series 10 Energy Chains®. These guide troughs are available from stock for outer chain widths up to 4.45 in. (113 mm). For wider E-Chains® and Tubes, special solutions are possible with short lead times.
No installation sets are required for these trough sizes since the guide troughs consist of a one-piece U-profile. The joint connection with this type of guide trough is specified individually for every application.



Dimensions Guide troughs 91-10 — 91-71

For Series	Part No.	B_{Ra} in.	B_{Ra} (mm)	B_{Ri} in.	B_{Ri} (mm)	Weight lbs/ft	Weight (kg/m)
10-015							
Trough **without** glide bar 6.56 ft. (2m section)	**91-10**	1.59	(40.5)	1.18	(30)	1.01	(1.50)
Glide bar 6.56 ft. (2m section)	**91-11**	1.59	(40.5)	1.18	(30)	.30	(.45)
10-025							
Trough **without** glide bar 6.56 ft. (2m section)	**91-20**	1.99	(50.5)	1.57	(40)	1.11	(1.65)
Glide bar 6.56 ft. (2m section)	**91-21**	1.99	(50.5)	1.57	(40)	.38	(.57)
10-038							
Trough **without** glide bar 6.56 ft. (2m section)	**91-30**	2.46	(62.5)	2.05	(52)	1.21	(1.80)
Glide bar 6.56 ft. (2m section)	**91-31**	2.46	(62.5)	2.05	(52)	.46	(.68)
10-050							
Trough **without** glide bar 6.56 ft. (2m section)	**91-40**	2.85	(72.5)	2.44	(62)	1.28	(1.90)
Glide bar 6.56 ft. (2m section)	**91-41**	2.85	(72.5)	2.44	(62)	.61	(.91)
10-5							
Trough **without** glide bar 6.56 ft. (2m section)	**91-50**	3.60	(91.5)	3.19	(81)	1.52	(2.26)
Glide bar 6.56 ft. (2m section)	**91-51**	3.60	(91.5)	3.19	(81)	.84	(1.25)
10-6							
Trough **without** glide bar 6.56 ft. (2m section)	**91-60**	4.27	(108.5)	3.86	(98)	1.83	(2.72)
Glide bar 6.56 ft. (2m section)	**91-61**	4.27	(108.5)	3.86	(98)	.91	(1.35)
10-7							
Trough **without** glide bar 6.56 ft. (2m section)	**91-70**	5.06	(128.5)	4.65	(118)	2.13	(3.17)
Glide bar 6.56 ft. (2m section)	**91-71**	5.06	(128.5)	4.65	(118)	1.14	(1.70)

Trough material in general: St 1203 galvanized

E-Chain System® E2 Mini
Series 10

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

14

igus®

E-Chain System® E2 Mini Series 14

.79

Price Index

Series 14

Special Features / Options

Clean-Room — Cleanroom Class 1 (ISO class 3)

EX — ESD Classification: Electrically conductive ESD/ ATEX version upon request

UL94-V2 Classifications

Assembly Tips

Easy to assemble and disassemble

Features & Benefits

1. Flammability class UL 94
2. Mounting bracket with integrated strain relief
3. Dirt-repellent exterior
4. Snap-open along inner radius with film-hinge

Usage Guidelines

- For applications with low loads
- Fast installation of the cables

- For gliding applications
  ➤ **Series 15 Zipper**
- For long unsupported lengths
  ➤ **Series 15 Zipper**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

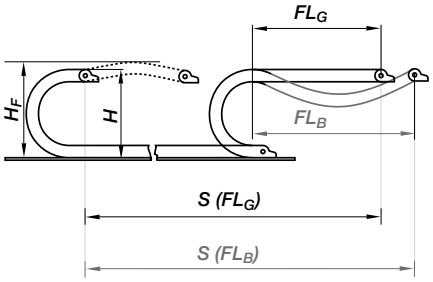
3.28 ft (1 m) **14-2-038-0**	E-Chain®
1 Set **114-2-12PZ**	Mounting Bracket

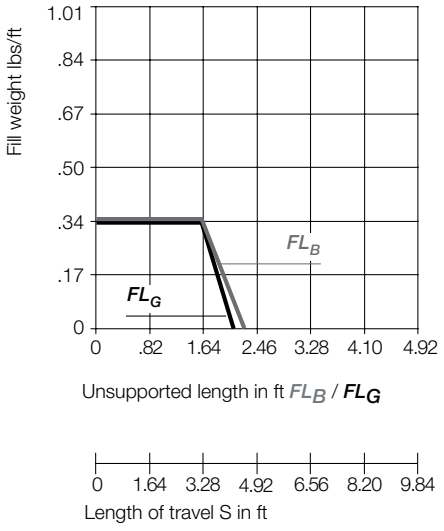
E-Chain System® E2 Mini
Series 14
Installation Dimensions

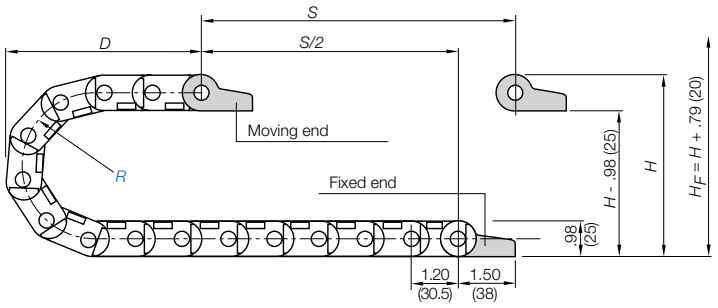
Short travel, unsupported length

- ● FL_B = unsupported with permitted sag
- ● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: ***HF = H + .79 in. (20 mm)*** (with 0.34 lbs/ft (0.5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	1.10 (028)	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.92 (125)
H	3.19 (81)	3.98 (101)	4.76 (121)	6.89 (175)	8.86 (225)	10.83 (275)
D	3.39 (86)	3.78 (96)	4.17 (106)	5.24 (133)	6.22 (158)	7.20 (183)
K	6.02 (150)	7.42 (185)	8.61 (215)	11.81 (300)	14.96 (380)	17.91(455)

Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $\frac{S}{2} + K$

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid NB	VDE 0304 IIC UL94 V2

Technical Data

Details of material properties
➤ Chapter 1

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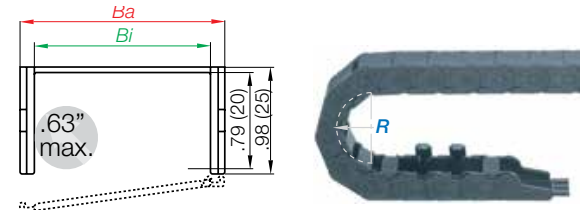
igus®

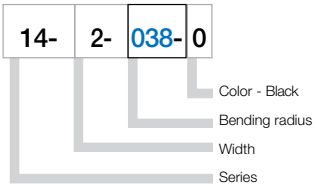
E-Chain System® E2 Mini
Series 14

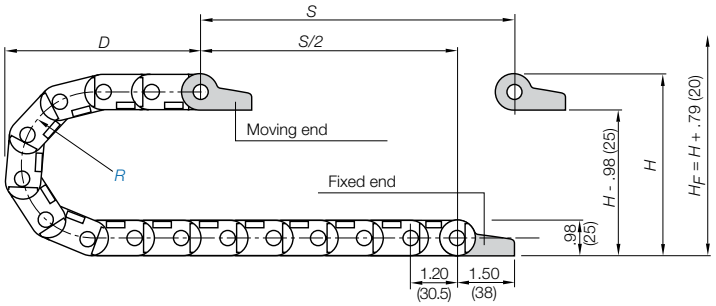
Telephone 1-800-521-2747
Fax 1-401-438-7270

Series 14 - E-Chain® snap-open alomg the inner radius



Part Number Structure





Supplement part number with required radius. Example: 14-2-[038]-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

Part Number			*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
14-1-	☐	-0	.59 (15)	1.02 (26)	≈ 0.21 (0.31)
14-2-	☐	-0	.98 (25)	1.42 (36)	≈ 0.22 (0.32)
14-3-	☐	-0	1.50 (38)	1.93 (49)	≈ 0.27 (0.40)
14-4-	☐	-0	1.97 (50)	2.40 (61)	≈ 0.28 (0.41)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 14-2-[038]-0

	028	038	048	075	100	125
R	1.10 (028)	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.92 (125)
H	3.19 (81)	3.98 (101)	4.76 (121)	6.89 (175)	8.86 (225)	10.83 (275)
D	3.39 (86)	3.78 (96)	4.17 (106)	5.24 (133)	6.22 (158)	7.20 (183)
K	6.02 (150)	7.42 (185)	8.61 (215)	11.81 (300)	14.96 (380)	17.91(455)

0=Standard color black. For other colors see Chapter 1

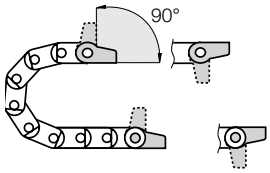
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E2 Mini
Series 14
Mounting Brackets

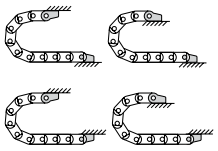
Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

Moving end
114...1P(Z)



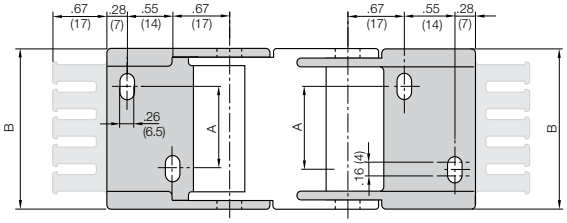
Fixed end
114...2P(Z)



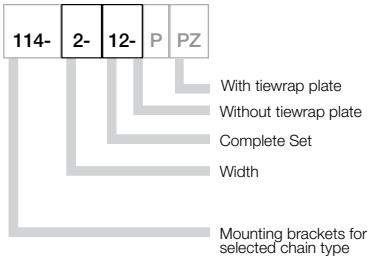
Possible installation configurations -

Moving end
114...1P(Z)

Fixed end
114...2P(Z)



Part Number Structure



For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)
14.1	**114-1-12-PZ**	**114-1-12-P**	—	—	1.04	(26.3)
14.2	**114-2-12-PZ**	**114-2-12-P**	.39	(10)	1.43	(36.3)
14.3	**114-3-12-PZ**	**114-3-12-P**	.91	(23)	1.94	(49.3)
14.4	**114-4-12-PZ**	**114-4-12-P**	1.38	(35)	2.41	(61.3)

Full set, for both ends:
114- 2- 12- PZ Full set, **each part with pin/bore + tiewrap plate**

Single-part order:
114- 2- 1- PZ Mounting bracket **with bore + tiewrap plate**
114- 2- 2- PZ Mounting bracket **with pin + tiewrap plate**

Additional Accessories

Quickfix - mounting bracket with dowel, upon request
Part No.
114-3-12QZ

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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B15
B15i

igus®

E-Chain System® E2 Mini
Series B15 / B15i

.67 .67

Features & Benefits

1. Large pins and double stop dog for superior life and long unsupported length
2. Mounting bracket with integrated strain relief
3. Can be opened along the outer radius (Series B15) or along the inner radius (Series B15i), these Series can be combined
4. Interior separation available
5. Dirt repellent exterior

Price Index

Series B15 / B15i

Special Features / Options

ESD Classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

Assembly Tips

Easy to assemble and disassemble

Usage Guidelines

- If snap-open accessibility is required
- If a small but very stable chain is required

- If snap-open accessibility is not required
  ➤ **Series 10 E2 Mini**
- If quick insertion of cables is needed
  ➤ **Series E14 E-Z Chain**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

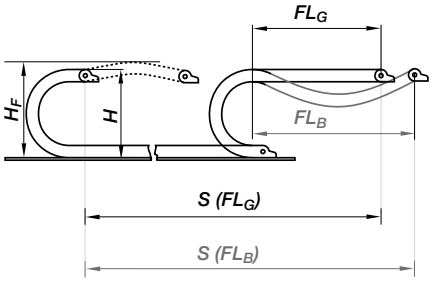
3.28 ft (1 m) **B15-025-038-0**	**E-Chain®**
With 2 separators **154** assembled every 2nd link	**Interior Separation**
1 Set **1025-12PZ**	**Mounting Bracket**

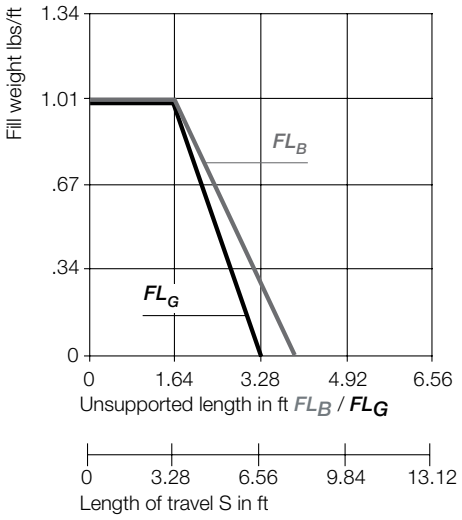
E-Chain System® E2 Mini Series B15 / B15i Installation Dimensions

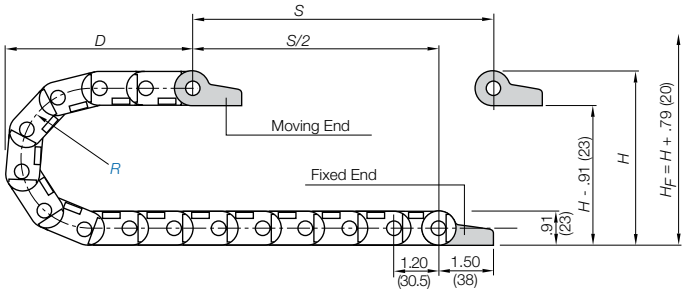
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: $H_F = H + .79$ **in. (20 mm)** (with 1.01 lbs/ft (0.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.33 (110)	4.92 (125)	5.71 (145)	7.09 (180)
H	3.90 (99)	4.69 (119)	6.81 (173)	8.78 (223)	9.57 (243)	10.75 (273)	12.32 (313)	15.08 (383)
D	3.74 (95)	4.13 (105)	5.20 (132)	6.18 (157)	6.57 (167)	7.17 (182)	7.95 (202)	9.33 (237)
K	7.28 (185)	8.46 (215)	11.81 (300)	14.96 (380)	16.14 (410)	17.91 (455)	20.47 (520)	24.80 (630)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
$K = \pi \bullet R +$ *safety buffer*
H_F = Required clearance height

Technical Data

Details of material properties
➤ **Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

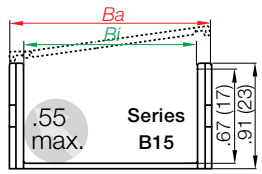
E-Chain System® E2 Mini
Series B15 / B15i

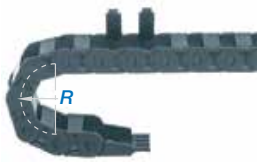
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

STANDARD

Series B15 - Snap-open along the outer radius - Standard



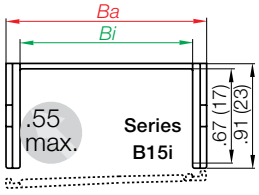


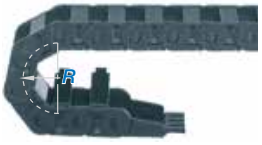
Part Number Structure

B15- 025- 038- 0

- Color - Black
- Bending radius
- Width
- Series

Series B15i - Snap-open along the inner radius

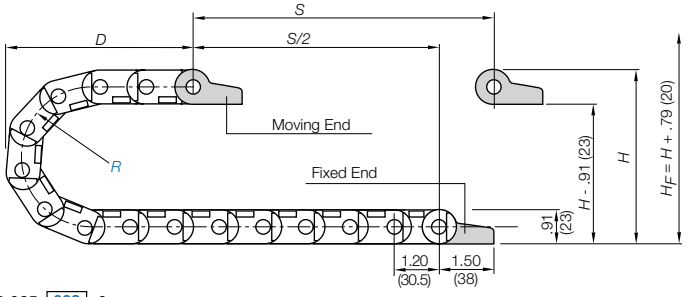




Part Number Structure

B15i- 025- 038- 0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: B15-025-038-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

Part Number Snap-open outer radius	Snap-open inner radius		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
B15-015-	B15i-015-	-0	.59 (15)	1.02 (26)	≈ 0.24 (0.35)
B15-025-	B15i-025-	-0	.98 (25)	1.42 (36)	≈ 0.27 (0.40)
B15-038-	B15i-038-	-0	1.50 (38)	1.93 (49)	≈ 0.31 (0.46)
B15-050-	B15i-050-	-0	1.97 (50)	2.40 (61)	≈ 0.35 (0.52)
B15-5-	B15i-5-	-0	2.48 (63)	2.99 (76)	≈ 0.42 (0.63)
B15-6-	B15i-6-	-0	3.15 (80)	3.70 (94)	≈ 0.47 (0.70)
B15-7-	B15i-7-	-0	3.94 (100)	4.45 (113)	≈ 0.51 (0.76)

Choose from the radii below for all of the above sizes
Radius (mm) Example: B15-025-038-0

	038	048	075	100	110	125	145	180
R	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.33 (110)	4.92 (125)	5.71 (145)	7.09 (180)
H	3.90 (99)	4.69 (119)	6.81 (173)	8.78 (223)	9.57 (243)	10.75 (273)	12.32 (313)	15.08 (383)
D	3.74 (95)	4.13 (105)	5.20 (132)	6.18 (157)	6.57 (167)	7.17 (182)	7.95 (202)	9.33 (237)
K	7.28 (185)	8.46 (215)	11.81 (300)	14.96 (380)	16.14 (410)	17.91 (455)	20.47 (520)	24.80 (630)

0=Standard color black. For other colors see Chapter 1

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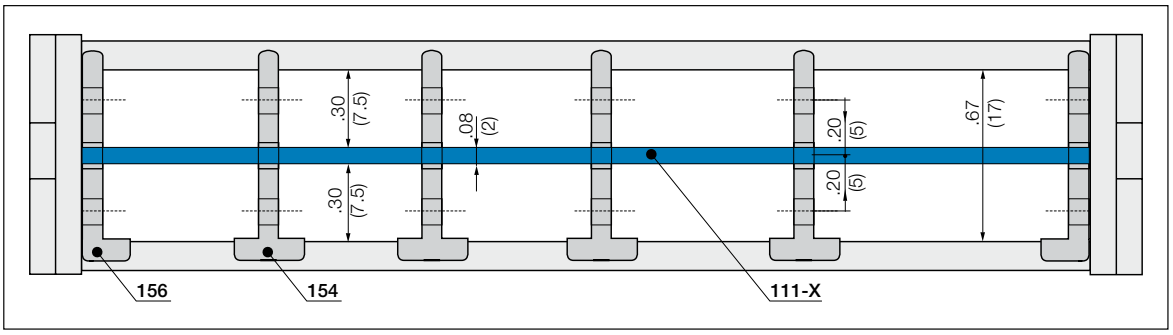
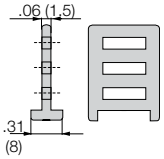
E-Chain System® E2 Mini
Series B15 / B15i
Interior Separation

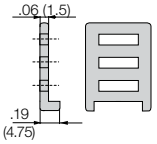




Slotted separator for E-Chains®

Unassembled	**Part No. 153**
Assembled	**Part No. 154**

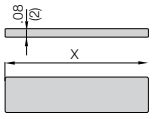
- **Slotted separator 153**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Side plate for E-Chains®

Unassembled	**Part No. 155**
Assembled	**Part No. 156**

- **Side plate 155**
  Side plate for use with full-width shelf 110-X and slotted separator 153



Full width shelf for E-Chains®

Unassembled	**Part No. 110-X**
Assembled	**Part No. 111-X**

- **Full width shelf 110-X**
  this option makes sense in applications with many thin cables with similar diameters. Full width shelves can be arranged at 3 different heights in .20" (5 mm) increments.

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.59	(015)	**110-15**	**111-15**
.98	(025)	**110-25**	**111-25**
1.50	(038)	**110-38**	**111-38**
1.97	(050)	**110-50**	**111-50**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
2.48	(063)	**110-63**	**111-63**
3.15	(080)	**110-80**	**111-80**
3.94	(100)	**110-100**	**111-100**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
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Mounting Brackets - Plastic

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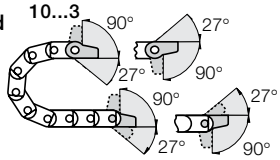
Standard

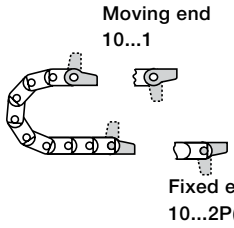
Option 1: pivoting

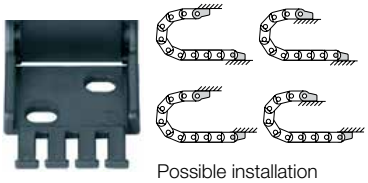
- Short and long travel
- Space-restricted conditions
- Corrosion resistant



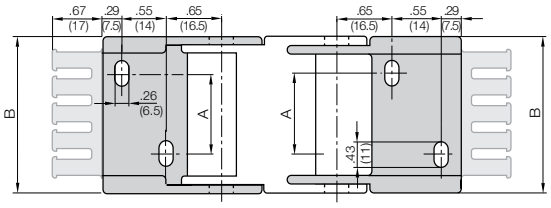
Option 2: locking

- Vertical hanging/standing travels
- Extreme accelerations
- Corrosion resistant

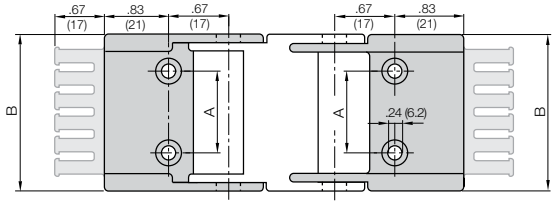




For E-Chain
B15/B15i-015 to
B15/B15i-050



For E-Chain
B15/B15i-5 to
B15/B15i-7



Part Number Structure

1025- 34- P PZ

- With tiewrap plate
- Without tiewrap plate
- Complete Set
  12 = Locking
  34 = Pivoting
- Mounting brackets for selected chain type

Part number examples are shown for pivoting brackets. For locking brackets fill in the blank with 12

Part No. Full Set (pivoting)
with Tiewrap Plate
Series B15/B15i with 25mm inner width
1025-34PZ

Part No. Full Set (pivoting)
without Tiewrap Plate
Series B15/B15i with 25 mm inner width
1025-34P

Full set, for both ends:
1025- 34- PZ Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
1025- 3- PZ Mounting bracket **with bore + tiewrap plate**
1025- 4- PZ Mounting bracket **with pin + tiewrap plate**

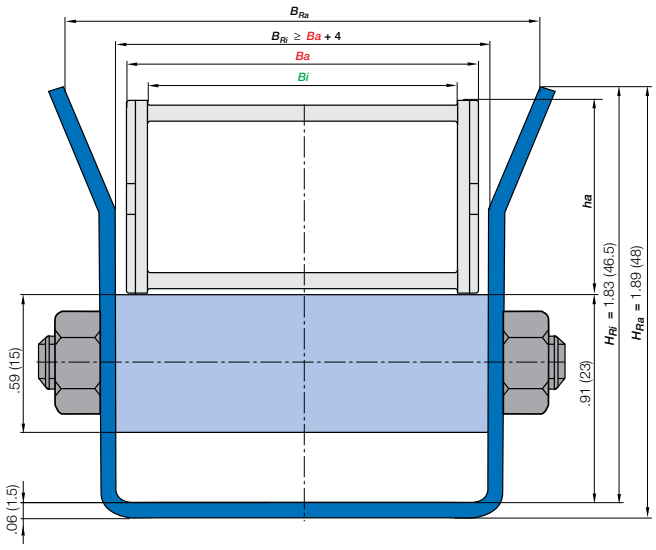
For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)
B15/B15i-015	1015- ☐ PZ	1015- ☐ P	—	—	1.00	(25.5)
B15/B15i-025	1025- ☐ PZ	1025- ☐ P	.39	(10)	1.40	(35.5)
B15/B15i-038	1038- ☐ PZ	1038- ☐ P	.91	(23)	1.91	(48.5)
B15/B15i-050	1050- ☐ PZ	1050- ☐ P	1.38	(35)	2.38	(60.5)
B15/B15i-5	105- ☐ PZ	105- ☐ P	1.89	(48)	2.95	(75.0)
B15/B15i-6	106- ☐ PZ	106- ☐ P	2.56	(65)	3.62	(92.0)
B15/B15i-7	107- ☐ PZ	107- ☐ P	3.35	(85)	4.41	(112.0)

☐ = 34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 1025- 34 PZ

E-Chain System® E2 Mini
Series B15 / B15i
Guide Trough

One-piece guide troughs made of steel are available for the Series B15 Energy Chains®. These guide troughs are available from stock for outer chain widths up to 4.45 in. (113 mm). For wider E-Chains® and Tubes, special solutions are possible with short lead times.
No installation sets are required for these trough sizes since the guide troughs consist of a one-piece U-profile. The joint connection with this type of guide trough is specified individually for every application.



Dimensions Guide troughs 91-10 — 91-71

For Series	Part No.	B_{Ra} in.	B_{Ra} (mm)	B_{Ri} in.	B_{Ri} (mm)	Weight lbs/ft	Weight (kg/m)
B15/015							
Trough **without** glide bar 6.56 ft. (2m section)	**91-10**	1.59	(40.5)	1.18	(30)	1.01	(1.50)
Glide bar 6.56 ft. (2m section)	**91-11**	1.59	(40.5)	1.18	(30)	.30	(.45)
B15-025							
Trough **without** glide bar 6.56 ft. (2m section)	**91-20**	1.99	(50.5)	1.57	(40)	1.11	(1.65)
Glide bar 6.56 ft. (2m section)	**91-21**	1.99	(50.5)	1.57	(40)	.38	(.57)
B15-038							
Trough **without** glide bar 6.56 ft. (2m section)	**91-30**	2.46	(62.5)	2.05	(52)	1.21	(1.80)
Glide bar 6.56 ft. (2m section)	**91-31**	2.46	(62.5)	2.05	(52)	.46	(.68)
B15-050							
Trough **without** glide bar 6.56 ft. (2m section)	**91-40**	2.85	(72.5)	2.44	(62)	1.28	(1.90)
Glide bar 6.56 ft. (2m section)	**91-41**	2.85	(72.5)	2.44	(62)	.61	(.91)
B15-5							
Trough **without** glide bar 6.56 ft. (2m section)	**91-50**	3.60	(91.5)	3.19	(81)	1.52	(2.26)
Glide bar 6.56 ft. (2m section)	**91-51**	3.60	(91.5)	3.19	(81)	.84	(1.25)
B15-6							
Trough **without** glide bar 6.56 ft. (2m section)	**91-60**	4.27	(108.5)	3.86	(98)	1.83	(2.72)
Glide bar 6.56 ft. (2m section)	**91-61**	4.27	(108.5)	3.86	(98)	.91	(1.35)
B15-7							
Trough **without** glide bar 6.56 ft. (2m section)	**91-70**	5.06	(128.5)	4.65	(118)	2.13	(3.17)
Glide bar 6.56 ft. (2m section)	**91-71**	5.06	(128.5)	4.65	(118)	1.14	(1.70)

Trough material in general: St 1203 galvanized

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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B17
B17i

igus®

E-Chain System® E2 Mini
Series B17/B17i

1.26

Price Index

Series B17

Special Features / Options

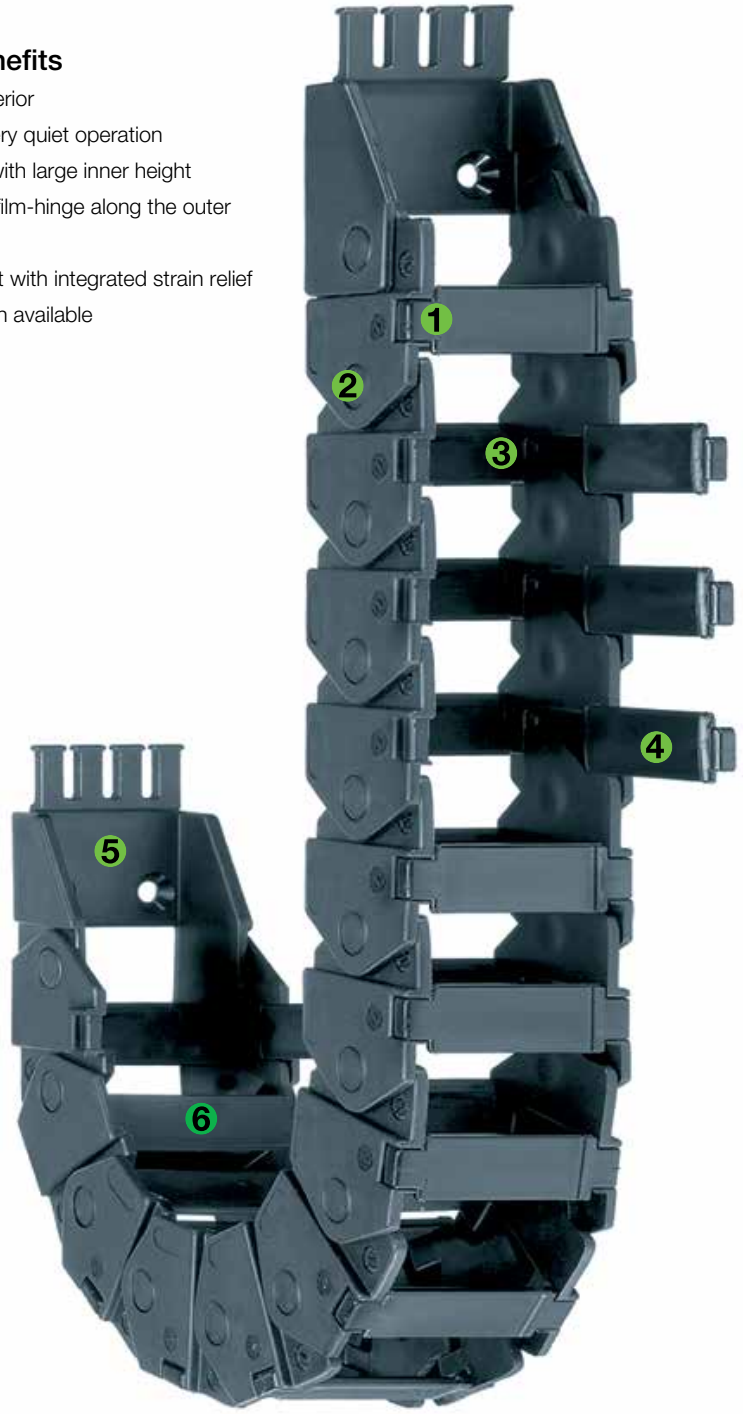
Special Equipment:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

Features & Benefits

1. Dirt-repellent exterior
2. Small pitch for very quiet operation
3. Small E-Chain® with large inner height
4. Snap-open with film-hinge along the outer
5. radius
6. Mounting bracket with integrated strain relief

Interior separation available



Assembly Tips

Easy to assemble and disassemble

Usage Guidelines

- If snap-open accessibility is required
- If a rather small chain with a broad inner width is required

- If quick opening of the links is required
  ➤ **Series 17 Zipper**
- If quick insertion of cables with preassembled connectors is required
  ➤ **Series E16 E-Z Chain**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **B17-1-063-0**	**E-Chain®**
With 2 separators **172** assembled every 2nd link	**Interior Separation**
1 Set **117-1-12PZ**	**Mounting Bracket**

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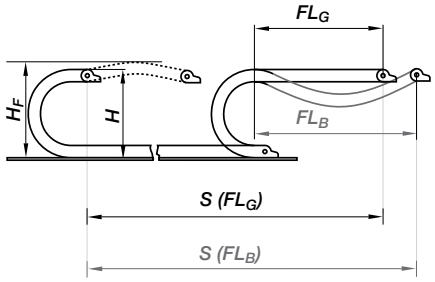
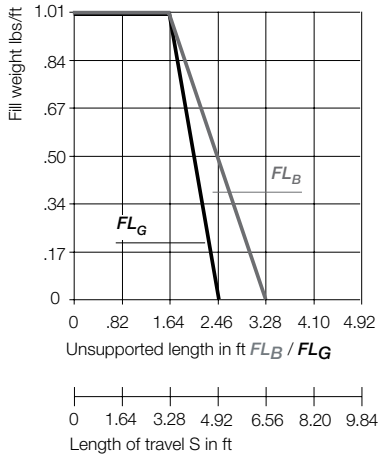
E-Chain System® E2 Mini Series B17/B17i Installation Dimensions

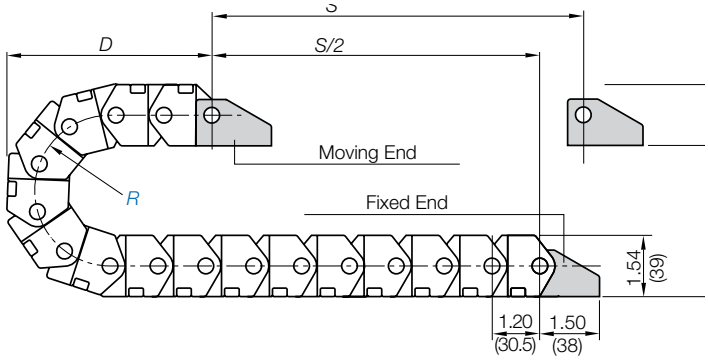
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: $H_F = H + .98$ **in. (25 mm)** (with 1.01 lbs/ft (1.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.89 (048)	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)
H	5.31 (135)	6.50 (165)	7.44 (189)	9.41 (239)	11.38 (289)
D	4.45 (113)	5.04 (128)	5.51 (140)	6.50 (165)	7.48 (190)
K	8.46 (215)	10.24 (260)	11.81 (300)	14.96 (380)	17.91 (455)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
$K = \pi \bullet R +$ *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

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Series B17/B17i

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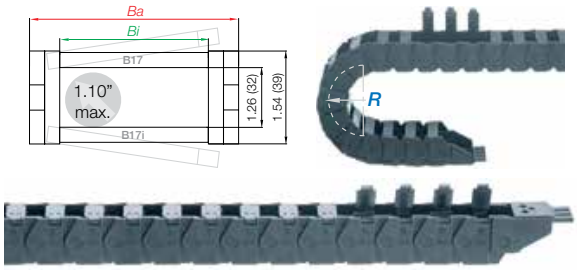
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

STANDARD

Series B17 - Snap-open along the outer radius - Standard

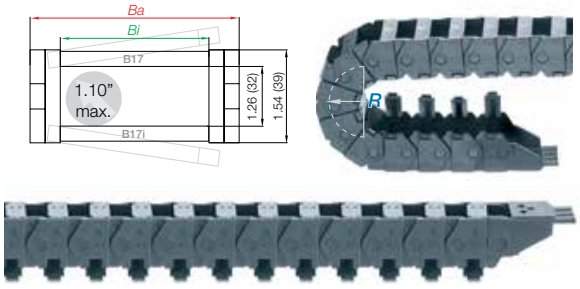


Part Number Structure

B17- 2- 075- 0

- Color - Black
- Bending radius
- Width
- Series

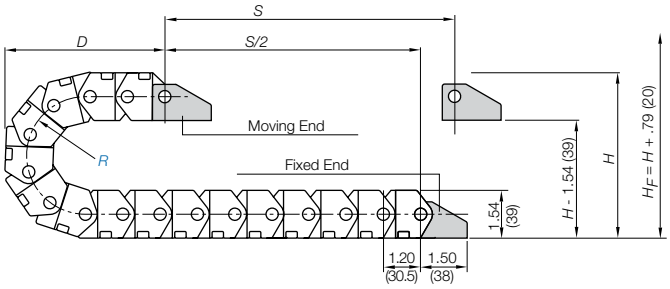
Series B17i - Snap-open along the inner radius



Part Number Structure

B17i- 2- 075- 0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: B17-2- 063 -0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

Part number Snap-open along outer radius	Part number Snap-open along inner radius		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
B17-1-	—	-0	.59 (15)	1.00 (25.5)	≈ 0.35 (0.52)
B17-2-	B17i-2-	-0	.98 (25)	1.40 (35.5)	≈ 0.40 (0.59)
B17-3-	B17i-3-	-0	1.50 (38)	1.91 (48.5)	≈ 0.44 (0.65)
B17-4-	B17i-4-	-0	1.97 (50)	2.38 (60.5)	≈ 0.47 (0.70)
B17-5-	—	-0	2.48 (63)	2.99 (76)	≈ 0.56 (0.83)
B17-6	—	-0	3.15 (80)	3.66 (93)	≈ 0.62 (0.92)
B17-7	—	-0	3.94 (100)	4.45 (113)	≈ 0.71 (1.06)

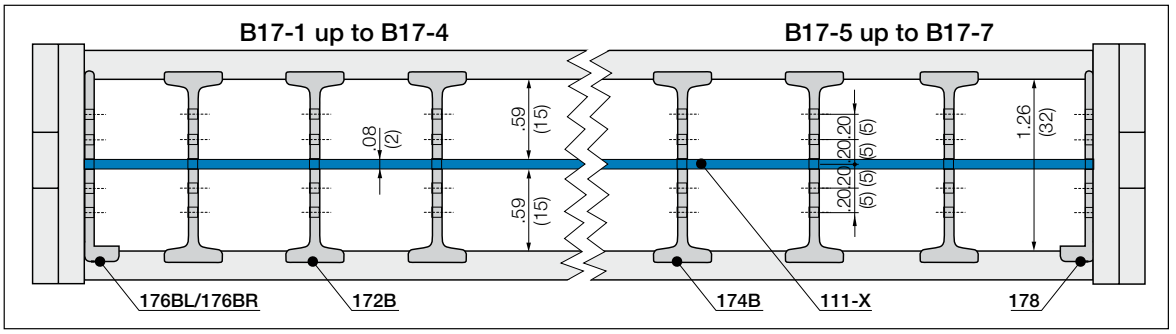
Choose from the radii below for all of the above sizes
Radius (mm) Example: B17-2- 075 -0

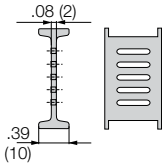
	048**	063*	075	100*	125*
R	1.89 (048)	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)
H	5.31 (135)	6.50 (165)	7.44 (189)	9.41 (239)	11.38 (289)
D	4.45 (113)	5.04 (128)	5.51 (140)	6.50 (165)	7.48 (190)
K	8.46 (215)	10.24 (260)	11.81 (300)	14.96 (380)	17.91 (455)

* Radii 063, 100, 125 not available for the B17i-3
** Radius 048 is not available for the B17-5 or B17-7

0=Standard color black. For other colors see Chapter 1

E-Chain System® E2 Mini
Series B17/B17i
Interior Separation

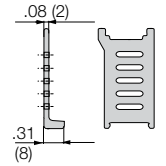




Slotted separator
for B17-1 up to B17-4

Unassembled	**Part No. 171B**
Assembled	**Part No. 172B**

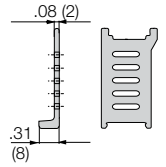
- **Slotted separator 171B**
(B17-1 up to B17-4)
is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Side plate (left)
for B17-1 up to B17-4

Unassembled	**Part No. 175BL**
Assembled	**Part No. 176BL**

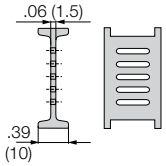
- **Side plate 175BL**
(B17-1 up to B17-4)
Side plate (left) for use with full-width shelf 110-X and slotted separator 171B



Side plate (right)
for B17-1 up to B17-4

Unassembled	**Part No. 175BR**
Assembled	**Part No. 176BR**

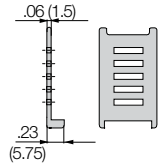
- **Side plate 175BR**
(B17-1 up to B17-4)
Side plate (right) for use with full-width shelf 110-X and slotted separator 171B



Slotted separator
for B17-5 up to B17-7

Unassembled	**Part No. 173B**
Assembled	**Part No. 174B**

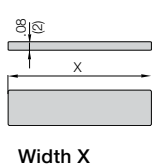
- **Slotted separator 173B**
(B17-5 up to B17-7)
is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Side plate
for B17-5 up to B17-7

Unassembled	**Part No. 177**
Assembled	**Part No. 178**

- **Side plate 177**
(B17-5 up to B17-7)
Side plate for use with full-width shelf 110-X and slotted separator 173B



Full width shelf, for all widths

Unassembled	**Part No. 110-X**
Assembled	**Part No. 111-X**

- **Full width shelf 110-X**
this option makes sense in applications with many thin cables with similar diameters. Full width shelves can be arranged at 5 different heights in .20" (5 mm) increments.

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.59	(015)	**110-15**	**111-15**
.98	(025)	**110-25**	**111-25**
1.50	(038)	**110-38**	**111-38**
1.97	(050)	**110-50**	**111-50**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
2.48	(063)	**110-63**	**111-63**
3.15	(080)	**110-80**	**111-80**
3.94	(100)	**110-100**	**111-100**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E-Chain System® E2 Mini
Series B17/B17i
Mounting Brackets - Plastic

Telephone 1-800-521-2747
Fax 1-401-438-7270

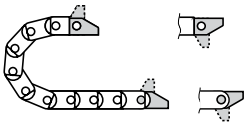
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

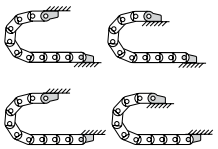
Standard

Option: locking

- One-piece mounting bracket
- Corrosion resistant
- Available pre-assembled
- Inner and outer attachment possible
- With or without strain relief tiewrap plates

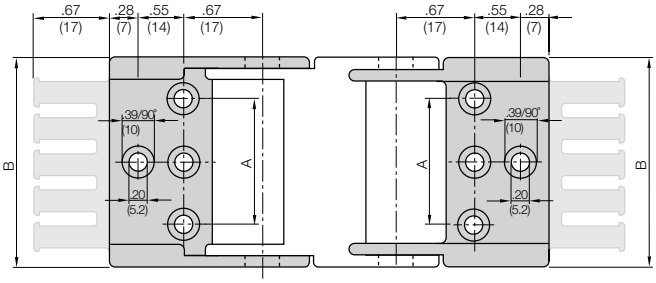
Moving end with bore
117...1P(Z)



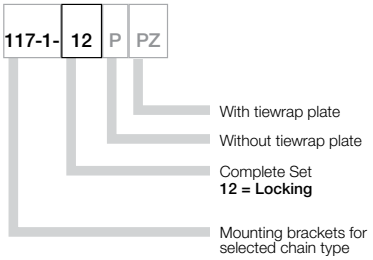


Possible installation configurations -

Fixed end with pin
117...2P(Z)



Part Number Structure



Full set, for both ends:
117-1-12-PZ Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
117-1-1-PZ Mounting bracket **with bore + tiewrap plate**
117-1-2-PZ Mounting bracket **with pin + tiewrap plate**

For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Number of Teeth	Dimension A in.	(mm)	Dimensions B in.	(mm)
B17-1	**117-1-12PZ**	**117-1-12P**	2	—	—	1.00	(25.5)
B17/B17i-2	**117-2-12PZ**	**117-2-12P**	3	.47	(12)	1.40	(35.5)
B17/B17i-3	**117-3-12PZ**	**117-3-12P**	4	.98	(25)	1.91	(48.5)
B17/B17i-4	**117-4-12PZ**	**117-4-12P**	5	1.46	(37)	2.38	(60.5)
B17-5	**117-5-12PZ**	**117-5-12P**	6	1.89	(48)	2.99	(76.0)
B17-6	**117-6-12PZ**	**117-6-12P**	8	2.56	(65)	3.66	(93.0)
B17-7	**117-7-12PZ**	**117-7-12P**	10	3.35	(85)	4.45	(113.0)

117-1-P(Z): Center bores only
117-2-12P(Z) - 117-7-P(Z): Outer bores only

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PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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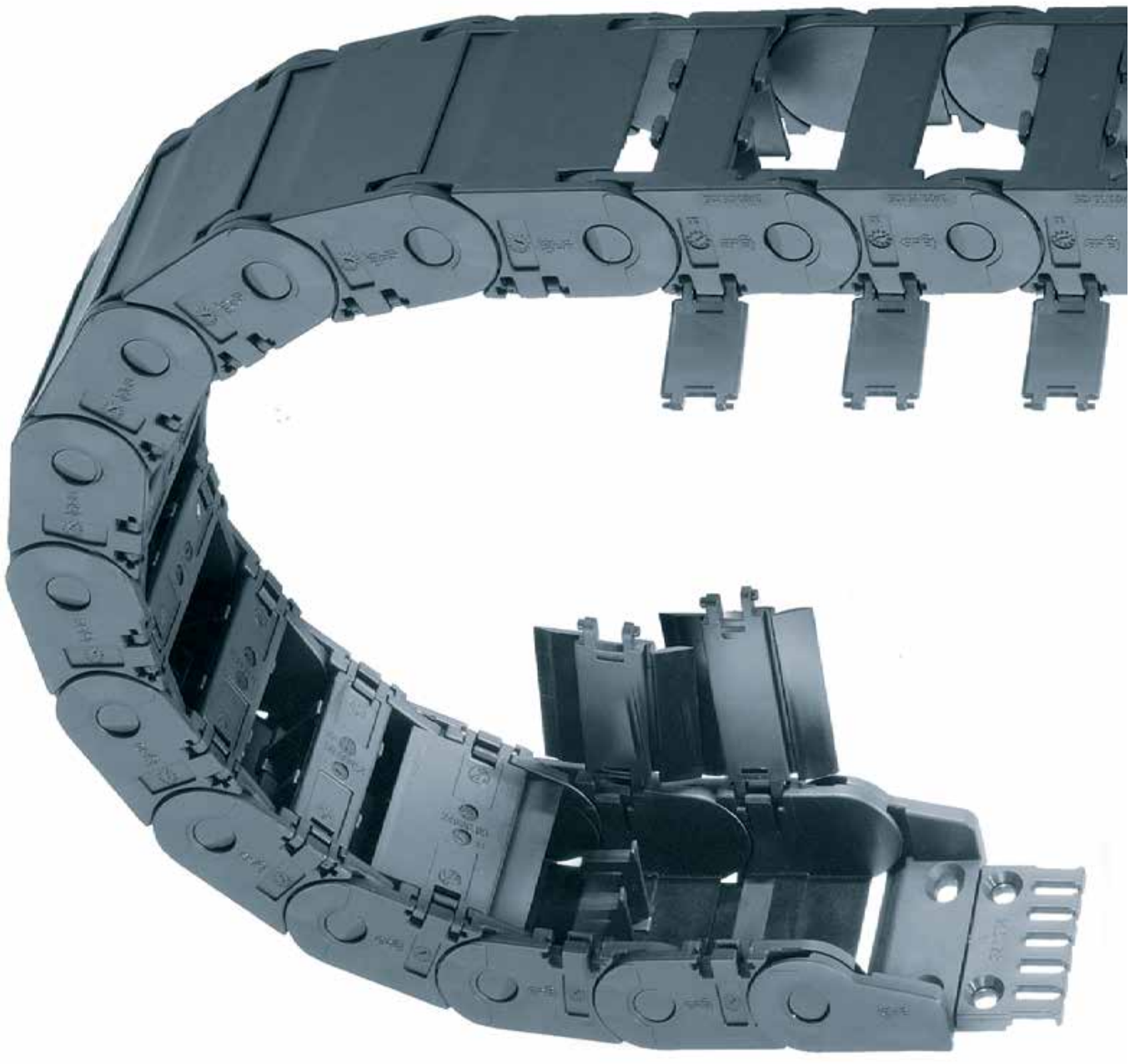

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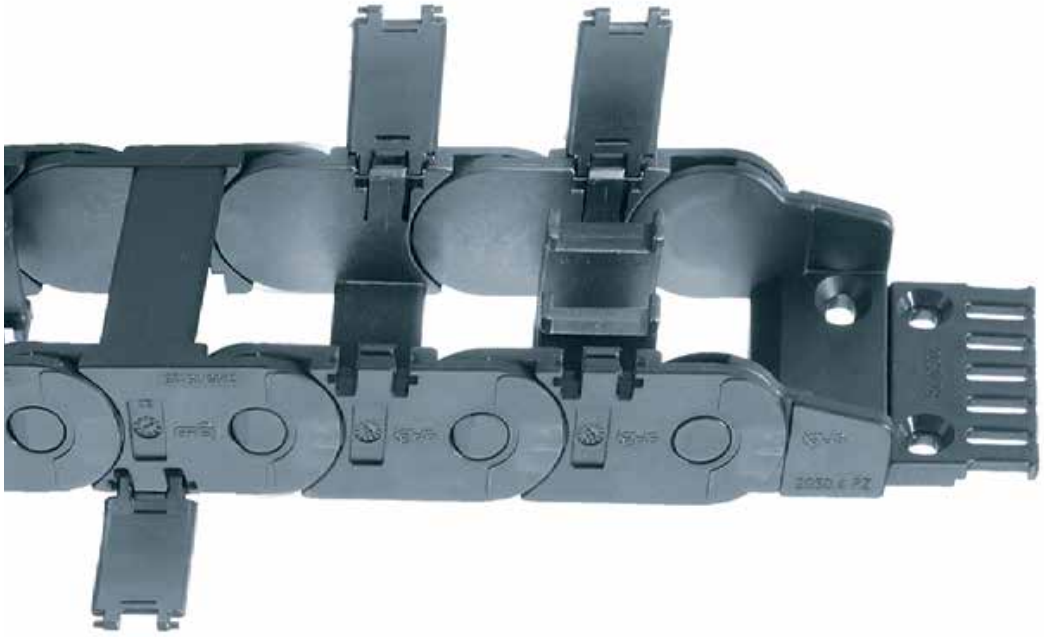

igus®
E2/000

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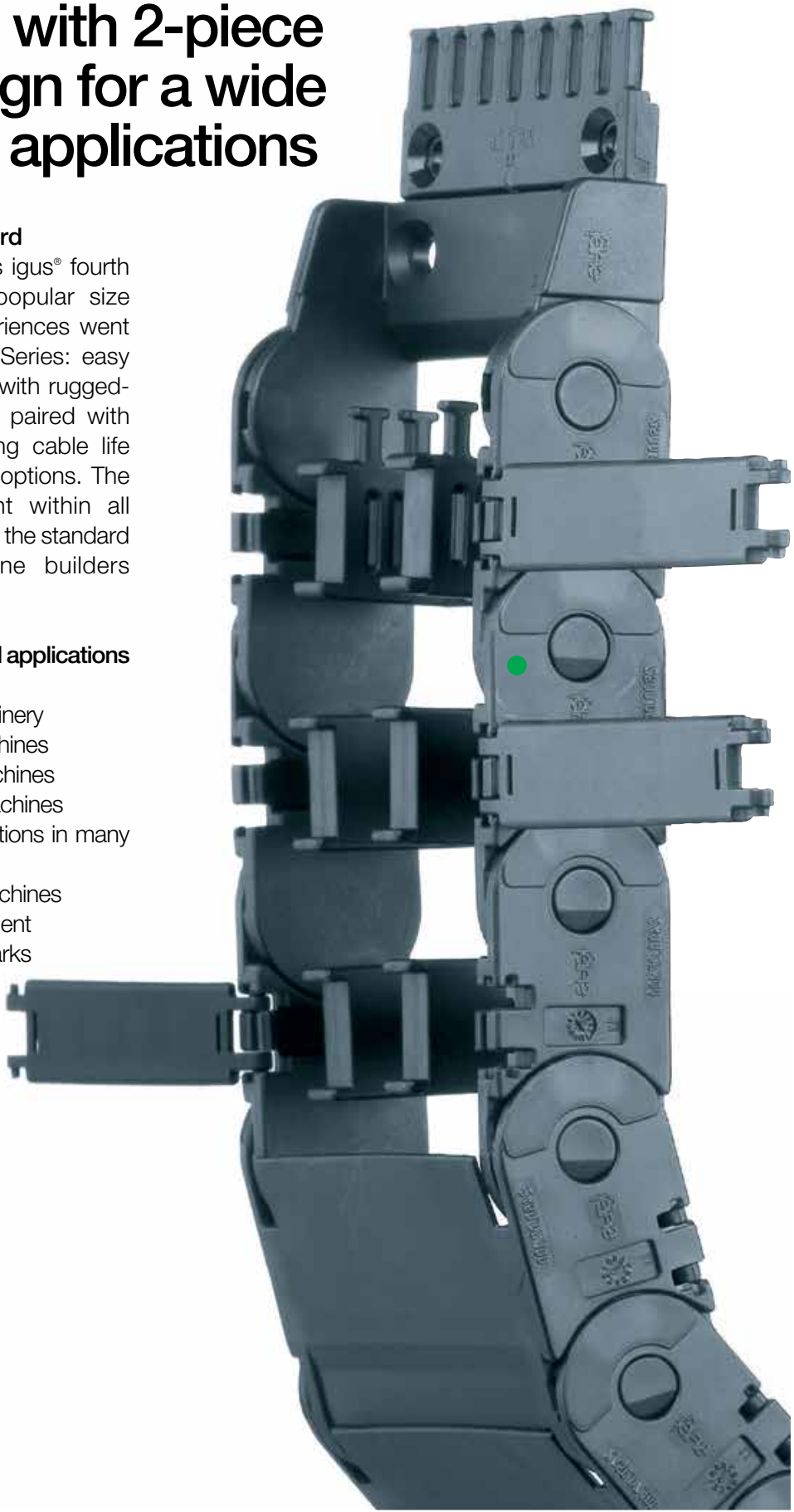
E2/000 - with 2-piece link-design for a wide range of applications



E2/000 - the standard

The E2/000 Series is igus® fourth generation in this popular size range. All past experiences went into this Millennium Series: easy assembly combined with ruggedness - high stability paired with quieter motion - long cable life and many mounting options. The design is consistent within all E2/000 variations. It is the standard product for machine builders around the world.

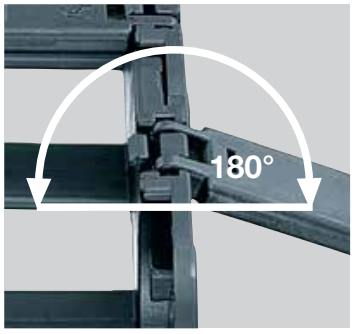
Typical industries and applications

- Material handling
- Construction machinery
- Woodworking machines
- Glass handling machines
- Plastic handling machines
- Long travel applications in many industries
- Semiconductor machines
- Theatre, entertainment and amusement parks
- Vehicles
- General machinery

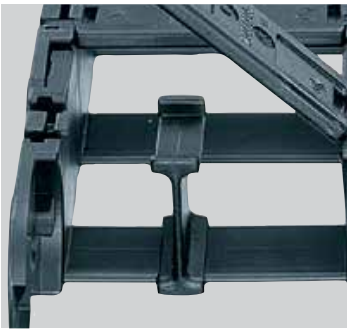
Harnessed E2/000 E-Chain® - turnkey solution delivered with cables and sheet metal parts attached and ready for installation

E2/000 features

New snap-open mechanism, choice of snap-open on left or right



Hinged crossbar can be swiveled by more than 180° on both sides



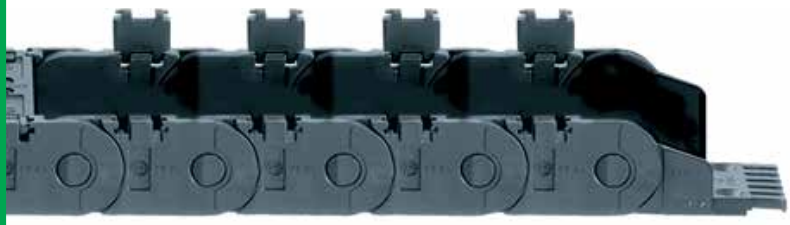
Secure fit of separators and interior separation even when E-Chain® is open

Half E-Tube - Fully enclosed in outer radius. Choice of swiveling interior radius to the left or right

Lightning-fast closing by the touch of a thumb - secure fit without additional locking devices

Opening mechanism accessible from above - rapid opening with a screwdriver or the E-Chain® opener

E-Chain System® E2/000
Selection Guide



E2/000 E-Chains®
Standard for System E2
snap-open along outer radius from both sides

Series	Inner height *hi* in.	(mm)	Inner width *Bi* in.	(mm)	Outer width *Ba* in.	(mm)	Outer height *ha* in.	(mm)	Bending radius *R* in.	(mm)
1500	.83	(21)	.59-4.92	(15 - 125)	1.12-5.45	(28.5 - 138.5)	1.10	(28)	1.38-7.09	(35 - 180)
2500	.98	(25)	.98-4.92	(25 - 125)	1.61-5.55	(41.0 - 141.0)	1.38	(35)	2.44-9.84	(55 - 250)
2700	1.38	(35)	1.97-6.89	(50 - 175)	2.60-7.64	(66.0 - 194.0)	1.97	(50)	2.48-9.84	(63 - 250)
3500	1.77	(45)	1.97-9.84	(50 - 250)	2.76-10.63	(70.0 - 270.0)	2.52	(64)	2.95-11.81	(75 - 300)
255	.94	(24)	1.50-4.06	(38 - 103)	2.13-4.69	(54.0 - 119.0)	1.38	(35)	2.17-9.84	(55 - 250)

E2/000 E-Chains®
snap-open along inner radius from both sides

1400	.83	(21)	.59-4.92	(15 - 125)	1.12-5.45	(28.5 - 138.5)	1.10	(28)	1.38-7.09	(35 - 180)
2400	.98	(25)	.98-4.92	(25 - 125)	1.61-5.55	(41.0 - 141.0)	1.38	(35)	2.44-9.84	(55 - 250)
2600	1.38	(35)	1.97-6.89	(50 - 175)	2.60-7.64	(66.0 - 194.0)	1.97	(50)	2.48-9.84	(63 - 250)
3400	1.77	(45)	1.97-9.84	(50 - 250)	2.76-10.63	(70.0 - 270.0)	2.52	(64)	2.95-11.81	(75 - 300)

Half E-Tubes
snap-open along inner radius from both sides

1450	.83	(21)	.59-4.92	(15 - 125)	1.12-5.45	(28.5 - 138.5)	1.10	(28)	2.95-7.09	(75 - 180)
2450	.98	(25)	.98-4.92	(25 - 125)	1.61-5.55	(41.0 - 141.0)	1.38	(35)	2.95-9.84	(75 - 250)
2650	1.38	(35)	1.97-6.89	(50 - 175)	2.60-7.64	(66.0 - 194.0)	1.97	(50)	3.94-9.84	(100 - 250)
3450	1.77	(45)	1.97-9.84	(50 - 250)	2.76-10.63	(70.0 - 270.0)	2.52	(64)	4.92-11.81	(125 - 300)

Full E-Tubes
snap-open along inner radius from both sides

1480	.83	(21)	.59-4.92	(15 - 125)	1.12-5.45	(28.5 - 138.5)	1.10	(28)	2.95-7.09	(75 - 180)
2480	.98	(25)	.98-4.92	(25 - 125)	1.61-5.55	(41.0 - 141.0)	1.38	(35)	2.95-9.84	(75 - 250)
2680	1.38	(35)	1.97-6.89	(50 - 175)	2.60-7.64	(66.0 - 194.0)	1.97	(50)	3.94-9.84	(100 - 250)
3480	1.77	(45)	1.97-9.84	(50 - 250)	2.76-10.63	(70.0 - 270.0)	2.52	(64)	4.92-11.81	(125 - 300)

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E-Chain System® E2/000
Assembly Instructions

E-Chains® - Opening and Closing E2 Series R1000 E-Tubes

Open: swivel lids

Close: push and snap

Insert screwdriver into the slot, using a lever action apply pressure to the screwdriver to release

Remove lid

E-Chains® - Separating E2 Series R1000 E-Tubes

Release side link

Twist and pull apart

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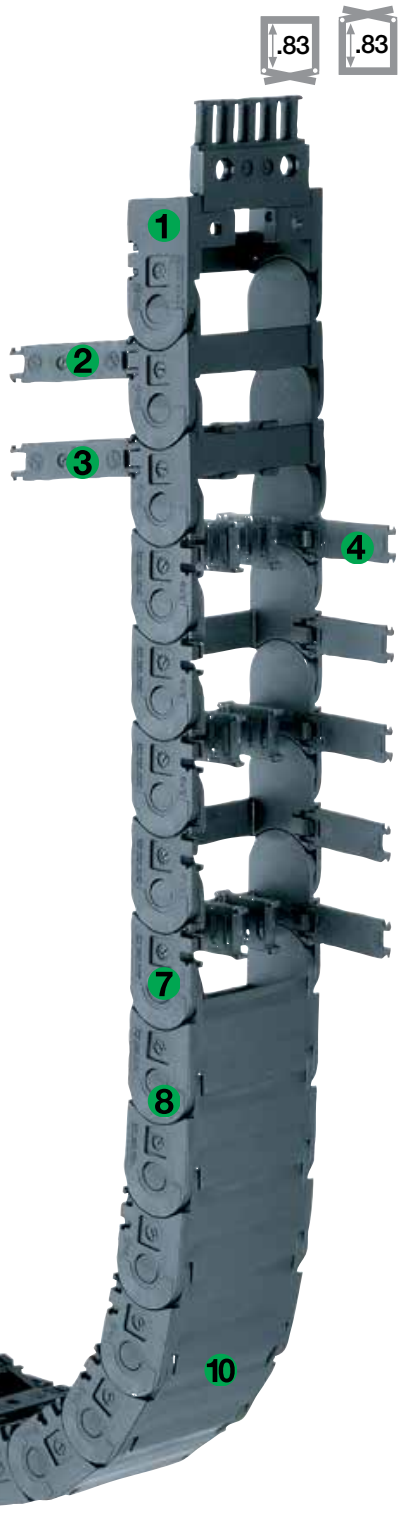
1400
1500

igus®

E-Chain System® E2/000
Series 1400/1500



Price Index

Series 1400/1450/1500

Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

Flammability Class VDE 0304 IIC UL94 HB

Assembly Tips

Snap-open mechanism, choice of snap-open on left or right. Hinged crossbar can be swiveled by more than 180° on both sides. Lightning-fast closing by hand. Secure fit without additional locking devices.

Other Installation Methods

Vertical, hanging ≤ 65.6 ft (20 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupp. ≤ 2.30 ft (0.7 m)
Rotary requires further calculation

Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required
- If intergrated strain relief at the mounting point is required
- If half E-Tube is required (Series 1450)
- If long service life is required
- If easy installation is required

- If the application is very simple
  ➤ **Series E200 E-Z Chain**
- If greater stability is required
  ➤ **Series E4-21 E4-1 Series**

Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 1400 snap-open on both sides along inner radius
4. Series 1500 snap-open on both sides along outer radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

9.84 ft (3 m) **1400-038-100-0**	**E-Chain®**
With 2 separators **14011** assembled every 2nd link	**Interior Separation**
1 Set **15000-038-34PZB**	**Mounting Bracket**

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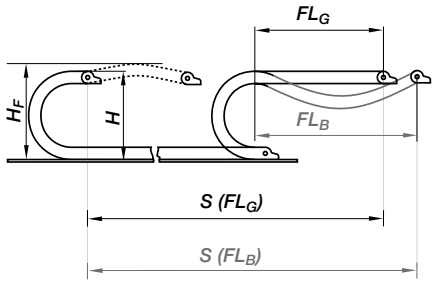
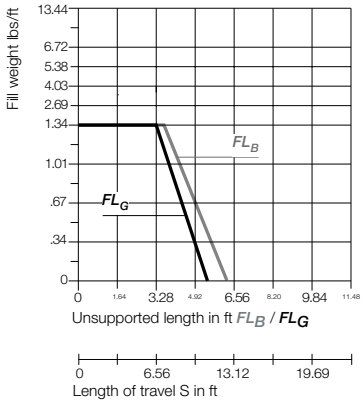
E-Chain System® E2/000
Series 1400/1500
Installation Dimensions

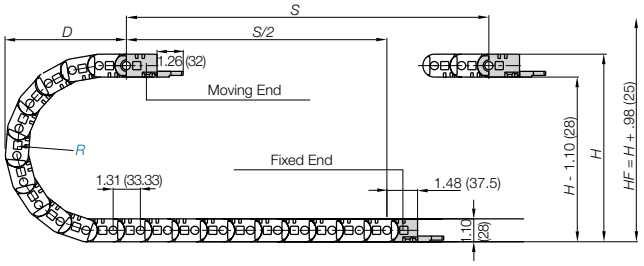
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.31" (33.3 mm)
Links per ft (m): = 9.14 (30)
For center mount applications:
Chain length = $S/2 + K$

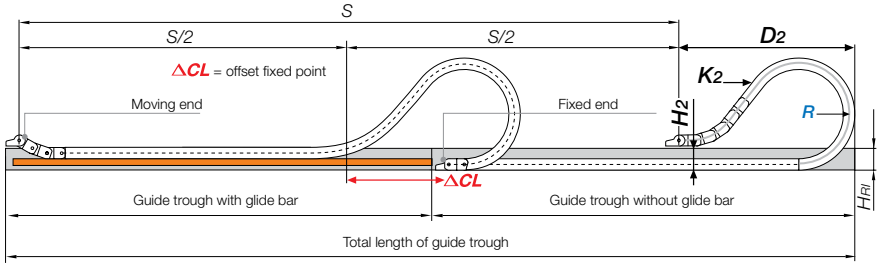
The required clearance height: ***H_F = H + .98 in. (25 mm)*** (with .34 lbs/ft (0.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.38 (035)	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.92 (125)	5.71 (145)	7.09 (180)
H	3.86 (98)	4.09 (104)	4.88 (124)	7.01 (178)	8.98 (228)	10.94 (278)	12.52 (318)	15.28 (388)
D	3.90 (99)	4.02 (102)	4.41 (112)	5.47 (139)	6.46 (164)	7.44 (189)	8.23 (209)	9.61 (244)
K	7.09 (180)	7.48 (190)	8.66 (220)	12.01 (305)	15.16 (385)	18.11 (460)	20.67 (525)	25.00 (635)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 246 ft. (75 m)

For center mount applications:
Chain length: = $S/2 + K_2$



In case of travels between 13 ft. (4m) and 32.8 ft. (10m) we recommend a longer unsupported length.

R	1.38 (035)	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.92 (125)	5.71 (145)	7.09 (180)
H_2	–	–	–	–	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)
D_{2+25}	–	–	–	–	13.39 (340)	19.49 (495)	21.26 (540)	27.17 (690)
K_2	–	–	–	–	23.62 (600)	31.50 (800)	37.01 (940)	46.06 (1170)
ΔCL	–	–	–	–	7.05 (179)	12.01 (305)	13.39 (340)	17.52 (445)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.81 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + safety buffer
H_F = Required clearance height
HRI = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ **Chapter 1**

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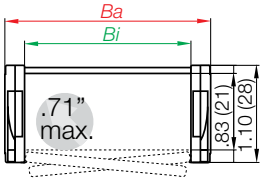
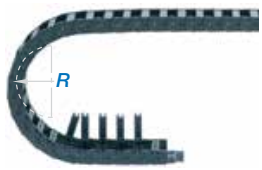
igus®

E-Chain System® E2/000
Series 1400/1500

Telephone 1-800-521-2747
Fax 1-401-438-7270

Series 1400 - Snap-open along the inner radius



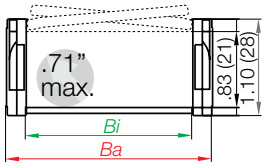


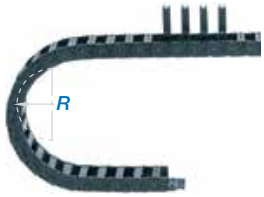
Part Number Structure

1400- 038- 100- 0

- Color - Black
- Bending radius
- Width
- Series

Series 1500 - Snap open along the outer radius

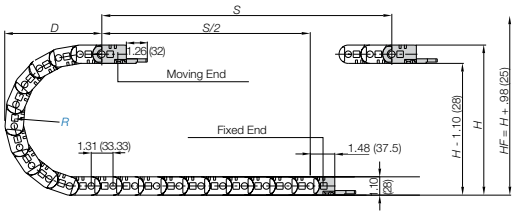




Part Number Structure

1500- 038- 100- 0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: 1400-038-100 -0
Pitch: 1.31 in. (33.3 mm) per link links/ft (m) = 9.14 (30)

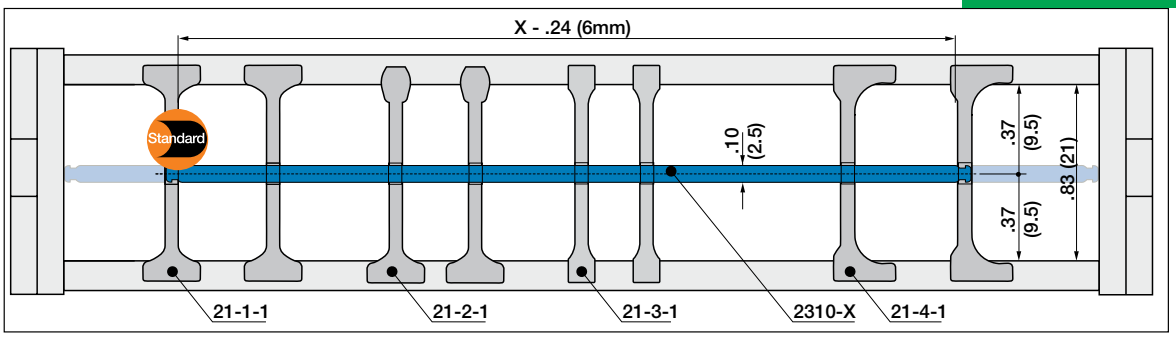
Part Number Snap-open Inner Radius	Part Number Snap-open Outer Radius		Bi in. (mm)	Ba in. (mm)	Weight 1400/1500 lbs/ft (kg/m)	Weight 1450 lbs/ft (kg/m)
1400-015-	1500-015-	-0	.59 (15)	1.12 (28.5)	≈ 0.31 (0.46)	≈ 0.32 (0.48)
1400-020-	1500-020-	-0	.79 (20)	1.32 (33.5)	≈ 0.32 (0.47)	–
1400-025-	1500-025-	-0	.98 (25)	1.52 (38.5)	≈ 0.33 (0.49)	≈ 0.38 (0.57)
1400-038-	1500-038-	-0	1.50 (38)	2.03 (51.5)	≈ 0.36 (0.53)	≈ 0.40 (0.59)
1400-050-	1500-050-	-0	1.97 (50)	2.50 (63.5)	≈ 0.38 (0.56)	≈ 0.44 (0.65)
1400-068-	1500-068-	-0	2.68 (68)	3.21 (81.5)	≈ 0.42 (0.63)	≈ 0.50 (0.74)
1400-080-	1500-080-	-0	3.15 (80)	3.68 (93.5)	≈ 0.45 (0.67)	≈ 0.54 (0.80)
1400-100-	1500-100-	-0	3.94 (100)	4.47 (113.5)	≈ 0.50 (0.74)	≈ 0.60 (0.90)
1400-125-	1500-125-	-0	4.92 (125)	5.45 (138.5)	≈ 0.56 (0.83)	≈ 0.69 (1.03)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 1400-038-100 -0

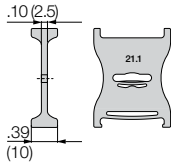
	035	038	048	075	100	125	145	180
R	1.38 (035)	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.92 (125)	5.71 (145)	7.09(180)
H+4	3.86 (98)	4.09 (104)	4.88 (124)	7.01 (178)	8.98 (228)	10.94 (278)	12.52 (318)	15.28 (388)
D	3.90 (99)	4.02 (102)	4.41 (112)	5.47 (139)	6.46 (164)	7.44 (189)	8.23 (209)	9.61 (244)
K	7.09 (180)	7.48 (190)	8.66 (220)	12.01 (305)	15.16 (385)	18.11 (460)	20.67 (525)	25.00 (635)

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E2/000
Series 1400/1500
Interior Separation - New Generation



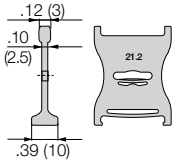
In the standard configuration separators are assembled every 2nd E-Chain® link
Note: Only suitable for E-Chain® Series 1400/1500



Separator, wide base

Unassembled	**Part No. 21.1**
Assembled	**Part No. 21.1.1**

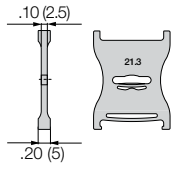
- **Standard separator 21.1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator, narrow head

Unassembled	**Part No. 21.2**
Assembled	**Part No. 21.2.1**

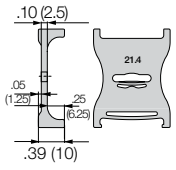
- **Separator 21.2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 21.3**
Assembled	**Part No. 21.3.1**

- **Separator 21.3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

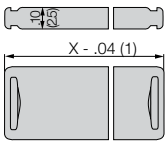


Separator, assymetrical

Unassembled	**Part No. 21.4**
Assembled	**Part No. 21.4.1**

- **Separator 21.4**
  For side mounted applications
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
015	**2300-15**	**2310-15**	060	**2300-60**	**2310-60**	087	**2300-87**	**2310-87**
025	**2300-25**	**2310-25**	062	**2300-62**	**2310-62**	090	**2300-90**	**2310-90**
030	**2300-30**	**2310-30**	065	**2300-65**	**2310-65**	100	**2300-100**	**2310-100**
038	**2300-38**	**2310-38**	070	**2300-70**	**2310-70**	103	**2300-103**	**2310-103**
040	**2300-40**	**2310-40**	075	**2300-75**	**2310-75**	110	**2300-110**	**2310-110**
050	**2300-50**	**2310-50**	077	**2300-77**	**2310-77**	120	**2300-120**	**2310-120**
057	**2300-57**	**2310-57**	080	**2300-80**	**2310-80**	125	**2300-125**	**2310-125**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

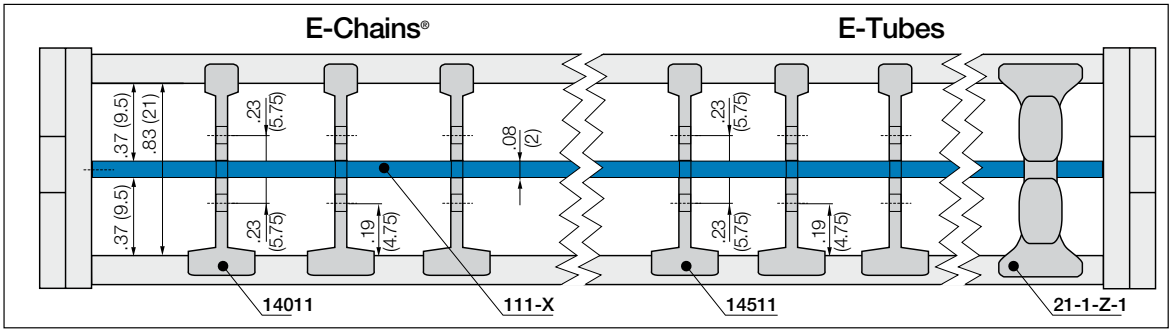
E-Chain System® E2/000
Series 1400/1500
Mounting Brackets - One Piece

Telephone 1-800-521-2747
Fax 1-401-438-7270

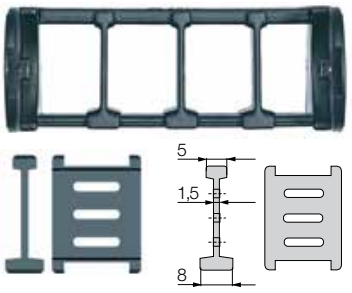
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

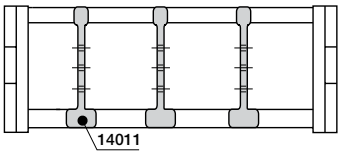
Option 1: Vertical separators

Vertical separators are used if a vertical subdivision of the E-Tube interior is required. By standard, vertical separators are assembled every other E-Tube link.



Separators, full-width shelves, Strain relief separators
In the standard configuration separators are assembled every 2nd E-Chain® link





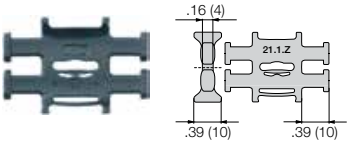
Slotted separator for E-Tubes

Unassembled	**Part No. 14001**
Assembled	**Part No. 14011**

- **Slotted separator 14001 (Chains only)** is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Option 2: Strain relief separator

Can be integrated into the mounting bracket and can be placed there at any position. To be used assembled on either the first or last E-Chain® link. Ideal for restricted space conditions.



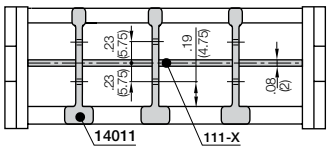
Strain relief separator for E-Chains®

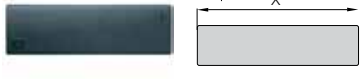
Unassembled	**Part No. 21.1.Z**
Assembled	**Part No. 21.1.Z.1**

- **Slotted separator 21.1.Z (Chains only)** It combines strain relief and interior separation.

Option 3: Full-width shelf

It is ideal for use in applications involving many thin cables with similar or identical diameters. This shelf slides into place and spans the entire width of the chain.





Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
0.59	(15)	**110-15**	**111-15**
0.79	(20)	**110-20**	**111-20**
0.98	(25)	**110-25**	**111-25**
1.50	(38)	**110-38**	**111-38**
1.97	(50)	**110-50**	**111-50**
2.68	(68)	**110-68**	**111-68**
3.15	(80)	**110-80**	**111-80**
3.94	(100)	**110-100**	**111-100**
4.92	(125)	**110-125**	**111-125**

- **Full-width shelf 110-X (Chains®/Tubes)** this option makes sense in applications with many thin cables with similar diameters. Full-width shelves can be inserted at 3 different heights in .23" (5.75mm) increments

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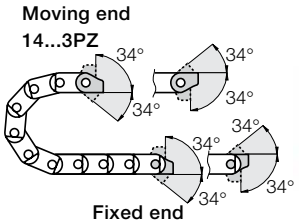
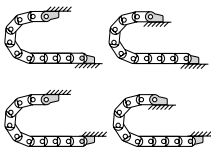
E-Chain System® E2/000
Series 1400/1500
Mounting Brackets - Plastic

Standard

Option 1: pivoting

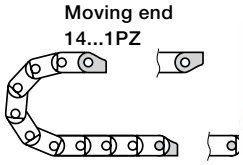
- Unsupported and gliding applications
- Space-restricted conditions
- Integrated strain relief
- Easy to assemble
- Various mounting positions

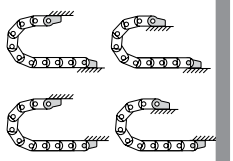




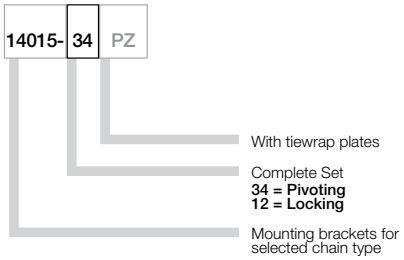
Option 2: locking

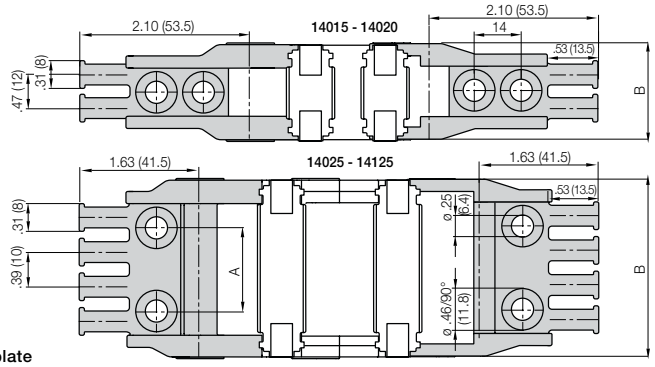
- Unsupported applications
- Extreme speed/accelerations
- If space is limited for height (H_F)
- Various mounting positions





Part Number Structure





Full set, for both ends:
14015- 34 PZ Full set, **each part with pin/bore + tiewrap plate**

Single-part order:
14015- 3 PZ Mounting bracket **with bore + tiewrap plate**
14015- 4 PZ Mounting bracket **with pin + tiewrap plate**

For Chain Type	Part No. Full Set with Tiewrap Plate	Dimension A in.	Dimension A (mm)	Dimension B in.	Dimension B (mm)	Number
1400/1450/1500-015	14015- ☐ PZ	–	–	1.12	(28.5)	2
1400/1450/1500-020	14020- ☐ PZ	–	–	1.32	(33.5)	2
1400/1450/1500-025	14025- ☐ PZ	.51	(13)	1.52	(38.5)	2
1400/1450/1500-038	14038- ☐ PZ	.94	(24)	2.03	(51.5)	4
1400/1450/1500-050	14050- ☐ PZ	1.42	(36)	2.50	(63.5)	6
1400/1450/1500-068	14068- ☐ PZ	2.13	(54)	3.21	(81.5)	7
1400/1450/1500-080	14080- ☐ PZ	2.60	(66)	3.68	(93.5)	8
1400/1450/1500-100	14100- ☐ PZ	3.39	(86)	4.47	(113.5)	10
1400/1450/1500-125	14125- ☐ PZ	4.37	(111)	5.45	(138.5)	13

☐ = 34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 14015- 34 PZB

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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www.edfluidos.com

igus®

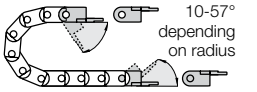
E-Chain System® E2/000
Series 1400/1500
Mounting Brackets - Plastic

Telephone 1-800-521-2747
Fax 1-401-438-7270

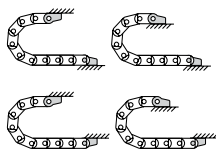
Option 3: plastic

- Unsupported applications
- Space-restricted conditions
- Strain relief with detachable tiewrap plates
- Can be attached at either the fixed end or the moving end

Moving end with bore
15000...3PZ(B)



Fixed end with pin
15000...4PZ(B)



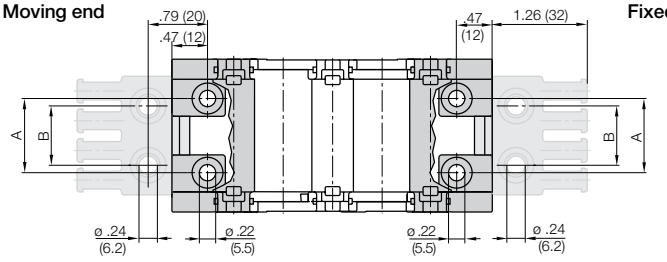
Part Number Structure

15000- | 34 | PZ | B

- With tiewrap plates
- Without tiewrap plates
- Complete Set
  34 = Pivoting
- Mounting brackets for selected chain type

15000...3PZ(B)
Moving end

15000...4PZ(B)
Fixed end



Full set, for both ends:
15000- 34 PZB Full set, **each part with pin/bore + tiewrap plate**

Single-part order:
15000- 3 PZB Mounting bracket **with bore + tiewrap plate**
15000- 4 PZB Mounting bracket **with pin + tiewrap plate**

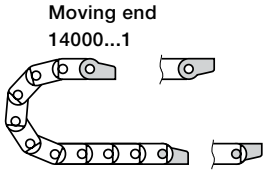
For Chain Type	Part No. Full Set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Dimension A in.	(mm)	Dimension B in.	(mm)
1400/1500-015	–	–	–	–	–	–	–
1400/1500-020	–	–	–	–	–	–	–
1400/1500-025	**15000-025-34PZB**	**15000-025-34PZ**	**15000-025-34PZBK1**	.47	(12)	.59	(15)
1400/1500-038	**15000-038-34PZB**	**15000-038-34PZ**	**15000-038-34PZBK1**	.98	(25)	.79	(20)
1400/1500-050	**15000-050-34PZB**	**15000-050-34PZ**	**15000-050-34PZBK1**	1.46	(37)	1.18	(30)
1400/1500-068	**15000-068-34PZB**	**15000-068-34PZ**	**15000-068-34PZBK1**	2.17	(55)	1.57	(40)
1400/1500-080	**15000-080-34PZB**	**15000-080-34PZ**	**15000-080-34PZBK1**	2.64	(67)	2.36	(60)
1400/1500-100	**15000-100-34PZB**	**15000-100-34PZ**	**15000-100-34PZBK1**	3.43	(87)	3.15	(80)
1400/1500-125	**15000-125-34PZB**	**15000-125-34PZ**	**15000-125-34PZBK1**	4.41	(112)	4.13	(105)

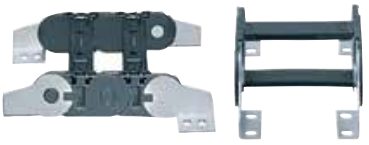
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

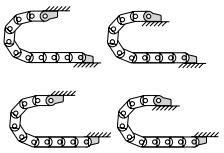
E-Chain System® E2/000
Series 1400/1500
Mounting Brackets - Steel

Option 4: Steel

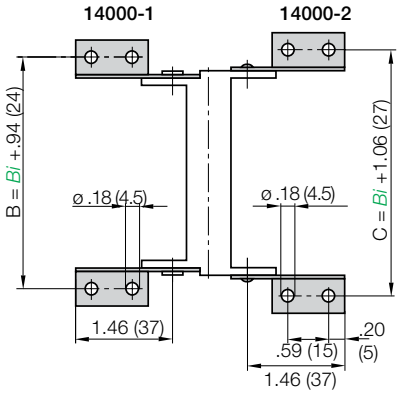
- Locked connections
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

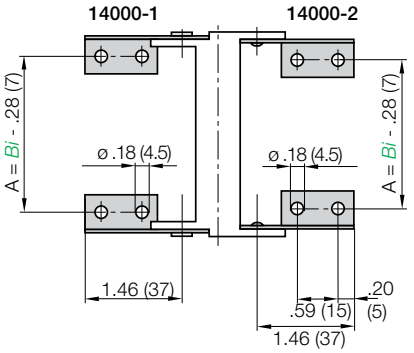






Possible installation configurations -





Chain Type	Part No. Full Set	Dimension A in.	(mm)	Dimension B in.	(mm)	Dimension C in.	(mm)
1400/1500-015	**14000-12**	.31	(8)	1.54	(39)	1.65	(42)
1400/1500-020	**14000-12**	.51	(13)	1.73	(44)	1.85	(47)
1400/1500-025	**14000-12**	.71	(18)	1.93	(49)	2.05	(52)
1400/1500-038	**14000-12**	1.22	(31)	2.44	(62)	2.56	(65)
1400/1500-050	**14000-12**	1.69	(43)	2.91	(74)	3.03	(77)
1400/1500-068	**14000-12**	2.40	(61)	3.62	(92)	3.74	(95)
1400/1500-080	**14000-12**	2.87	(73)	4.09	(104)	4.21	(107)
1400/1500-100	**14000-12**	3.66	(93)	4.88	(124)	5.00	(127)
1400/1500-125	**14000-12**	4.65	(118)	5.87	(149)	5.98	(152)

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 1400/1500:
14000-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right
Series 1400/1500:
14000-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right
Series 1400/1500:
14000-2

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E-Chain System® E2/000
Series 1400/1500
Strain Relief

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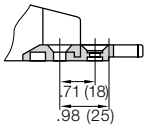
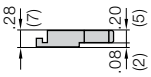
Tiewrap Plates



Shown assembled

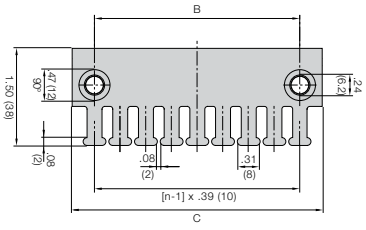


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2125-ZB	12	4.72 (120)	3.94 (100)



For more information please refer to strain relief section of Chapter 10

Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **20XX-ZB** can be also used here. **Details chapter 10**

Cable tiewraps as individual parts

Cable tiewraps 100 pieces/bag	Width x Length in.	(mm)	Maximum Ø in.	(mm)	Tensile Strength lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)

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E-Chain System® E2/000
Series 1450/1480

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
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1450
1480

igus®

E-Chain System® E2/000
Series 1450/1480 Half-Tubes and Full Tubes

.83

Price Index

Series R1480

Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 3
(at v = 6.56 ft/s) upon request

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

Assembly Tips

Insert screwdriver into the slot, using a lever action apply pressure to the screw-driver to release

Other Installation Methods

Vertical, hanging ≤ 65.6 ft (20 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupp. ≤ 2.3 ft (0.7 m)
Rotary requires further calculation

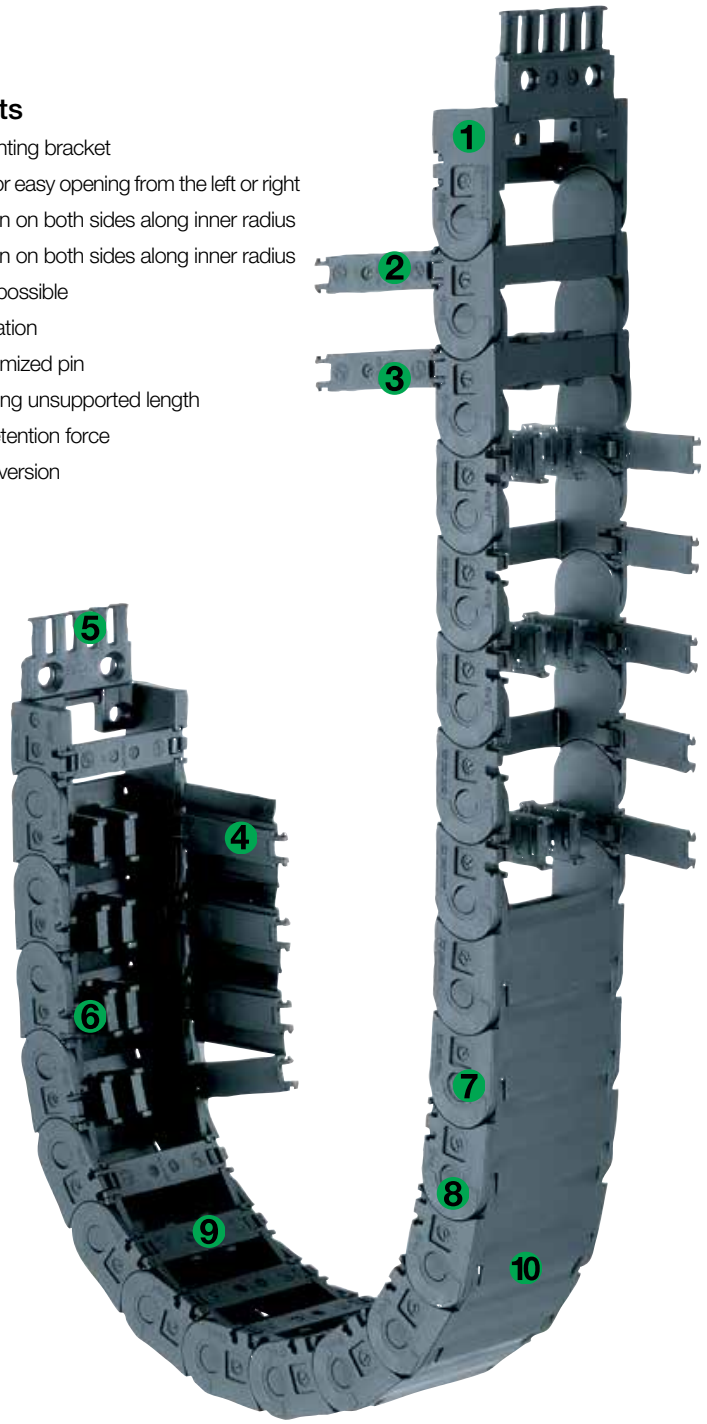
Usage Guidelines

- If hinged, snap-open accessibility along the inner radius is required
- If integrated strain relief is required at the connection point
- If long service life is required
- If chip protection is required
- If easy installation is required

- If the application is very simple
  ➤ **Series E14 E-Z Chain**
- If greater stability is needed
  ➤ **Series E4-21 System E4-1**
- If an E-Tube with a small bending radius is required
  ➤ **Series R117 E2 Tubes**

Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 1450 snap-open on both sides along inner radius
4. Series 1480 snap-open on both sides along inner radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **1480-038-075-0**	**E-Chain®**
With 2 separators **14501** assembled every 2nd link	**Interior Separation**
1 Set **15000-038-34PZB**	**Mounting Bracket**

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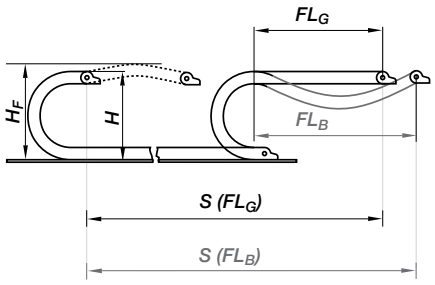
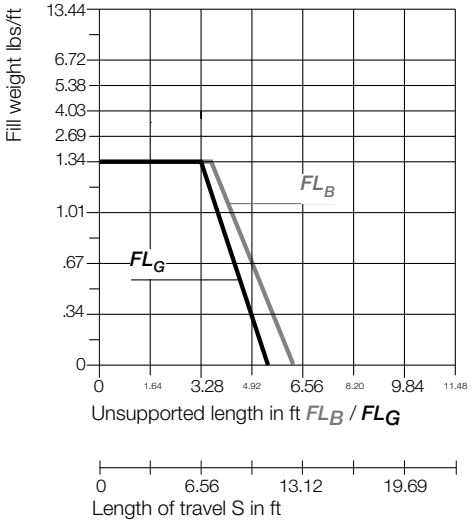
E-Chain System® E2/000
Series 1450/1480 Half-Tubes and Full Tubes
Installation Dimensions

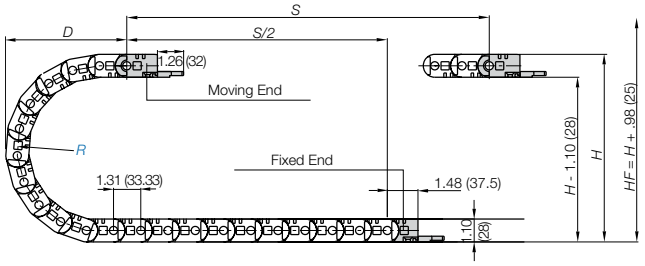
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.31" (33 mm)
Links per ft (m): = 9.41 (30)
For center mount applications:
Chain length = $S/2 + K$

The required clearance height: ***H_F = H* + .98 in. (25 mm)** (with .34 lbs/ft (0.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.95 (075)	3.94 (100)	4.92 (125)	5.71 (145)	7.09 (180)
H	7.01 (178)	8.98 (228)	10.94 (278)	12.52 (318)	15.28 (388)
D	5.47 (139)	6.46 (164)	7.44 (189)	8.23 (209)	9.61 (244)
K	12.01 (305)	15.16 (385)	18.11 (460)	20.67 (525)	25.00 (635)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height

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Specs/CAD/RFQ: www.igus.com/e-chains
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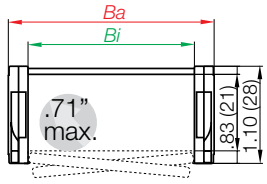
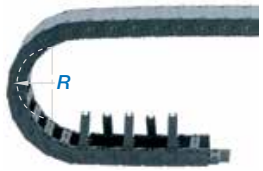
igus®

E-Chain System® E2/000
Series 1450/1480 Half-Tubes and Full Tubes

Series 1450 - Half E-Tube - Snap-open along the inner radius



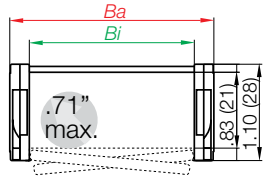


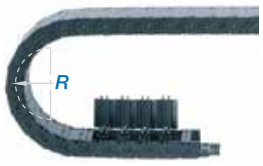
Part Number Structure

1450- 038- 100- 0

- Color - Black
- Bending radius
- Width
- Series

Series 1480 - hinged, snap-open along the inner radius

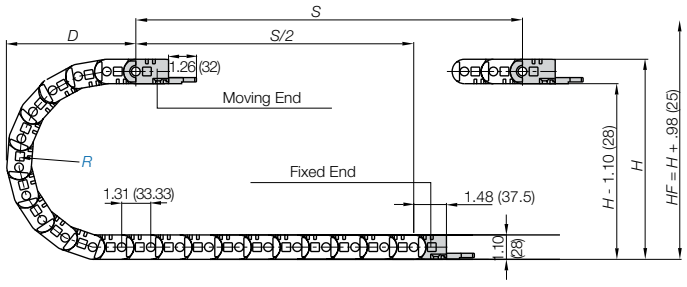




Part Number Structure

1480- 038- 075- 0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: 1480-038-100-0
Pitch: 1.31 in. (33 mm) per link links/ft(m) = 9.41 (30)

Part Number. Half E-Tube Snap-open Inner Radius	Full E-Tube Snap-open Inner Radius		Bi in. (mm)	Ba in. (mm)	Weight 1450 lbs/ft (kg/m)	Weight 1480 lbs/ft (kg/m)
1450-015-	1480-015-	-0	.79 (15)	1.12 (28.5)	≈ 0.32 (0.48)	≈ 0.34 (0.50)
1450-025-	1480-025-	-0	.98 (25)	1.52 (38.5)	≈ 0.36 (0.54)	≈ 0.38 (0.57)
1450-038-	1480-038-	-0	1.50 (38)	2.03 (51.5)	≈ 0.40 (0.59)	≈ 0.41 (0.61)
1450-050-	1480-050-	-0	1.97 (50)	2.50 (63.5)	≈ 0.44 (0.65)	≈ 0.45 (0.67)
1450-068-	1480-068-	-0	2.68 (68)	3.21 (81.5)	≈ 0.50 (0.74)	≈ 0.52 (0.77)
1450-080-	1480-080-	-0	3.15 (80)	3.68 (93.5)	≈ 0.54 (0.80)	≈ 0.56 (0.84)
1450-100-	1480-100-	-0	3.94 (100)	4.47 (113.5)	≈ 0.60 (0.90)	≈ 0.65 (0.96)
1450-125-	1480-125-	-0	4.92 (125)	5.45 (138.5)	≈ 0.69 (1.03)	≈ 0.73 (1.08)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 1480-038-100-0

	075	100	125	145	180
R	2.95 (075)	3.94 (100)	4.92 (125)	5.71 (145)	7.09 (180)
H	7.01 (178)	8.98 (228)	10.94 (278)	12.52 (318)	15.28 (388)
D	5.47 (139)	6.46 (164)	7.44 (189)	8.23 (209)	9.61 (244)
K	12.01 (305)	15.16 (385)	18.11 (460)	20.67 (525)	25.00 (635)

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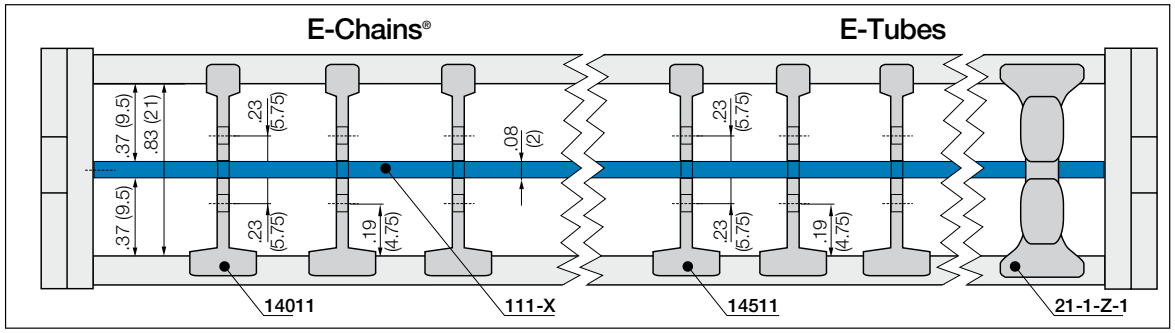
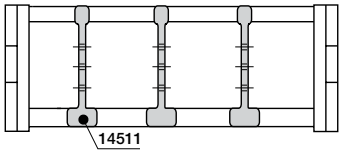
E-Chain System® E2/000
Series 1450/1480 Half-Tubes and Full Tubes
Interior Separation

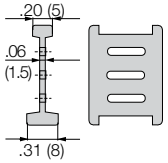
Option 1: Vertical separators

Vertical separators are used if a vertical subdivision of the E-Tube interior is required. By standard, vertical separators are assembled every other E-Tube link.



Separators, full-width shelves
In the standard configuration separators are assembled every 2nd E-Chain® link



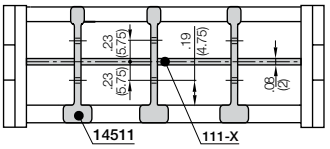


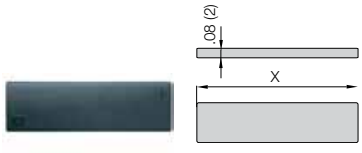
Slotted separator for E-Tubes	
Unassembled	**Part No. 14501**
Assembled	**Part No. 14511**

- **Slotted separator 14501 (Tubes only)** is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Option 2: Full-width shelf

It is ideal for use in applications involving many thin cables with similar or identical diameters. This shelf slides into place and spans the entire width of the chain.





Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
0.59	(15)	**110-15**	**111-15**
0.79	(20)	**110-20**	**111-20**
0.98	(25)	**110-25**	**111-25**
1.50	(38)	**110-38**	**111-38**
1.97	(50)	**110-50**	**111-50**
2.68	(68)	**110-68**	**111-68**
3.15	(80)	**110-80**	**111-80**
3.94	(100)	**110-100**	**111-100**
4.92	(125)	**110-125**	**111-125**

- **Full-width shelf 110-X (Chains®/Tubes)** this option makes sense in applications with many thin cables with similar diameters. For a consequent subdivision. Full-width shelves can be inserted at 3 different heights in .23" (5.75mm) increments

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Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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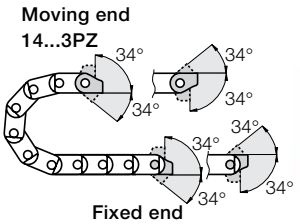
E-Chain System® E2/000
Series 1450/1480 Half-Tubes and Full Tubes
Mounting Brackets - One Piece

Standard

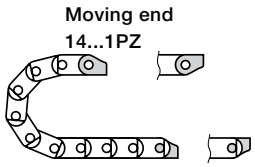
Option 1: pivoting

- Unsupported and gliding applications
- Space-restricted conditions
- Integrated strain relief
- Easy to assemble
- Various mounting positions



Option 2: locking

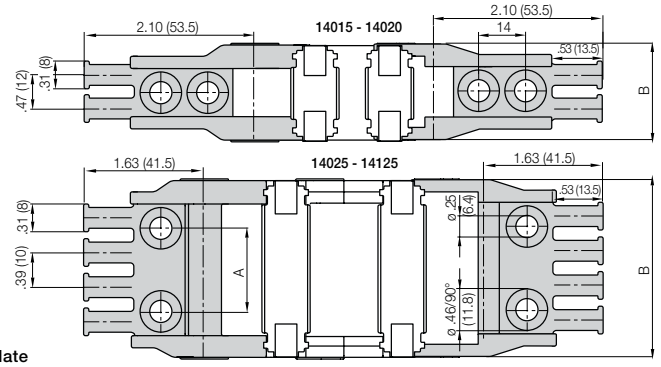
- Unsupported applications
- Extreme speed/accelerations
- If space is limited for height (H_F)
- Various mounting positions



Part Number Structure

14015- | 34 | PZ

- With tiewrap plates
- Complete Set
  34 = Pivoting
  12 = Locking
- Mounting brackets for selected chain type



Full set, for both ends:

14015- | 34 | PZ Full set, **each part with pin/bore + tiewrap plate**

Single-part order:

14015- | 3 | PZ Mounting bracket **with bore + tiewrap plate**

14015- | 4 | PZ Mounting bracket **with pin + tiewrap plate**

For Chain Type	Part No. Full Set with Tiewrap Plate	Dimension A in.	(mm)	Dimension B in.	(mm)	Number
1450/1480-015	**14015-** ☐ **PZ**	–	–	1.12	(28.5)	2
1450/1480-020	**14020-** ☐ **PZ**	–	–	1.32	(33.5)	2
1450/1480-025	**14025-** ☐ **PZ**	.51	(13)	1.52	(38.5)	2
1450/1480-038	**14038-** ☐ **PZ**	.94	(24)	2.03	(51.5)	4
1450/1480-050	**14050-** ☐ **PZ**	1.42	(36)	2.50	(63.5)	6
1450/1480-068	**14068-** ☐ **PZ**	2.13	(54)	3.21	(81.5)	7
1450/1480-080	**14080-** ☐ **PZ**	2.60	(66)	3.68	(93.5)	8
1450/1480-100	**14100-** ☐ **PZ**	3.39	(86)	4.47	(113.5)	10
1450/1480-125	**14125-** ☐ **PZ**	4.37	(111)	5.45	(138.5)	13

☐ = 34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 14015- 34 PZB

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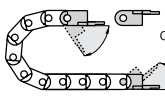
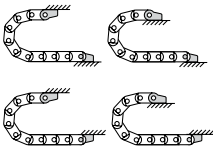
E-Chain System® E2/000
Series 1450/1480 Half-Tubes and Full Tubes
Mounting Brackets - Plastic

Option 3: plastic

- Unsupported applications
- Space-restricted conditions
- Strain relief with detachable tiewrap plates
- Can be attached at either the fixed end or the moving end

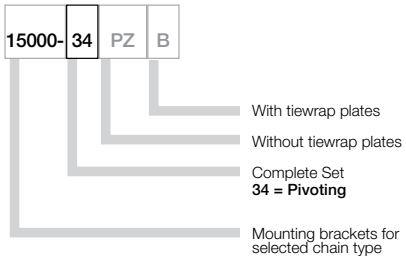
Moving end with bore
15000...3PZ(B)





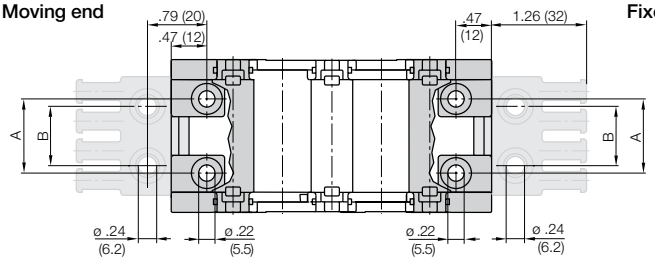
Fixed end with pin
15000...4PZ(B)

Part Number Structure



15000...3PZ(B)
Moving end

15000...4PZ(B)
Fixed end



Full set, for both ends:
15000- 34 PZB Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
15000- 3 PZB Mounting bracket **with bore + tiewrap plate**
15000- 4 PZB Mounting bracket **with pin + tiewrap plate**

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 1480:
15000-Width-34

Part No. Mounting bracket with bore
2 parts, 1 left & 1 right
Series 1480:
15000-Width-3

Part No. Mounting bracket with pin
2 parts, 1 left & 1 right
Series 1480:
15000-Width-4

For Chain Type	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Dimension A in.	(mm)	Dimension B in.	(mm)
1450/1480-025	**15000-025-34PZB**	**15000-025-34PZBK1**	.47	(12)	.59	(15)
1450/1480-038	**15000-038-34PZB**	**15000-038-34PZBK1**	.98	(25)	.79	(20)
1450/1480-050	**15000-050-34PZB**	**15000-050-34PZBK1**	1.46	(37)	1.18	(30)
1450/1480-068	**15000-068-34PZB**	**15000-068-34PZBK1**	2.17	(55)	1.57	(40)
1450/1480-080	**15000-080-34PZB**	**15000-080-34PZBK1**	2.64	(67)	2.36	(60)
1450/1480-100	**15000-100-34PZB**	**15000-100-34PZBK1**	3.43	(87)	3.15	(80)
1450/1480-125	**15000-125-34PZB**	**15000-125-34PZBK1**	4.41	(112)	4.13	(105)

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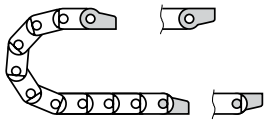
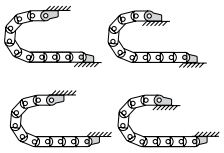
E-Chain System® E2/000
Series 1450/1480 Half-Tubes and Full Tubes
Mounting Bracket - Steel

Option 4: steel

- Locked connections
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

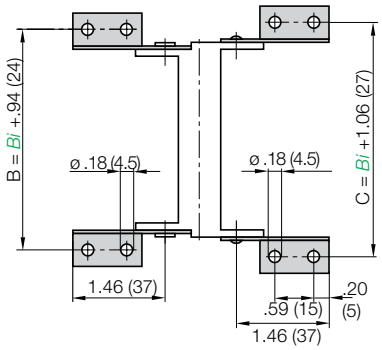
Moving end
14000...1

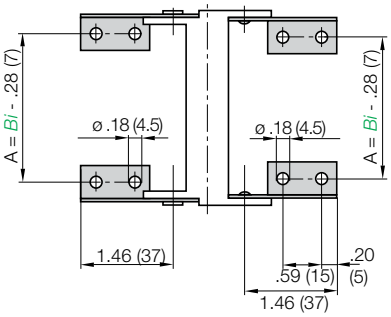




Possible installation configurations -

Fixed end
14000...2





Chain Type	Part No. Full Set	Dimension A in.	(mm)	Dimension B in.	(mm)	Dimension C in.	(mm)
1450/1480-015	**14000-12**	.31	(8)	1.54	(39)	1.65	(42)
1450/1480-020	**14000-12**	.51	(13)	1.73	(44)	1.85	(47)
1450/1480-025	**14000-12**	.71	(18)	1.93	(49)	2.05	(52)
1450/1480-038	**14000-12**	1.22	(31)	2.44	(62)	2.56	(65)
1450/1480-050	**14000-12**	1.69	(43)	2.91	(74)	3.03	(77)
1450/1480-068	**14000-12**	2.40	(61)	3.62	(92)	3.74	(95)
1450/1480-080	**14000-12**	2.87	(73)	4.09	(104)	4.21	(107)
1450/1480-100	**14000-12**	3.66	(93)	4.88	(124)	5.00	(127)
1450/1480-125	**14000-12**	4.65	(118)	5.87	(149)	5.98	(152)

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 1480:
14000-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right
Series 1480:
14000-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right
Series 1480:
14000-2

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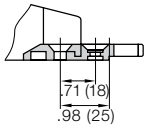
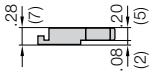
Mounting Bracket - Steel

Tiewrap Plates



Shown assembled

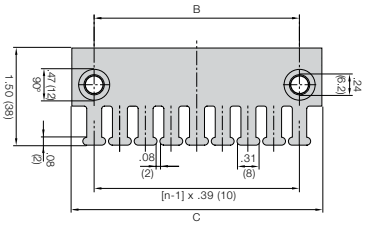


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2125-ZB	12	4.72 (120)	3.94 (100)



For more information please refer to strain relief section of Chapter 10

Cable tiewraps as individual parts

Cable tiewraps	Width x Length		Maximum Ø		Tensile Strength	
100 pieces/bag	in.	(mm)	in.	(mm)	lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)

Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **20XX-ZB** can be also used here. **Details chapter 10**

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2400
2500

igus®

E-Chain System® E2/000
Series 2400/2500

.98 .98

Price Index

Series 2400/2500

Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94 V2 classifications upon request

Assembly Tips

Snap-open mechanism, choice of snap-open on left or right. Hinged crossbar can be swiveled by more than 180° on both sides. Lightning-fast closing by hand. Secure fit without additional locking devices.

Other Installation Methods

Vertical, hanging ≤ 131.24 ft (40 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.28 ft (1 m)
Rotary requires further calculation

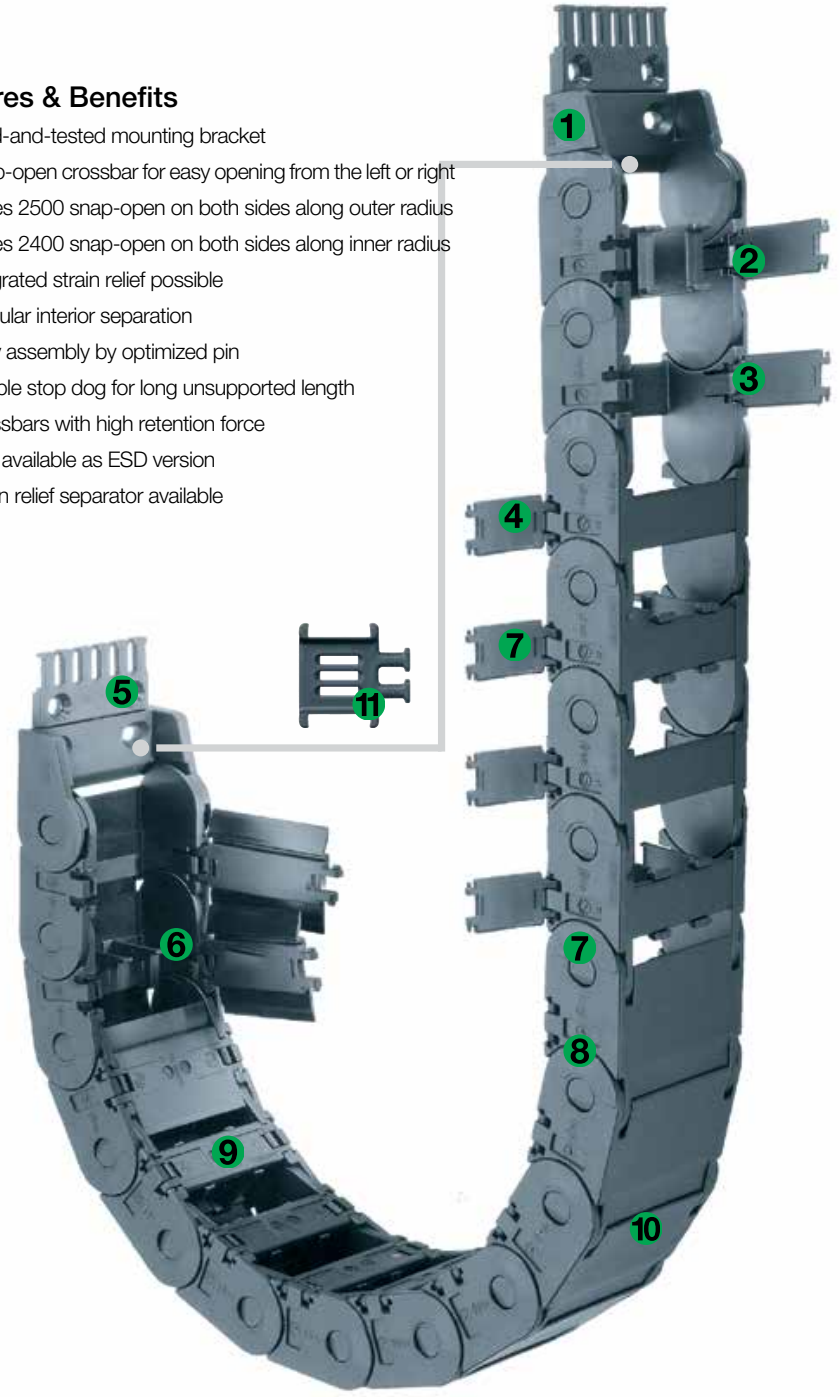
Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required
- If intergrated strain relief at the mounting point is required
- If modular interior separation is needed
- If long service life is required
- If easy installation is required

- If the application is very simple
  ➤ **Series E200 E-Z Chain**
- If greater stability is required
  ➤ **Series E4-21 E4-1 Series**

Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 2500 snap-open on both sides along outer radius
4. Series 2400 snap-open on both sides along inner radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version
11. Strain relief separator available



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

9.84 ft (3 m) **2500-10-100-0**	**E-Chain®**
With 2 separators **25.1** assembled every 2nd link	**Interior Separation**
1 Set **2100-34PZB+**	**Mounting Bracket**

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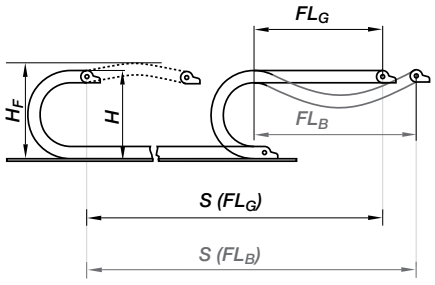
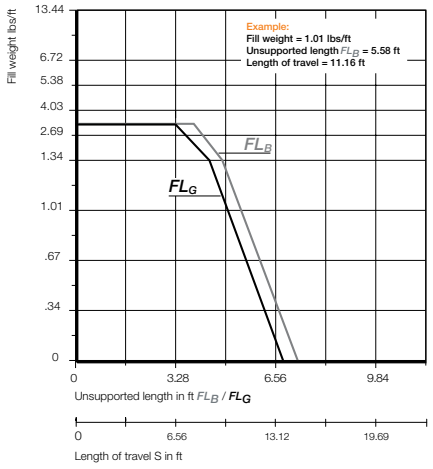
E-Chain System® E2/000
Series 2400/2500
Installation Dimensions

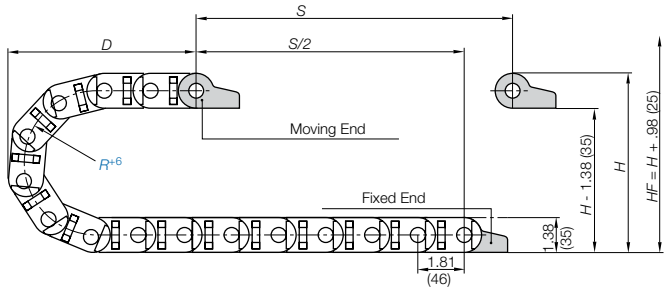
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.81" (46 mm)
Links per ft (m): = 6.71 (22)
For center mount applications:
Chain length = $^{S}/_{2} + K$

The required clearance height: ***HF = H + .98 in. (25 mm)*** (with 1.01 lbs/ft (1.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

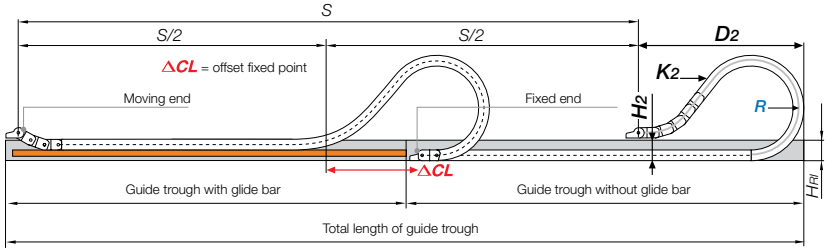
R	1.38 (055**)	1.50 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
H	5.71 (145)	7.28 (185)	9.25 (235)	11.22 (285)	13.19 (335)	15.16 (385)	17.13 (435)	19.09 (485)	21.06 (535)
D	5.59 (142)	6.38 (162)	7.36 (187)	8.35 (212)	9.33 (237)	10.31 (262)	11.30 (287)	12.28 (312)	13.27 (337)
K	10.43 (265)	12.99 (330)	16.14 (410)	19.09 (485)	22.24 (565)	25.39 (645)	28.54 (725)	31.50 (800)	34.65 (880)

**upon request

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 328 ft. (100 m)
Note: For using Series 2400 for long travels (gliding), please consult with igus® first.
For long travels, igus® specifies Series 2500 that snap open on the outer radius.

For center mount applications:
Chain length: = $^{S}/_{2} + K_2$



R	1.38 (055)	1.50 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
H_2	4.33 (110)	5.91 (150)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)
D_2^{+25}	5.59 (142)	6.38 (162)	14.96 (380)	17.32 (440)	23.23 (590)	29.72 (755)	37.40 (950)	40.94 (1040)	44.49 (1130)
K_2	10.43 (265)	12.99 (330)	25.35 (644)	28.98 (736)	39.84 (1012)	48.90 (1242)	57.95 (1472)	63.39 (1610)	70.63 (1794)
ΔCL	–	–	8.03 (204)	9.61 (244)	14.33 (364)	19.84 (504)	26.54 (674)	29.69 (754)	31.65 (804)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ **Chapter 1**

2400
2500

.98

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E2/000
Series 2400/2500

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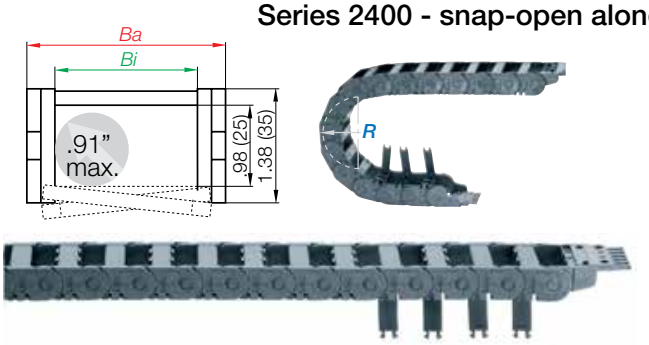
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

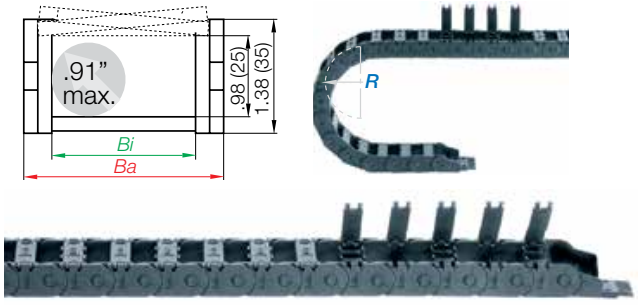
Series 2400 - snap-open along the inner radius



Part Number Structure

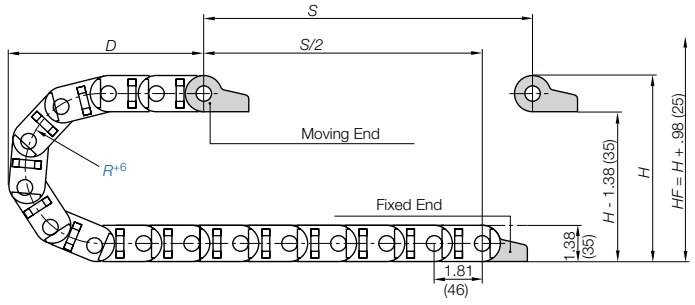
2400- 10- 100- 0
- Color - Black
- Bending radius
- Width
- Series

Series 2500 - snap-open along the outer radius



Part Number Structure

2500- 10- 100- 0
- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: 2400-10-100-0
Pitch: 1.81 in. (46 mm) per link links/ft(m) = 6.71 (22)

Part Number. Snap-open inner radius	Part Number. Snap-open outer radius	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
2400-02-□-0	2500-02-□-0	.98 (25)	1.61 (41)	≈ 0.52 (0.77)
2400-03-□-0	2500-03-□-0	1.50 (38)	2.13 (54)	≈ 0.56 (0.83)
2400-05-□-0	2500-05-□-0	2.24 (57)	2.87 (73)	≈ 0.61 (0.91)
2400-07-□-0	2500-07-□-0	3.03 (77)	3.66 (93)	≈ 0.68 (1.01)
2400-09-□-0	2500-09-□-0	3.50 (89)	4.13 (105)	≈ 0.73 (1.08)
2400-10-□-0	2500-10-□-0	4.06 (103)	4.69 (119)	≈ 0.77 (1.15)
2400-12-□-0	2500-12-□-0	4.92 (125)	5.55 (141)	≈ 0.82 (1.22)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 2400-10-100-0

	055	075	100	125	150	175	200	225	250
R	1.38 (055)	1.50 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
H	5.71 (145)	7.28 (185)	9.25 (235)	11.22 (285)	13.19 (335)	15.16 (385)	17.13 (435)	19.09 (485)	21.06 (535)
D	5.59 (142)	6.38 (162)	7.36 (187)	8.35 (212)	9.33 (237)	10.31 (262)	11.30 (287)	12.28 (312)	13.27 (337)
K	10.43 (265)	12.99 (330)	16.14 (410)	19.09 (485)	22.24 (565)	25.39 (645)	28.54 (725)	31.50 (800)	34.65 (880)

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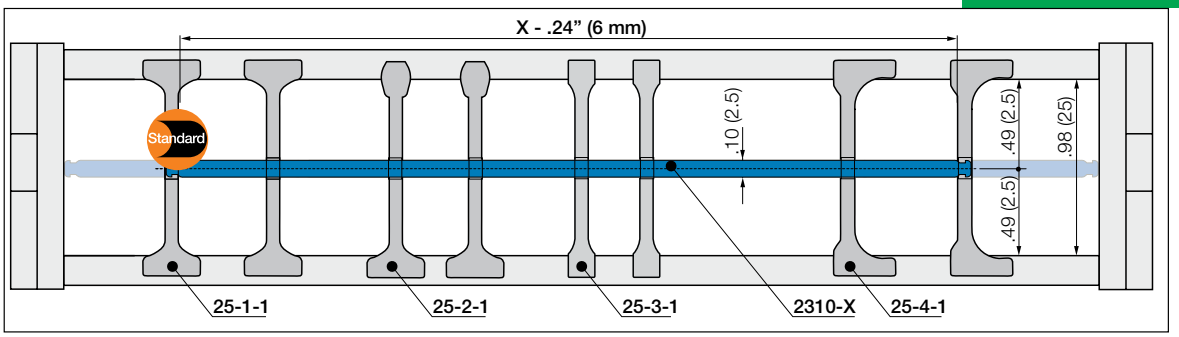
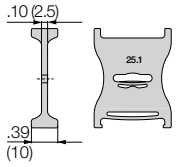
E-Chain System® E2/000
Series 2400/2500
Interior Separation



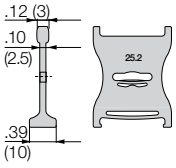
In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 25.1**
Assembled	**Part No. 25.1.1**

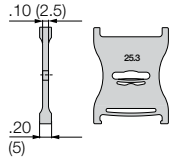
- **Standard separator 25.1**
  for all applications
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator, narrow head

Unassembled	**Part No. 25.2**
Assembled	**Part No. 25.2.1**

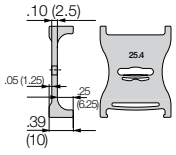
- **Separator 25.2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 25.3**
Assembled	**Part No. 25.3.1**

- **Separator 25.3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

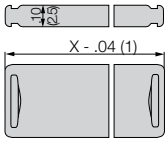


Separator, asymmetrical

Unassembled	**Part No. 25.4**
Assembled	**Part No. 25.4.1**

- **Separator 25.4**
  For side mounted applications
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required. .

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
0.59 (015)	**2300-15**	**2310-15**	2.36 (060)	**2300-60**	**2310-60**	3.43 (087)	**2300-87**	**2310-87**
0.98 (025)	**2300-25**	**2310-25**	2.44 (062)	**2300-62**	**2310-62**	3.54 (090)	**2300-90**	**2310-90**
1.18 (030)	**2300-30**	**2310-30**	2.56 (065)	**2300-65**	**2310-65**	3.94 (100)	**2300-100**	**2310-100**
1.50 (038)	**2300-38**	**2310-38**	2.76 (070)	**2300-70**	**2310-70**	4.06 (103)	**2300-103**	**2310-103**
1.57 (040)	**2300-40**	**2310-40**	2.95 (075)	**2300-75**	**2310-75**	4.33 (110)	**2300-110**	**2310-110**
1.97 (050)	**2300-50**	**2310-50**	3.03 (077)	**2300-77**	**2310-77**	4.72 (120)	**2300-120**	**2310-120**
2.24 (057)	**2300-57**	**2310-57**	3.15 (080)	**2300-80**	**2310-80**	4.92 (125)	**2300-125**	**2310-125**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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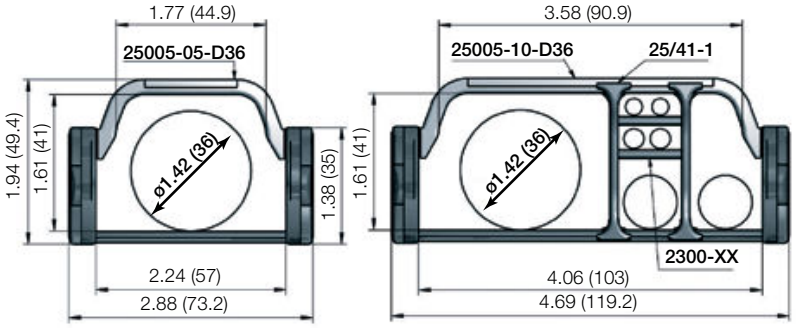
igus®

E-Chain System® E2/000
Series 2400/2500
Extender crossbars



Part Number.

Extender crossbars for E-Chains® that snap-open along inner radius	Extender crossbars for E-Chains® that snap-open along outer radius	*Bi* in. (mm)	*Ba* in. (mm)
2400-05D36- ☐ -0	2500-05D36- ☐ -0	2.24 (57)	2.87 (73)
2400-10D36- ☐ -0	2500-10D36- ☐ -0	4.06 (103)	4.69 (119)

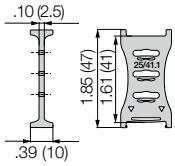
Choose from the radii below for all of the above sizes

Radius (mm) Example: 2400-10D36- [100] -0

	055*	075	100	125	150	175	200	225	250
R	1.38 (055*)	1.50 (075*)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)

*Radius 055 only possible with Series 2500 E-Chains®

Interior separation for extender crossbars

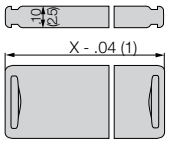


Separator, wide base

Unassembled	**Part No. 25/41.1**
Assembled	**Part No. 25/41.1.1**

- **Standard separator 25/41-1, wide base**
  For maximum locking strength and safe standing. In standard configuration separators are assembled every 2nd E-Chain® link.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
0.59 (015)	**2300-15**	**2310-15**	2.36 (060)	**2300-60**	**2310-60**	3.43 (087)	**2300-87**	**2310-87**
0.98 (025)	**2300-25**	**2310-25**	2.44 (062)	**2300-62**	**2310-62**	3.54 (090)	**2300-90**	**2310-90**
1.18 (030)	**2300-30**	**2310-30**	2.56 (065)	**2300-65**	**2310-65**	3.94 (100)	**2300-100**	**2310-100**
1.50 (038)	**2300-38**	**2310-38**	2.76 (070)	**2300-70**	**2310-70**	4.06 (103)	**2300-103**	**2310-103**
1.57 (040)	**2300-40**	**2310-40**	2.95 (075)	**2300-75**	**2310-75**	4.33 (110)	**2300-110**	**2310-110**
1.97 (050)	**2300-50**	**2310-50**	3.03 (077)	**2300-77**	**2310-77**	4.72 (120)	**2300-120**	**2310-120**
2.24 (057)	**2300-57**	**2310-57**	3.15 (080)	**2300-80**	**2310-80**	4.92 (125)	**2300-125**	**2310-125**

Separator with integrated strain relief

Strain relief separator Part No. 2020-Z can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.

For more information ➤ **Chapter 10, Strain Relief**

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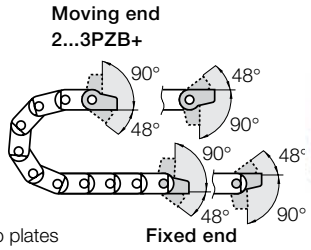
E-Chain System® E2/000
Series 2400/2500
Mounting Bracket - Plastic

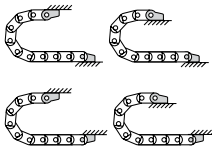
igus®

2400
2500

Option 1: pivoting

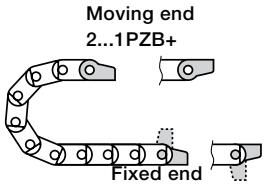
- For unsupported and gliding applications
- Well suited for tight installation conditions
- Detachable strain relief tiewrap plates
- Can be mounted on the fixed and/or moving end

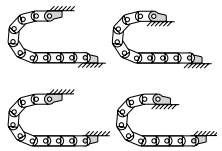




Option 2: locking

- For unsupported and gliding applications
- Extreme speed and/or accelerations
- For height restricted applications
- Can be mounted on the fixed and/or moving end

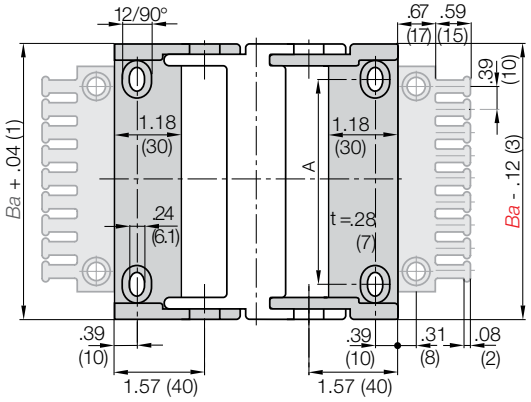




Part Number Structure

2020- | 34 | PZB | K1

- With 10 cable tiewraps
- With tiewrap plates
- Complete Set
  34 = Pivoting
  12 = Locking
- Mounting brackets for selected chain type



Full set, for both ends:
2020- | 34 | PZB+ Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
2020- | 3 | PZB+ Mounting bracket **with bore + tiewrap plate**
2020- | 4 | PZB+ Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
With Tiewrap Plates
Series 2400/2500:
2020-34PZB+

Part No. Full Set (pivoting)
With Tiewrap Plates
+ 10 cable ties
Series 2400/2500:
2020-34PZBK1+

For Chain Type	Part No. Full set without Tiewrap Plate	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Dimension A in.	(mm)	Number of teeth
2400/2500-02	2020- ☐ PZ+	2020- ☐ PZB+	2020- ☐ PZBK1+	.47	(12)	3
2400/2500-03	2030- ☐ PZ+	2030- ☐ PZB+	2030- ☐ PZBK1+	.98	(25)	4
2400/2500-05	2050- ☐ PZ+	2050- ☐ PZB+	2050- ☐ PZBK1+	1.73	(44)	6
2400/2500-07	2070- ☐ PZ+	2070- ☐ PZB+	2070- ☐ PZBK1+	2.52	(64)	8
2400/2500-09	2090- ☐ PZ+	2090- ☐ PZB+	2090- ☐ PZBK1+	3.03	(77)	9
2400/2500-10	2100- ☐ PZ+	2100- ☐ PZB+	2100- ☐ PZBK1+	3.54	(90)	10
2400/2500-12	2125- ☐ PZ+	2125- ☐ PZB+	2125- ☐ PZBK1+	4.41	(112)	12

☐ = 34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 2020- 34 PZB+

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Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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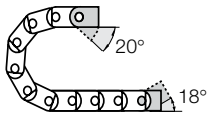
igus®

E-Chain System® E2/000
Series 2400/2500
Mounting Bracket - KMA

Option 1: pivoting

- For unsupported applications
- Bolted connection outside of chain cross section
- Confined installation conditions
- Attachment points on all sides
- Stackable

Moving end
24001...1

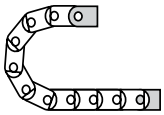


Fixed end
24001...2

Option 2: locking

- For vertical hanging/standing applications
- Bolted connection outside of chain cross section
- For very high speeds and accelerations
- Attachment points on all sides
- Stackable

Moving end
24101...1

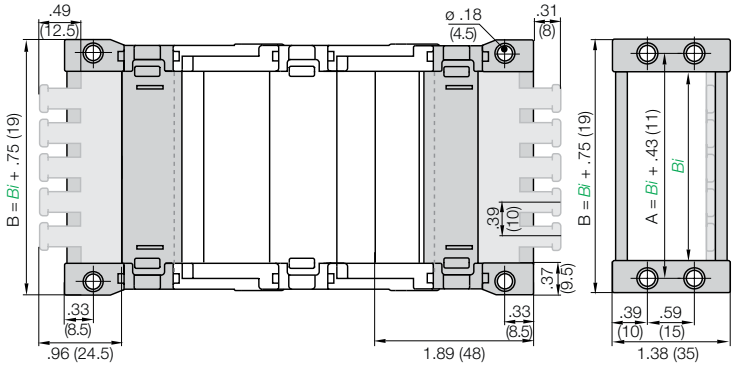


Fixed end
24101...2

Part Number Structure

24001- 02- 12 ZB

- 12 = With tiewrap plates
- 02 = Complete Set
- 02 = Width
- 24001 = Mounting brackets for selected chain type
  24001 = Pivoting
  24101 = Locking



Full set, for both ends:

24001- 12 ZB Full set, **each part with pin/bore + tiewrap plate**

Single-part order:

24001- 1 ZB Mounting bracket **with bore + tiewrap plate**

24001- 2 ZB Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
With Tiewrap Plates
Series 2480:
24001-Width-12ZB

Part No. Full Set (pivoting)
Without Tiewrap Plates
Series 2480:
24001-Width-12

For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Number of Teeth
2400/2500-02	[ ] -02-12ZB	[ ] -02-12	1.42	(36)	2
2400/2500-03	[ ] -03-12ZB	[ ] -03-12	1.93	(49)	4
2400/2500-05	[ ] -05-12ZB	[ ] -05-12	2.68	(68)	6
2400/2500-07	[ ] -07-12ZB	[ ] -07-12	3.46	(88)	7
2400/2500-09	[ ] -09-12ZB	[ ] -09-12	3.94	(100)	9
2400/2500-10	[ ] -10-12ZB	[ ] -10-12	4.49	(114)	10
2400/2500-12	[ ] -12-12ZB	[ ] -12-12	5.35	(136)	12

[24001] or [24101]

For pivoting brackets choose [24001]
For locking brackets choose [24101]
Example: [24001] -02-12ZB

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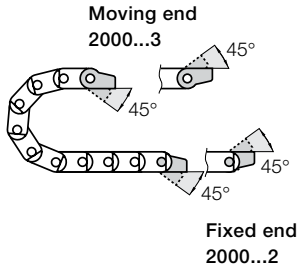
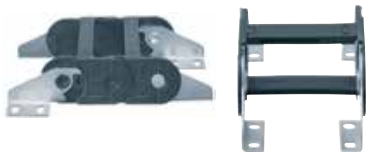
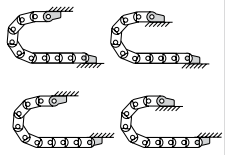
E-Chain System® E2/000
Series 2400/2500
Mounting Bracket - Steel

Option 1: Steel

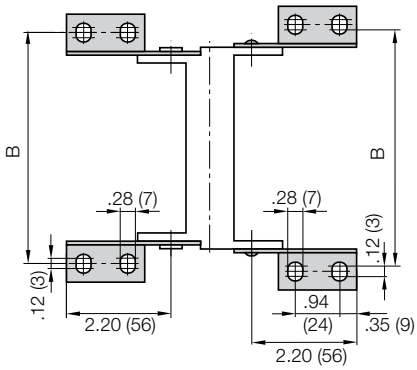
- Pivoting connections
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

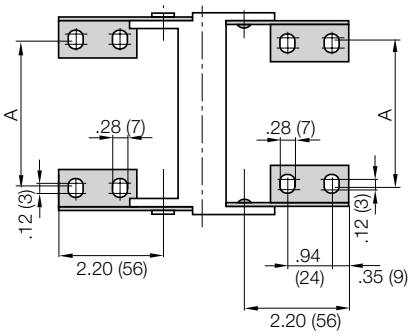






Possible installation configurations -





Chain Type	Part No. Full Set	Dimension A in.	(mm)	Dimension B in.	(mm)
2400/2500-02	**2000-32**	—	—	2.36	(60)
2400/2500-03	**2000-32**	.98	(25)	2.87	(73)
2400/2500-05	**2000-32**	1.73	(44)	3.62	(92)
2400/2500-07	**2000-32**	2.52	(64)	4.41	(112)
2400/2500-09	**2000-32**	2.99	(76)	4.88	(124)
2400/2500-10	**2000-32**	3.54	(90)	5.43	(138)
2400/2500-12	**2000-32**	4.41	(112)	6.30	(160)

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 2400/2500:
2000-32

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right
Series 2400/2500:
2000-3

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right
Series 2400/2500:
2000-2

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E2/000
Series 2400/2500
Strain Relief

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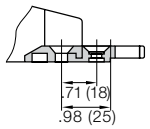
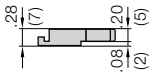
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Tiewrap Plates



Shown assembled

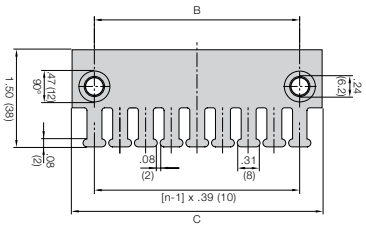


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2125-ZB	12	4.72 (120)	3.94 (100)



For more information please refer to strain relief section of Chapter 10

Cable tiewraps as individual parts

Cable tiewraps 100 pieces/bag	Width x Length in.	(mm)	Maximum Ø in.	(mm)	Tensile Strength lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)

Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **20XX-ZB** can be also used here. **Details chapter 10**

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E-Chain System® E2/000
Series 2400/2500
Guide Trough

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part Number 92-30
- 1/2 travel length of glide bars
  Part Number 92-01
- Installation sets as end connectors
  Part Number 92-50-XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

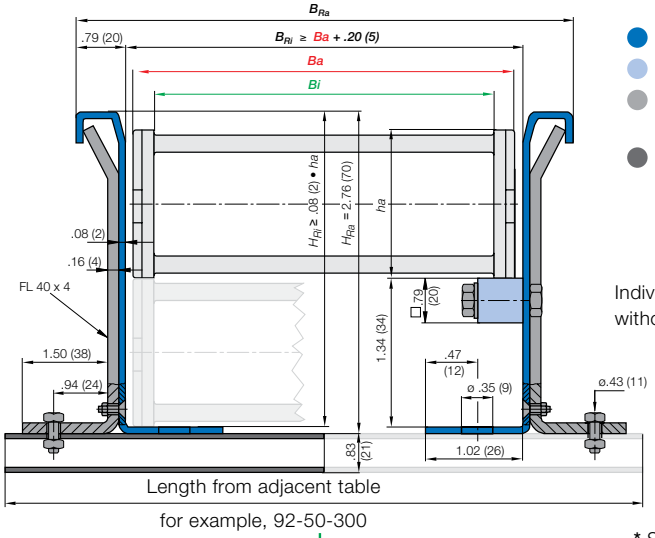
Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 92-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 92-01

Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets

Example: 92-50-400 for 15.75" (400 mm) long profile rail.

Width of Crossbar
2500-**05**-200-0
B_{Ri}

	B_{Ri}	Installation Part No.
-02*	1.81 (46)	—
-03	2.32 (59)	**92-50-175**
-05	3.07 (78)	**92-50-200**
-07	3.86 (98)	**92-50-225**
-09	4.37 (111)	**92-50-225**
-10	4.88 (124)	**92-50-250**
-12	5.75 (146)	**92-50-275**



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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2450
2480

igus®

E-Chain System® E2/000
Series 2450/2480 Half-Tubes and Full Tubes

.98 .98

Price Index

Series 2450/2480

Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94 V2 classifications upon request

Assembly Tips

Insert screwdriver into the slot, using a lever action apply pressure to the screw-driver to release

Other Installation Methods

Vertical, hanging ≤ 131 ft (40 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.28 ft (1 m)
Rotary requires further calculation

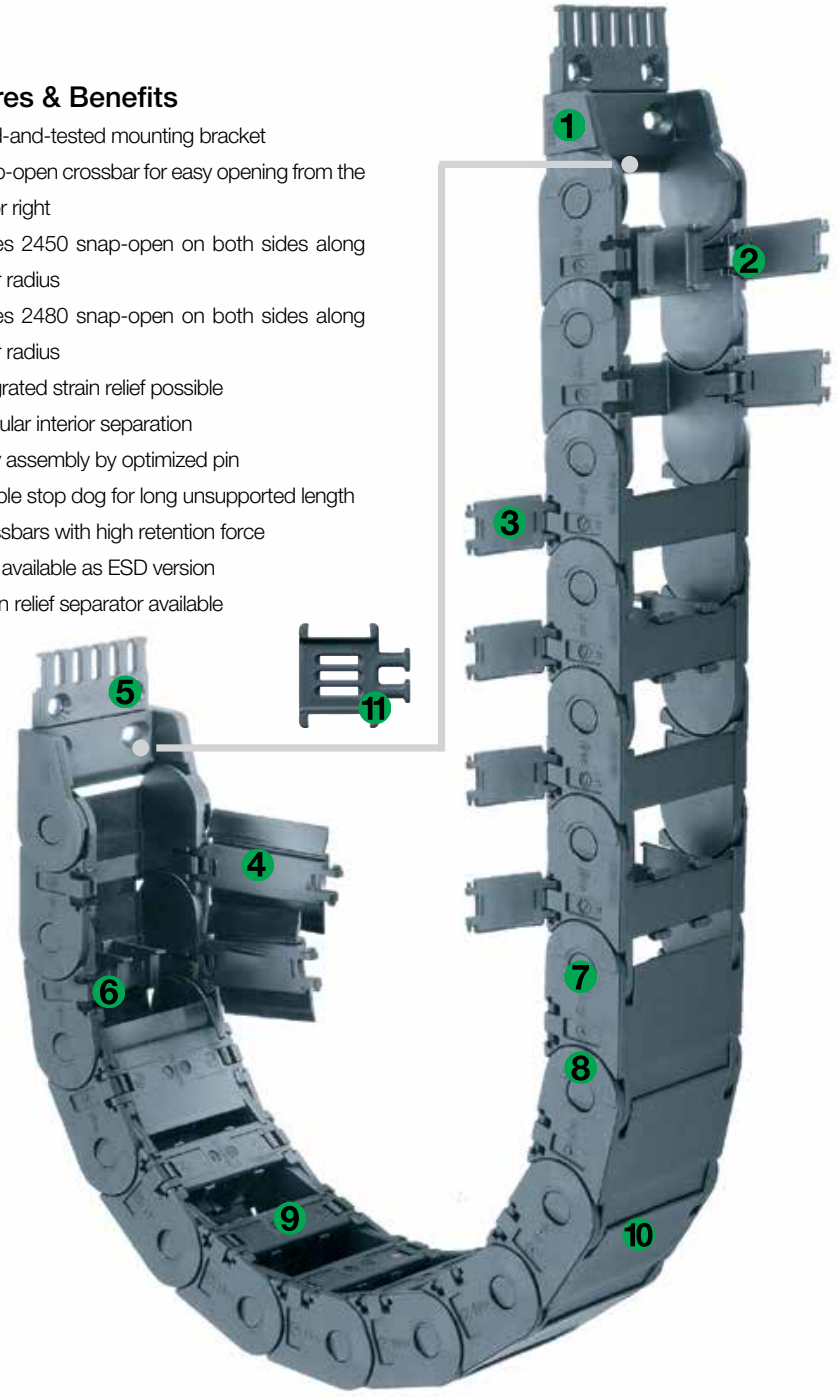
Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required
- If intergrated strain relief at the mounting point is required
- If modular interior separation is needed
- If long service life is required
- If easy installation is required

- If the application is very simple
  ➤ **Series E200 E-Z Chain**
- If greater stability is required
  ➤ **Series E4-21 E4-1 Series**

Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 2450 snap-open on both sides along inner radius
4. Series 2480 snap-open on both sides along inner radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version
11. Strain relief separator available



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

9.84 ft (3 m) **2450-10-100-0**	**E-Chain®**
With 2 separators **24501** assembled every 2nd link	**Interior Separation**
1 Set **2100-34PZB+**	**Mounting Bracket**

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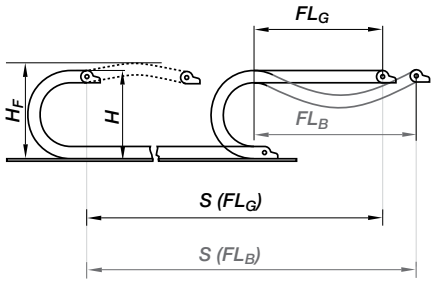
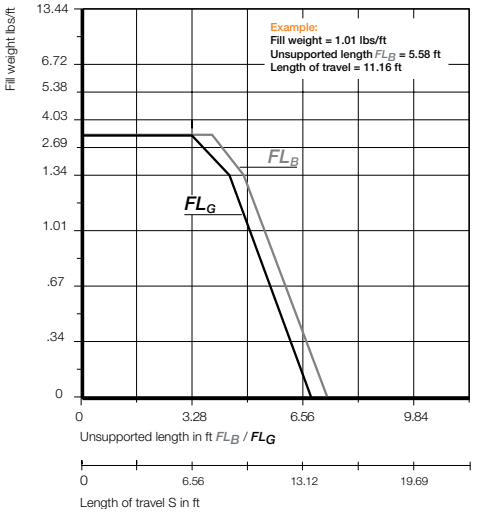
E-Chain System® E2/000
Series 2450/2480 Half-Tubes and Full Tubes
Installation Dimensions

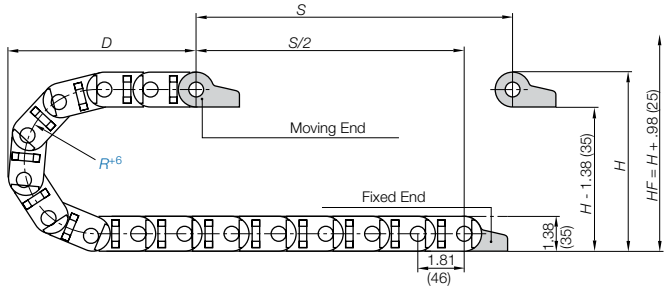
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.81" (46 mm)
Links per ft (m): = 6.71 (22)
For center mount applications:
Chain length = $S/2 + K$

The required clearance height: ***H_F = H + .98 in. (25 mm)*** (with 1.01 lbs/ft (1.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.38 (055*)	1.50 (075*)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
H	5.71 (145)	7.28 (185)	9.25 (235)	11.22 (285)	13.19 (335)	15.16 (385)	17.13 (435)	19.09 (485)	21.06 (535)
D	5.59 (142)	6.38 (162)	7.36 (187)	8.35 (212)	9.33 (237)	10.31 (262)	11.30 (287)	12.28 (312)	13.27 (337)
K	10.43 (265)	12.99 (330)	16.14 (410)	19.09 (485)	22.24 (565)	25.39 (645)	28.54 (725)	31.50 (800)	34.65 (880)

*upon request
Radii 055: the E-Tube is not completely enclosed. Please consult igus®

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height

Technical Data

Details of material properties
➤ Chapter 1

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igus®

E-Chain System® E2/000
Series 2450/2480 Half-Tubes and Full Tubes

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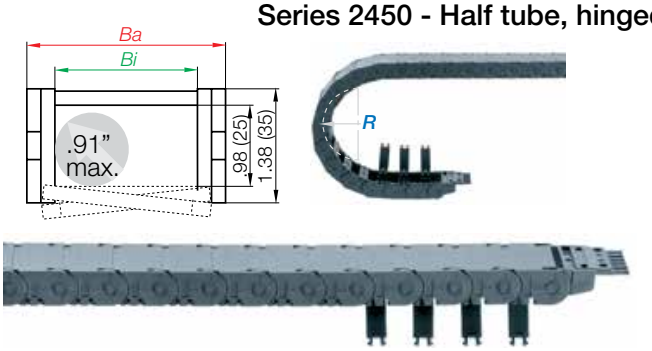
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Series 2450 - Half tube, hinged, snap-open along the inner radius

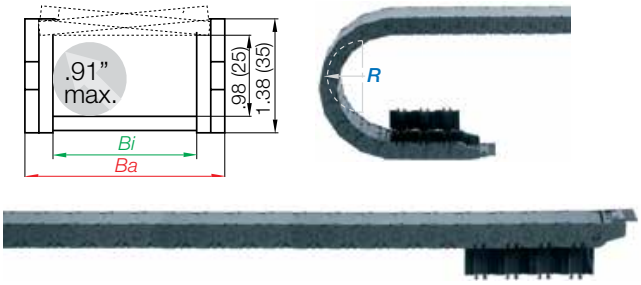


Part Number Structure

2450- 10- 100- 0

- Color - Black
- Bending radius
- Width
- Series

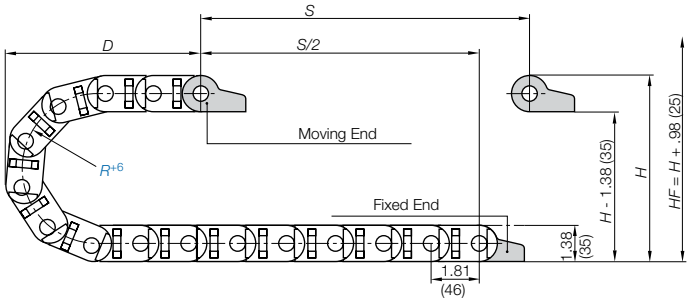
Series 2480 - Full tube, hinged, snap-open along the inner radius



Part Number Structure

2480- 10- 100- 0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: 2480-10-100-0
Pitch: 1.81 in. (46 mm) per link links/ft(m) = 6.71 (22)

Part Number Snap-open inner radius	Part Number Snap-open outer radius	Bi in. (mm)	Ba in. (mm)	Series 2480 Weight lbs/ft (kg/m)	Series 2480 Weight lbs/ft (kg/m)
2450-02-[ ]-0	2480-02-[ ]-0	.98 (25)	1.61 (41)	≈ 0.54 (0.80)	≈ 0.55 (0.82)
2450-03-[ ]-0	2480-03-[ ]-0	1.50 (38)	2.13 (54)	≈ 0.59 (0.88)	≈ 0.62 (0.92)
2450-05-[ ]-0	2480-05-[ ]-0	2.24 (57)	2.87 (73)	≈ 0.66 (0.99)	≈ 0.69 (1.03)
2450-07-[ ]-0	2480-07-[ ]-0	3.03 (77)	3.66 (93)	≈ 0.75 (1.12)	≈ 0.79 (1.17)
2450-09-[ ]-0	2480-09-[ ]-0	3.50 (89)	4.13 (105)	≈ 0.81 (1.20)	≈ 0.85 (1.26)
2450-10-[ ]-0	2480-10-[ ]-0	4.06 (103)	4.69 (119)	≈ 0.85 (1.27)	≈ 0.90 (1.34)
2450-12-[ ]-0	2480-12-[ ]-0	4.92 (125)	5.55 (141)	≈ 0.91 (1.35)	≈ 0.96 (1.43)

Choose from the radii below for all of the above sizes

Radius (mm) Example: 2400-10-100-0

	055*	075*	100	125	150	175	200	225	250
R	1.38 (055)	1.50 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
H	5.71 (145)	7.28 (185)	9.25 (235)	11.22 (285)	13.19 (335)	15.16 (385)	17.13 (435)	19.09 (485)	21.06 (535)
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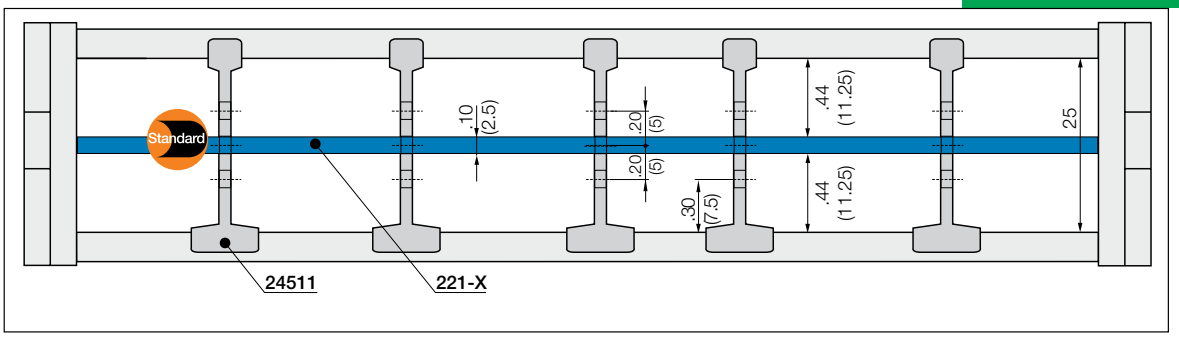
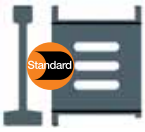
K	10.43 (265)	12.99 (330)	16.14 (410)	19.09 (485)	22.24 (565)	25.39 (645)	28.54 (725)	31.50 (800)	34.65 (880)

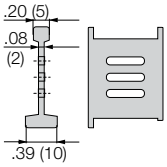
*upon request
Radii 055: the E-Tube is not completely enclosed. Please consult igus®

E-Chain System® E2/000
Series 2450/2480 Half-Tubes and Full Tubes
Interior Separation



In the standard configuration separators are assembled every 2nd E-Chain® link



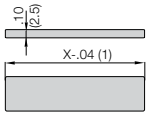


Separator, wide base

Unassembled	**Part No. 24501**
Assembled	**Part No. 24511**

- **Slotted separator 24501**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.

Full-width shelves - for the standard interior separation



Separator, narrow head

Unassembled	**Part No. 220-X**
Assembled	**Part No. 221-X**

- **Full-width shelf 220-X**
  this option makes sense in applications with many thin cables with similar diameters. For a consequent subdivision. Full-width shelves can be inserted at 3 different heights in .20" (5 mm) increments

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.98	(25)	**220-25**	**221-25**	3.54	(90)	**220-90**	**221-90**
1.50	(38)	**220-38**	**221-38**	4.06	(103)	**220-103**	**221-103**
2.24	(57)	**220-57**	**221-57**	4.92	(125)	**220-125**	**221-125**
3.03	(77)	**220-77**	**221-77**				

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
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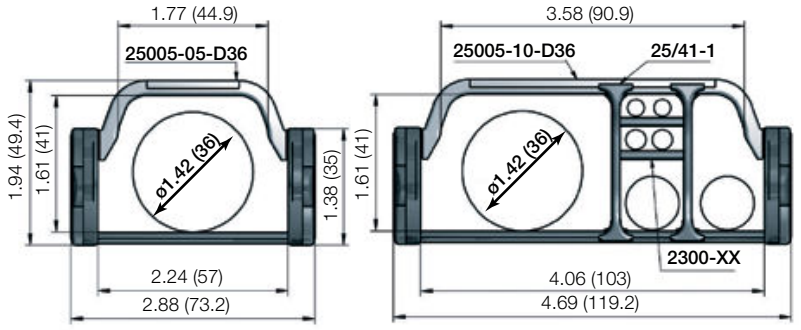
E-Chain System® E2/000
Series 2450 Half-Tubes
Extender crossbars



Part Number.
Extender crossbars for E-Chains® that snap-open along inner radius

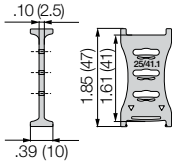
	Bi in. (mm)	*Ba* in. (mm)
2450-05D36-☐-0	2.24 (57)	2.87 (73)
2450-10D36-☐-0	4.06 (103)	4.69 (119)

Choose from the radii below for all of the above sizes

Radius (mm) Example: 2400-10D36-100-0

075	100	125	150	175	200	225	250
R	1.50 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)

Interior separation for extender crossbars

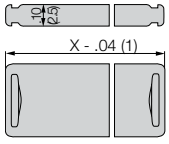


Separator, wide base

Unassembled	**Part No. 25/41.1**
Assembled	**Part No. 25/41.1.1**

- **Standard separator 25/41-1, wide base**
  For maximum locking strength and safe standing. In standard configuration separators are assembled every 2nd E-Chain® link.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
0.59 (015)	2300-15	2310-15	2.36 (060)	2300-60	2310-60	3.43 (087)	2300-87	2310-87
0.98 (025)	2300-25	2310-25	2.44 (062)	2300-62	2310-62	3.54 (090)	2300-90	2310-90
1.18 (030)	2300-30	2310-30	2.56 (065)	2300-65	2310-65	3.94 (100)	2300-100	2310-100
1.50 (038)	2300-38	2310-38	2.76 (070)	2300-70	2310-70	4.06 (103)	2300-103	2310-103
1.57 (040)	2300-40	2310-40	2.95 (075)	2300-75	2310-75	4.33 (110)	2300-110	2310-110
1.97 (050)	2300-50	2310-50	3.03 (077)	2300-77	2310-77	4.72 (120)	2300-120	2310-120
2.24 (057)	2300-57	2310-57	3.15 (080)	2300-80	2310-80	4.92 (125)	2300-125	2310-125

Separator with integrated strain relief

Strain relief separator Part No. 2020-ZR can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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E-Chain System® E2/000
Series 2450/2480 Half-Tubes and Full Tubes
Mounting Bracket - Plastic

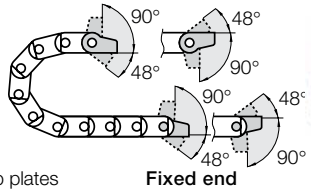
igus®

2450
2480

Option 1: pivoting

- For unsupported and gliding applications
- Well suited for tight installation conditions
- Detachable strain relief tiewrap plates
- Can be mounted on the fixed and/or moving end

Moving end
2...3PZB+

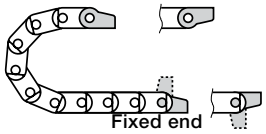


Fixed end
2...4PZB+

Option 2: locking

- For unsupported and gliding applications
- Extreme speed and/or accelerations
- For height restricted applications
- Can be mounted on the fixed and/or moving end

Moving end
2...1PZB+

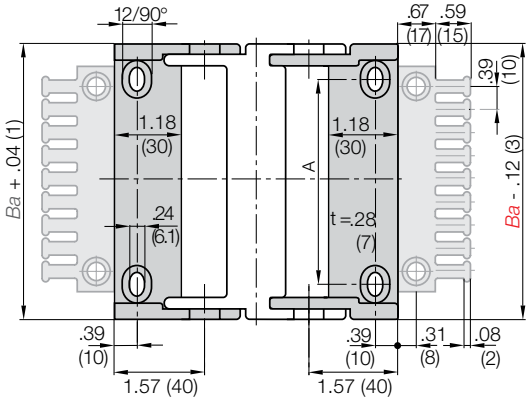


Fixed end
2...2PZB+

Part Number Structure

2020- 34 PZB K1

- With 10 cable tiewraps
- With tiewrap plates
- Complete Set
  34 = Pivoting
  12 = Locking
- Mounting brackets for selected chain type



Full set, for both ends:
2020- 34 PZB+ Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
2020- 3 PZB+ Mounting bracket **with bore + tiewrap plate**
2020- 4 PZB+ Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
With Tiewrap Plates
Series 2400/2500:
2020-34PZB+

Part No. Full Set (pivoting)
With Tiewrap Plates
+ 10 cable ties
Series 2400/2500:
2020-34PZBK1+

For Chain Type	Part No. Full set without Tiewrap Plate	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Dimension A in.	(mm)
2450/2480-02	2020- ☐ PZ+	2020- ☐ PZB+	2020- ☐ PZBK1+	.47	(12)
2450/2480-03	2030- ☐ PZ+	2030- ☐ PZB+	2030- ☐ PZBK1+	.98	(25)
2450/2480-05	2050- ☐ PZ+	2050- ☐ PZB+	2050- ☐ PZBK1+	1.73	(44)
2450/2480-07	2070- ☐ PZ+	2070- ☐ PZB+	2070- ☐ PZBK1+	2.52	(64)
2450/2480-09	2090- ☐ PZ+	2090- ☐ PZB+	2090- ☐ PZBK1+	3.03	(77)
2450/2480-10	2100- ☐ PZ+	2100- ☐ PZB+	2100- ☐ PZBK1+	3.54	(90)
2450/2480-12	2125- ☐ PZ+	2125- ☐ PZB+	2125- ☐ PZBK1+	4.41	(112)

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 2020- 34 PZB+

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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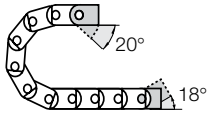
igus®

E-Chain System® E2/000
Series 2450/2480 E-Chain® Half-Tubes and Full Tubes
Mounting Bracket - KMA

Option 1: pivoting

- For unsupported applications
- Bolted connection outside of chain cross section
- Confined installation conditions
- Attachment points on all sides
- Stackable

Moving end
2450 = 24501...1
2480 = 24801...1

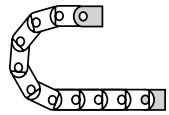


Fixed end
2450 = 24501...2
2480 = 24801...2

Option 2: locking

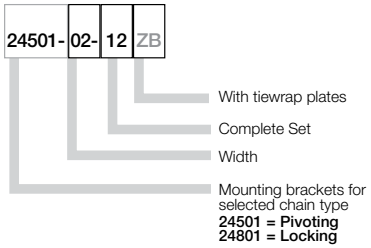
- For vertical hanging/standing applications
- Bolted connection outside of chain cross section
- For very high speeds and accelerations
- Attachment points on all sides
- Stackable

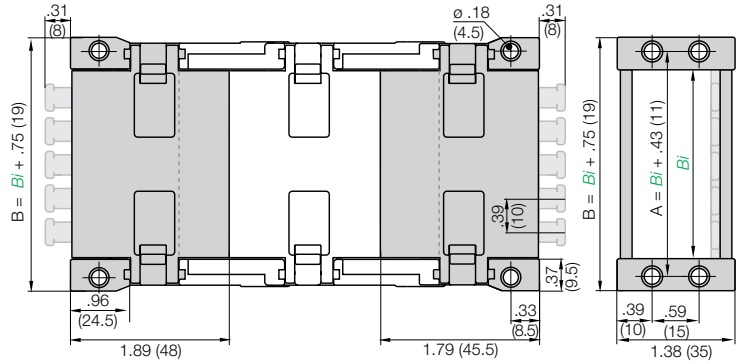
Moving end
2450 = 24511...1
2480 = 24811...1



Fixed end
2450 = 24511...2
2480 = 24811...2

Part Number Structure





Full set, for both ends:
24501- 12 ZB Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
24501- 1 ZB Mounting bracket **with bore + tiewrap plate**
24501- 2 ZB Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
With Tiewrap Plates
Series 2450:
24501-Width-12ZB

Part No. Full Set (pivoting)
Without Tiewrap Plates
Series 2450:
24501-Width-12

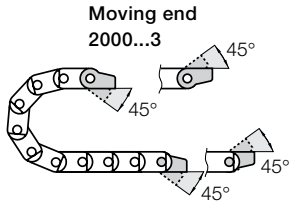
For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Number of Teeth
2450/2480-02	[ ] -02-12ZB	[ ] -02-12	1.42	(36)	2
2450/2480-03	[ ] -03-12ZB	[ ] -03-12	1.93	(49)	4
2450/2480-05	[ ] -05-12ZB	[ ] -05-12	2.68	(68)	6
2450/2480-07	[ ] -07-12ZB	[ ] -07-12	3.46	(88)	7
2450/2480-09	[ ] -09-12ZB	[ ] -09-12	3.94	(100)	9
2450/2480-10	[ ] -10-12ZB	[ ] -10-12	4.49	(114)	10
2450/2480-12	[ ] -12-12ZB	[ ] -12-12	5.35	(136)	12

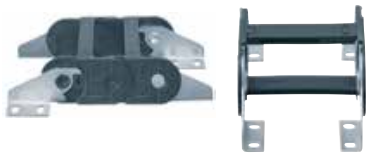
For pivoting brackets choose: 24501 or 24801
For locking brackets choose: 24511 or 24811
Example: 24501 -02-12ZB

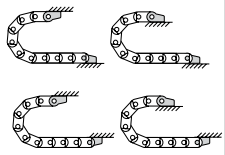
E-Chain System® E2/000
Series 2450/2480 E-Chain® Half-Tubes and Full Tubes
Mounting Bracket - Steel

Option 1: Steel

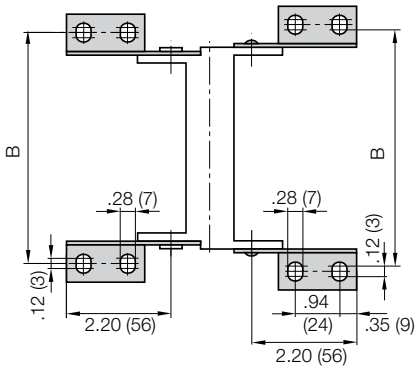
- Pivoting connections
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

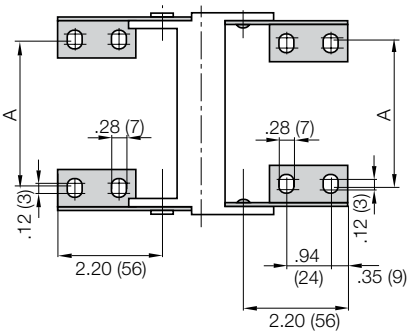






Possible installation configurations -





Chain Type	Part No. Full Set	Dimension A in.	(mm)	Dimension B in.	(mm)
2450/2480-02	**2000-32**			2.36	(60)
2450/2480-03	**2000-32**	.98	(25)	2.87	(73)
2450/2480-05	**2000-32**	1.73	(44)	3.62	(92)
2450/2480-07	**2000-32**	2.52	(64)	4.41	(112)
2450/2480-09	**2000-32**	2.99	(76)	4.88	(124)
2450/2480-10	**2000-32**	3.54	(90)	5.43	(138)
2450/2480-12	**2000-32**	4.41	(112)	6.30	(160)

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 2450/2480:
2000-32

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right
Series 2450/2480:
2000-3

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right
Series 2450/2480:
2000-2

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E-Chain System® E2/000
Series 2450/2480 Half-Tubes and Full Tubes
Strain Relief

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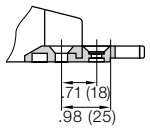
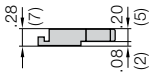
Tiewrap Plates



Shown assembled

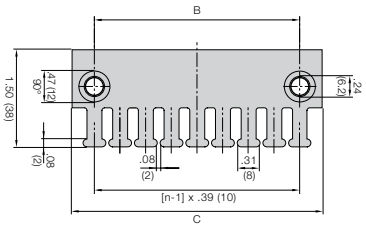


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2125-ZB	12	4.72 (120)	3.94 (100)



For more information please refer to strain relief section of Chapter 10

Cable tiewraps as individual parts

Cable tiewraps 100 pieces/bag	Width x Length in.	(mm)	Maximum Ø in.	(mm)	Tensile Strength lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)

Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **20XX-ZB** can be also used here. **Details chapter 10**

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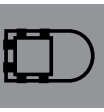
E-Chain System® E2/000
Series 2450/2480 Half-Tubes and Full Tubes



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2600
2700

igus®

E-Chain System® E2/000
Series 2600/2700

1.38 1.38

Price Index

Series 2600/2700

Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94 V2 classifications upon request

Assembly Tips

Snap-open mechanism, choice of snap-open on left or right. Hinged crossbar can be swiveled by more than 180° on both sides. Lightning-fast closing by hand. Secure fit without additional locking devices.

Other Installation Methods

Vertical, hanging ≤ 164 ft (50 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.28 ft (1 m)
Rotary requires further calculation

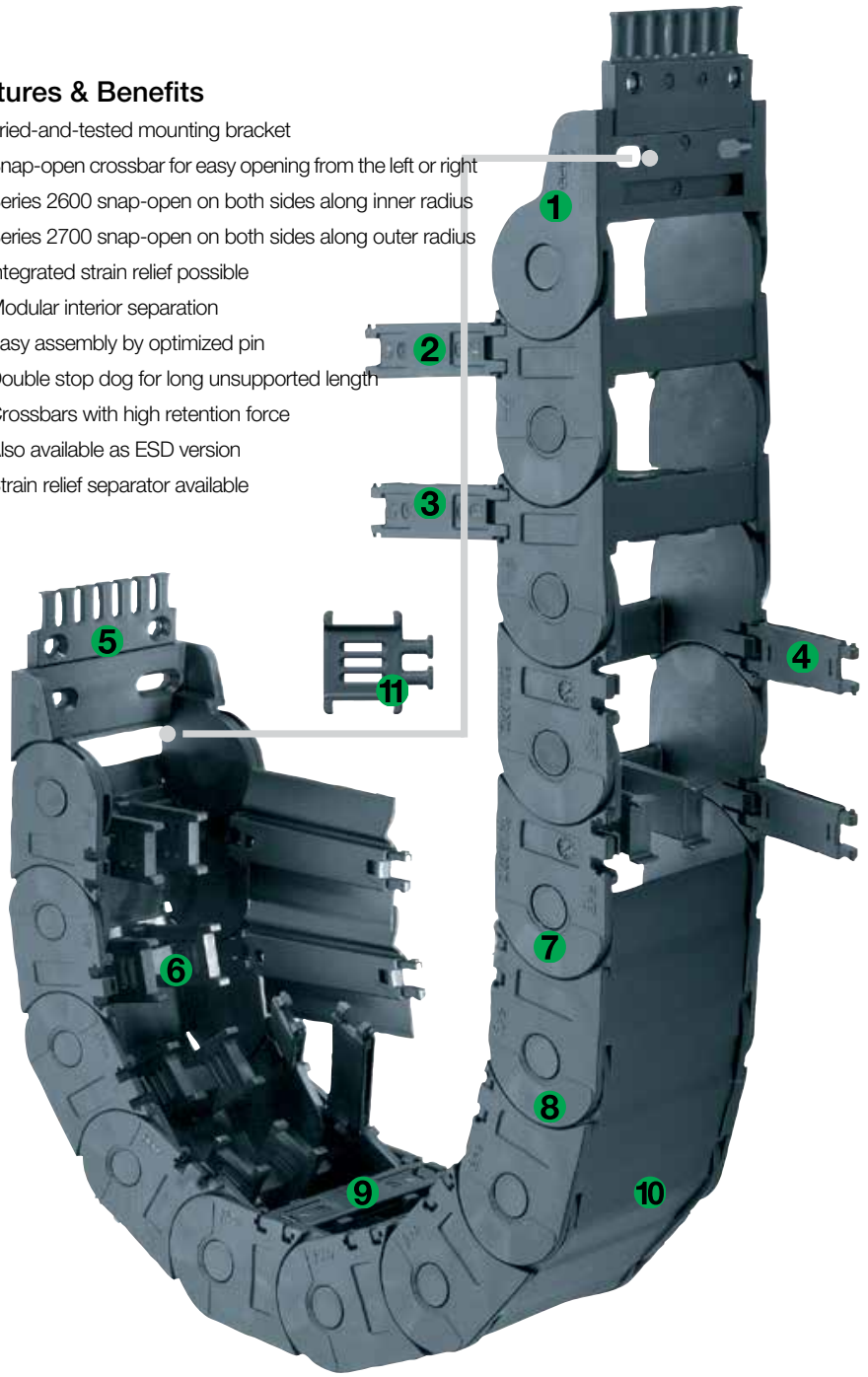
Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required
- If intergrated strain relief at the mounting point is required
- If modular interior separation is needed
- If long service life is required
- If easy installation is required

- If the application is very simple
  ➤ **Series E26 E-Z Chain**
- If greater stability is required
  ➤ **Series E4-32 E4-1 Series**

Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 2600 snap-open on both sides along inner radius
4. Series 2700 snap-open on both sides along outer radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version
11. Strain relief separator available



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

9.84 ft (3 m) **2700-10-100-0**	**E-Chain®**
With 2 separators **35.1** assembled every 2nd link	**Interior Separation**
1 Set **2610-34PZB**	**Mounting Bracket**

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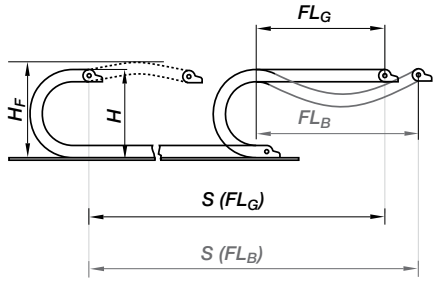
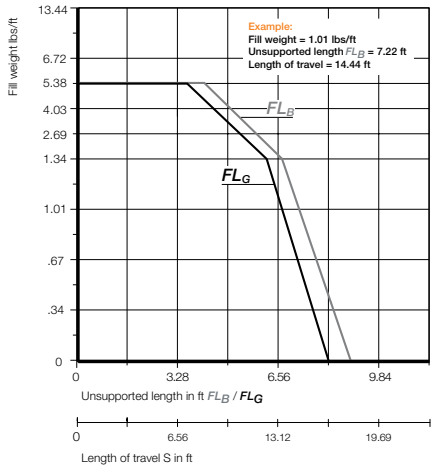
E-Chain System® E2/000
Series 2600/2700
Installation Dimensions

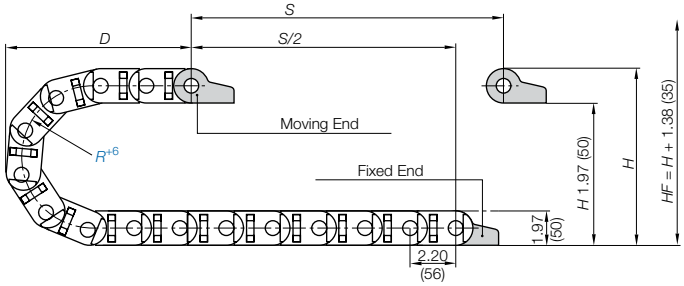
Short travel, unsupported length

- ● FL_B = unsupported with permitted sag
- ● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.49 (18)
For center mount applications:
Chain length = $S/2 + K$

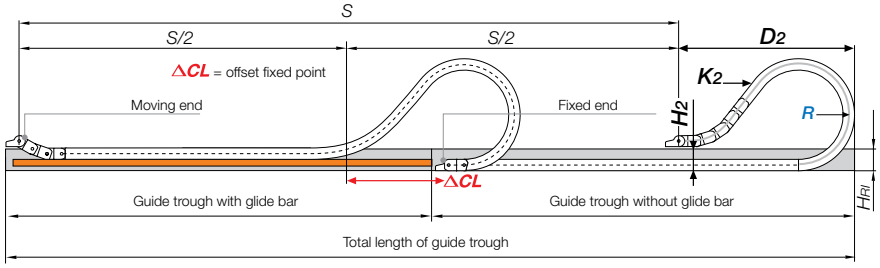
The required clearance height: ***HF = H* + 1.38 in. (35 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	6.93 (176)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	21.65 (550)
D	6.77 (172)	7.24 (184)	8.23 (209)	9.21 (234)	10.20 (259)	11.18 (284)	12.17 (309)	14.13 (359)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.88 (505)	23.03 (585)	26.18 (665)	29.33 (745)	35.43 (900)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 394 ft. (120 m)
For long travels, igus® specifies Series 2700 that snap open on the outer radius.

For center mount applications:
Chain length: = $S/2 + K_2$



R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H_2	5.12 (130)	5.91 (150)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
D_{2+25}	5.51 (140)	5.91 (150)	13.78 (350)	18.70 (475)	19.69 (500)	25.79 (655)	30.31 (770)	37.40 (950)
K_2	13.19 (335)	14.76 (375)	24.25 (616)	30.87 (784)	35.28 (896)	44.09 (1120)	50.71 (1288)	63.94 (1624)
ΔCL	–	–	5.67 (144)	9.61 (244)	9.61 (244)	14.72 (374)	18.27 (464)	23.39 (594)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain® must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ **Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E2/000
Series 2600/2700

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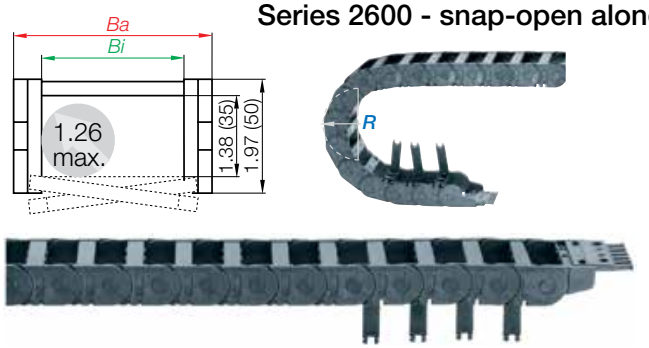
Series 2600 - snap-open along the inner radius

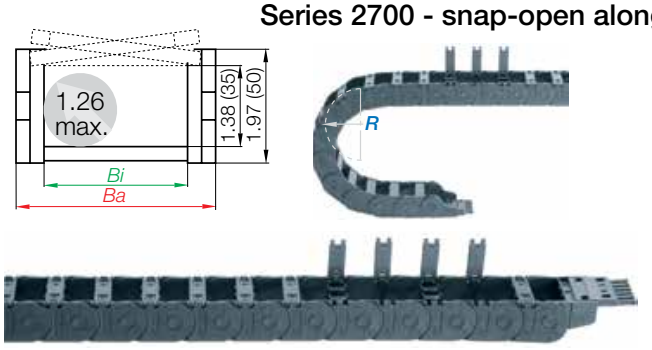


Part Number Structure

2600- 10- 100- 0

- Color - Black
- Bending radius
- Width
- Series

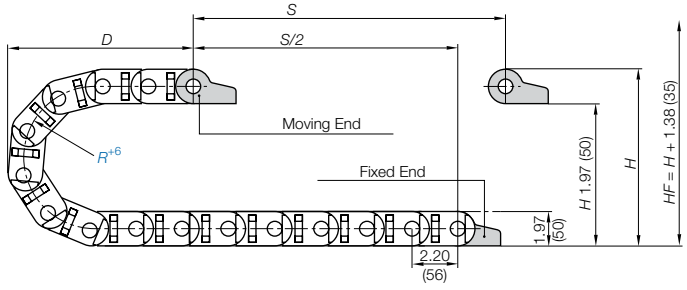
Series 2700 - snap-open along the outer radius



Part Number Structure

2700- 10- 100- 0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: 2600-10-100-0
Pitch: 2.20 in. (56 mm) per link links/ft(m) = 5.49 (18)

Part Number. Snap-open inner radius	Part Number. Snap-open outer radius	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
2600-05-□-0	2700-05-□-0	1.97 (50)	2.60 (66)	≈ 0.79 (1.17)
2600-06-□-0	2700-06-□-0	2.56 (65)	3.19 (81)	≈ 0.83 (1.24)
2600-07-□-0	2700-07-□-0	2.95 (75)	3.58 (91)	≈ 0.87 (1.30)
2600-09-□-0	2700-09-□-0	3.54 (90)	4.17 (106)	≈ 0.92 (1.37)
2600-10-□-0	2700-10-□-0	3.94 (100)	4.57 (116)	≈ 0.93 (1.39)
2600-12-□-0	2700-12-□-0	4.92 (125)	5.55 (141)	≈ 0.99 (1.48)
2600-15-□-0	2700-15-□-0	5.91 (150)	6.53 (166)	≈ 1.09 (1.62)
2600-17-□-0	2700-17-□-0	6.89 (175)	7.64 (194)	≈ 1.24 (1.85)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 2400-10-100-0

	063	075	100	125	150	175	200	250
R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	6.93 (176)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	21.65 (550)
D	6.77 (172)	7.24 (184)	8.23 (209)	9.21 (234)	10.20 (259)	11.18 (284)	12.17 (309)	14.13 (359)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.88 (505)	23.03 (585)	26.18 (665)	29.33 (745)	35.43 (900)

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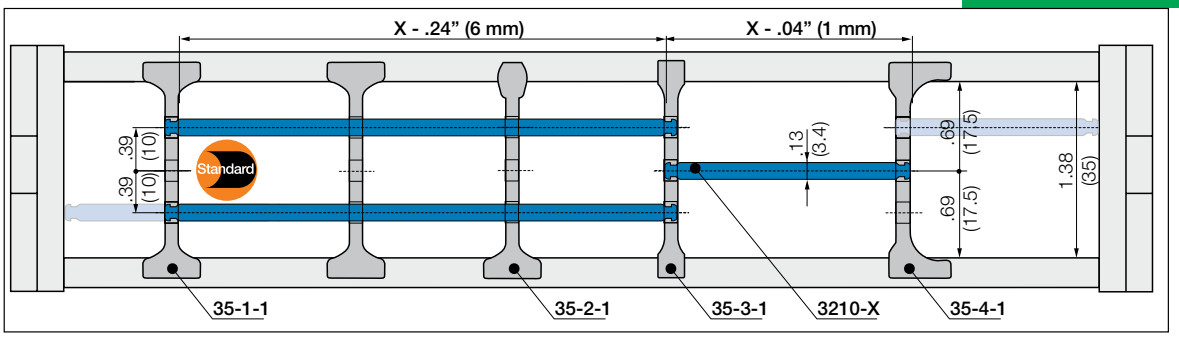
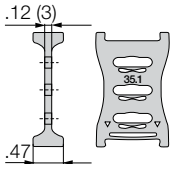
E-Chain System® E2/000
Series 2600/2700
Interior Separation



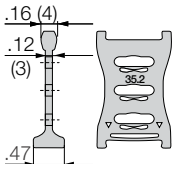
In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 35.1**
Assembled	**Part No. 35.1.1**

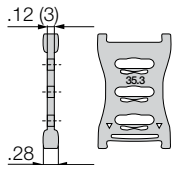
- **Standard separator 35.1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator, narrow head

Unassembled	**Part No. 35.2**
Assembled	**Part No. 35.2.1**

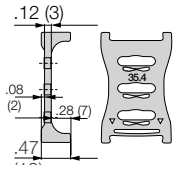
- **Separator 35.2 For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 35.3**
Assembled	**Part No. 35.3.1**

- **Separator 35.3 For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

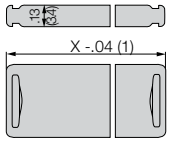


Separator, asymmetrical

Unassembled	**Part No. 35.4**
Assembled	**Part No. 35.4.1**

- **Separator 35.4 For side mounted applications**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required. .

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	5.91 (150)	**3200-150**	**3210-150**
2.95 (075)	**3200-75**	**3210-75**	6.89 (175)	**3200-175**	**3210-175**
3.94 (100)	**3200-100**	**3210-100**	7.87 (200)	**3200-200**	**3210-200**
4.53 (115)	**3200-115**	**3210-115**	8.86 (225)	**3200-225**	**3210-225**
4.92 (125)	**3200-125**	**3210-125**	9.84 (250)	**3200-250**	**3210-250**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
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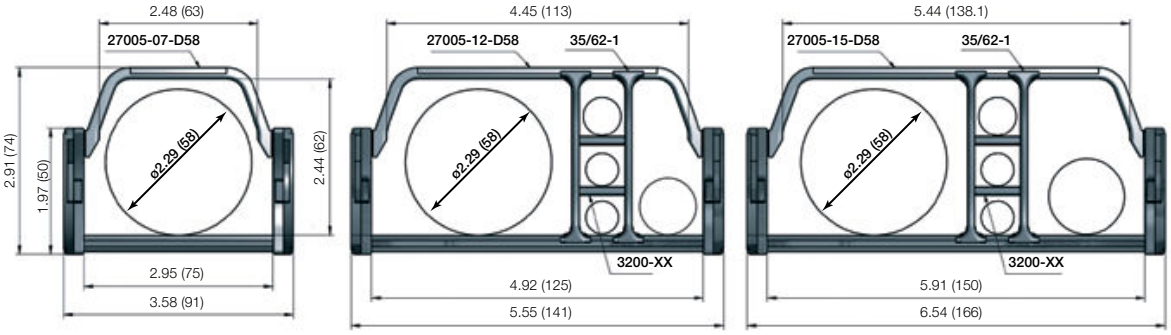
E-Chain System® E2/000
Series 2600/2700
Extender crossbars



Part Number.

Extender crossbars for E-Chains® that snap-open along **inner** radius	Extender crossbars for E-Chains® that snap-open along **outer** radius	*Bi* in. (mm)	*Ba* in. (mm)
2600-07D58-☐-0	2700-07D58-☐-0	2.95 (75)	3.58 (91)
2600-12D58-☐-0	2700-12D58-☐-0	4.92 (125)	5.55 (141)
2600-15D58-☐-0	2700-15D58-☐-0	5.91 (150)	6.54 (166)

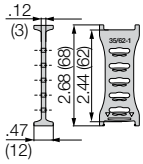
Choose from the radii below for all of the above sizes

Radius (mm) Example: 2700-10D58-100-0

	063*	075*	100	125	150	175	200	250
R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)

*Radius 063 and 075 only available for 2700 series

Interior separation for extender crossbars

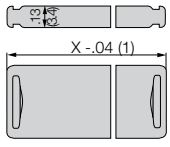


Separator, wide base

Unassembled	**Part No. 35/62-1**
Assembled	**Part No. 35/62-1-1**

- **Standard separator 35/62-1, wide base**
  For maximum locking strength and safe standing. In standard configuration separators are assembled every 2nd E-Chain® link.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	5.91 (150)	**3200-150**	**3210-150**
2.95 (075)	**3200-75**	**3210-75**	6.89 (175)	**3200-175**	**3210-175**
3.94 (100)	**3200-100**	**3210-100**	7.87 (200)	**3200-200**	**3210-200**
4.53 (115)	**3200-115**	**3210-115**	8.86 (225)	**3200-225**	**3210-225**
4.92 (125)	**3200-125**	**3210-125**	9.84 (250)	**3200-250**	**3210-250**

Separator with integrated strain relief

Strain relief separator Part No. 262-Z can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

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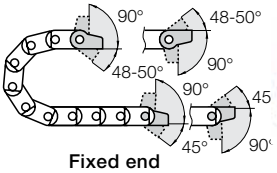
E-Chain System® E2/000
Series 2600/2700
Mounting Bracket - Plastic

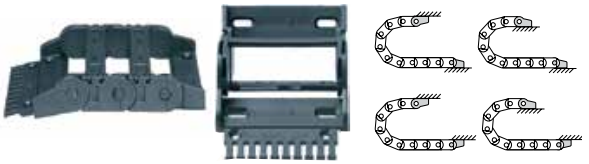
Option 1: pivoting

- For unsupported and gliding applications
- Well suited for tight installation conditions
- Detachable strain relief tiewrap plates
- Can be mounted on the fixed and/or moving end

Moving end
26...3PZB



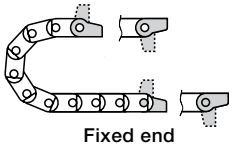
Fixed end
26...4PZB



Option 2: locking

- For unsupported and gliding applications
- Extreme speed and/or accelerations
- For height restricted applications
- Can be mounted on the fixed and/or moving end

Moving end
26...1PZB

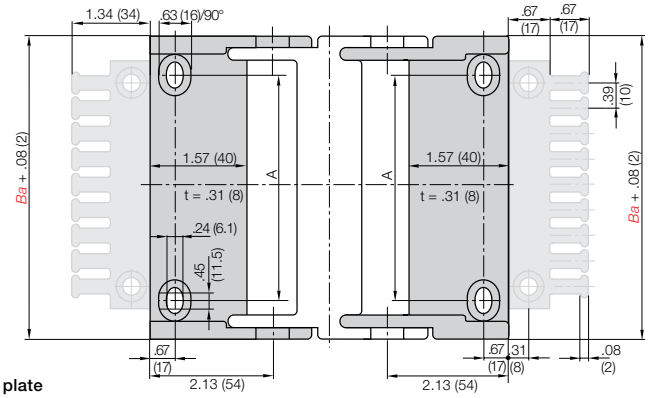


Fixed end
26...2PZB

Part Number Structure

2605- 34 PZB K1

- With 10 cable tiewraps
- With tiewrap plates
- Complete Set
  34 = Pivoting
  12 = Locking
- Mounting brackets for selected chain type



Full set, for both ends:
2605- 34 PZB Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
2605- 3 PZB Mounting bracket **with bore + tiewrap plate**
2605- 4 PZB Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
With Tiewrap Plates
Series 2600:
2605-34PZB

Part No. Full Set (pivoting)
With Tiewrap Plates + 10 cable ties
Series 2600:
2605-34PZBK1

For Chain Type	Part No. Full Set without Tiewrap Plate	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Dimension A in.	(mm)	Number of Teeth
2600/2700-05	2605- ☐ PZ	2605- ☐ PZB	2605- ☐ PZBK1	1.18	(30)	5
2600/2700-06	2606- ☐ PZ	2606- ☐ PZB	2606- ☐ PZBK1	1.77	(45)	5
2600/2700-07	2607- ☐ PZ	2607- ☐ PZB	2607- ☐ PZBK1	2.17	(55)	7
2600/2700-09	2609- ☐ PZ	2609- ☐ PZB	2609- ☐ PZBK1	2.76	(70)	9
2600/2700-10	2610- ☐ PZ	2610- ☐ PZB	2610- ☐ PZBK1	3.15	(80)	10
2600/2700-12	2612- ☐ PZ	2612- ☐ PZB	2612- ☐ PZBK1	4.13	(105)	12
2600/2700-15	2615- ☐ PZ	2615- ☐ PZB	2615- ☐ PZBK1	5.12	(130)	15
2600/2700-17	2617- ☐ PZ	2617- ☐ PZB	2617- ☐ PZBK1	6.10	(155)	17

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 2605- 34 PZB

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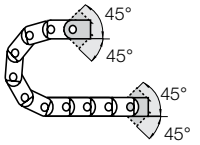
E-Chain System® E2/000
Series 2600/2700
Mounting Bracket - KMA

Telephone 1-800-521-2747
Fax 1-401-438-7270

Option 1: pivoting

- For unsupported applications
- Bolted connection outside of chain cross section
- Confined installation conditions
- Attachment points on all sides
- Stackable

Moving end
26001...1

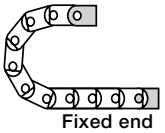


Fixed end
26001...2

Option 2: locking

- For vertical hanging/standing applications
- Bolted connection outside of chain cross section
- For very high speeds and accelerations
- Attachment points on all sides
- Stackable

Moving end
26101...1

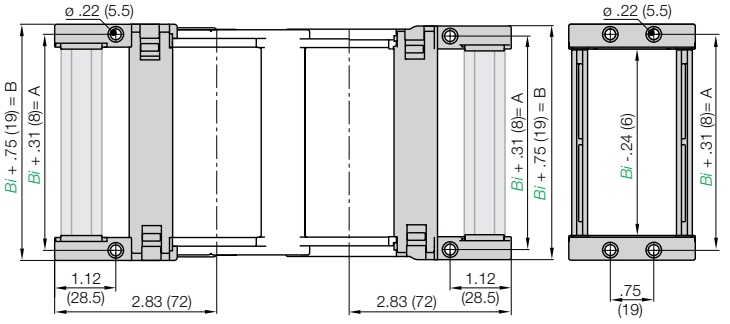


Fixed end
26101...2

Part Number Structure

26001-	10-	12	P

- P: With profile rail
- 12: Complete Set
- 10: Width
- 26001- : Mounting brackets for selected chain type
  26001 = Pivoting
  26101 = Locking



Full set, for both ends:
26001- 12 P Full set, **each part with pin/bore + profile rail**
Single-part order:
26001- 1 P Mounting bracket **with bore + profile rail**
26001- 2 P Mounting bracket **with pin + profile rail**

Part No. Full Set (pivoting)
With Profile Rail
Series 2600/2700:
26001-Width-12P

Part No. Full Set (pivoting)
Without Profile Rail
Series 2600/2700:
26001-Width-12

For Chain Type	Part No. Full set with Profile Rail	Part No. Full Set without Profile Rail	Dimension A in.	(mm)	Dimension B in.	(mm)
2600/2700-05	[ ] -05-12P	[ ] -05-12	2.28	(58)	2.72	(69)
2600/2700-06	[ ] -06-12P	[ ] -06-12	2.87	(73)	3.31	(84)
2600/2700-07	[ ] -07-12P	[ ] -07-12	3.27	(83)	3.70	(94)
2600/2700-09	[ ] -09-12P	[ ] -09-12	3.86	(98)	4.29	(109)
2600/2700-10	[ ] -10-12P	[ ] -10-12	4.25	(108)	4.69	(119)
2600/2700-12	[ ] -12-12P	[ ] -12-12	5.24	(133)	5.67	(144)
2600/2700-15	[ ] -15-12P	[ ] -15-12	6.22	(158)	6.65	(169)
2600/2700-17	[ ] -17-12P	[ ] -17-12	7.20	(183)	7.64	(194)

[26001] or [26101]

For pivoting brackets choose [26001]
For locking brackets choose [26101]
Example: [26001] -10-12P

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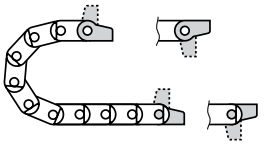
E-Chain System® E2/000
Series 2600/2700
Mounting Bracket - Steel

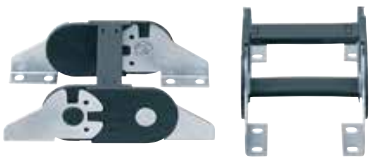
Option 1: Steel

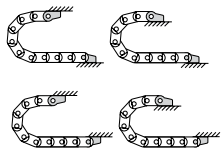
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

Moving end
260...1

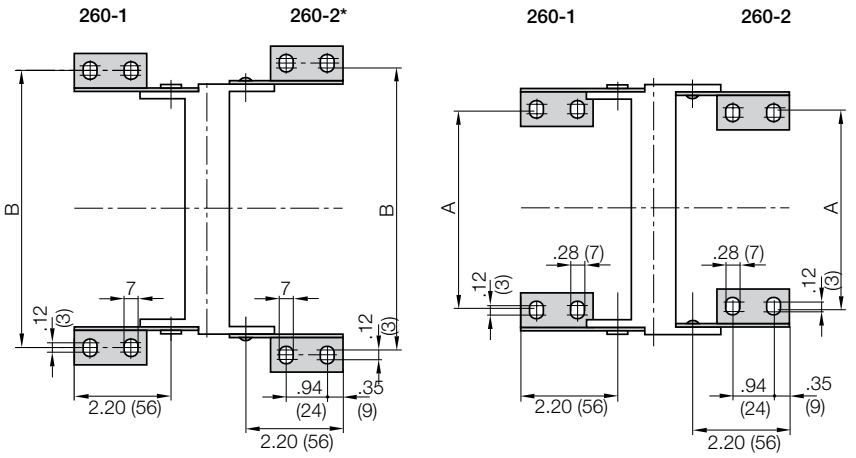


Fixed end
260...2





Possible installation configurations -



*pivoting with no stop, (360°)

Chain Type	Part No. Full Set	Dimension A in.	(mm)	Dimension B in.	(mm)
2600/2700-05	**260-12**	1.46	(37)	3.27	(83)
2600/2700-07	**260-12**	2.44	(62)	4.25	(108)
2600/2700-10	**260-12**	3.43	(87)	5.24	(133)
2600/2700-12	**260-12**	4.41	(112)	6.22	(158)

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 2680:
260-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right
Series 2680:
260-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right
Series 2680:
260-2

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E2/000
Series 2600/2700
Mounting Bracket - KMA

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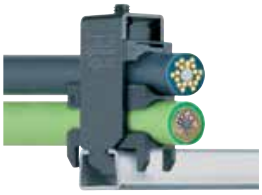
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

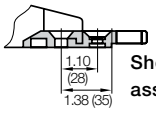
Chainfix Clip

Modular snap-on strain relief device

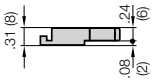
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(04-08)	**CFC-08-M**	**CFC-08-C**
.31-.47	(08-12)	**CFC-12-M**	**CFC-12-C**
.47-.63	(12-16)	**CFC-16-M**	**CFC-16-C**
.63-.79	(16-20)	**CFC-20-M**	**CFC-20-C**
.79-.94	(20-24)	**CFC-24-M**	**CFC-24-C**

Tiewrap Plates



Shown assembled

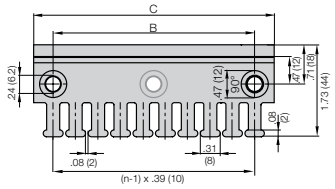


Single tiewrap plate

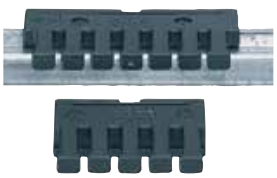
Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



For more information please refer to strain relief section of Chapter 10



Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **30XX-Z and ZS** can be also used here. **Details chapter 10**

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E-Chain System® E2/000
Series 2600/2700
Strain Relief

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part Number 95-30
- 1/2 travel length of glide bars
  Part number 92-01
- Installation sets as end connectors
  Part Number 95-50-XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bar

= 25 sections of 6.56 ft (2 m) guide trough

Part No. 95-30

= 13 sections of 6.56 ft (2 m) glide bar

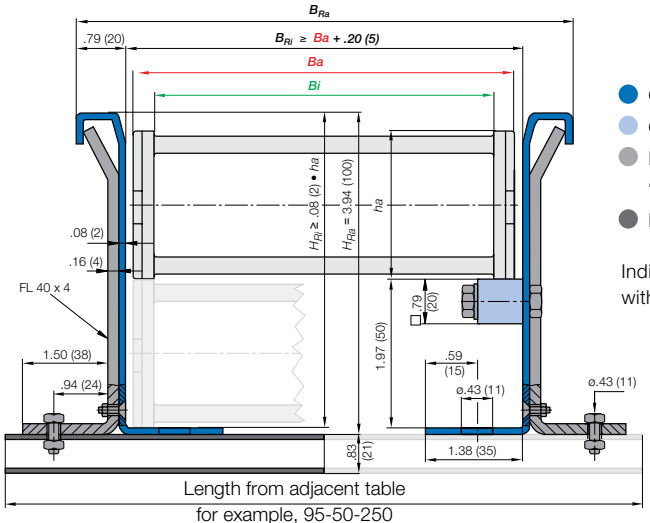
Part No. 92-01

Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
Example: 95-50-400 for 15.75" (400 mm) long profile rail.

Width of Crossbar
2700-**05**-200-0

B_{Ri}	Installation Part No.
-05 2.80 (71)	**95-50-200**
-06 3.38 (86)	**95-50-200**
-07 3.78 (96)	**95-50-225**
-09 4.37 (111)	**95-50-225**
-10 4.76 (121)	**95-50-250**
-12 5.75 (146)	**95-50-275**
-15 6.73 (171)	**95-50-300**
-17 7.83 (199)	**95-50-325**

Standard length profile rail



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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2650
2680

igus®

E-Chain System® E2/000
Series 2650/2680 E-Chain®
Half-Tubes and Full Tubes

1.38 1.38

Price Index

Series 2650/2680

Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94 V2 classifications upon request

Assembly Tips

Insert screwdriver into the slot, using a lever action apply pressure to the screw-driver to release

Other Installation Methods

Vertical, hanging ≤ 164 ft (50 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.28 ft (1 m)
Rotary requires further calculation

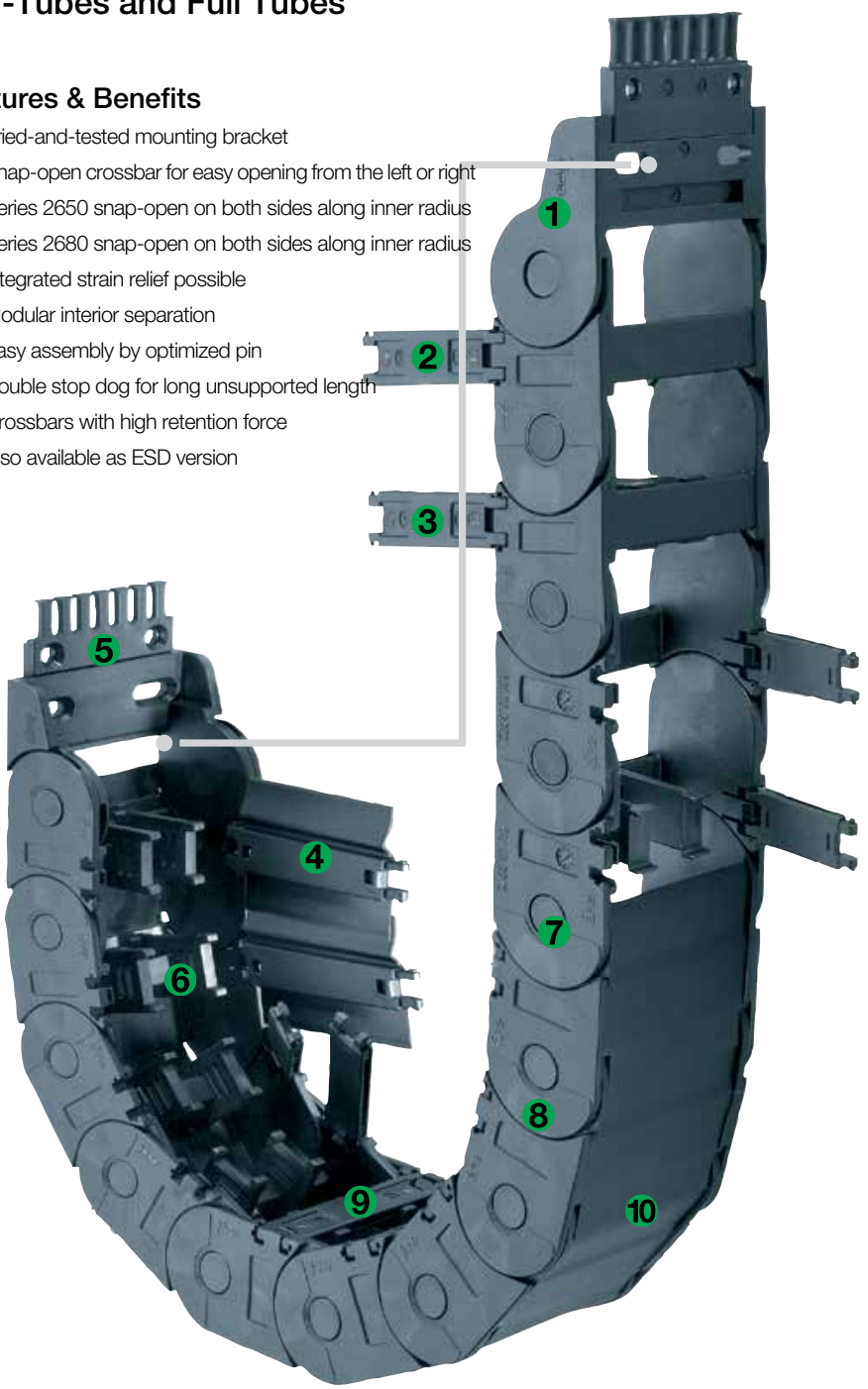
Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required
- If intergrated strain relief at the mounting point is required
- If modular interior separation is needed
- If long service life is required
- If easy installation is required
- If a half-Tube is required Series 2650
- If a fully enclosed E-Tube is required Series 2680

- If the application is very simple
  ➤ **Series E26 E-Z Chain**
- If greater stability is required
  ➤ **Series E4-32 E4-1 Series**
- If E-Tubes with small bending radii are needed
  ➤ **Series R58 E2 Tubes**

Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 2650 snap-open on both sides along inner radius
4. Series 2680 snap-open on both sides along inner radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

9.84 ft (3 m) **2680-10-100-0**	**E-Chain®**
With 2 separators **26501** assembled every 2nd link	**Interior Separation**
1 Set **26500-10-12PZB**	**Mounting Bracket**

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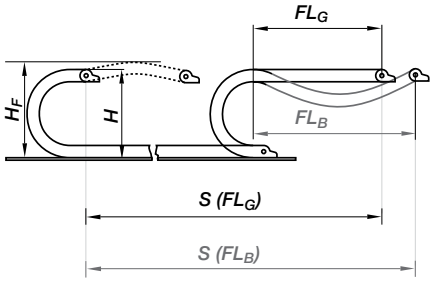
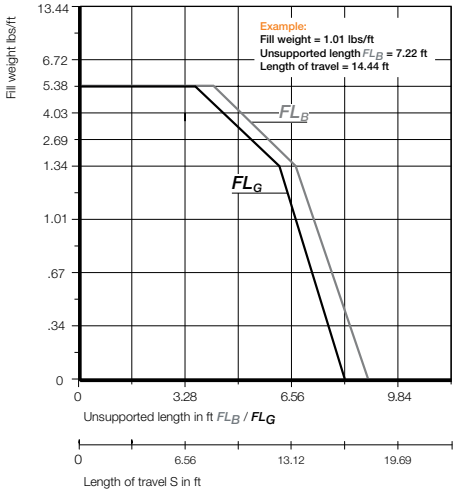
E-Chain System® E2/000
Series 2650/2680 E-Chain® Half-Tubes and Full Tubes
Installation Dimensions

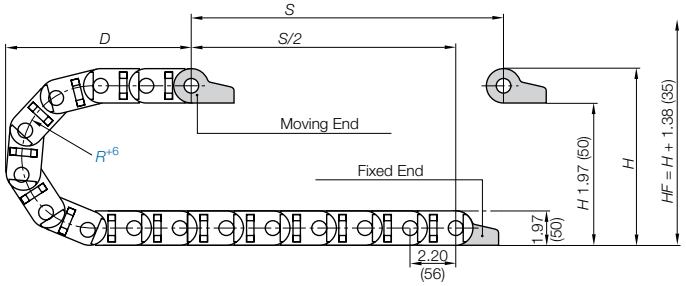
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.49 (18)
For center mount applications:
Chain length = $^{S}/_{2} + K$

The required clearance height: $H_F = H + 1.38$ **in. (35 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.48 (063*)	2.95 (075*)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	6.93 (176)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	21.65 (550)
D	6.77 (172)	7.24 (184)	8.23 (209)	9.21 (234)	10.20 (259)	11.18 (284)	12.17 (309)	14.13 (359)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.88 (505)	23.03 (585)	26.18 (665)	29.33 (745)	35.43 (900)

* Radius available upon request, please consult igus® for delivery time
Radii 063, 075: the E-Tube is not completely enclosed. Please consult igus®

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

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igus®

E-Chain System® E2/000
Series 2650/2680 E-Chain® Half-Tubes and Full Tubes

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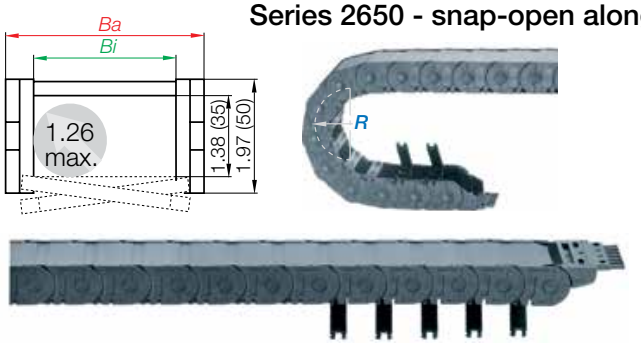
Series 2650 - snap-open along the inner radius

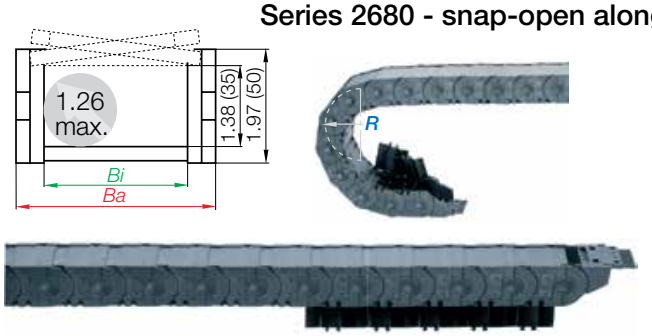


Part Number Structure

2650- 10- 100- 0

- Color - Black
- Bending radius
- Width
- Series

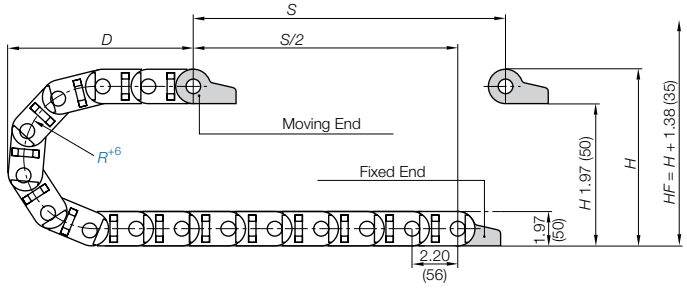
Series 2680 - snap-open along the inner radius



Part Number Structure

2680- 10- 100- 0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: 2650-10-100-0
Pitch: 2.20 in. (56 mm) per link links/ft(m) = 5.49 (18)

Part Number. Snap-open inner radius	Part Number. Snap-open outer radius	Bi in. (mm)	Ba in. (mm)	Weight 2650 lbs/ft (kg/m)	Weight 2680 lbs/ft (kg/m)
2650-05-□-0	2680-05-□-0	1.97 (50)	2.60 (66)	≈ 0.84 (1.25)	≈ 0.89 (1.33)
2650-06-□-0	2680-06-□-0	2.56 (65)	3.19 (81)	≈ 0.91 (1.36)	≈ 0.96 (1.43)
2650-07-□-0	2680-07-□-0	2.95 (75)	3.58 (91)	≈ 0.94 (1.40)	≈ 1.01 (1.51)
2650-09-□-0	2680-09-□-0	3.54 (90)	4.17 (106)	≈ 1.04 (1.55)	≈ 1.09 (1.62)
2650-10-□-0	2680-10-□-0	3.94 (100)	4.57 (116)	≈ 1.08 (1.61)	≈ 1.22 (1.81)
2650-12-□-0	2680-12-□-0	4.92 (125)	5.55 (141)	≈ 1.14 (1.70)	≈ 1.34 (1.99)
2650-15-□-0	2680-15-□-0	5.91 (150)	6.53 (166)	≈ 1.21 (1.80)	≈ 1.46 (2.17)
2650-17-□-0	2680-17-□-0	6.89 (175)	7.64 (194)	≈ 1.34 (2.00)	≈ 1.58 (2.35)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 2650-10-100-0

	063*	075*	100	125	150	175	200	250
R	2.48 (063*)	2.95 (075*)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	6.93 (176)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	21.65 (550)
D	6.77 (172)	7.24 (184)	8.23 (209)	9.21 (234)	10.20 (259)	11.18 (284)	12.17 (309)	14.13 (359)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.88 (505)	23.03 (585)	26.18 (665)	29.33 (745)	35.43 (900)

* Radius available upon request, please consult igus® for delivery time
Radii 063, 075: the E-Tube is not completely enclosed. Please consult igus®

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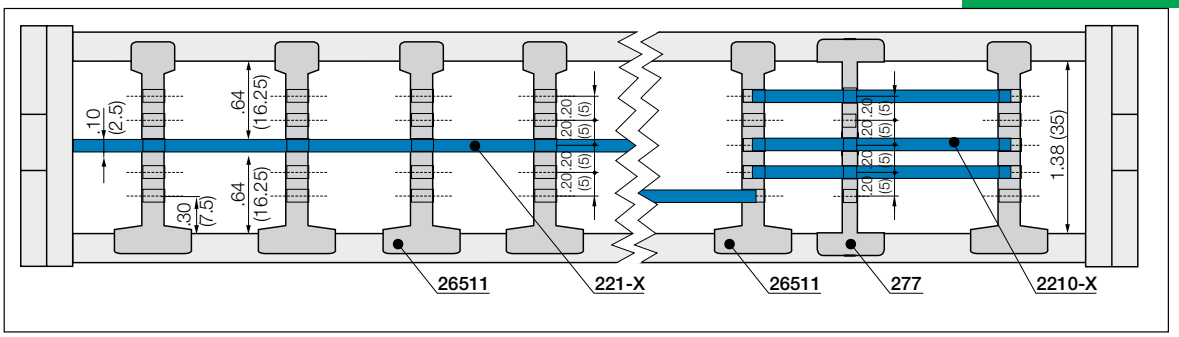
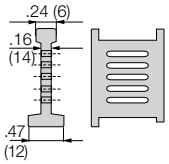
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E2/000
Series 2650/2680 E-Chain® Half-Tubes and Full Tubes
Interior Separation



In the standard configuration separators are assembled every 2nd E-Chain® link

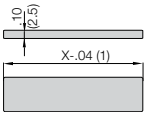


Separator, wide base

Unassembled	**Part No. 26501**
Assembled	**Part No. 26511**

- **Slotted separator 26501**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.

Full-width shelves - for the standard interior separation

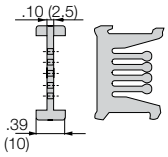


Separator, narrow head

Unassembled	**Part No. 220-X**
Assembled	**Part No. 221-X**

- **Full-width shelf 220-X**
  this option makes sense in applications with many thin cables with similar diameters. For a consequent subdivision. Full-width shelves can be inserted at 5 different heights in .20" (5 mm) increments

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.98	(25)	**220-25**	**221-25**	3.54	(90)	**220-90**	**221-90**
1.50	(38)	**220-38**	**221-38**	4.06	(103)	**220-103**	**221-103**
2.24	(57)	**220-57**	**221-57**	4.92	(125)	**220-125**	**221-125**
3.03	(77)	**220-77**	**221-77**				

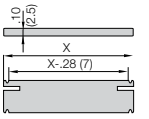


Separator, wide base

Unassembled	**Part No. 276**
Assembled	**Part No. 276**

- **Slotted separator 276**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.

Full-width shelves - for the standard interior separation



Separator, narrow head

Unassembled	**Part No. 2200-X**
Assembled	**Part No. 2210-X**

- **Full-width shelf 2200-X**
  this option makes sense in applications with many thin cables with similar diameters. For a consequent subdivision. Full-width shelves can be inserted at 5 different heights in .20" (5 mm) increments

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.98	(25)	**2200-25**	**2210-25**	3.54	(90)	**2200-90**	**221-90**
1.50	(38)	**2200-38**	**2210-38**	4.06	(103)	**2200-103**	**2210-103**
2.24	(57)	**2200-57**	**2210-57**	4.92	(125)	**2200-125**	**2210-125**
3.03	(77)	**2200-77**	**2210-77**				

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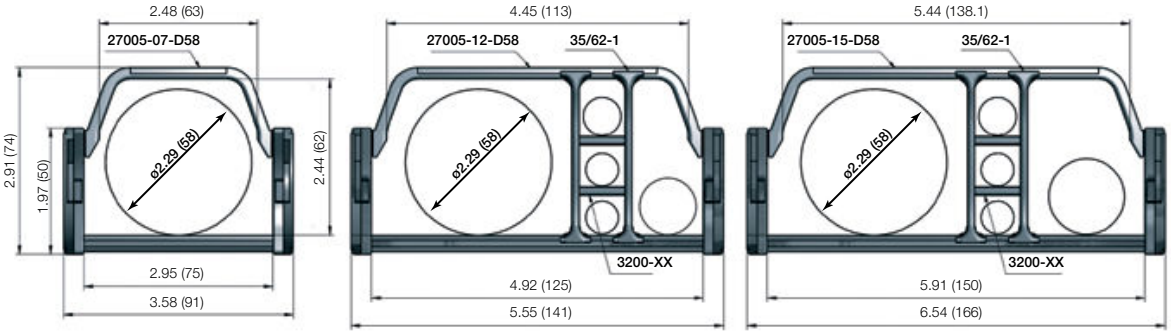
igus®

E-Chain System® E2/000
Series 2650 E-Chain® Half-Tubes
Extender crossbars



Part Number.
Extender crossbars for E-Chains® that snap-open along inner radius

	Bi in. (mm)	*Ba* in. (mm)
2650-07D58-☐-0	2.95 (75)	3.58 (91)
2650-12D58-☐-0	4.92 (125)	5.55 (141)
2650-15D58-☐-0	5.91 (150)	6.54 (166)

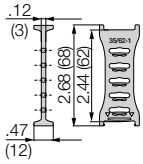
Choose from the radii below for all of the above sizes

Example: 2700-10D58-100-0

Radius (mm)

	100	125	150	175	200	250
R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)

Interior separation for extender crossbars

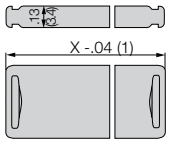


Separator, wide base

Unassembled	**Part No. 35/62-1**
Assembled	**Part No. 35/62-1-1**

- **Standard separator 35/62-1, wide base**
  For maximum locking strength and safe standing. In standard configuration separators are assembled every 2nd E-Chain® link.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	5.91 (150)	**3200-150**	**3210-150**
2.95 (075)	**3200-75**	**3210-75**	6.89 (175)	**3200-175**	**3210-175**
3.94 (100)	**3200-100**	**3210-100**	7.87 (200)	**3200-200**	**3210-200**
4.53 (115)	**3200-115**	**3210-115**	8.86 (225)	**3200-225**	**3210-225**
4.92 (125)	**3200-125**	**3210-125**	9.84 (250)	**3200-250**	**3210-250**

Separator with integrated strain relief

Strain relief separator Part No. 262-Z can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

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Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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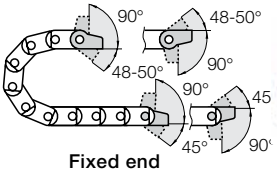
E-Chain System® E2/000
Series 2650/2680 E-Chain® Half-Tubes and Full Tubes
Mounting Bracket - Plastic

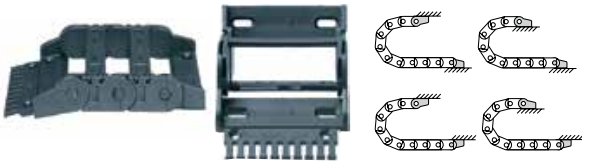
Option 1: pivoting

- For unsupported and gliding applications
- Well suited for tight installation conditions
- Detachable strain relief tiewrap plates
- Can be mounted on the fixed and/or moving end

Moving end
26...3PZB



Fixed end
26...4PZB



Option 2: locking

- For unsupported and gliding applications
- Extreme speed and/or accelerations
- For height restricted applications
- Can be mounted on the fixed and/or moving end

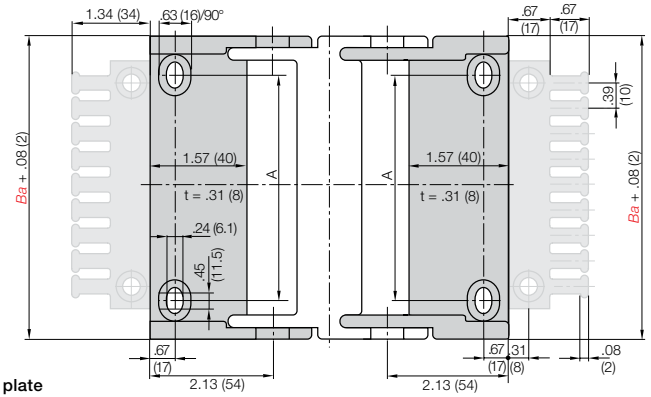
Moving end
26...1PZB

Fixed end
26...2PZB

Part Number Structure

2605- 34 PZB K1

- With 10 cable tiewraps
- With tiewrap plates
- Complete Set
  34 = Pivoting
  12 = Locking
- Mounting brackets for selected chain type



Full set, for both ends:
2605- 34 PZB Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
2605- 3 PZB Mounting bracket **with bore + tiewrap plate**
2605- 4 PZB Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
With Tiewrap Plates
Series 2650:
2605-34PZB

Part No. Full Set (pivoting)
With Tiewrap Plates + 10 cable ties
Series 2650:
2605-34PZBK1

For Chain Type	Part No. Full Set without Tiewrap Plate	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Dimension A in.	(mm)	Number of Teeth
2650/2680-05	2605- ☐ PZ	2605- ☐ PZB	2605- ☐ PZBK1	1.18	(30)	5
2650/2680-06	2606- ☐ PZ	2606- ☐ PZB	2606- ☐ PZBK1	1.77	(45)	5
2650/2680-07	2607- ☐ PZ	2607- ☐ PZB	2607- ☐ PZBK1	2.17	(55)	7
2650/2680-09	2609- ☐ PZ	2609- ☐ PZB	2609- ☐ PZBK1	2.76	(70)	9
2650/2680-10	2610- ☐ PZ	2610- ☐ PZB	2610- ☐ PZBK1	3.15	(80)	10
2650/2680-12	2612- ☐ PZ	2612- ☐ PZB	2612- ☐ PZBK1	4.13	(105)	12
2650/2680-15	2615- ☐ PZ	2615- ☐ PZB	2615- ☐ PZBK1	5.12	(130)	15
2650/2680-17	2617- ☐ PZ	2617- ☐ PZB	2617- ☐ PZBK1	6.10	(155)	17

☐ = 34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 2605- 34 PZB

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E-Chain System® E2/000
Series 2650/2680 E-Chain® Half-Tubes and Full Tubes
Mounting Bracket - KMA

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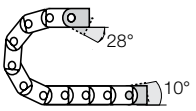
Option 1: pivoting

- For unsupported applications
- Bolted connection outside of chain cross section
- Confined installation conditions
- Attachment points on all sides
- Stackable

Moving end
2650 = 26500...1
2680 = 24800...1

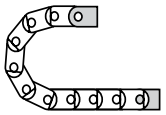


Fixed end
2650 = 26500...2
2680 = 26800...2

Option 2: locking

- For vertical hanging/standing applications
- Bolted connection outside of chain cross section
- For very high speeds and accelerations
- Attachment points on all sides
- Stackable

Moving end
2650 = 24510...1
2680 = 24810...1

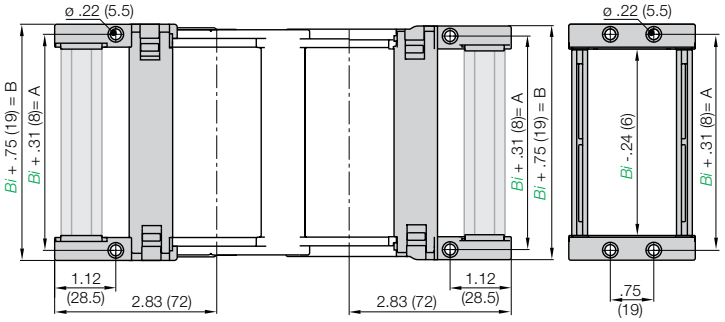


Fixed end
2650 = 24510...2
2680 = 24810...2

Part Number Structure

26500- | 10- | 12 | P

- P: With profile rail
- 12: Complete Set
- 10-: Width
- 26500-: Mounting brackets for selected chain type
  26500 = Pivoting
  26800 = Locking



Full set, for both ends:
26500- 12 P Full set, **each part with pin/bore + profile rail**
Single-part order:
26500- 1 P Mounting bracket **with bore + profile rail**
26500- 2 P Mounting bracket **with pin + profile rail**

Part No. Full Set (pivoting)
With Profile Rail
Series 2650/2680:
26500-Width-12P

Part No. Full Set (pivoting)
Without Profile Rail
Series 2650/2680:
26500-Width-12

For Chain Type	Part No. Full set with Profile Rail	Part No. Full Set without Profile Rail	Dimension A in.	Dimension A (mm)	Dimension B in.	Dimension B (mm)
2650/2680-05	[ ] -05-12P	[ ] -05-12	2.28	(58)	2.72	(69)
2650/2680-06	[ ] -06-12P	[ ] -06-12	2.87	(73)	3.31	(84)
2650/2680-07	[ ] -07-12P	[ ] -07-12	3.27	(83)	3.70	(94)
2650/2680-09	[ ] -09-12P	[ ] -09-12	3.86	(98)	4.29	(109)
2650/2680-10	[ ] -10-12P	[ ] -10-12	4.25	(108)	4.69	(119)
2650/2680-12	[ ] -12-12P	[ ] -12-12	5.24	(133)	5.67	(144)
2650/2680-15	[ ] -15-12P	[ ] -15-12	6.22	(158)	6.65	(169)
2650/2680-17	[ ] -17-12P	[ ] -17-12	7.20	(183)	7.64	(194)

[ ] = 26500 or 26800 / or / 26510 or 26810

For pivoting brackets choose 26500 or 26800
For locking brackets choose 26510 or 26810
Example: 26500 -10-12P

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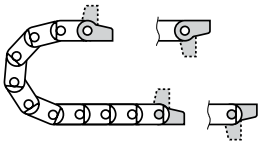
E-Chain System® E2/000
Series 2650/2680 E-Chain® Half-Tubes and Full Tubes
Mounting Bracket - Steel

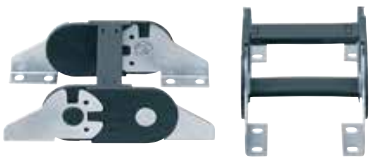
Option 1: Steel

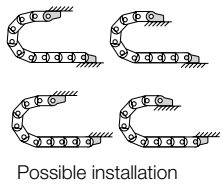
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

Moving end
260...1



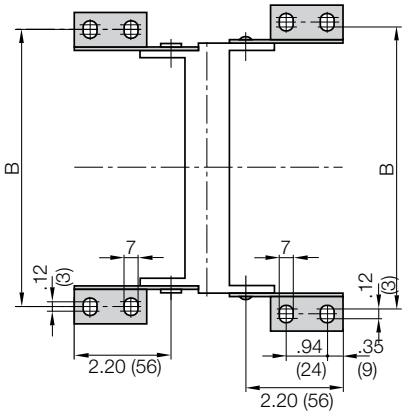
Fixed end
260...2



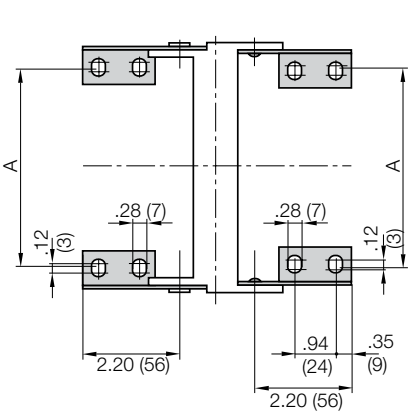


Possible installation configurations -

260-1 260-2*



260-1 260-2



*pivoting with no stop, (360°)

Chain Type	Part No. Full Set	Dimension A in.	(mm)	Dimension B in.	(mm)
2650/2680-05	**260-12**	1.46	(37)	3.27	(83)
2650/2680-06	**260-12**	2.05	(52)	3.86	(98)
2650/2680-07	**260-12**	2.44	(62)	4.25	(108)
2650/2680-09	**260-12**	3.03	(77)	4.84	(123)
2650/2680-10	**260-12**	3.43	(87)	5.24	(133)
2650/2680-12	**260-12**	4.41	(112)	6.22	(158)
2650/2680-15	**260-12**	5.39	(137)	7.20	(183)
2650/2680-17	**260-12**	6.42	(163)	8.23	(209)

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 2650/2680:
260-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right
Series 2650/2680:
260-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right
Series 2650/2680:
260-2

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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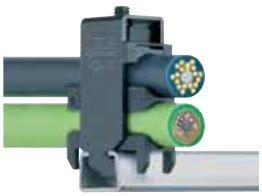
E-Chain System® E2/000
Series 2650/2680 E-Chain® Half-Tubes and Full Tubes
Strain Relief

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

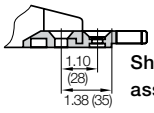
Chainfix Clip

Modular snap-on strain relief device

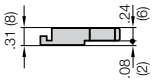
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(04-08)	CFC-08-M	CFC-08-C
.31-.47	(08-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

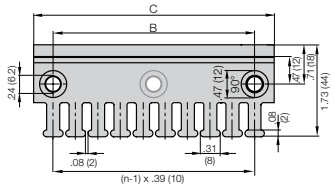


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

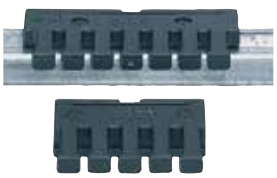
Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



For more information please refer to strain relief section of Chapter 10

Option 2:
Clip-on Tiewrap plates



Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **30XX-Z and ZS** can be also used here. **Details chapter 10**

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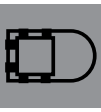
E-Chain System® E2/000
Series 2650/2680 E-Chain® Half-Tubes and Full Tubes

igus®

2650
2680

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



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3400
3500

igus®

E-Chain System® E2/000
Series 3400/3500

1.77 1.77

Price Index

Series 3400/3500

Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94 V2 classifications upon request

Assembly Tips

Snap-open mechanism, choice of snap-open on left or right. Hinged crossbar can be swiveled by more than 180° on both sides. Lightning-fast closing by hand. Secure fit without additional locking devices.

Other Installation Methods

Vertical, hanging ≤ 262 ft (80 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.28 ft (1 m)
Rotary requires further calculation

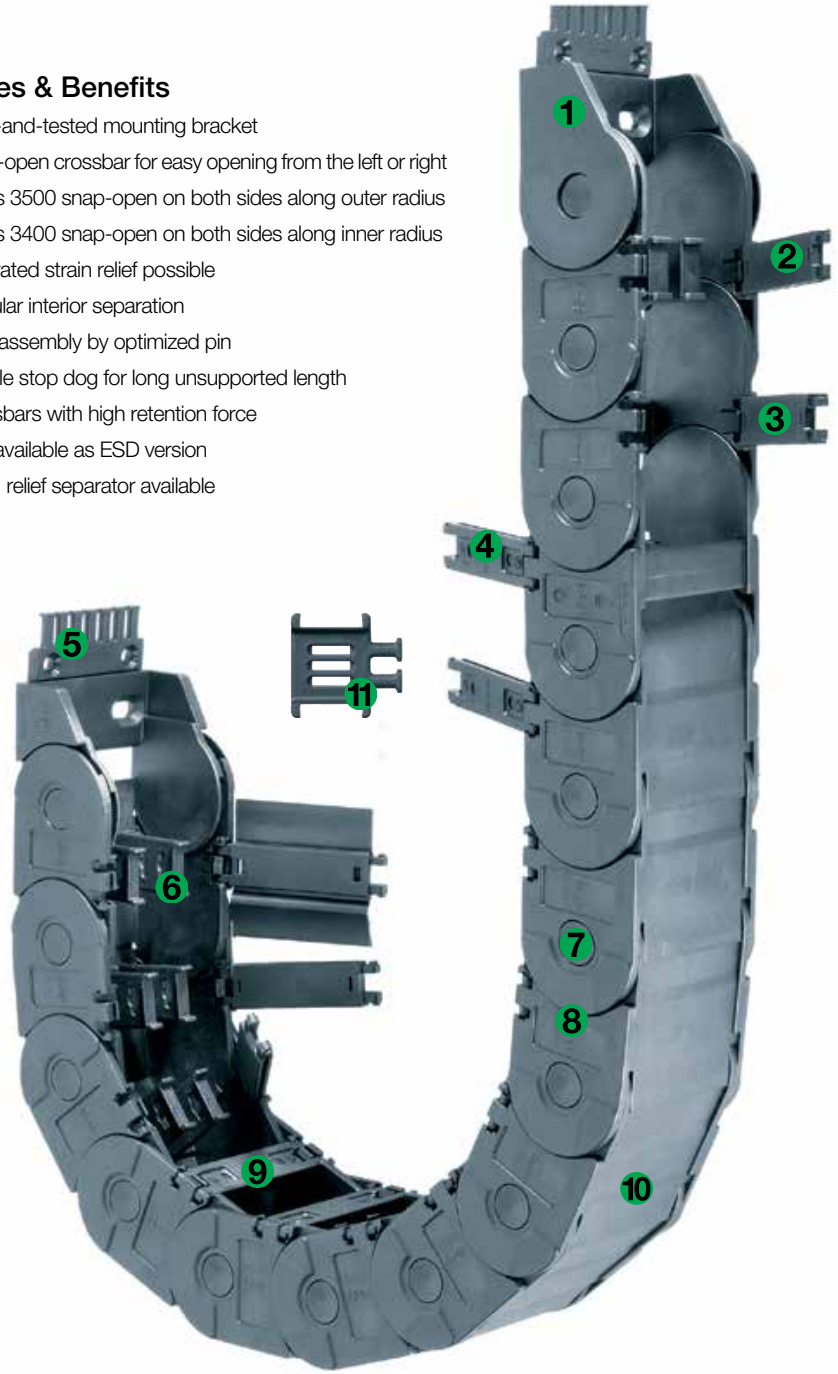
Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required
- If intergrated strain relief at the mounting point is required
- If modular interior separation is needed
- If long service life is required
- If easy installation is required

- If the application is very simple
  ➤ **Series E300 E-Z Chain**
- If greater stability is required
  ➤ **Series E4-42 E4-1 Series**

Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 3500 snap-open on both sides along outer radius
4. Series 3400 snap-open on both sides along inner radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version
11. Strain relief separator available



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

9.84 ft (3 m) **3400-100-100-0**	**E-Chain®**
With 2 separators **45.1.1** assembled every 2nd link	**Interior Separation**
1 Set **3100-34PZB**	**Mounting Bracket**

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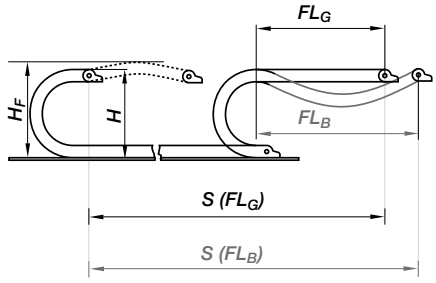
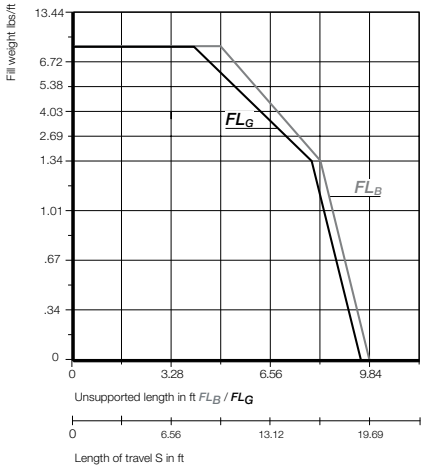
E-Chain System® E2/000
Series 3400/3500
Installation Dimensions

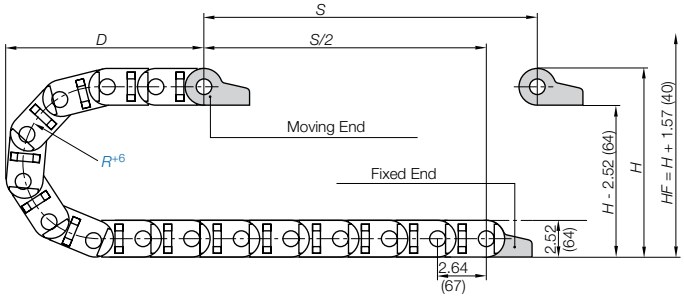
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.64" (67 mm)
Links per ft (m): = 4.57 (15)
For center mount applications:
Chain length = $S/2 + K$

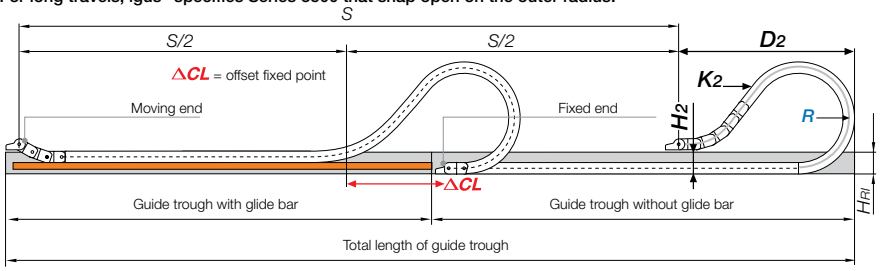
The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.50 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)
H	8.43 (214)	10.39 (264)	12.36 (314)	14.33 (364)	18.27 (464)	22.20 (564)	26.14 (664)
D	8.19 (208)	9.17 (233)	10.16 (258)	11.14 (283)	13.11 (333)	15.08 (383)	17.05 (433)
K	14.57 (370)	17.72 (450)	20.87 (530)	24.02 (610)	30.11 (765)	36.22 (920)	42.52 (1080)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 492 ft. (150 m)
For long travels, igus® specifies Series 3500 that snap open on the outer radius.

For center mount applications:
Chain length: = $S/2 + K_2$



R	1.50 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)
H_2	5.91 (150)	7.87 (200)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)
D_2^{+25}	8.19 (208)	9.17 (233)	18.70 (475)	22.44 (570)	30.71 (780)	39.76 (1010)	45.28 (1150)
K_2	14.57 (370)	17.72 (450)	31.65 (804)	39.57 (1005)	52.76 (1340)	65.94 (1675)	76.50 (1943)
ΔCL	–	–	9.17 (233)	11.93 (303)	18.23 (463)	25.31 (643)	28.86 (733)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain® must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ **Chapter 1**

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igus®

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Series 3400/3500

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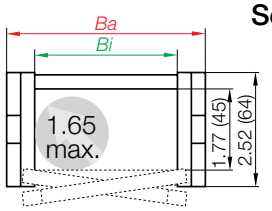
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Series 3400 - snap-open along the inner radius

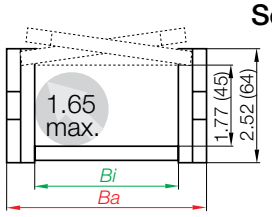


Part Number Structure

3400-100-100-0

- Color - Black
- Bending radius
- Width
- Series

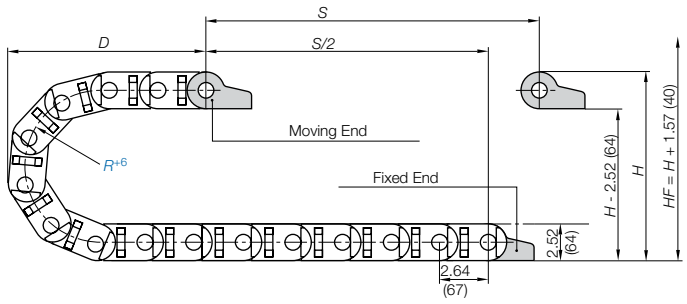
Series 3500 - snap-open along the outer radius



Part Number Structure

3500-100-100-0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius.
Example: 3500-100-100-0
Pitch: 264 in. (67 mm) per link links/ft(m) = 4.57 (15)

Part Number. Snap-open inner radius	Snap-open outer radius	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
3400-050-□-0	3500-050-□-0	1.97 (50)	2.76 (70)	≈ 1.07 (1.60)
3400-075-□-0	3500-075-□-0	2.95 (75)	3.74 (95)	≈ 1.20 (1.78)
3400-100-□-0	3500-100-□-0	3.94 (100)	4.72 (120)	≈ 1.30 (1.93)
3400-115-□-0	3500-115-□-0	4.53 (115)	5.31 (135)	≈ 1.34 (1.99)
3400-125-□-0	3500-125-□-0	4.92 (125)	5.71 (145)	≈ 1.36 (2.03)
3400-150-□-0	3500-150-□-0	5.91 (150)	6.69 (170)	≈ 1.46 (2.17)
3400-175-□-0	3500-175-□-0	6.89 (175)	7.68 (195)	≈ 1.53 (2.28)
3400-200-□-0	3500-200-□-0	7.87 (200)	8.66 (220)	≈ 1.65 (2.45)
3400-225-□-0	3500-225-□-0	8.86 (225)	9.65 (245)	≈ 1.74 (2.59)
3400-250-□-0	3500-250-□-0	9.84 (250)	10.63 (270)	≈ 1.83 (2.73)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 3500-100-100-0

	075	100	125	150	200	250	300
R	1.50 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)
H	8.43 (214)	10.39 (264)	12.36 (314)	14.33 (364)	18.27 (464)	22.20 (564)	26.14 (664)
D	8.19 (208)	9.17 (233)	10.16 (258)	11.14 (283)	13.11 (333)	15.08 (383)	17.05 (433)
K	14.57 (370)	17.72 (450)	20.87 (530)	24.02 (610)	30.11 (765)	36.22 (920)	42.52 (1080)

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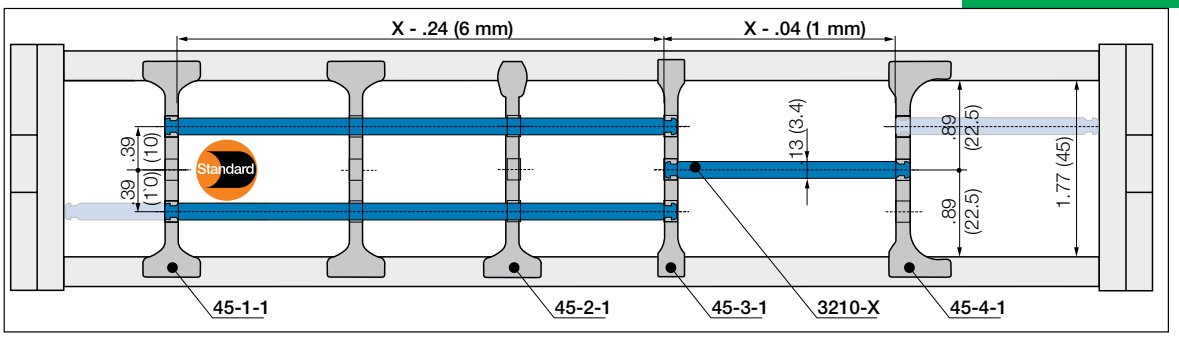
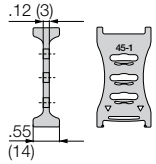
E-Chain System® E2/000
Series 3400/3500
Interior Separation



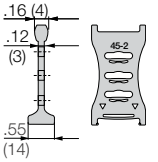
In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 45.1**
Assembled	**Part No. 45.1.1**

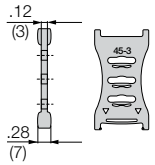
- **Standard separator 45.1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator, narrow head

Unassembled	**Part No. 45.2**
Assembled	**Part No. 45.2.1**

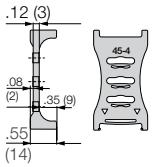
- **Separator 45.2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 45-3**
Assembled	**Part No. 45.3.1**

- **Separator 45.3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

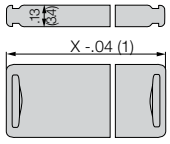


Separator, asymmetrical

Unassembled	**Part No. 45.4**
Assembled	**Part No. 45.4.1**

- **Separator 45.4**
  For side mounted applications
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	5.91 (150)	**3200-150**	**3210-150**
2.95 (075)	**3200-75**	**3210-75**	6.89 (175)	**3200-175**	**3210-175**
3.94 (100)	**3200-100**	**3210-100**	7.87 (200)	**3200-200**	**3210-200**
4.53 (115)	**3200-115**	**3210-115**	8.86 (225)	**3200-225**	**3210-225**
4.92 (125)	**3200-125**	**3210-125**	9.84 (250)	**3200-250**	**3210-250**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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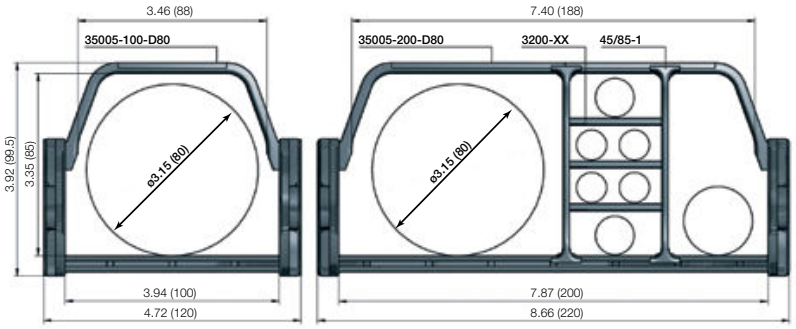
E-Chain System® E2/000
Series 3400/3500
Extender crossbars



Part Number.

Extender crossbars for E-Chains® that snap-open along **inner** radius	Extender crossbars for E-Chains® that snap-open along **outer** radius	*Bi* in. (mm)	*Ba* in. (mm)
3400-100D80-[ ]-0	3500-100D80-[ ]-0	2.95 (100)	3.58 (120)
3400-200D80-[ ]-0	3400-200D80-[ ]-0	4.92 (200)	5.55 (220)

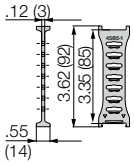
Choose from the radii below for all of the above sizes

Radius (mm) Example: 2700-10D58-[100]-0

	075*	100*	125	150	200	250	300
R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)

*Radius 075 and 100 are only available for Series 3500 E-Chains®

Interior separation for extender crossbars

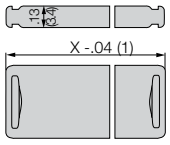


Separator, wide base

Unassembled	**Part No. 45/85.1**
Assembled	**Part No. 45/85.1.1**

- **Standard separator 45/85.1, wide base**
  For maximum locking strength and safe standing. In standard configuration separators are assembled every 2nd E-Chain® link.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	5.91 (150)	**3200-150**	**3210-150**
2.95 (075)	**3200-75**	**3210-75**	6.89 (175)	**3200-175**	**3210-175**
3.94 (100)	**3200-100**	**3210-100**	7.87 (200)	**3200-200**	**3210-200**
4.53 (115)	**3200-115**	**3210-115**	8.86 (225)	**3200-225**	**3210-225**
4.92 (125)	**3200-125**	**3210-125**	9.84 (250)	**3200-250**	**3210-250**

Separator with integrated strain relief

Strain relief separator Part No. 301-Z can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E2/000
Series 3400/3500
Mounting Bracket - Plastic

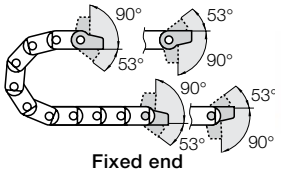
igus®

3400
3500

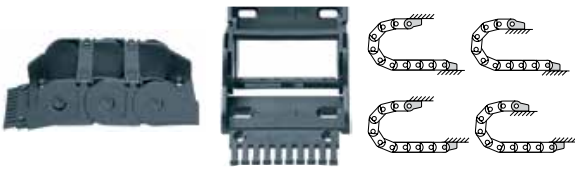
Option 1: pivoting

- For unsupported and gliding applications
- Well suited for tight installation conditions
- Detachable strain relief tiewrap plates
- Can be mounted on the fixed and/or moving end

Moving end
3...3PZB



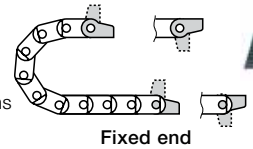
Fixed end
3...4PZB



Option 2: locking

- For unsupported and gliding applications
- Extreme speed and/or accelerations
- For height restricted applications
- Can be mounted on the fixed and/or moving end

Moving end
3...1PZB

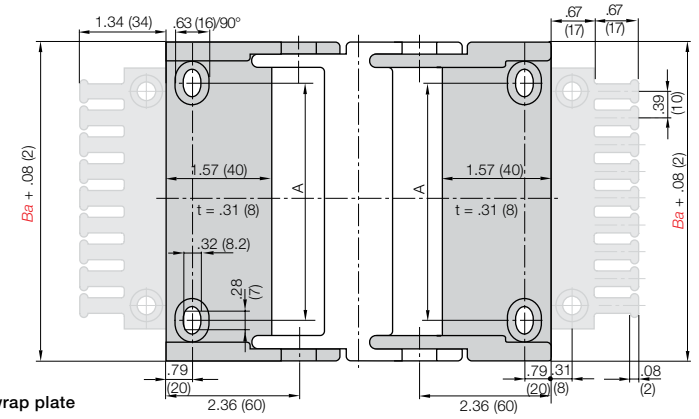


Fixed end
3...2PZB

Part Number Structure

3075- | 34 | PZB | K1

- With 10 cable tiewraps
- With tiewrap plates
- Complete Set
  34 = Pivoting
  12 = Locking
- Mounting brackets for selected chain type



Full set, for both ends:
3075- | 34 | PZB Full set, **each part with pin/bore + tiewrap plate**

Single-part order:
3075- | 3 | PZB Mounting bracket **with bore + tiewrap plate**
3075- | 4 | PZB Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
Without Tiewrap Plates
Series 3400:
3075-34PZ

Part No. Full Set (pivoting)
With Tiewrap Plates
Series 3400:
3075-34PZB

Part No. Full Set (pivoting)
With Tiewrap Plates + 10 cable ties
Series 3400:
3075-34PZBK1

For Chain Type	Part No. Full Set without Tiewrap Plate	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Dimension A in.	(mm)	Number of Teeth
3400/3500-050	3075- ☐ PZ	3075- ☐ PZB	3075- ☐ PZBK1	2.09	(28)	5
3400/3500-075	3075- ☐ PZ	3075- ☐ PZB	3075- ☐ PZBK1	2.09	(53)	7
3400/3500-100	3100- ☐ PZ	3100- ☐ PZB	3100- ☐ PZBK1	3.07	(78)	10
3400/3500-115	3115- ☐ PZ	3115- ☐ PZB	3115- ☐ PZBK1	3.66	(93)	11
3400/3500-125	3125- ☐ PZ	3125 ☐ PZB	3125 ☐ PZBK1	4.06	(103)	12
3400/3500-150	3150- ☐ PZ	3150- ☐ PZB	3150- ☐ PZBK1	5.04	(128)	15
3400/3500-175	3175- ☐ PZ	3175- ☐ PZB	3175- ☐ PZBK1	6.02	(153)	17
3400/3500-200	3200- ☐ PZ	3200- ☐ PZB	3200- ☐ PZBK1	7.01	(178)	20
3400/3500-225	3225- ☐ PZ	3225- ☐ PZB	3225- ☐ PZBK1	7.99	(203)	22
3400/3500-250	3250- ☐ PZ	3250- ☐ PZB	3250- ☐ PZBK1	8.98	(228)	25

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 3075- 34 PZB

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E2/000
Series 3400/3500
Mounting Bracket - KMA

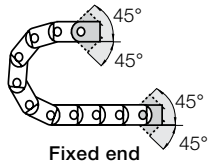
Telephone 1-800-521-2747
Fax 1-401-438-7270

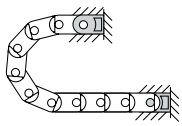
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Option 1: pivoting

- For unsupported applications
- Bolted connection outside of chain cross section
- Confined installation conditions
- Attachment points on all sides
- Stackable

Moving end
34800...1



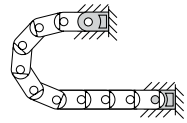


Fixed end
34800...2

Option 2: locking

- For vertical hanging/standing applications
- Bolted connection outside of chain cross section
- For very high speeds and accelerations
- Attachment points on all sides
- Stackable

Moving end
34810...1

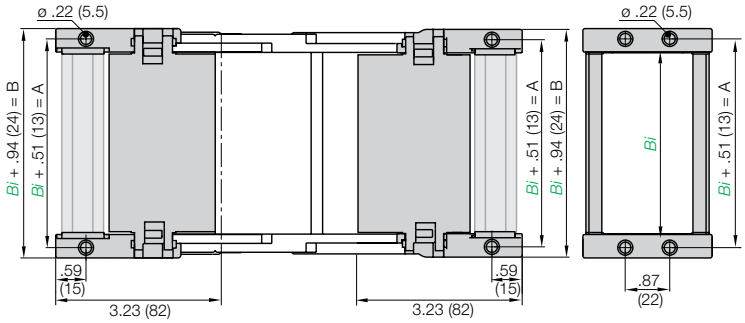


Fixed end
34810...2

Part Number Structure

34800- 075- 12 P

- With profile rail
- Complete Set
- Width
- Mounting brackets for selected chain type
  34800 = Pivoting
  34810 = Locking



Full set, for both ends:
34800- 12 P Full set, **each part with pin/bore + profile rail**
Single-part order:
34800- 1 P Mounting bracket **with bore + profile rail**
34800- 2 P Mounting bracket **with pin + profile rail**

Part No. Full Set (pivoting)
With Profile Rail
Series 3480:
34800-Width-12P

Part No. Full Set (pivoting)
Without Profile Rail
Series 3480:
34800-Width-12

For Chain Type	Part No. Full set with Profile Rail	Part No. Full Set without Profile Rail	Dimension A in.	Dimension A (mm)	Dimension B in.	Dimension B (mm)
3480-075	[ ] -075-12P	[ ] -075-12	3.46	(88)	3.90	(99)
3480-100	[ ] -100-12P	[ ] -100-12	4.45	(113)	4.88	(124)
3480-115	[ ] -115-12P	[ ] -115-12	5.04	(128)	5.47	(139)
3480-150	[ ] -150-12P	[ ] -150-12	6.42	(163)	6.85	(174)
3480-175	[ ] -175-12P	[ ] -175-12	7.40	(188)	7.83	(199)

[34800] or [34810]

For pivoting brackets choose [34800]
For locking brackets choose [34810]
Example: [34800] -075-12P

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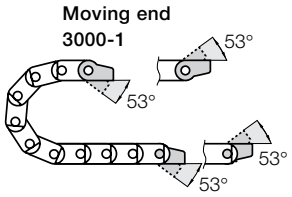
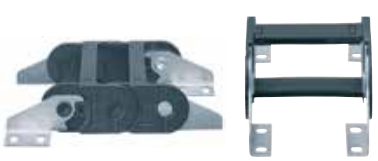
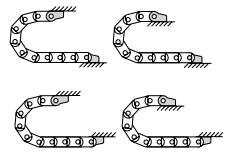
E-Chain System® E2/000
Series 3400/3500
Mounting Bracket - Steel

Option 1: Steel

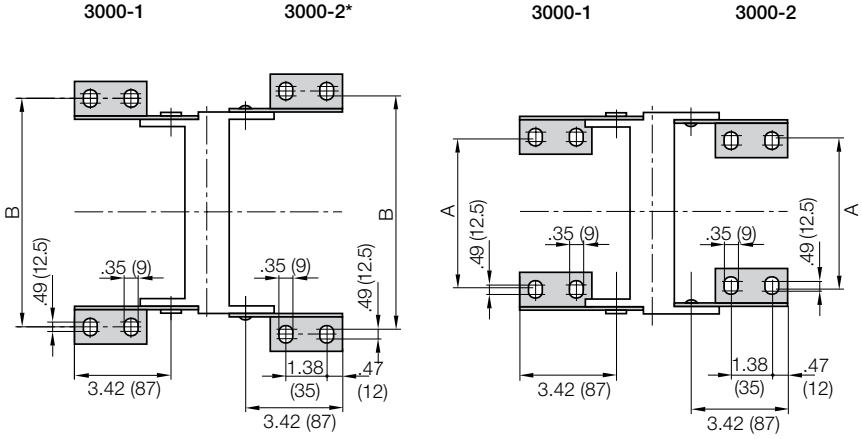
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible







Possible installation configurations -



*pivoting with no stop, (360°)

Chain Type	Part No. Full Set	Dimension A in.	(mm)	Dimension B in.	(mm)	in.	(mm)
3480-075	**3000-12**	2.09	(53)	4.37	(111)	4.80	(122)
3480-100	**3000-12**	3.07	(78)	5.35	(136)	5.79	(147)
3480-115	**3000-12**	3.66	(93)	5.94	(151)	6.38	(162)
3480-150	**3000-12**	5.04	(128)	7.32	(186)	7.76	(197)
3480-175	**3000-12**	6.02	(153)	8.35	(212)	8.82	(224)

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 3480:
3000-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right
Series 3480:
3000-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right
Series 3480:
3000-2

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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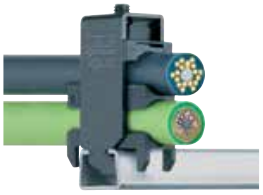
E-Chain System® E2/000
Series 3400/3500
Strain Relief

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

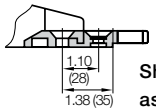
Chainfix Clip

Modular snap-on strain relief device

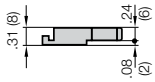
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(04-08)	CFC-08-M	CFC-08-C
.31-.47	(08-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

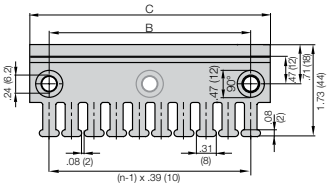


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



For more information please refer to strain relief section of Chapter 10

Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **30XX-Z and ZS** can be also used here. **Details chapter 10**

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E-Chain System® E2/000
Series 3400/3500
Guide Troughs

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part Number 93-30
- 1/2 travel length of glide bars
  Part number 93-01
- Installation sets as end connectors
  Part Number 93-50 -XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bar

= 25 sections of 6.56 ft (2 m) guide trough

Part No. 93-30

= 13 sections of 6.56 ft (2 m) glide bar

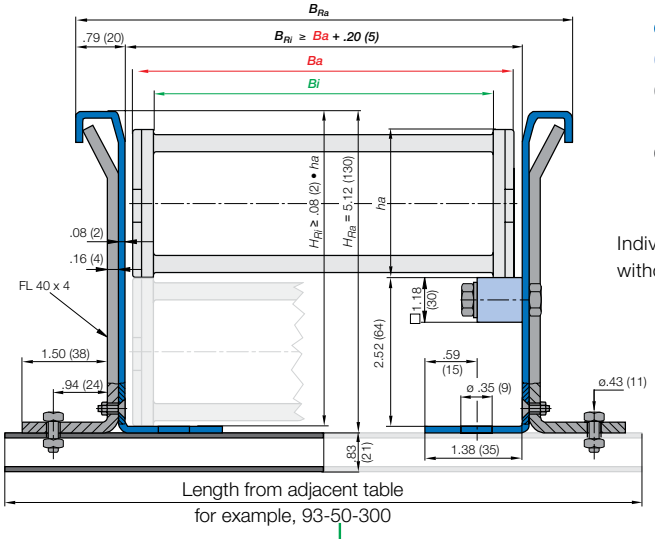
Part No. 93-01

Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
Example: 93-50-300 for 15.75" (400 mm) long profile rail.

Example:
Width of Crossbar
3500-**075**-200-0

	B_{Ri}	Installation Part No.
-050	2.95 (75)	**93-50-200**
-075	3.94 (100)	**93-50-225**
-100	4.92 (125)	**93-50-250**
-115	5.51 (140)	**93-50-250**
-125	5.91 (150)	**93-50-275**
-150	6.89 (175)	**93-50-300**
-175	7.87 (200)	**93-50-325**
-200	8.86 (225)	**93-50-350**
-225	9.84 (250)	**93-50-375**
-250	10.83 (275)	**93-50-400**

Standard length profile rail



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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3450
3480

igus®

E-Chain System® E2/000
Series 3450/3480 E-Chain®
Half-Tubes and Full Tubes

1.77 1.77

Price Index

Series 3450/3480

Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

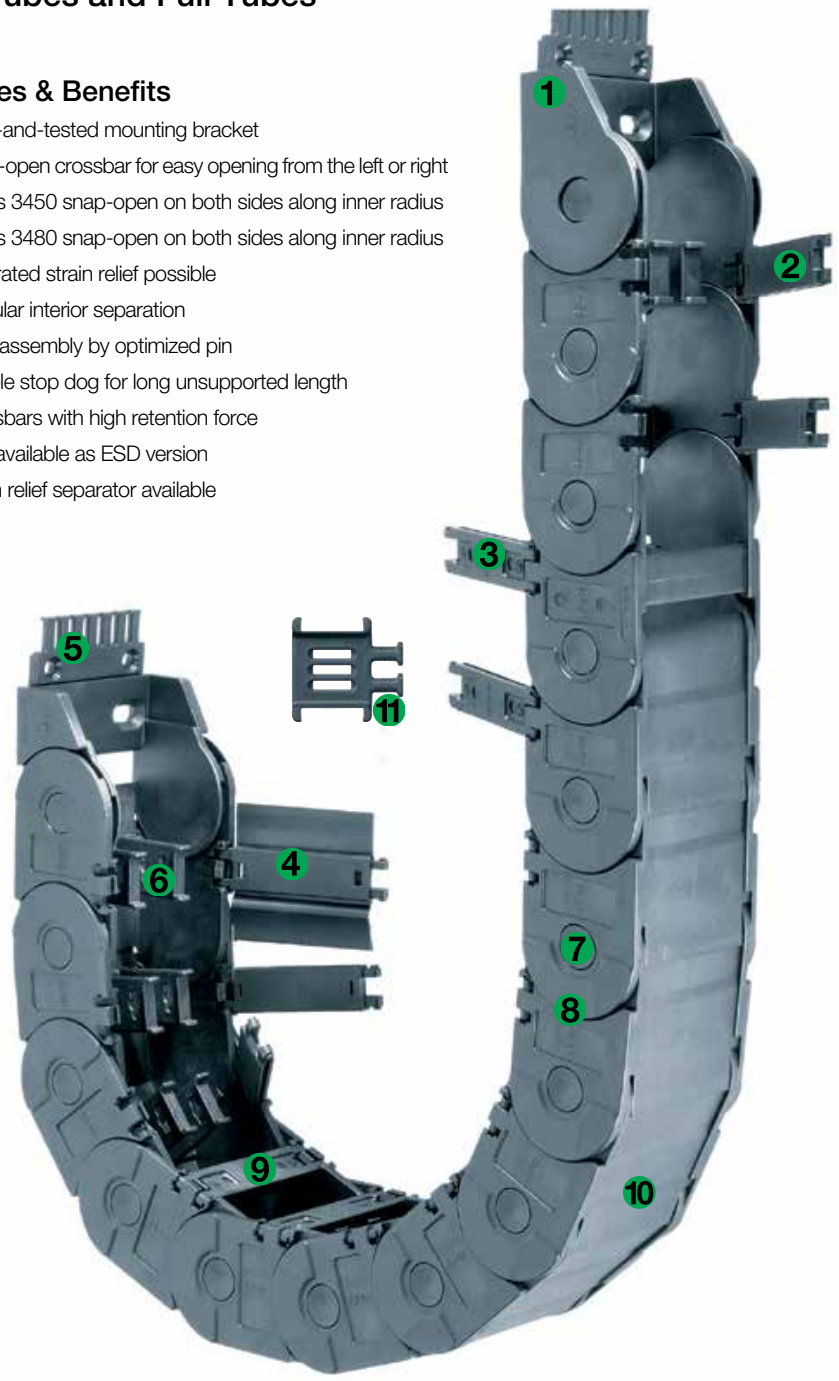
UL94 V2 classifications upon request

Assembly Tips

Insert screwdriver into the slot, using a lever action apply pressure to the screw-driver to release

Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 3450 snap-open on both sides along inner radius
4. Series 3480 snap-open on both sides along inner radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version
11. Strain relief separator available



Other Installation Methods

Vertical, hanging ≤ 262 ft (80 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.28 ft (1 m)
Rotary requires further calculation

Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required
- If intergrated strain relief at the mounting point is required
- If modular interior separation is needed
- If long service life is required
- If easy installation is required

- If the application is very simple
  ➤ **Series E300 E-Z Chain**
- If greater stability is required
  ➤ **Series E4-42 E4-1 Series**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

9.84 ft (3 m) **3450-100-125-0**	**E-Chain®**
With 2 separators **45.1.1** assembled every 2nd link	**Interior Separation**
1 Set **3125-34PZB**	**Mounting Bracket**

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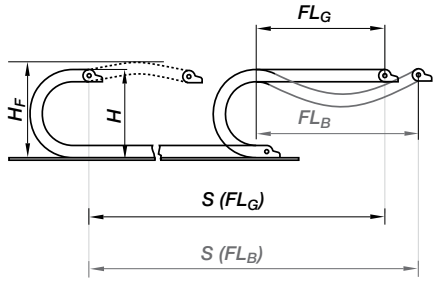
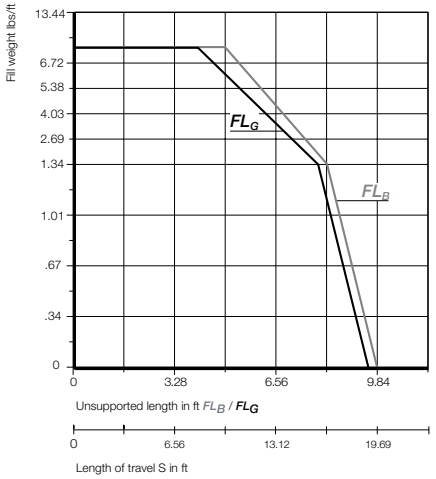
E-Chain System® E2/000
Series 3450/3480 E-Chain® Half-Tubes and Full Tubes
Installation Dimensions

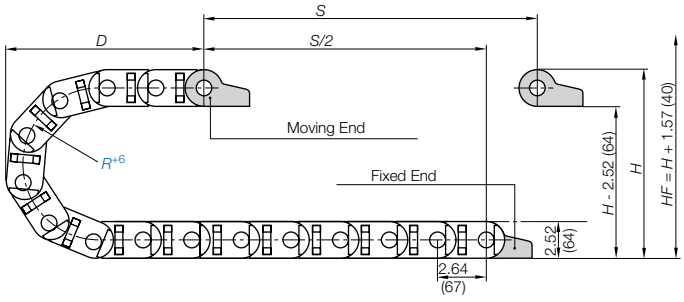
Short travel, unsupported length

- ● FL_B = unsupported with permitted sag
- ● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.64" (67 mm)
Links per ft (m): = 4.57 (15)
For center mount applications:
Chain length = $^{S}/_{2}$ + K

The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.95 (075*)	3.94 (100*)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)
H	8.42 (214)	10.39 (264)	12.36 (314)	14.33 (364)	18.27 (464)	22.20 (564)	26.14 (664)
D	8.19 (208)	9.17 (233)	10.16 (258)	11.14 (283)	13.11 (333)	15.08 (383)	17.05 (433)
K	14.57 (370)	17.72 (450)	20.87 (530)	24.02 (610)	30.11 (765)	36.22 (920)	42.52 (1080)

* Radius available upon request, please consult igus® for delivery time
Radii 075, 100: the E-Tube is not completely enclosed. Please consult igus®
Before using Series 3450/3480 on long travels please consult igus®.

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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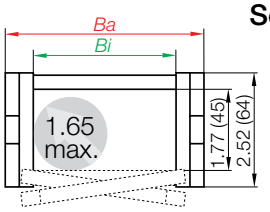
igus®

E-Chain System® E2/000
Series 3450/3480 E-Chain® Half-Tubes and Full Tubes

Telephone 1-800-521-2747
Fax 1-401-438-7270

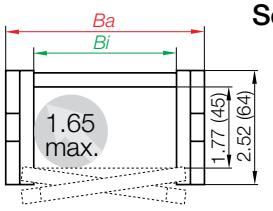
Series 3450 - snap-open along the inner radius, closed along the outer



Part Number Structure

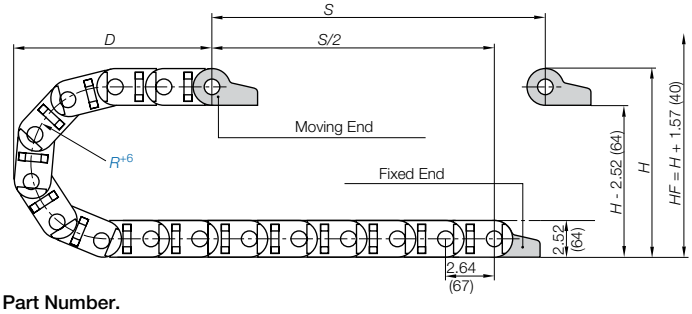
3450	100-	125-	0
Series	Width	Bending radius	Color - Black

Series 3480 - snap-open along the inner radius, fully enclosed



Part Number Structure

3480-	100-	125-	0
Series	Width	Bending radius	Color - Black



Supplement part number with required radius.
Example: 3450-100-125-0
Pitch: 264 in. (67 mm) per link links/ft(m) = 4.57 (15)

Part Number. Snap-open inner radius	Part Number. Snap-open outer radius	Bi in. (mm)	Ba in. (mm)	Weight 3450 lbs/ft (kg/m)	Weight 3480 lbs/ft (kg/m)
3450-050-□-0	3480-050-□-0	1.97 (50)	2.76 (70)	≈ 1.19 (1.77)	≈ 1.32 (1.96)
3450-075-□-0	3480-075-□-0	2.95 (75)	3.74 (95)	≈ 1.31 (1.95)	≈ 1.39 (2.07)
3450-100-□-0	3480-100-□-0	3.94 (100)	4.72 (120)	≈ 1.44 (2.15)	≈ 1.55 (2.30)
3450-115-□-0	3480-115-□-0	4.53 (115)	5.31 (135)	≈ 1.55 (2.30)	≈ 1.65 (2.46)
3450-125-□-0	3480-125-□-0	4.92 (125)	5.71 (145)	≈ 1.63 (2.42)	≈ 1.67 (2.49)
3450-150-□-0	3480-150-□-0	5.91 (150)	6.69 (170)	≈ 1.75 (2.60)	≈ 1.76 (2.62)
3450-175-□-0	3480-175-□-0	6.89 (175)	7.68 (195)	≈ 1.84 (2.75)	≈ 1.88 (2.80)
3450-200-□-0	3480-200-□-0	7.87 (200)	8.66 (220)	≈ 1.95 (2.90)	≈ 1.98 (2.94)
3450-225-□-0	3480-225-□-0	8.86 (225)	9.65 (245)	≈ 2.12 (3.15)	≈ 2.10 (3.12)
3450-250-□-0	3480-250-□-0	9.84 (250)	10.63 (270)	≈ 2.22 (3.30)	≈ 2.20 (3.28)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 3450-100-125-0

	075*	100*	200	250	300	250	300
R	2.95 (075*)	3.94 (100*)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)
H	8.42 (214)	10.39 (264)	12.36 (314)	14.33 (364)	18.27 (464)	22.20 (564)	26.14 (664)
D	8.19 (208)	9.17 (233)	10.16 (258)	11.14 (283)	13.11 (333)	15.08 (383)	17.05 (433)
K	14.57 (370)	17.72 (450)	20.87 (530)	24.02 (610)	30.11 (765)	36.22 (920)	42.52 (1080)

* Radius available upon request, please consult igus® for delivery time
Radii 075, 100: the E-Tube is not completely enclosed. Please consult igus®

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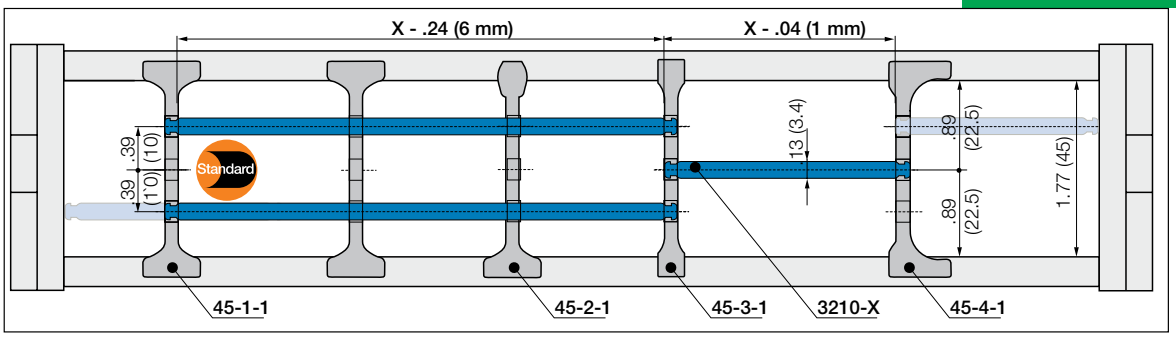
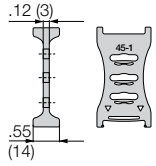
E-Chain System® E2/000
Series 3450/3480 E-Chain® Half-Tubes and Full Tubes
Interior Separation



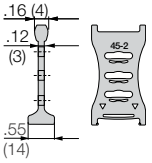
In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 45.1**
Assembled	**Part No. 45.1.1**

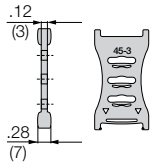
- **Standard separator 45.1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator, narrow head

Unassembled	**Part No. 45.2**
Assembled	**Part No. 45.2.1**

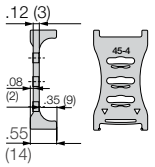
- **Separator 45.2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 45.3**
Assembled	**Part No. 45.3.1**

- **Separator 45.3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

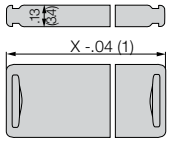


Separator, asymmetrical

Unassembled	**Part No. 45.4**
Assembled	**Part No. 45.4.1**

- **Separator 45.4**
  For side mounted applications
  is used when vertical and horizontal separation is required.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-050**	**3210-050**	5.91 (150)	**3200-150**	**3210-150**
2.95 (075)	**3200-075**	**3210-075**	6.89 (175)	**3200-175**	**3210-175**
3.94 (100)	**3200-100**	**3210-100**	7.87 (200)	**3200-200**	**3210-200**
4.53 (115)	**3200-115**	**3210-115**	8.86 (225)	**3200-225**	**3210-225**
4.92 (125)	**3200-125**	**3210-125**	9.84 (250)	**3200-250**	**3210-250**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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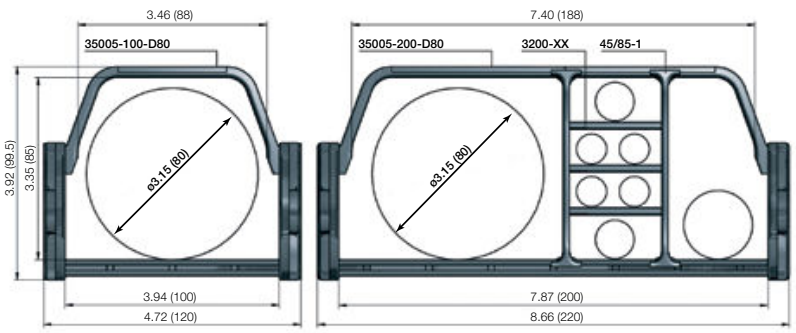
E-Chain System® E2/000
Series 3450 E-Chain® Half-Tubes
Extender crossbars



Part Number.
Extender crossbars
for E-Chains®
that snap-open
along **inner** radius

		Bi in. (mm)	*Ba* in. (mm)
3450-100D80- ☐	-0	2.95 (100)	3.58 (120)
3450-200D80- ☐	-0	4.92 (200)	5.55 (220)

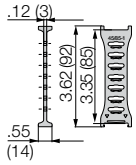
Choose from the radii below for all of the above sizes

Radius (mm) Example: 3450-100D80- 100 -0

125	150	200	250	300
R 4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)

*Extender crossbars are only available for Series 3450 E-Chains®

Interior separation for extender crossbars

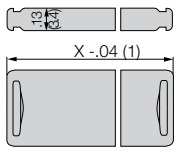


Separator, wide base

Unassembled	**Part No. 45/85.1**
Assembled	**Part No. 45/85.1.1**

- **Standard separator 45/85.1, wide base**
  For maximum locking strength and safe standing. In standard configuration separators are assembled every 2nd E-Chain® link.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-050**	**3210-050**	5.91 (150)	**3200-150**	**3210-150**
2.95 (075)	**3200-075**	**3210-075**	6.89 (175)	**3200-175**	**3210-175**
3.94 (100)	**3200-100**	**3210-100**	7.87 (200)	**3200-200**	**3210-200**
4.53 (115)	**3200-115**	**3210-115**	8.86 (225)	**3200-225**	**3210-225**
4.92 (125)	**3200-125**	**3210-125**	9.84 (250)	**3200-250**	**3210-250**

Separator with integrated strain relief

Strain relief separator Part No. 34501-Z can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

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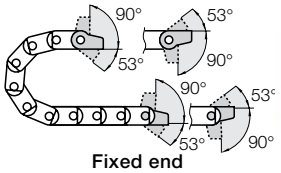
E-Chain System® E2/000
Series 3450/3480 E-Chain® Half-Tubes and Full Tubes
Mounting Bracket - Plastic

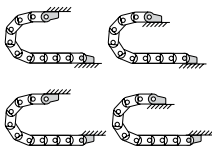
Option 1: pivoting

- For unsupported and gliding applications
- Well suited for tight installation conditions
- Detachable strain relief tiewrap plates
- Can be mounted on the fixed and/or moving end

Moving end
3...3PZB



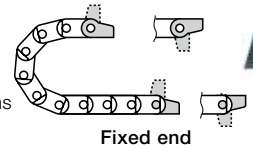
Fixed end
3...4PZB

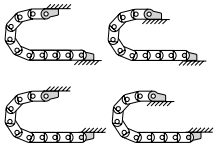


Option 2: locking

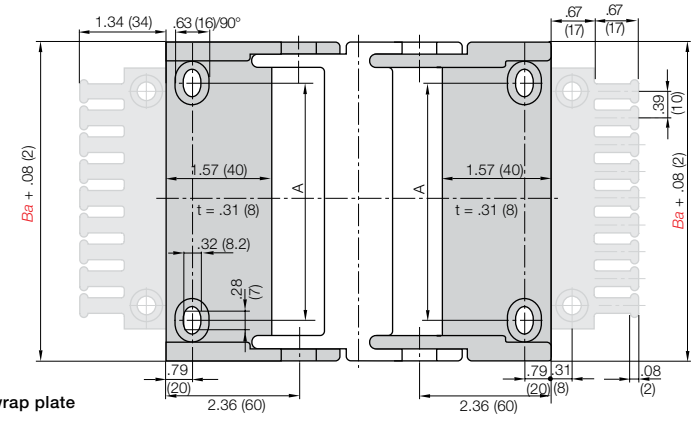
- For unsupported and gliding applications
- Extreme speed and/or accelerations
- For height restricted applications
- Can be mounted on the fixed and/or moving end

Moving end
3...1PZB

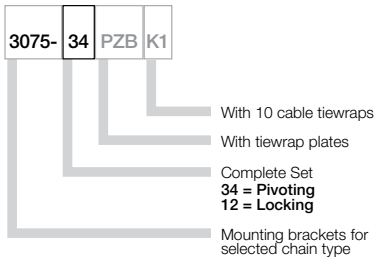




Fixed end
3...2PZB



Part Number Structure



Full set, for both ends:
3075- 34 PZB Full set, **each part with pin/bore + tiewrap plate**

Single-part order:
3075- 3 PZB Mounting bracket **with bore + tiewrap plate**
3075- 4 PZB Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
Without Tiewrap Plates
Series 3450:
3075-34PZ

Part No. Full Set (pivoting)
With Tiewrap Plates
Series 3450:
3075-34PZB

Part No. Full Set (pivoting)
With Tiewrap Plates + 10 cable ties
Series 3450:
3075-34PZBK1

For Chain Type	Part No. Full Set without Tiewrap Plate	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Dimension A in.	(mm)	Number of Teeth
3450/3480-050	3075- ☐ PZ	3075- ☐ PZB	3075- ☐ PZBK1	2.09	(28)	5
3450/3480-075	3075- ☐ PZ	3075- ☐ PZB	3075- ☐ PZBK1	2.09	(53)	7
3450/3480-100	3100- ☐ PZ	3100- ☐ PZB	3100- ☐ PZBK1	3.07	(78)	10
3450/3480-115	3115- ☐ PZ	3115- ☐ PZB	3115- ☐ PZBK1	3.66	(93)	11
3450/3480-125	3125- ☐ PZ	3125 ☐ PZB	3125 ☐ PZBK1	4.06	(103)	12
3450/3480-150	3150- ☐ PZ	3150- ☐ PZB	3150- ☐ PZBK1	5.04	(128)	15
3450/3480-175	3175- ☐ PZ	3175- ☐ PZB	3175- ☐ PZBK1	6.02	(153)	17
3450/3480-200	3200- ☐ PZ	3200- ☐ PZB	3200- ☐ PZBK1	7.01	(178)	20
3450/3480-225	3225- ☐ PZ	3225- ☐ PZB	3225- ☐ PZBK1	7.99	(203)	22
3450/3480-250	3250- ☐ PZ	3250- ☐ PZB	3250- ☐ PZBK1	8.98	(228)	25

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 3075- 34 PZB

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E-Chain System® E2/000
Series 3450/3480 E-Chain® Half-Tubes and Full Tubes
Mounting Bracket - KMA

Option 1: pivoting

- For unsupported applications
- Bolted connection outside of chain cross section
- Confined installation conditions
- Attachment points on all sides
- Stackable

Moving end
34800...1

Fixed end
34800...2

Option 2: locking

- For vertical hanging/standing applications
- Bolted connection outside of chain cross section
- For very high speeds and accelerations
- Attachment points on all sides
- Stackable

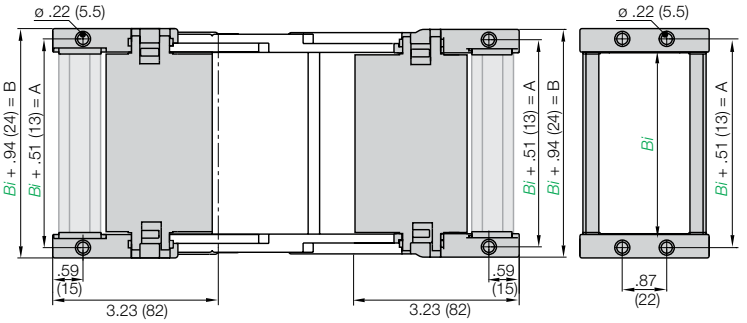
Moving end
34810...1

Fixed end
34810...2

Part Number Structure

34800- | 075- | 12 | P

- With profile rail
- Complete Set
- Width
- Mounting brackets for selected chain type
  34800 = Pivoting
  34810 = Locking



Full set, for both ends:
34800- 12 P Full set, **each part with pin/bore + profile rail**
Single-part order:
34800- 1 P Mounting bracket **with bore + profile rail**
34800- 2 P Mounting bracket **with pin + profile rail**

Part No. Full Set (pivoting)
With Profile Rail
Series 3480:
34800-Width-12P

Part No. Full Set (pivoting)
Without Profile Rail
Series 3480:
34800-Width-12

For Chain Type	Part No. Full set with Profile Rail	Part No. Full Set without Profile Rail	Dimension A in.	Dimension A (mm)	Dimension B in.	Dimension B (mm)
3450/3480-050	[ ] -050-12P	[ ] -050-12	2.48	(63)	2.91	(74)
3450/3480-075	[ ] -075-12P	[ ] -075-12	3.46	(88)	3.90	(99)
3450/3480-100	[ ] -100-12P	[ ] -100-12	4.45	(113)	4.88	(124)
3450/3480-115	[ ] -115-12P	[ ] -115-12	5.04	(128)	5.47	(139)
3450/3480-125	[ ] -125-12P	[ ] -125-12	5.43	(138)	5.87	(149)
3450/3480-150	[ ] -150-12P	[ ] -150-12	6.42	(163)	6.85	(174)
3450/3480-175	[ ] -175-12P	[ ] -175-12	7.40	(188)	7.83	(199)
3450/3480-200	[ ] -200-12P	[ ] -200-12	8.38	(213)	8.82	(224)
3450/3480-225	[ ] -225-12P	[ ] -225-12	9.37	(238)	9.80	(249)
3450/3480-250	[ ] -250-12P	[ ] -250-12	10.35	(263)	10.79	(274)

[34800] or [34810]

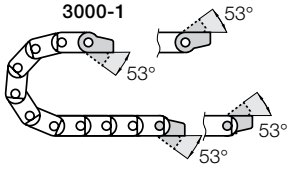
For pivoting brackets choose [34800]
For locking brackets choose [34810]
Example: [34800] -075-12P

E-Chain System® E2/000
Series 3450/3480 E-Chain® Half-Tubes and Full Tubes
Mounting Bracket - Steel

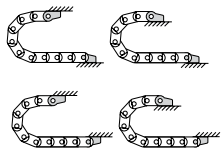
Option 1: Steel

- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

Moving end
3000-1

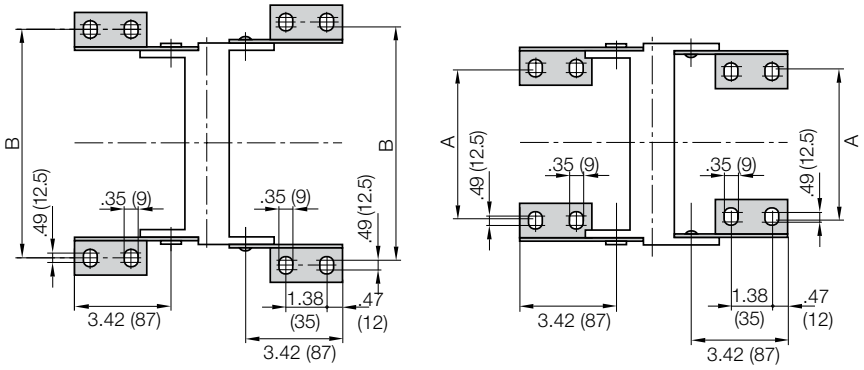


Fixed end
3000-2



Possible installation configurations -

3000-1 3000-2* 3000-1 3000-2



*pivoting with no stop, (360°)

Chain Type	Part No. Full Set	Dimension A in.	(mm)	Dimension B in.	(mm)
3450/3480-050	**3000-12**	1.10	(28)	3.39	(86)
3450/3480-075	**3000-12**	2.09	(53)	4.37	(111)
3450/3480-100	**3000-12**	3.07	(78)	5.35	(136)
3450/3480-115	**3000-12**	3.66	(93)	5.94	(151)
3450/3480-125	**3000-12**	4.06	(103)	6.34	(161)
3450/3480-150	**3000-12**	5.04	(128)	7.32	(186)
3450/3480-175	**3000-12**	6.02	(153)	8.35	(212)
3450/3480-200	**3000-12**	7.01	(178)	9.29	(236)
3450/3480-225	**3000-12**	7.99	(203)	10.28	(261)
3450/3480-250	**3000-12**	8.98	(228)	11.26	(286)

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 3480:
3000-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right
Series 3480:
3000-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right
Series 3480:
3000-2

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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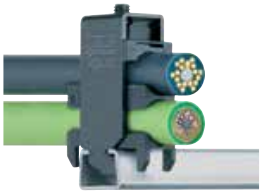
igus®

E-Chain System® E2/000
Series 3450/3480 E-Chain® Half-Tubes and Full Tubes
Strain Relief

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

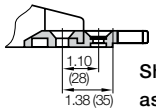
Chainfix Clip

Modular snap-on strain relief device

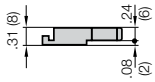
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(04-08)	CFC-08-M	CFC-08-C
.31-.47	(08-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

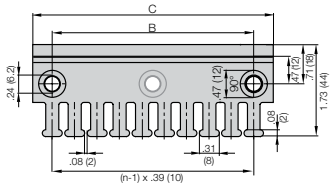


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



For more information please refer to strain relief section of Chapter 10

Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **30XX-Z and ZS** can be also used here. **Details chapter 10**

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E-Chain System® E2/000
Series 3450/3480 E-Chain® Half-Tubes and Full Tubes

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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255

igus®

E-Chain System® E2 Medium
Series 255 E-Chain®

24

Price Index

Series 255

Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94 V2 classifications upon request

Assembly Tips

Insert screwdriver into the slot, using a lever action apply pressure to the screw-driver to release

Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 255 snap-open on both sides along outer radius
4. Integrated strain relief possible
5. Modular interior separation
6. Easy assembly by optimized pin
7. Double stop dog for long unsupported length
8. Crossbars with high retention force
9. Also available as ESD version

Other Installation Methods

Vertical, hanging ≤ 131 ft (40 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.28 ft (1 m)
Rotary requires further calculation

Usage Guidelines

- If quieter operation at very high speeds is required
- If intergrated strain relief at the mounting point is required
- If modular interior separation is needed
- If easy installation is required

- If each link requires snap-open accessibility on both sides
  ➤ **Series E4-21 E4-1**
- If maximum stability is required
  ➤ **Series E4-21 E4-1**
- If the application is very simple and easy filling is required
  ➤ **Series E300 E-Z Chain**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **255-10-200-0**	**E-Chain®**
With 2 separators **2552** assembled every 2nd link	**Interior Separation**
1 Set **2100-34PZ1B** with tiewrap plate	**Mounting Bracket**

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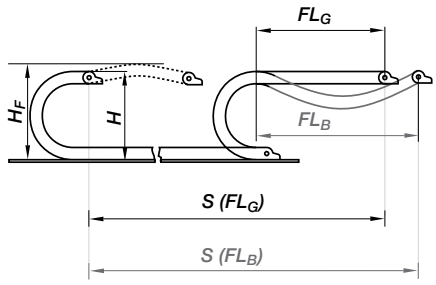
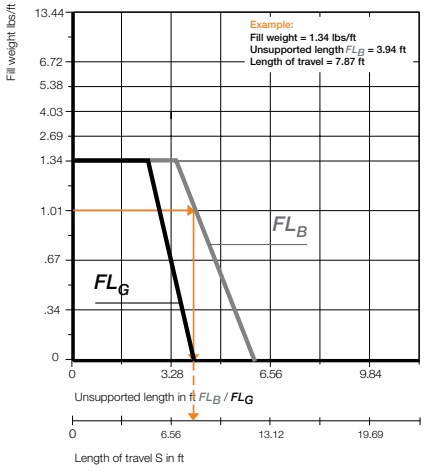
E-Chain System® E2 Medium Series 255 E-Chain® Installation Dimensions

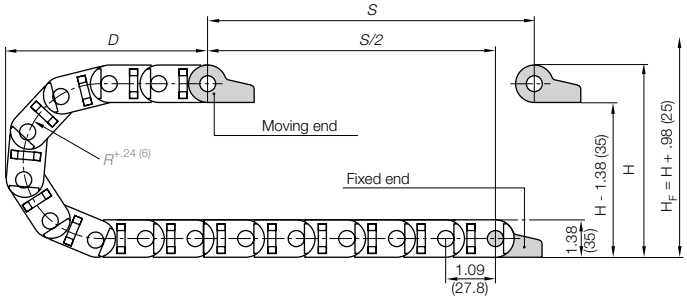
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.09" (27.8 mm)
Links per ft (m): = 11 (36)
For center mount applications:
Chain length = $S/2 + K$

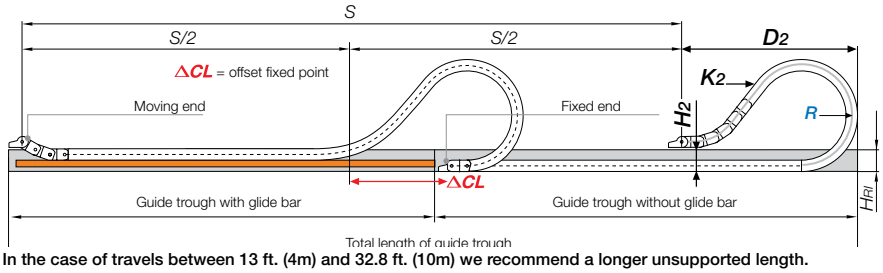
The required clearance height: ***HF = H* + .98 in. (25 mm)** (with 1.01 lbs/ft (1.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.17 (055)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
H +4 0	5.71 (145)	7.28 (185)	9.25 (235)	11.22 (285)	13.19 (335)	15.16 (385)	17.13 (435)	19.09 (485)	21.06 (535)
D	4.48 (114)	5.28 (134)	6.26 (159)	7.24 (184)	8.23 (209)	9.21 (234)	10.20 (259)	11.18 (284)	12.17 (309)
K	9.06 (230)	11.61 (295)	14.57 (370)	17.72 (450)	20.87 (530)	24.02 (610)	26.97 (685)	30.12 (765)	33.27 (845)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 328 ft. (100 m)

For center mount applications:
Chain length: = $S/2 + K_2$



In the case of travels between 13 ft. (4m) and 32.8 ft. (10m) we recommend a longer unsupported length.

R	2.17 (055)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
H2	4.33 (110)	5.91 (150)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)
D2 +25	4.49 (114)	5.28 (134)	14.96 (380)	19.49 (495)	22.44 (570)	26.18 (665)	29.13 (740)	40.94 (1040)	44.49 (1130)
K2	9.06 (230)	11.61 (295)	24.09 (612)	31.73 (806)	37.20 (945)	43.78 (1112)	48.15 (1223)	63.39 (1610)	70.04 (1779)
ΔCL	–	–	8.74 (222)	12.68 (322)	14.65 (372)	17.20 (437)	19.57 (497)	–	32.36 (822)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

- S = Length of travel
- R = Bending radius
- H = Nominal clearance height
- D = Overlength E-Chain® radius in final position
- K = $\pi \bullet R$ + *safety buffer*
- HF = Required clearance height

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain® must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ Chapter 1

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Specs/CAD/RFQ: www.igus.com/e-chains
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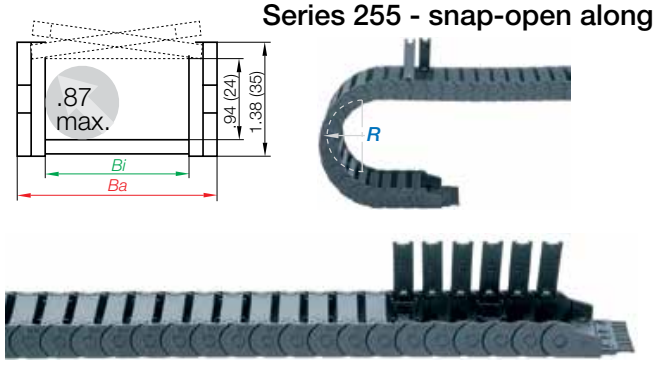
E-Chain System® E2 Medium
Series 255 E-Chain®

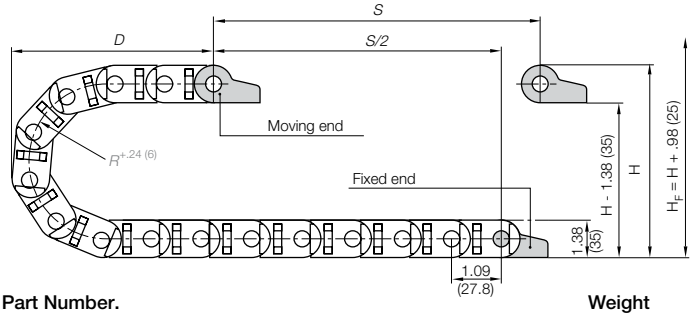
Series 255 - snap-open along the outer radius



Part Number Structure

255-	03-	200-	0

- 0 — Color - Black
- 200 — Bending radius
- 03 — Width
- 255 — Series



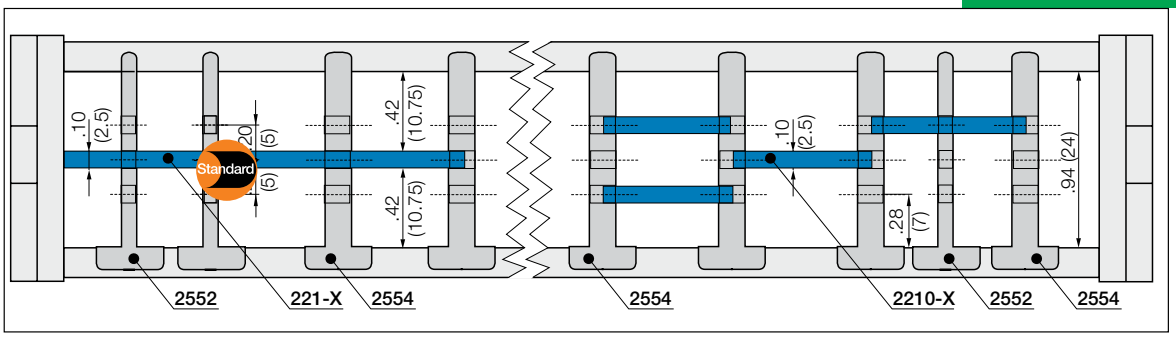
Supplement part number with required radius.
Example: 255-03-200-0
Pitch: 1.09 in. (27.8 mm) per link
links/ft(m) = 11 (36)

Part Number. Snap-ope inner radius	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
255-03-□-0	1.97 (38)	2.76 (54)	≈ 0.54 (0.81)
255-05-□-0	2.95 (57)	3.74 (73)	≈ 0.60 (0.90)
255-07-□-0	3.94 (77)	4.72 (93)	≈ 0.68 (1.01)
255-10-□-0	4.53 (103)	5.31 (119)	≈ 0.77 (1.15)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 255-03-200-0

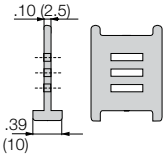
055	075	100	125	150	175	200	225	250
2.17 (055)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
5.71 (145)	7.28 (185)	9.25 (235)	11.22 (285)	13.19 (335)	15.16 (385)	17.13 (435)	19.09 (485)	21.06 (535)
4.48 (114)	5.28 (134)	6.26 (159)	7.24 (184)	8.23 (209)	9.21 (234)	10.20 (259)	11.18 (284)	12.17 (309)
9.06 (230)	11.61 (295)	14.57 (370)	17.72 (450)	20.87 (530)	24.02 (610)	26.97 (685)	30.12 (765)	33.27 (845)

E-Chain System® E2 Medium
Series 255 E-Chain®
Interior Separation



In the standard configuration separators are assembled every 2nd E-Chain® link

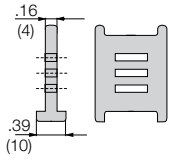
Separators



Slotted Separator for E-Chains®

Unassembled	**Part No. 2551**
Assembled	**Part No. 2552**

- **Standard slotted separator 2551**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.

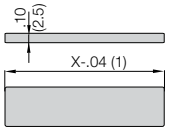


Slotted separator for E-Chains®

Unassembled	**Part No. 2553**
Assembled	**Part No. 2554**

- **Slotted Separator 2553**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Full-width shelves



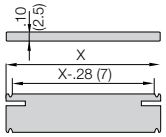
Full-width shelf for E-Chains®

Unassembled	**Part No. 220-X**
Assembled	**Part No. 221-X**

- **Full-width shelf 220-X**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.50 (038)	**2200-38**	**2210-38**	3.03 (077)	**2200-73**	**2210-73**
2.24 (057)	**2200-58**	**2210-58**	4.06 (103)	**2200-88**	**2210-88**

Shelves



Shelf for E-Chains®

Unassembled	**Part No. 2200-X**
Assembled	**Part No. 2210-X**

- **Shelf 2200-X**
  is used when vertical and horizontal separation is required.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
0.71 (018)	**2200-18**	**2210-18**	1.69 (043)	**2200-43**	**2210-43**	3.46 (088)	**2200-88**	**2210-88**
0.91 (023)	**2200-23**	**2210-23**	1.89 (048)	**2200-48**	**2210-48**	3.90 (099)	**2200-99**	**2210-99**
1.10 (028)	**2200-28**	**2210-28**	2.28 (058)	**2200-58**	**2210-58**			
1.30 (033)	**2200-33**	**2210-33**	2.68 (068)	**2200-68**	**2210-68**			
1.50 (038)	**2200-38**	**2210-38**	2.87 (073)	**2200-73**	**2210-73**			

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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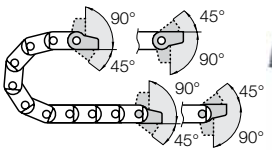
E-Chain System® E2 Medium
Series 255 E-Chain®
Mounting Bracket - Plastic

Option 1: pivoting

- For unsupported and gliding applications
- Well suited for tight installation conditions
- Detachable strain relief tiewrap plates
- Can be mounted on the fixed and/or moving end

Moving end
3...3PZB

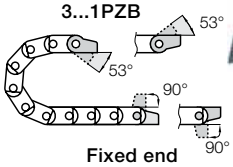


Fixed end
3...4PZB

Option 2: locking

- For vertical hanging and standing applications
- Extreme speed and/or accelerations
- For height restricted applications
- Can be mounted on the fixed and/or moving end

Moving end
3...1PZB

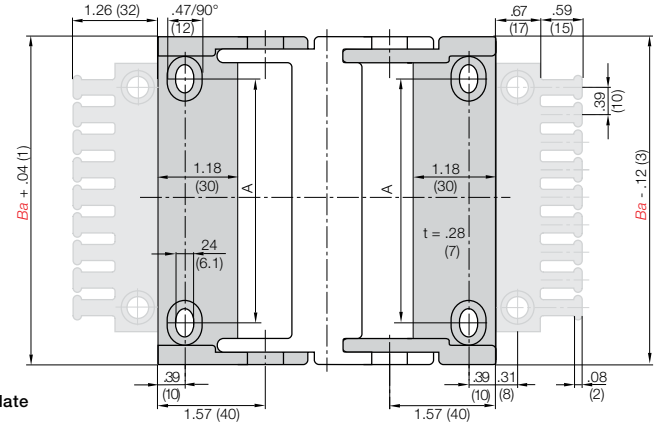


Fixed end
3...2PZB

Part Number Structure

2030- | 34 | PZB | K1

- With 10 cable tiewraps
- With tiewrap plates
- Complete Set
  34 = Pivoting
  12 = Locking
- Mounting brackets for selected chain type



Full set, for both ends:
2030- 34 PZB Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
2030- 3 PZB Mounting bracket **with bore + tiewrap plate**
2030- 4 PZB Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
Without Tiewrap Plates
Series 255:
2030-34PZ1

Part No. Full Set (pivoting)
With Tiewrap Plates
Series 255:
2030-34PZ1B

Part No. Full Set (pivoting)
With Tiewrap Plates + 10 cable ties
Series 255:
2030-34PZ1BK1

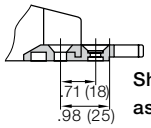
For Chain Type	Part No. Full Set without Tiewrap Plate	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Dimension A in.	(mm)	Number of Teeth
255-03	2030-[ ]PZ1	2030-[ ]PZ1B	2030-[ ]PZ1BK1	.98	(25)	4
255-05	2030-[ ]PZ1	2030-[ ]PZ1B	2030-[ ]PZ1BK1	1.73	(44)	6
255-07	2030-[ ]PZ1	2030-[ ]PZ1B	2030-[ ]PZ1BK1	2.52	(64)	8
255-10	2030-[ ]PZ1	2030-[ ]PZ1B	2030-[ ]PZ1BK1	3.54	(90)	10

34 or 12

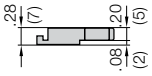
For pivoting brackets choose 34
For locking brackets choose 12
Example: 2030-34PZ1B

E-Chain System® E2 Medium
Series 255 E-Chain®
Strain Relief

Tiewrap Plates



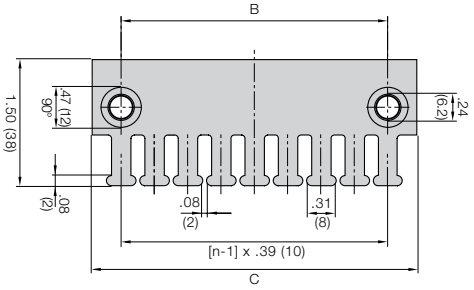
Shown assembled



Single tiewrap plate

Option 1:
Tiewrap plates as an individual part
Available as an individual component or can be fixed onto a mounting bracket with the use of a profile rail.

Series 2000



Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B	
2020-ZB	3	1.18 (30)	.59 (15)	
2030-ZB	4	1.57 (40)	.79 (20)	
2040-ZB	5	1.97 (50)	1.18 (30)	
2050-ZB	6	2.36 (60)	1.57 (40)	
2070-ZB	8	3.15 (80)	2.36 (60)	
2090-ZB	9	3.54 (90)	2.76 (70)	= 2030-ZB + 2040-ZB combined
2100-ZB	10	3.94 (100)	3.15 (80)	=2050-ZB x 2 pieces combined
2125-ZB	12	4.72 (120)	3.94 (100)	

If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 2020-ZBKMA

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Specs/CAD/RFQ: www.igus.com/e-chains
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E-Chain System® E2 Medium
Series 255 E-Chain®
Guide Troughs

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part Number 92-30
- 1/2 travel length of glide bars
  Part Number 92-01
- Installation sets as end connectors
  Part Number 92-50-XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

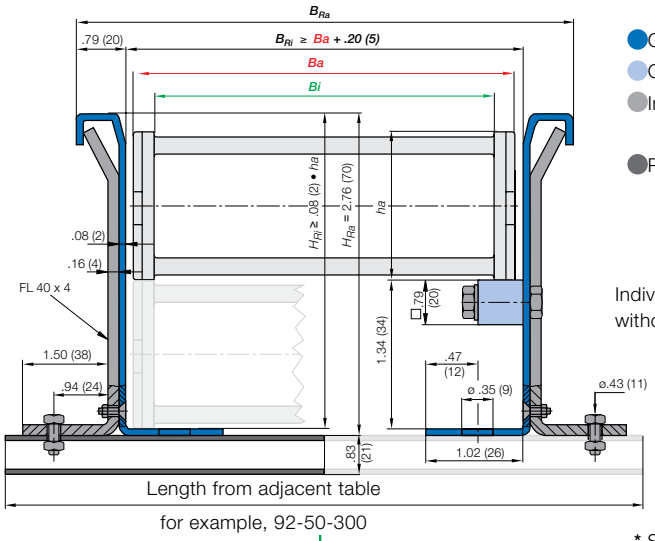
Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 92-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 92-01

Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets

Example: 92-50-400 for 15.75" (400 mm) long profile rail.

Width of Crossbar
255-**03**-200-0
B_{Ri}

	B_{Ri}	Installation Part No.
-03	2.32 (59)	**92-50-175**
-05	3.07 (78)	**92-50-200**
-07	3.86 (98)	**92-50-225**
-10	4.88 (124)	**92-50-250**



Guide trough
Glide bars
Installation set "Basic"
Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

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E-Chain System® E2 Medium
Series 255 E-Chain®

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E2 Medium

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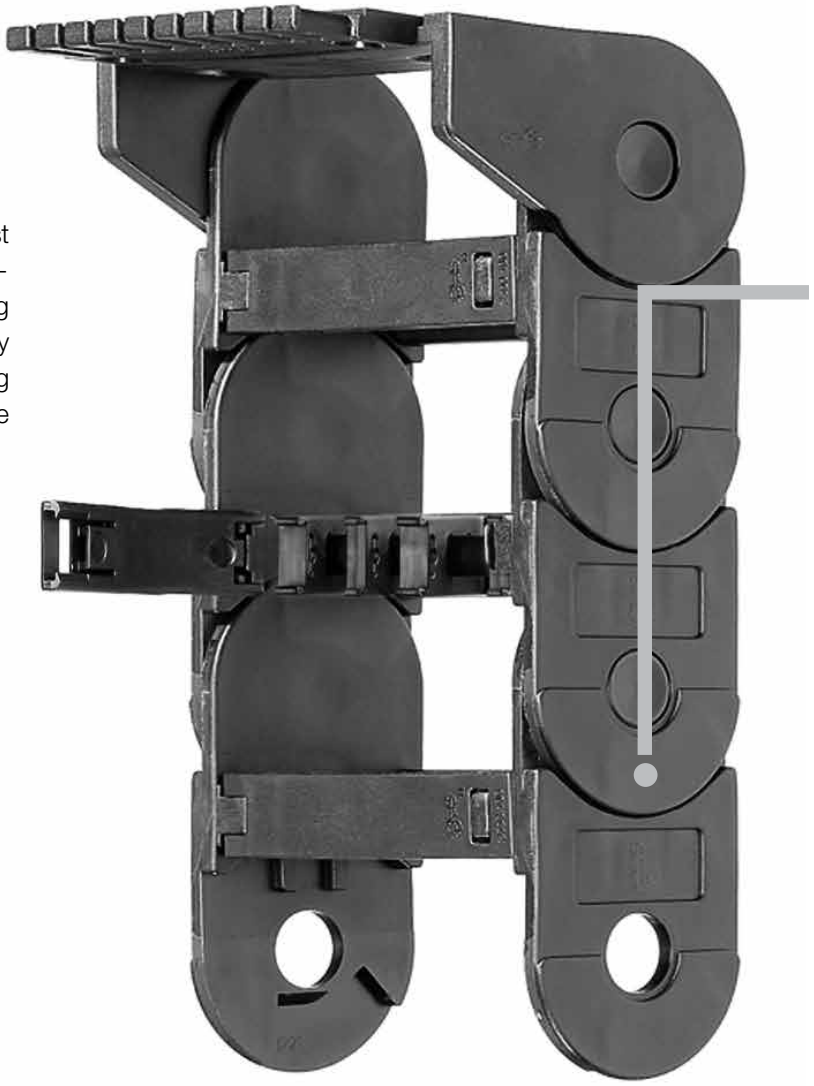
E2 Medium - E-Chains® with 2-part link design for a wide range of applications

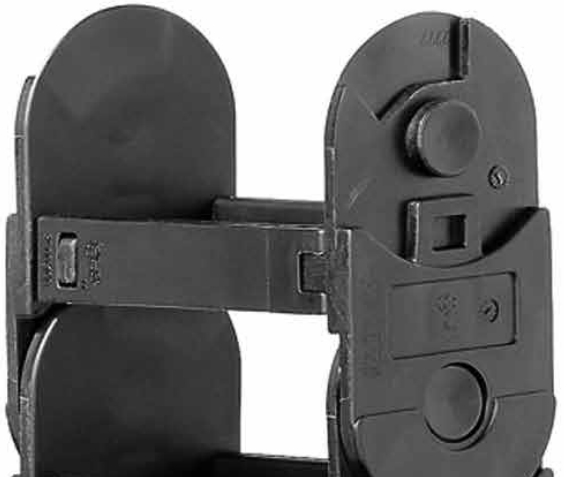


E2 Medium - the standard

The E2 Medium Series is the largest of the E2 family of E-Chains® — features snap-open crossbars along the entire length of the carrier for easy cable access. It is suitable for gliding applications and delivers a long service life.

Typical industries and applications

- Material handling
- Construction machinery
- Woodworking machines
- Glass machines
- Plastic machines
- Long travel applications in many industries
- Semiconductor
- Theatrical and entertainment and amusement parks
- Vehicles
- General machinery
- And many more



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Series 350 E-Chain®, steel guide trough and Chainflex cables used in a shelf conveyor application

Selection Guide

E2 Medium

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
200	.98	(25)	.98-4.92	(25-125)	1.61-5.55	(41-141)	1.38	(35)	2.16-9.84	(55-250)
240	.98	(25)	.98-4.92	(25-125)	1.61-5.55	(41-141)	1.38	(35)	2.16-9.84	(55-250)
250	.98	(25)	.98-4.92	(25-125)	1.61-5.55	(41-141)	1.38	(35)	2.16-9.84	(55-250)
26	1.38	(35)	1.97-7.87	(50-200)	2.60-8.62	(66-219)	1.97	(50)	2.48-9.84	(63-250)
27	1.38	(35)	1.97-7.87	(50-200)	2.60-8.62	(66-219)	1.97	(50)	2.48-9.84	(63-250)
27i	1.38	(35)	1.97-7.87	(50-200)	2.60-8.62	(66-219)	1.97	(50)	2.48-9.84	(63-250)
340	1.77	(45)	1.97-9.84	(50-250)	2.76-10.63	(70-270)	2.64	(67)	2.95-11.81	(75-300)
350	1.77	(45)	1.97-9.84	(50-250)	2.76-10.63	(70-270)	2.64	(67)	2.95-11.81	(75-300)

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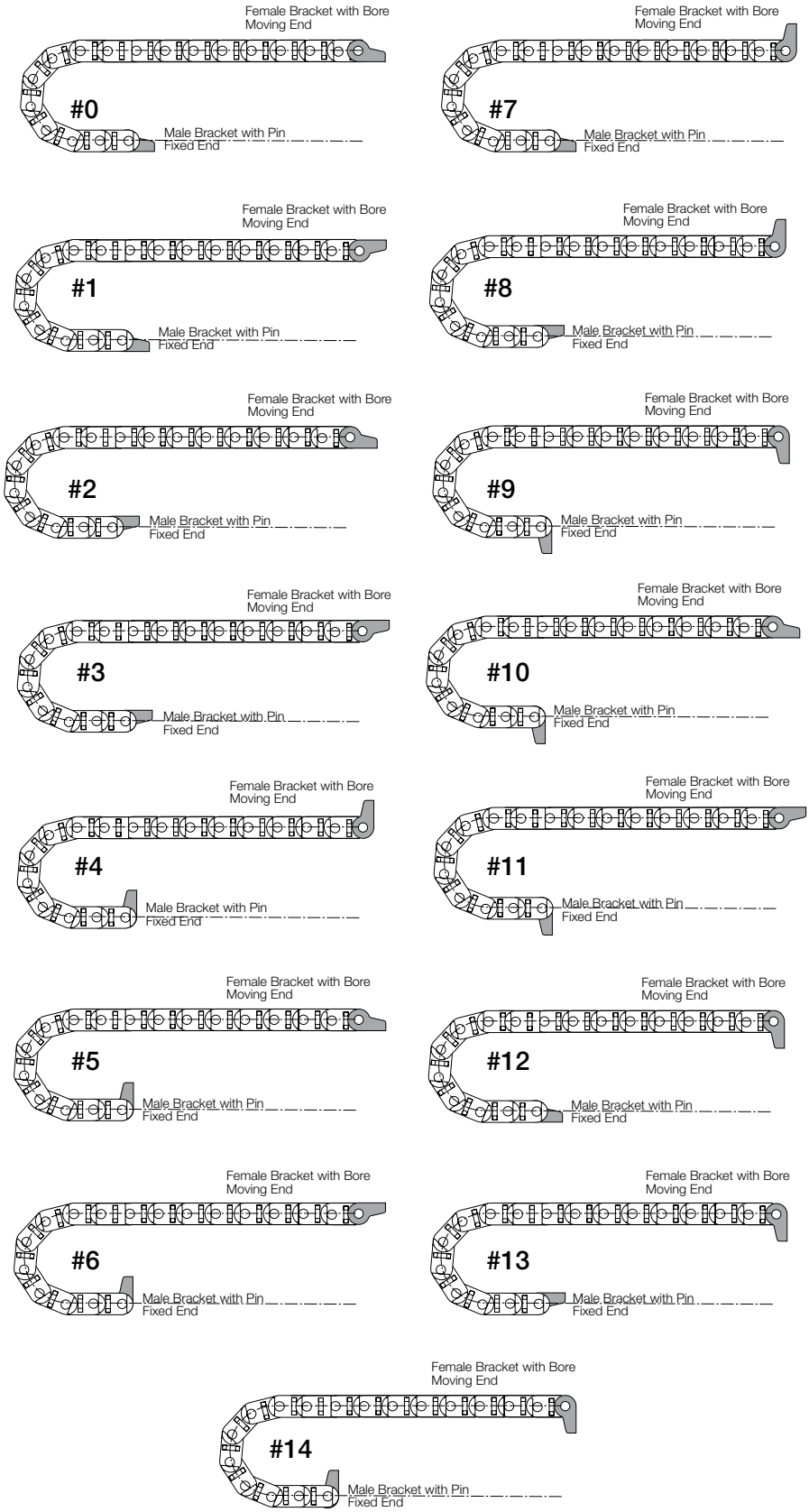
E-Chain System® E2 Medium Bracket Configurations

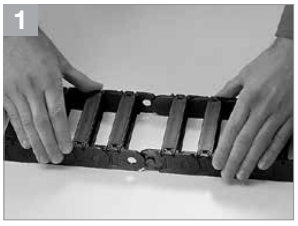


- Not all configurations apply to all mounting brackets.

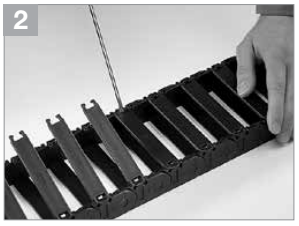
Please refer to bracket specifications pages of each individual series.

E-Chain System® E2 Medium Assembly Instructions

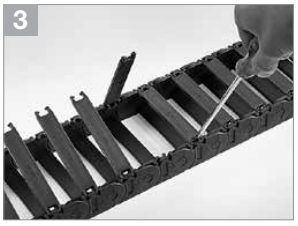
E-Chains® - Assembling Series 200/240/250



Joining chain sections: push sections together; angle one side until pin snaps into bore; repeat on other side



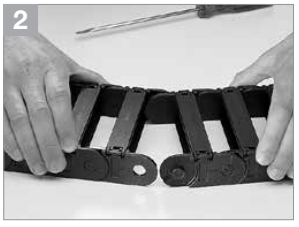
To open crossbars: press screwdriver into tab on top of link, lever screwdriver until crossbar opens



Repeat Step 1 on other side

To close crossbars: push down on crossbar with thumb until it snaps into place

E-Chains® - Separating



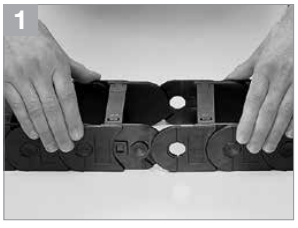
Separating chain sections: insert screwdriver between two links. Twist until pin disengages from bore; pull sections apart

E-Chains® - Attaching Mounting Bracket

Attaching mounting brackets: snap bracket into link (see Step 4 - “Joining chain sections”)

Snap tiewrap plate into bottom groove of the mounting bracket

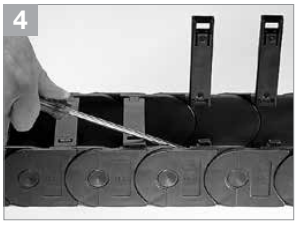
E-Chains® - Assembling Series 26/27/27i and Series 340/350



4. Joining chain sections: push sections together; angle one side until pin snaps into bore; repeat on other side

2. Repeat Step 1 on other side

2. Repeat Step 1 on other side



3. To close crossbars: push down on crossbar with thumb until it snaps into place

Assembling continued

5. Separating chain sections: insert screwdriver between two links

6. Twist until pin disengages from bore; pull sections apart

E-Chains® and E-Tubes - Separating

7. Attaching mounting brackets: snap bracket into link (see Step 4 - “Joining chain sections”)

8. Snap tiewrap plate into bottom groove of the mounting bracket

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200
240
250

igus®

E-Chain System® E2 Medium
Series 200/240/250

.98 .98 .98

Price Index

Series 200/240/250

Special Features / Options

Flammability Class
VDE 0304 IIC UL94 HB

Assembly Tips

Easy to assemble and disassemble

Other Installation Methods

- Vertical, hanging ≤ 131 ft (40 m)
- Vertical, standing ≤ 9.84 ft (3 m)
- Side-mounted, unsupp. ≤ 3.28 ft (1 m)
- Rotary requires further calculation

Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required (Series 200 does not open)
- If intergrated strain relief at the mounting point is required
- If modular interior separation is required
- If long service life is required
- If easy installation is required

- If each link requires snap-open accessibility on both sides simultaneously
  ➤ **Series 220 E4/100**
- If chip protection is required
  ➤ **Series R48 E2 Tubes**
- If the application is very simple
  ➤ **Series E200 E-Z Chain**

Features & Benefits

1. Dirt-repellent contoured exterior
2. Cable-friendly, smooth interior with modular interior separation
3. Lateral glide surfaces for side mounted operation
4. Large pins for long service life
5. Double stop dog for long unsupported length
6. Tapered insertion point for easy assembly
7. Intergrated strain relief possible
8. Snap-open, hinged to left or right, accessible from the top
9. Series 240 snap-open along the inner radius can be combined with Series 250 snap-open along the outer radius

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

6.56 ft (2 m) **250-10-100-0**	**E-Chain®**
With 2 separators **211** assembled every 2nd link	**Interior Separation**
1 Set **2100-34PZB**	**Mounting Bracket**

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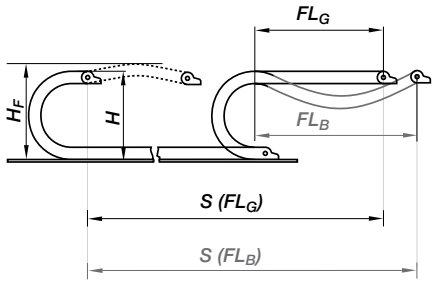
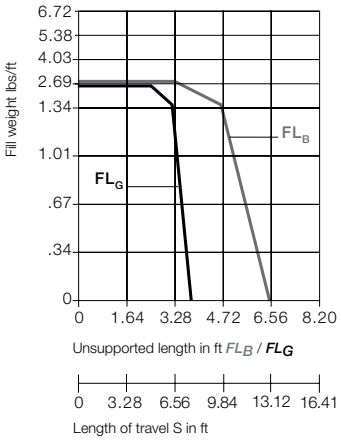
E-Chain System® E2 Medium Series 200/240/250 Installation Dimensions

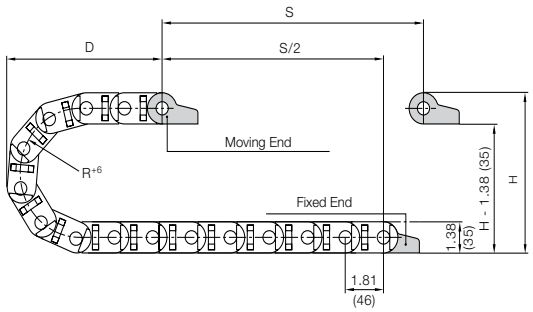
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.81" (46 mm)
Links per ft (m): = 6.63 (22)
For center mount applications:
Chain length = $\frac{S}{2} + K$

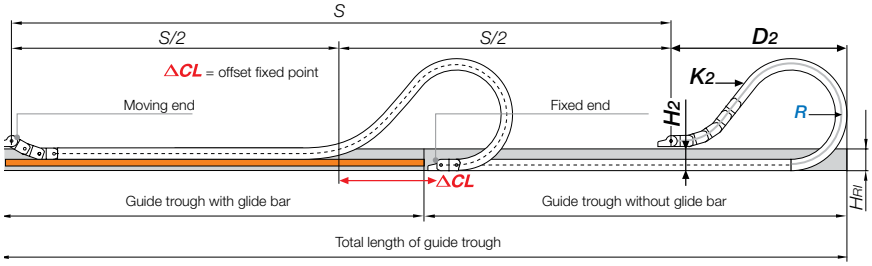
The required clearance height: $H_F = H + .98$ **in. (25 mm)** (with 1.01 lbs/ft (1.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.17 (55)	2.95 (75)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (225)	9.84 (250)
H +4	5.71 (145)	7.28 (185)	9.25 (235)	11.22 (285)	13.19 (335)	15.16 (385)	17.13 (435)	19.09 (485)	21.06 (535)
D	4.92 (125)	5.91 (150)	6.69 (170)	7.68 (195)	8.66 (220)	9.65 (245)	10.63 (270)	11.61 (295)	12.60 (320)
K	10.87 (276)	13.62 (346)	16.30 (414)	19.53 (496)	22.76 (578)	25.98 (660)	29.21 (742)	32.05 (814)	36.22 (920)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 328 ft. (100 m)

For center mount applications:
Chain length: = $\frac{S}{2} + K_2$



In case of travels between 13 ft. (4m) and 32.8 ft. (10m) we recommend a longer unsupported length.

R	2.17 (55)	2.95 (75)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (225)	9.84 (250)
H_2+4	–	–	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)
D_2+25	–	–	14.96 (380)	17.32 (440)	23.23 (590)	29.72 (755)	37.40 (950)	40.94 (1040)	44.49 (1130)
K_2	–	–	25.35 (644)	28.98 (736)	39.84 (1012)	48.90 (1242)	57.95 (1472)	63.39 (1610)	70.63 (1794)
ΔCL	–	–	8.03 (204)	9.61 (244)	14.33 (364)	19.84 (504)	26.54 (674)	29.69 (754)	31.65 (804)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.81 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height
HRI = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ **Chapter 1**

igus®
200
240
250
.98

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E2 Medium
Series 200/240/250

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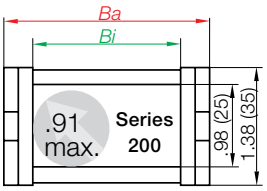
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Series 200 - Non snap-open

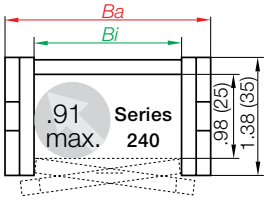


Part Number Structure

200- 10- 100- 0

- Color - Black
- Bending radius
- Width
- Series

Series 240 - Snap-open along the inner radius

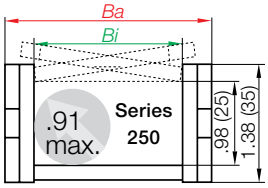


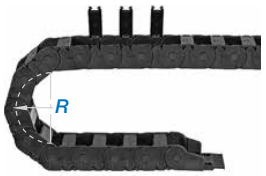
Part Number Structure

240- 10- 100- 0

- Color - Black
- Bending radius
- Width
- Series

Series 250 - Snap open along the outer radius



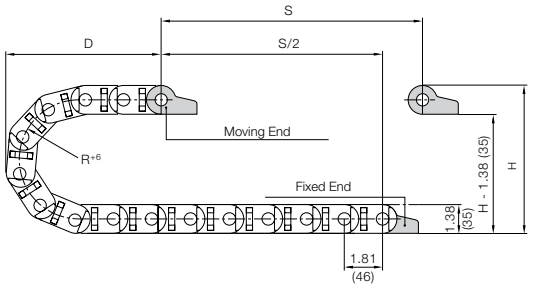


Part Number Structure

250- 10- 100- 0

- Color - Black
- Bending radius
- Width
- Series

Supplement part number with required radius. Example: 250-10-100-0
Pitch: 1.81 in. (46 mm) per link links/ft (m) = 6.71 (22)



Part Number Non Snap-open	Snap-open Inner Radius	Snap-open Outer Radius		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
200-02	240-02	250-02	-0	.98 (25)	1.61 (41)	≈ 0.50 (0.74)
200-03-	240-03	250-03	-0	1.50 (38)	2.13 (54)	≈ 0.54 (0.81)
200-05-	240-05	250-05	-0	2.24 (57)	2.87 (73)	≈ 0.60 (0.90)
200-07-	240-07	250-07	-0	3.03 (77)	3.66 (93)	≈ 0.68 (1.01)
200-09-	240-09	250-09	-0	3.54 (90)	4.17 (106)	≈ 0.73 (1.08)
200-10	240-10	250-10	-0	4.06 (103)	4.69 (119)	≈ 0.77 (1.15)
200-12	240-12	250-12	-0	4.92 (125)	5.55 (141)	≈ 0.82 (1.22)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 250-10-100-0

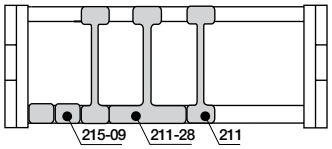
	55	075	100	125	150	175	200	225	250
R	2.17 (55)	2.95 (75)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
H_{+4}	5.71 (145)	7.28 (185)	9.25 (235)	11.22 (285)	13.19 (335)	15.16 (385)	17.13 (435)	19.09 (485)	21.06 (535)
D	4.92 (125)	5.91 (150)	6.69 (170)	7.68 (195)	8.66 (220)	9.65 (245)	10.63 (270)	11.61 (295)	12.60 (320)
K	10.87 (276)	13.62 (346)	16.30 (414)	19.53 (496)	22.76 (578)	25.98 (660)	29.21 (742)	32.05 (814)	36.22 (920)

0=Standard color black. For other colors see Chapter 1

E-Chain System® E2 Medium
Series 200/240/250
Interior Separation

Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link. These separators are the only option when compartmentalizing the interior of the non snap-open E-Chain® such as the Series 200. Both are predominantly used for side-mounted applications.



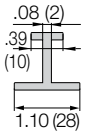
STANDARD

Vertical separator 201

Vertical Separator	
Unassembled	**Part No. 201**
Assembled	**Part No. 211**

- **Standard separator 201 for E-Chains®**
  This separator is used for general subdivision of E-Chain®.

Vertical separator 201-28



Vertical Separator	
Unassembled	**Part No. 201-28**
Assembled	**Part No. 211-28**

- **Standard separator 201-28 for E-Chains®**
  This separator features a wide base for use when a large distance between separators is required.

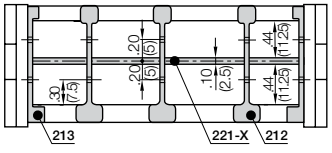
Spacers 205-09

Spacer	
Unassembled	**Part No. 205-09**
Assembled	**Part No. 215-09**

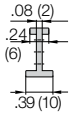
- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Option 2: Full-width shelf

This option is available for the snap-open Series 240/250 chains. It is ideal for use in applications involving many thin cables with similar or identical diameters. This shelf slides into place and spans the entire width of the chain.



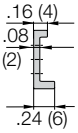
Slotted vertical separator 202



Vertical Separator	
Unassembled	**Part No. 202**
Assembled	**Part No. 212**

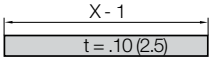
- **Slotted separator 202 for E-Chains®**
  This component is used to form the basic pattern of a shelf system.

Side Plate 203



Side plate	
Unassembled	**Part No. 203**
Assembled	**Part No. 213**

- **Side plate 203 for E-Chains®**
  This component is used to form the basic pattern of a shelf system.



Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.98	(25)	**220-25**	**221-25**
1.50	(38)	**220-38**	**221-38**
2.24	(57)	**220-57**	**221-57**
3.03	(77)	**220-77**	**221-77**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
3.54	(90)	**220-90**	**221-90**
4.06	(103)	**220-103**	**221-103**
4.92	(125)	**220-125**	**221-125**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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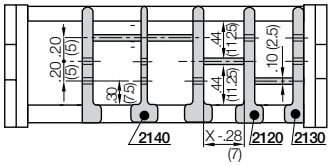
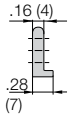
E-Chain System® E2 Medium
Series 200/240/250
Interior Separation

Option 3: Shelves

This option is available for the Series 240/250 snap-open chains. It is ideal for use in applications involving many cables with different diameters. This option allows for variable compartment heights and widths across the chain width, but can also be used for level separation across the entire width.



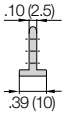
Side plate 2030



Vertical Separator	
Unassembled	**Part No. 2030**
Assembled	**Part No. 2130**

- **Side plate 2030 for E-Chains®**
  This component is used to form the basic pattern of a shelf system.

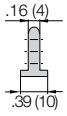
Vertical separator 2040



Vertical Separator	
Unassembled	**Part No. 2040**
Assembled	**Part No. 2140**

- **Vertical slotted separator 2040 for E-Chains®**
  This component is used to form the basic pattern of a shelf system.

Vertical separator 2020



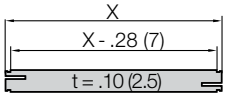
Vertical Separator	
Unassembled	**Part No. 2020**
Assembled	**Part No. 2120**

- **Vertical slotted separator 2020 for E-Chains®**
  This component is used to form the basic pattern of a shelf system.

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	**2200-18**	**2210-18**
.91	(23)	**2200-23**	**2210-23**
1.10	(28)	**2200-28**	**2210-28**
1.30	(33)	**2200-33**	**2210-33**
1.50	(38)	**2200-38**	**2210-38**
1.69	(43)	**2200-43**	**2210-43**
1.89	(48)	**2200-48**	**2210-48**
2.28	(58)	**2200-58**	**2210-58**
2.68	(68)	**2200-68**	**2210-68**
2.87	(73)	**2200-73**	**2210-73**
3.46	(88)	**2200-88**	**2210-88**
3.90	(99)	**2200-99**	**2210-99**
4.88	(124)	**2200-124**	**2210-124**

Shelves 2200-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 3 different heights in .20" (5mm) increments



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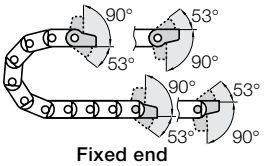
E-Chain System® E2 Medium
Series 200/240/250
Mounting Brackets - Plastic

Standard

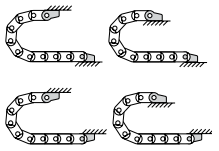
Option 1: pivoting

- Short and long travels
- Space-restricted conditions
- Corrosion resistant

Moving end
2...3PZB



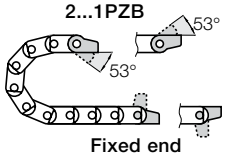
Fixed end
2...4PZB



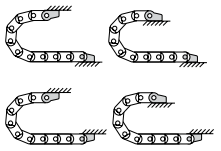
Option 2: locking

- Vertical hanging/standing travels
- Extreme accelerations
- Corrosion resistant

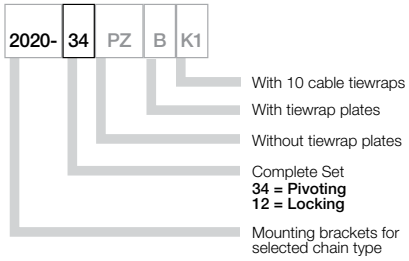
Moving end
2...1PZB

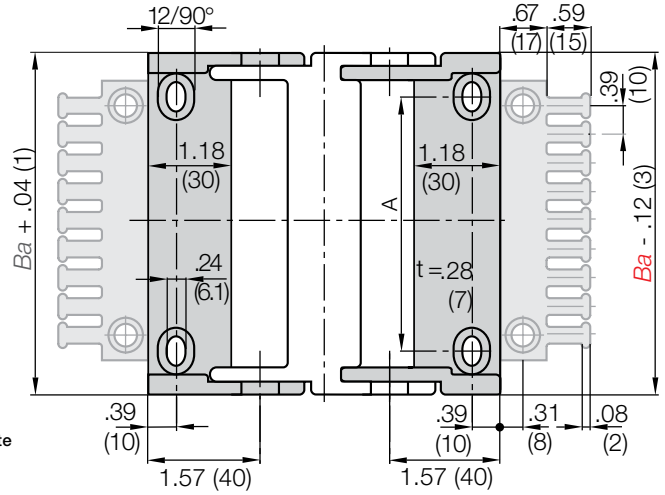


Fixed end
2...2PZB



Part Number Structure





Full set, for both ends:
2020- 34 PZB Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
2020- 3 PZB Mounting bracket **with bore + tiewrap plate**
2020- 4 PZB Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
With Tiewrap Plates
Series 200, 240 or 250:
2020-34PZB

Part No. Full Set (pivoting)
With Tiewrap Plates
+ 10 cable ties
Series 200, 240 or 250:
2020-34PZBK1

Part No. Full Set (pivoting)
Without Tiewrap Plates
Series 200, 240 or 250:
2020-34PZ

For Chain Type	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)
200/240/250-02	2020- ☐ PZB	2020- ☐ PZBK1	2020- ☐ PZ	.47	(12)
200/240/250-03	2030- ☐ PZB	2030- ☐ PZBK1	2030- ☐ PZ	.98	(25)
200/240/250-05	2050- ☐ PZB	2050- ☐ PZBK1	2050- ☐ PZ	1.73	(44)
200/240/250-07	2070- ☐ PZB	2070- ☐ PZBK1	2070- ☐ PZ	2.52	(64)
200/240/250-09	2090- ☐ PZB	2090- ☐ PZBK1	2090- ☐ PZ	3.03	(77)
200/240/250-10	2100- ☐ PZB	2100- ☐ PZBK1	2100- ☐ PZ	3.54	(90)
200/240/250-12	2125- ☐ PZB	2125- ☐ PZBK1	2125- ☐ PZ	4.41	(112)

☐ = 34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 2020- 34 PZB

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Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

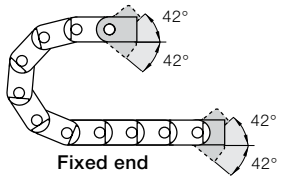
E-Chain System® E2 Medium
Series 200/240/250
Mounting Brackets - KMA

Standard

Option 1: pivoting

- Short travels
- Space-restricted conditions
- Corrosion resistant
- Bolted connection outside of chain cross section

Moving end
20000...1



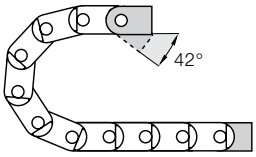
Fixed end
20000...2

Stackable

Option 2: locking

- Vertical hanging/standing travels
- Extreme accelerations
- Corrosion resistant
- Bolted connection outside of chain cross section

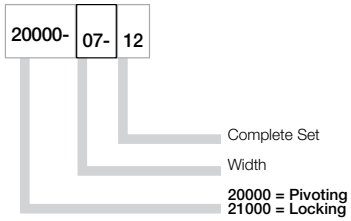
Moving end
21000...1

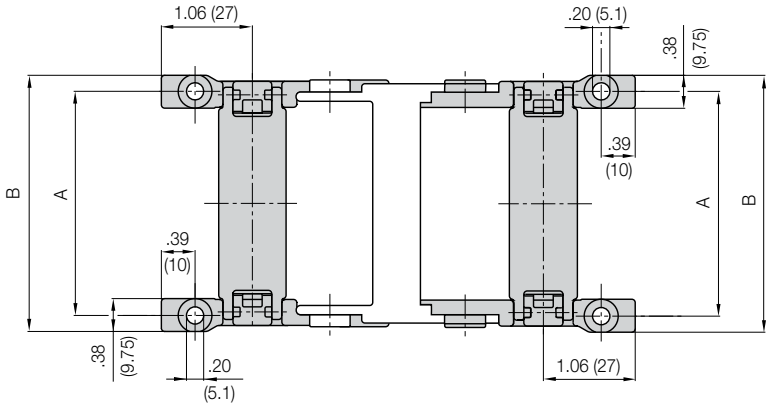


Fixed end
21000...2

Stackable

Part Number Structure





Full set, for both ends:
20000- 07- 12 Full set, **each part with pin/bore**

Single-part order:
20000- 07- 1 Mounting bracket **with bore**
20000- 07- 2 Mounting bracket **with pin**

Width	Part No. Full Set			Dimension A		Dimension B	
	Pivoting	Locking		in.	(mm)	in.	(mm)
-02	20000	21000	-02-12	1.36	(34.5)	1.73	(44)
-03	20000	21000	-03-12	1.87	(47.5)	2.24	(57)
-05	20000	21000	-05-12	2.62	(66.5)	2.99	(76)
-07	20000	21000	-07-12	3.41	(86.5)	3.78	(96)
-09	20000	21000	-09-12	3.92	(99.5)	4.29	(109)
-10	20000	21000	-10-12	4.43	(112.5)	4.80	(122)
-12	20000	21000	-12-12	5.30	(134.5)	5.67	(144)

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Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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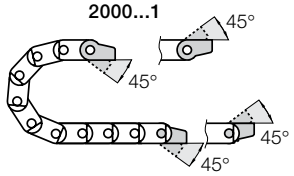
E-Chain System® E2 Medium
Series 200/240/250
Mounting Brackets - Steel

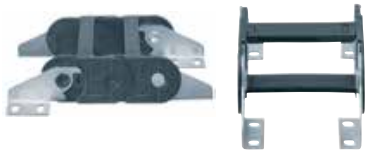
Option 1: Steel

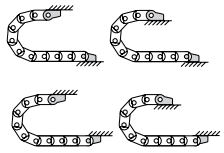
- Pivoting connections
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

Moving end
2000...1

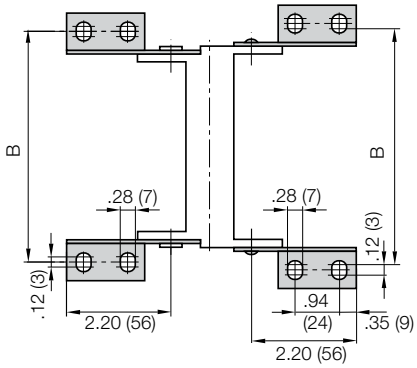


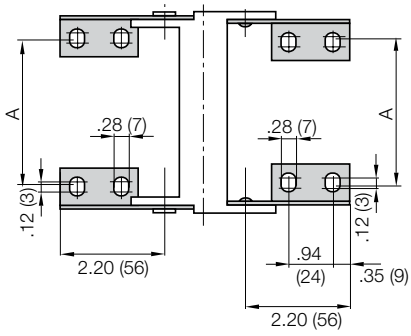
Fixed end
2000...2





Possible installation configurations -





Chain Type	Part No. Full Set	Dimension A in.	(mm)	Dimension B in.	(mm)
200/240/250-02	**2000-12**		–	2.36	(60)
200/240/250-03	**2000-12**	.98	(25)	2.87	(73)
200/240/250-05	**2000-12**	1.73	(44)	3.62	(92)
200/240/250-07	**2000-12**	2.52	(64)	4.41	(112)
200/240/250-09	**2000-12**	3.03	(77)	4.92	(125)
200/240/250-10	**2000-12**	3.54	(90)	5.43	(138)
200/240/250-12	**2000-12**	4.41	(112)	6.30	(160)

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 200/240/250:
2000-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right
Series 200/240/250:
2000-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right
Series 200/240/250:
2000-2

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E-Chain System® E2 Medium
Series 200/240/250
Strain Relief

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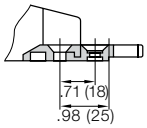
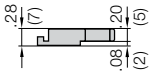
Tiewrap Plates



Shown assembled

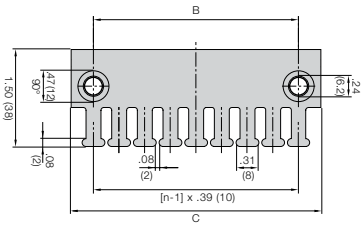


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2125-ZB	12	4.72 (120)	3.94 (100)



For more information please refer to strain relief section of Chapter 10

Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **20XX-ZB** can be also used here. **Details chapter 10**

Cable tiewraps as individual parts

Cable tiewraps 100 pieces/bag	Width x Length in.	(mm)	Maximum Ø in.	(mm)	Tensile Strength lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)

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E-Chain System® E2 Medium
Series 200/240/250
Guide Trough

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part Number 92-30
- 1/2 travel length of glide bars
  Part Number 92-01
- Installation sets as end connectors
  Part Number 92-50-XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

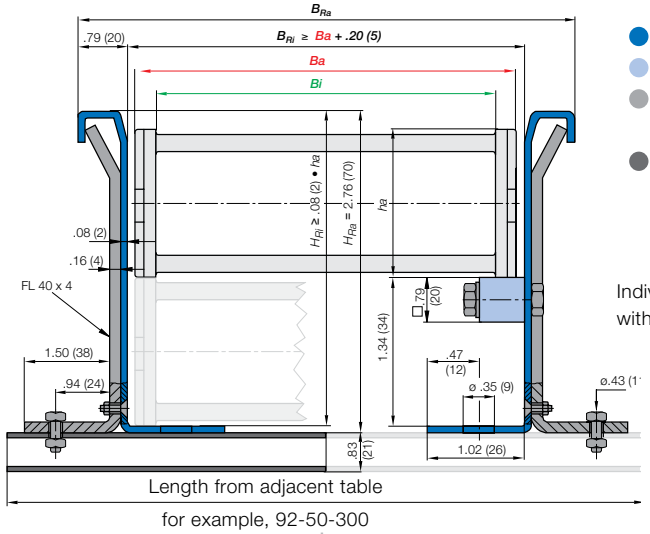
Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 92-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 92-01

Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets

Example: 92-50-400 for 15.75" (400 mm) long profile rail.

Width of Crossbar
250-**05**-200-0
B_{Ri}

	B_{Ri}	Installation Part No.
-02*	1.81 (46)	**92-50-150**
-03	2.32 (59)	**92-50-175**
-05	3.07 (78)	**92-50-175**
-07	3.86 (98)	**92-50-200**
-09	4.37 (111)	**92-50-250**
-10	4.88 (124)	**92-50-250**
-12	5.75 (146)	**92-50-300**



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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26
27
27I

igus®

E-Chain System® E2 Medium
Series 26/27/27i

1.38 1.38 1.38

Features & Benefits

1. Large pins for long service life
2. Double stop dog for long unsupported length
3. Modular interior separation
4. Space-saving ratio of inner-to-outer dimensions
5. Lateral glide surfaces for side-mounted operation
6. Side wear pads
7. Intergrated strain relief possible
8. Cable-friendly smooth interior
9. Series 27i snap-open along inner radius can be combined with Series 27 snap-open along the outer radius

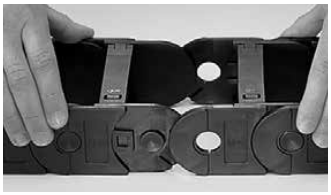
Price Index

Series 26/27/27i

Special Features / Options

Flammability Class
VDE 0304 IIC UL94 HB

Assembly Tips



Easy to assemble and disassemble

Other Installation Methods

- Vertical, hanging ≤ 164 ft (50 m)
- Vertical, standing ≤ 9.84 ft (3 m)
- Side-mounted, unsupp. ≤ 3.28 ft (1 m)
- Rotary requires further calculation

Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required (Series 200 does not open)
- If stable chain of moderate size is required
- If loads are moderate
- If Intergrated strain relief at the connection point is required
- If easy installation is required

- If maximum stability is required
  ➤ **Series 280, E4/100**
- If chip protection is required
  ➤ **Series R58, E2 Tubes**
- If the application is very simple
  ➤ **Series E26, E-Z Chain**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

9.84 ft (3 m) **27-10-100-0**	**E-Chain®**
With 2 separators **261** assembled every 2nd link	**Interior Separation**
1 Set **2610-34PZB**	**Mounting Bracket**

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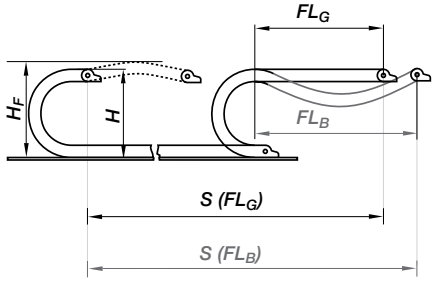
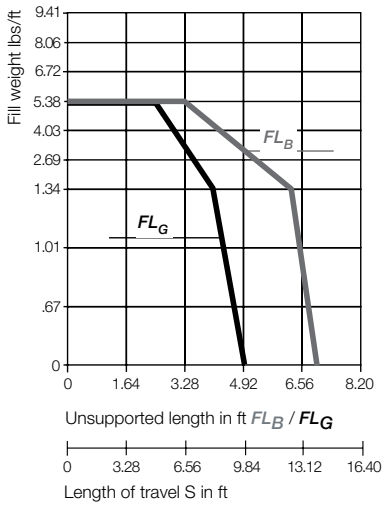
E-Chain System® E2 Medium Series 26/27/27i Installation Dimensions

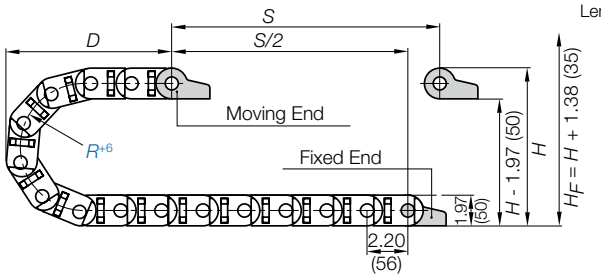
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.45 (18)
For center mount applications:
Chain length = $\frac{S}{2} + K$

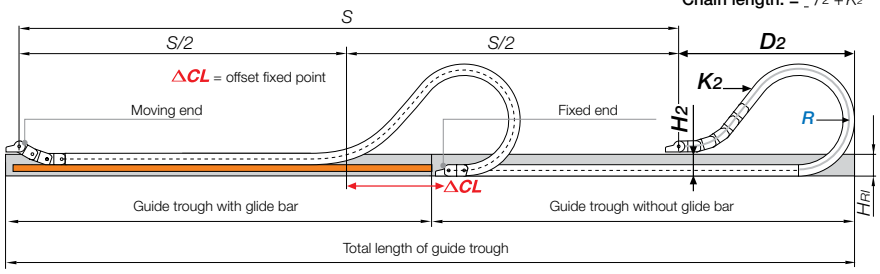
The required clearance height: $H_F = H + 1.38$ **in. (35 mm)** (with 1.34 lbs/ft (2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H +4	7.09 (180)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	21.65 (550)
D	5.51 (140)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)	10.83 (275)	12.80 (325)
K	13.19 (335)	14.76 (375)	18.70 (475)	21.65 (550)	25.59 (650)	29.53 (750)	32.48 (825)	36.42 (925)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 394 ft. (120 m)

For center mount applications:
Chain length: $= \frac{S}{2} + K_2$



In case of travels between 13 ft. (4m) and 32.8 ft. (10m) we recommend a longer unsupported length.

R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H2+4	–	–	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
D2	–	–	13.78 (350)	18.70 (475)	19.69 (500)	25.79 (655)	30.31 (770)	37.40 (950)
K2	–	–	24.25 (616)	30.87 (784)	35.28 (896)	44.09 (1120)	50.71 (1288)	63.94 (1624)
ΔCL	–	–	5.67 (144)	9.61 (244)	9.61 (244)	14.72 (374)	18.27 (464)	23.39 (594)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.81 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
$K = \pi \bullet R +$ *safety buffer*
H_F = Required clearance height
HRI = Trough inner height
H_2 = *Mounting height
D_2 = Over length - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ **Chapter 1**

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Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E2 Medium
Series 26/27/27i

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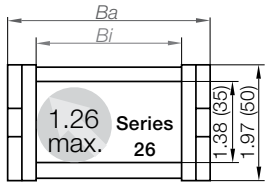
Series 26 - Non snap-open

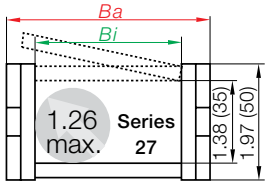


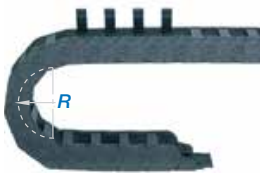
Part Number Structure

26-	10-	100-	0

Color - Black
Bending radius
Width
Series

Series 27 - Snap-open along the outer radius



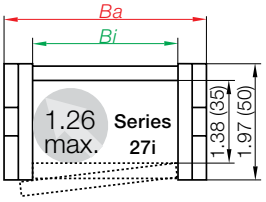


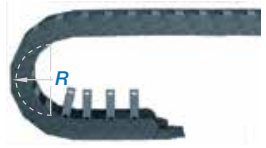
Part Number Structure

27-	10-	100-	0

Color - Black
Bending radius
Width
Series

Series 27i - Snap open along the inner radius



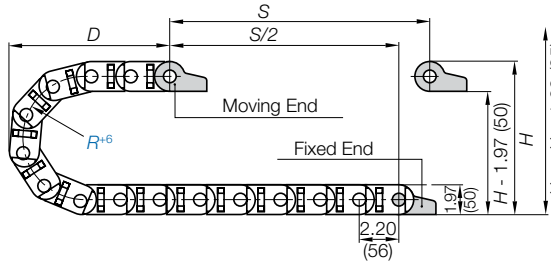


Part Number Structure

27i-	10-	100-	0

Color - Black
Bending radius
Width
Series

Supplement part number with required radius. Example: 26-10-100-0
Pitch: 2.20 in. (56 mm) per link links/ft (m) = 5.49 (18)



Part Number Non Snap-open	Snap-open Outer Radius	Snap-open Inner Radius		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
26-05-	27-05-	27i-05-	□ -0	1.97 (50)	2.60 (66)	≈ 0.79 (1.17)
26-07-	27-07-	27i-07-	□ -0	2.95 (75)	3.58 (91)	≈ 0.87 (1.30)
26-10-	27-10-	27i-10-	□ -0	3.94 (100)	4.57 (116)	≈ 0.93 (1.39)
26-12-	27-12-	27i-12-	□ -0	4.92 (125)	5.55 (141)	≈ 0.99 (1.48)
26-15-	27-15-	27i-15-	□ -0	5.91 (150)	6.54 (166)	≈ 1.09 (1.62)
26-17-	27-17-	27i-17-	□ -0	6.89 (175)	7.64 (194)	≈ 1.24 (1.85)
26-20-	27-20-	27i-20-	□ -0	7.87 (200)	8.62 (219)	≈ 1.32 (1.96)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 26-10-100-0

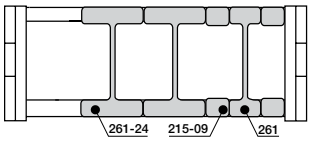
	063	075	100	125	150	175	200	250
R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H_{+4}	7.09 (180)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	21.65 (550)
D	5.51 (140)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)	10.83 (275)	12.80 (325)
K	13.19 (335)	14.76 (375)	18.70 (475)	21.65 (550)	25.59 (650)	29.53 (750)	32.48 (825)	36.42 (925)

0=Standard color black. For other colors see Chapter 1

E-Chain System® E2 Medium
Series 26/27/27i
Interior Separation

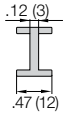
Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link. These separators are the only option when compartmentalizing the interior of the non snap-open E-Chain® such as the Series 26. Both are predominantly used for side-mounted applications.



STANDARD

Vertical separator 261



Vertical Separator	
Unassembled	**Part No. 260**
Assembled	**Part No. 261**

- **Standard separator 260 for E-Chains®**
  This separator is used for general subdivision of E-Chain®.

Vertical separator 260-24

Vertical Separator	
Unassembled	**Part No. 260-24**
Assembled	**Part No. 261-24**

- **Standard separator 260-24 for E-Chains®**
  This separator features a wide base for use when a large distance between separators is required. These are also used in the case of side mounted applications

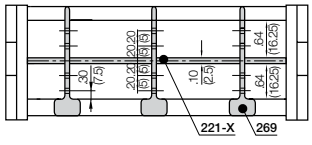
Spacers 205-09

Spacer	
Unassembled	**Part No. 205-09**
Assembled	**Part No. 215-09**

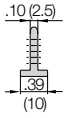
- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Option 2: Full-width shelf

This option is available for the snap-open Series 27/27i chains. It is ideal for use in applications involving many thin cables with similar or identical diameters. This shelf slides into place and spans the entire width of the chain.

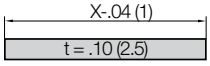


Slotted vertical separator 268



Vertical Separator	
Unassembled	**Part No. 268**
Assembled	**Part No. 269**

- **Slotted separator 268 for E-Chains®**
  This component is used to form the basic pattern of a shelf system.



Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.97	(50)	**220-50**	**221-50**
2.95	(75)	**220-75**	**221-75**
3.94	(100)	**220-100**	**221-100**
4.92	(125)	**220-125**	**221-125**
5.91	(150)	**220-150**	**221-150**
6.89	(175)	**220-175**	**221-175**
7.87	(200)	**220-200**	**221-200**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E-Chain System® E2 Medium
Series 26/27/27i
Interior Separation

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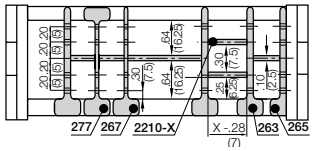
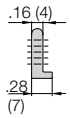
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Option 3: Shelves

This option is available for the Series 27/27i snap-open chains. It is ideal for use in applications involving many cables with different diameters. This option allows for variable compartment heights and widths across the chain width, but can also be used for level separation across the entire width.



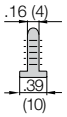
Side plate 264



Side plate	
Unassembled	**Part No. 264**
Assembled	**Part No. 265**

- **Side plate 264 for E-Chains®**
  This component is used to form the basic pattern of a shelf system.

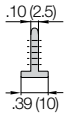
Vertical separator 262



Vertical Separator	
Unassembled	**Part No. 262**
Assembled	**Part No. 263**

- **Slotted separator 262 for E-Chains®**
  This component is used to form the basic pattern of a shelf system.

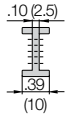
Closed slotted separator 266



Vertical Separator	
Unassembled	**Part No. 266**
Assembled	**Part No. 267**

- **Closed slotted separator 266 for E-Chains®**
  These are used for complex subdivisions. However, they cannot be retrofitted into an existing interior separation system without removing the shelves first.

Open slotted separator 276



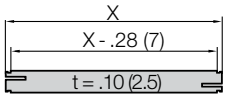
Vertical Separator	
Unassembled	**Part No. 276**
Assembled	**Part No. 277**

- **Open slotted separator 276 for E-Chains®**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into the 5 middle slots only.

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	**2200-18**	**2210-18**
.91	(23)	**2200-23**	**2210-23**
1.10	(28)	**2200-28**	**2210-28**
1.30	(33)	**2200-33**	**2210-33**
1.50	(38)	**2200-38**	**2210-38**
1.69	(43)	**2200-43**	**2210-43**
1.89	(48)	**2200-48**	**2210-48**
2.28	(58)	**2200-58**	**2210-58**
2.68	(68)	**2200-68**	**2210-68**
2.87	(73)	**2200-73**	**2210-73**
3.46	(88)	**2200-88**	**2210-88**
3.90	(99)	**2200-99**	**2210-99**
4.88	(124)	**2200-124**	**2210-124**

Shelves 2200-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 5 different heights in .20" (5mm) increments



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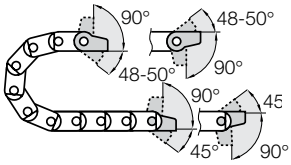
E-Chain System® E2 Medium
Series 26/27/27i
Mounting Brackets - Plastic

Standard

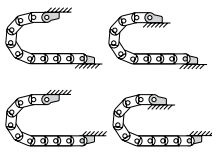
Option 1: pivoting

- Short and long travels
- Space-restricted conditions
- Corrosion resistant

Moving end
26...3PZB



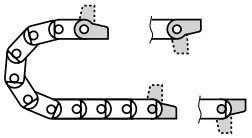
Fixed end
26...4PZB



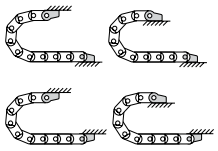
Option 2: locking

- Vertical hanging/standing travels
- Extreme accelerations
- Corrosion resistant

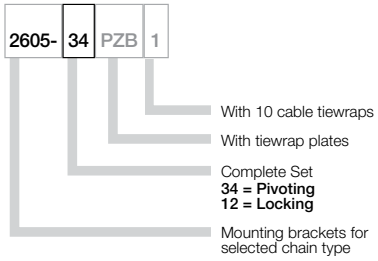
Moving end
26...1PZB

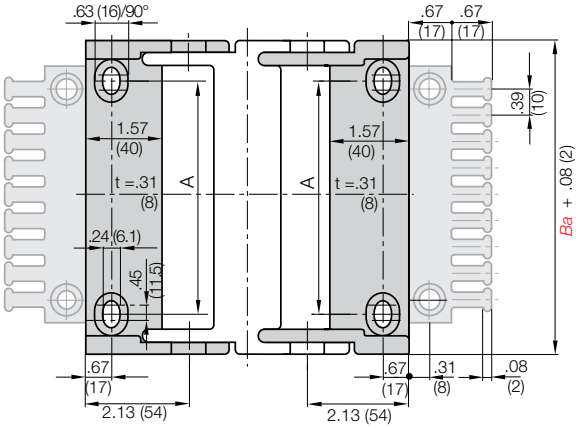


Fixed end
26...2PZB



Part Number Structure





Full set, for both ends:
2605- 34 PZB Full set, **each part with pin/bore + tiewrap plate**

Single-part order:
2605- 3 PZB Mounting bracket **with bore + tiewrap plate**
2605- 4 PZB Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
With Tiewrap Plates
Series 26, 27 or 27i:
2605-34PZB

Part No. Full Set (pivoting)
With Tiewrap Plates + 10 cable ties
Series 26, 27 or 27i:
2605-34PZB1

Part No. Full Set (pivoting)
Without Tiewrap Plates
Series 26, 27 or 27i:
2605-34PZ

For Chain Type	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)
26/27/27i-05	2605- ☐ PZB	2605- ☐ PZB1	2605- ☐ PZ	1.18	(30)
26/27/27i-07	2607- ☐ PZB	2607- ☐ PZB1	2607- ☐ PZ	2.17	(55)
26/27/27i-10	2610- ☐ PZB	2610- ☐ PZB1	2610- ☐ PZ	3.15	(80)
26/27/27i-12	2612- ☐ PZB	2612- ☐ PZB1	2612- ☐ PZ	4.13	(105)
26/27/27i-15	2615- ☐ PZB	2615- ☐ PZB1	2615- ☐ PZ	5.12	(130)
26/27/27i-17	2617- ☐ PZB	2617- ☐ PZB1	2617- ☐ PZ	6.10	(155)
26/27/27i-20	2620- ☐ PZB	2620- ☐ PZB1	2620- ☐ PZ	7.09	(180)

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 2605- 34 PZB

Cable tiewraps as individual parts

Cable tiewraps 100 pieces/bag	Width x Length in.	(mm)	Maximum Ø in.	(mm)	Tensile Strength lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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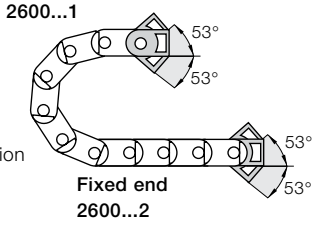
E-Chain System® E2 Medium
Series 26/27/27i
Mounting Brackets - KMA

Standard

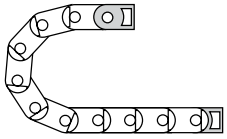
Option 1: pivoting

- Short and long travels
- Optional integrated profile rail for strain relief
- Bolted connection outside of chain cross section
- Space-restricted conditions
- Corrosion resistant
- Universal use



Option 2: locking

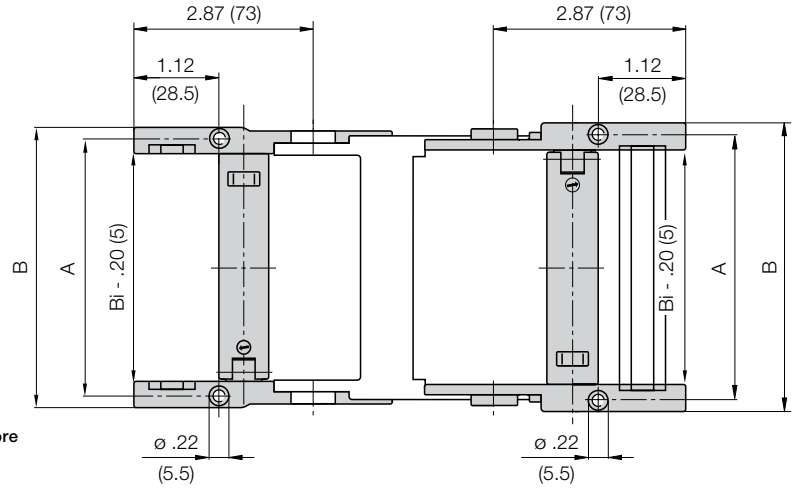
- Vertical hanging/standing travels
- Optional integrated profile rail for strain relief
- Bolted connection outside of chain cross section
- Extreme accelerations
- Corrosion resistant
- Universal use



Part Number Structure

2600- | 07- | 12 | P

- P = With Profile Rail
- 12 = Complete Set
- 07 = Width
- 2600 = Pivoting, 2700 = Locking



Full set, for both ends:
2600- 07- 12 Full set, **each part with pin/bore**

Single-part order:
2600- 07- 1 Mounting bracket **with bore**
2600- 07- 2 Mounting bracket **with pin**

Part number examples are shown for pivoting brackets. For locking brackets change part number to 2700

Part No. Full Set (pivoting)
Series 26/27/27i:
2600-Width-12

Part No. Full Set (pivoting)
with profile rail
Series 26/27/27i:
2600-Width-12P

Width	Part No. Full Set			With	Dimension A		Dimension B	
	Pivoting	Locking		Profile Rail	in.	(mm)	in.	(mm)
-05	2600	2700	-05-12	P	2.28	(58)	2.72	(69)
-07	2600	2700	-07-12	P	3.27	(83)	3.70	(94)
-10	2600	2700	-10-12	P	4.25	(108)	4.69	(119)
-12	2600	2700	-12-12	P	5.24	(133)	5.67	(144)
-15	2600	2700	-15-12	P	6.22	(158)	6.65	(169)
-17	2600	2700	-17-12	P	7.20	(183)	7.64	(194)
-20	2600	2700	-20-12	P	8.19	(208)	8.62	(219)

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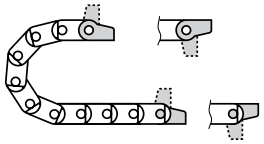
E-Chain System® E2 Medium
Series 26/27/27i
Mounting Brackets - Steel

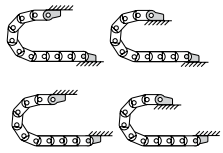
Option 1: Steel

- Pivoting connections
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

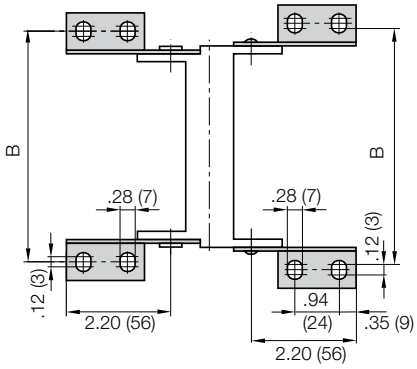
Moving end
260...1

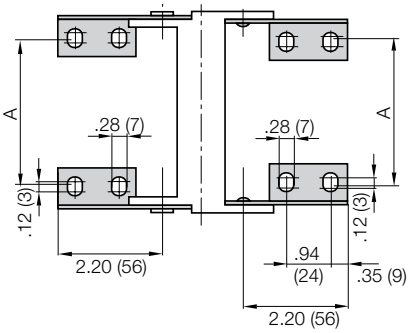


Fixed end
260...2



Possible installation configurations -





Chain Type	Part No. Full Set	Dimension A in.	(mm)	Dimension B in.	(mm)
26/27/27i-05	**260-12**	1.44	(36.5)	3.31	(84)
26/27/27i-07	**260-12**	2.44	(62)	4.25	(108)
26/27/27i-10	**260-12**	3.43	(87)	5.24	(133)
26/27/27i-12	**260-12**	4.41	(112)	6.22	(158)
26/27/27i-15	**260-12**	5.39	(137)	7.20	(183)
26/27/27i-17	**260-12**	6.42	(163)	8.23	(209)
26/27/27i-20	**260-12**	7.40	(188)	9.21	(234)

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 26/27/27i:
260-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right
Series 26/27/27i:
260-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right
Series 26/27/27i:
260-2

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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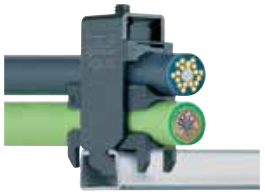
igus®

E-Chain System® E2 Medium Series 26/27/27i Strain Relief

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

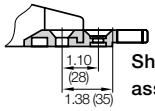
Chainfix Clip

Modular snap-on strain relief device

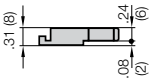
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(04-08)	CFC-08-M	CFC-08-C
.31-.47	(08-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

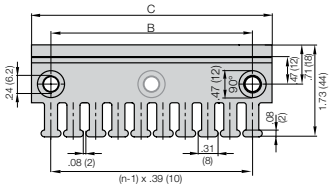


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



For more information please refer to strain relief section of Chapter 10

Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
2050-Z	6	2.36	(60)

For more information please refer to strain relief section of Chapter 10

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E-Chain System® E2 Medium
Series 26/27/27i
Guide Trough

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part Number 95-30
- 1/2 travel length of glide bars
  Part number 92-01
- Installation sets as end connectors
  Part Number 95-50-XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bar

= 25 sections of 6.56 ft (2 m) guide trough

Part No. 95-30

= 13 sections of 6.56 ft (2 m) glide bar

Part No. 92-01

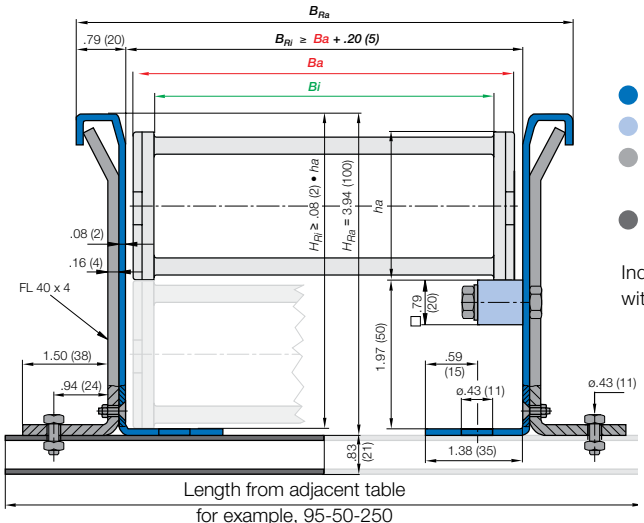
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
Example: 95-50-400 for 15.75" (400 mm) long profile rail.

Width of Crossbar
27-**05**-200-0

-05	2.80 (71)	95-50-200
-07	3.78 (96)	95-50-200
-10	4.76 (121)	95-50-250
-12	5.75 (146)	95-50-250
-15	6.73 (171)	95-50-300
-17	7.83 (199)	95-50-300
-20	8.82 (224)	95-50-350

B_{Ri} | Installation Part No.

Standard length profile rail



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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340
350

igus®

E-Chain System® E2 Medium
Series 340/350

1.77 1.77

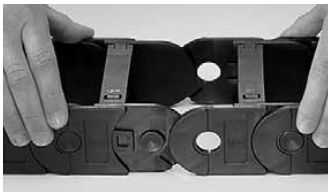
Price Index

Series 340/350

Special Features / Options

Flammability Class
VDE 0304 IIC UL94 HB

Assembly Tips



Easy to assemble and disassemble

Other Installation Methods

Vertical, hanging ≤ 262 ft (80 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.28 ft (1 m)
Rotary requires further calculation

Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required
- If Intergrated strain relief at the connection point is required
- If modular interior separation is required
- For travels up to 492 ft (150 m)
- For long service life

- If maximum stability is required
  ➤ **Series 380, E4/100**
- If chip protection is required
  ➤ **Series R68 or R167/R168, E2 Tubes**
- If the application is very simple
  ➤ **Series E/Z 300, E-Z Chain**

Features & Benefits

1. Lateral glide surfaces for side mounted
2. operation
3. Double stop dog for long unsupported length
4. Integrated strain relief possible
5. Dirt-repellent, contoured exterior
   Series 340 snap-open along the inner radius can be combined with Series 350 snap-open along the outer radius
6. Cable-friendly smooth interior
7. Large pins for long service life
8. Available with extender crossbars for large hoses

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

16.4 ft (5 m) **350-150-100-0**	**E-Chain®**
With 2 separators **311** assembled every 2nd link	**Interior Separation**
1 Set **3150-34PZB**	**Mounting Bracket**

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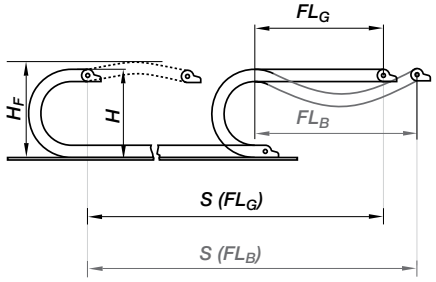
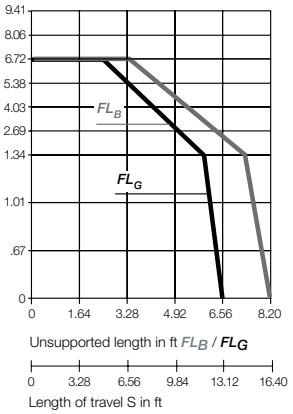
E-Chain System® E2 Medium Series 340/350 Installation Dimensions

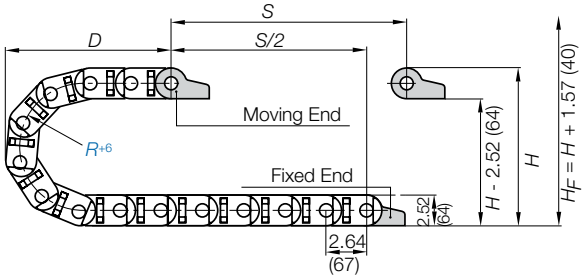
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.64" (67 mm)
Links per ft (m): = 4.55 (15)
For center mount applications:
Chain length = $S/2 + K$

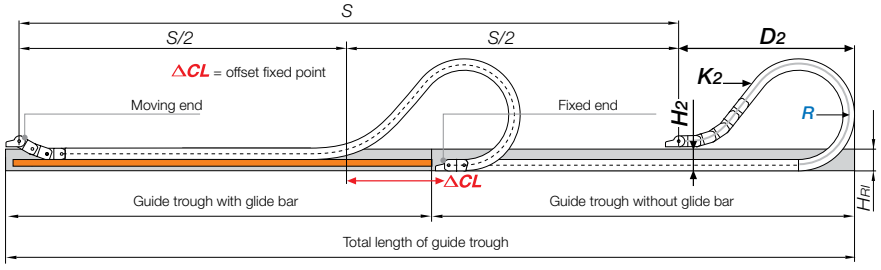
The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)
H +5	8.46 (215)	10.43 (265)	12.40 (315)	14.37 (365)	18.31 (465)	22.24 (565)	26.18 (665)
D	5.91 (150)	7.87 (200)	8.86 (225)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)
K	15.75 (400)	19.69 (500)	25.59 (650)	28.54 (725)	34.45 (875)	41.34 (1050)	48.23 (1225)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 492 ft. (150 m)

For center mount applications:
Chain length = $S/2 + K_2$



In case of travels between 13 ft. (4m) and 32.8 ft. (10m) we recommend a longer unsupported length.

R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)
H2	–	–	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)
D2 +5	–	–	18.70 (45)	22.44 (570)	30.71 (780)	39.76 (1010)	45.28 (1150)
K2	–	–	31.65 (804)	39.57 (1005)	52.76 (1340)	65.94 (1675)	76.50 (1943)
ΔCL	—	—	9.17 (233)	11.93 (303)	18.23 (463)	25.31 (643)	28.86 (733)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.81 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height
HRI = Trough inner height
H_2 = *Mounting height
D_2 = Over length - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ Chapter 1

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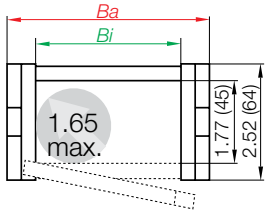
igus®

E-Chain System® E2 Medium
Series 340/350

Series 340 - Snap-open along the inner radius

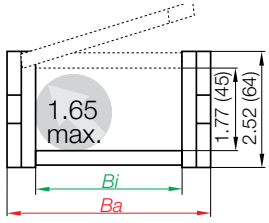


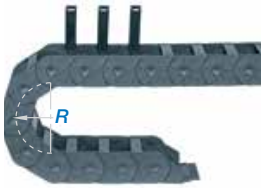
Part Number Structure

340- 150- 100- 0

- Color - Black
- Bending radius
- Width
- Series

Series 350 - Snap open along the outer radius

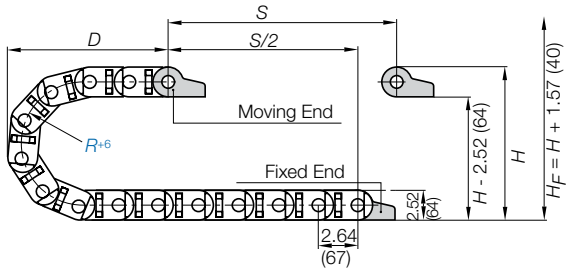




Part Number Structure

350- 150- 100- 0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: 350-150-100-0
Pitch: 2.64 in. (67 mm) per link links/ft (m) = 4.57 (15)

Part Number Snap-open Inner Radius	Part Number Snap-open Outer Radius			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
340-050-	350-050-		-0	1.97 (50)	2.76 (70)	≈ 1.08 (1.603)
340-075-	350-075-		-0	2.95 (75)	3.74 (95)	≈ 1.19 (1.778)
340-100-	350-100-		-0	3.94 (100)	4.72 (120)	≈ 1.29 (1.925)
340-115-	350-115-		-0	4.53 (115)	5.31 (135)	≈ 1.33 (1.985)
340-125-	350-125-		-0	4.92 (125)	5.71 (145)	≈ 1.36 (2.025)
340-150-	350-150-		-0	5.91 (150)	6.69 (170)	≈ 1.45 (2.165)
340-175-	350-175-		-0	6.89 (175)	7.68 (195)	≈ 1.53 (2.278)
340-200-	350-200-		-0	7.87 (200)	8.66 (220)	≈ 1.65 (2.448)
340-225-	350-225-		-0	8.86 (225)	9.65 (245)	≈ 1.74 (2.587)
340-250-	350-250-		-0	9.84 (250)	10.63 (270)	≈ 1.83 (2.725)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 350-150-100-0

	075	100	125	150	200	250	300
R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)
H_{+5}	8.46 (215)	10.43 (265)	12.40 (315)	14.37 (365)	18.31 (465)	22.24 (565)	26.18 (665)
D	5.91 (150)	7.87 (200)	8.86 (225)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)
K	15.75 (400)	19.69 (500)	25.59 (650)	28.54 (725)	34.45 (875)	41.34 (1050)	48.23 (1225)

0=Standard color black. For other colors see Chapter 1

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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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E-Chain System® E2 Medium
Series 340/350
Extender Crossbars

The extender crossbars were developed specifically for applications in which a large diameter hose must be guided carefully. It is intended for hoses with a maximum outer diameter of 4.53 (115 mm). The extender crossbar can be placed along either the outer (Series 350) or inner (Series 340) radius. In most applications, the inner radius is preferred. However, the chain cannot glide on itself in this case. If gliding operation is required, the crossbars are assembled along the outer radius and a special guide trough is required. The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.

If the extender crossbars are attached along the outer radius, the side of the chain must be supported so that the crossbars do not come in contact with the running surface. We are happy to assist with the design and assembly of this type of system. This design is also suitable for gliding applications. We are also happy to assist with guide trough requirements.

Extender crossbar: Series 340

340-150...

340-175...

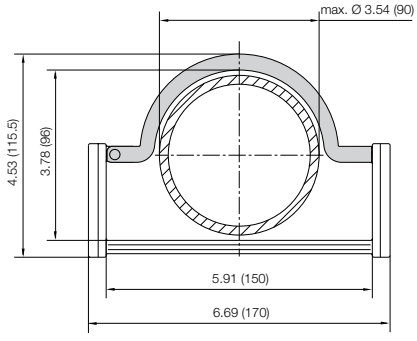
Series	max. Hose Ø in. (mm)	Bending Radii in. (mm)
340-150	3.54 (90)	5.91 (150), 7.87 (200), 9.84 (250)
340-175	4.53 (115)	7.87 (200), 9.84 (250)

Extender crossbar: Series 350

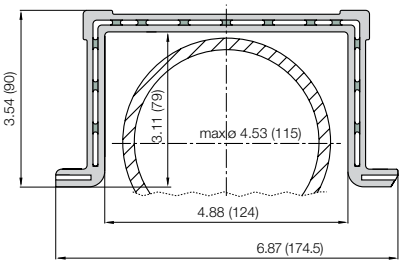
350-150...

350-175...

Series	max. Hose Ø in. (mm)	Bending Radii in. (mm)
350-150	3.54 (90)	2.95 (75), 3.94 (100), 4.92 (125),
		5.91 (150), 7.87 (200), 9.84 (250)
350-175	4.53 (115)	2.95 (75), 3.94 (100), 4.92 (125),
		5.91 (150), 7.87 (200), 9.84 (250)



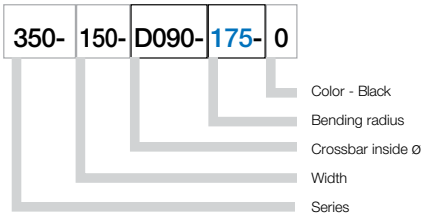
Part No. (round extender crossbar)
3500-150-D090



Part No. (square extender crossbar)
3500-175-D115*

*This product also available in round design - order **Part No. 3500-175-RD115**

Part Number Structure for E-Chain®
with Extender Crossbars



Assembly
As with all Series 340/350 crossbars, the extender crossbars are opened using a screwdriver.

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E2 Medium Series 340/350 Interior Separation

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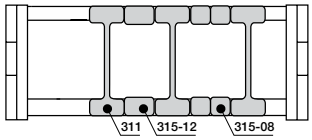
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.



Vertical separator 301

Vertical Separator

Unassembled	**Part No. 301**
Assembled	**Part No. 311**

- **Standard separator 301 for E-Chains®**
  This separator is used for general subdivision of E-Chain®.

Spacers 305-XX

Spacer

Unassembled	**Part No. 305-XX**
Assembled	**Part No. 315-XX**

XX = width of the spacer

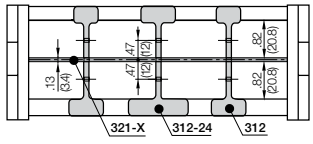
- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

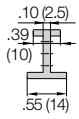
Part No. Unassembled	Part No. Assembled	in.	(mm)
305-08	**315-08**	.31"	(8)
305-12	**315-12**	..47"	(12)

Option 2: Full-width shelf

This option is available for the snap-open Series 340/350 chains. It is ideal for use in applications involving many thin cables with similar or identical diameters. This shelf slides into place and spans the entire width of the chain.



Slotted vertical separator 302

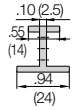


Slotted Separator

Unassembled	**Part No. 302**
Assembled	**Part No. 312**

- **Slotted separator 302 for E-Chains®**
  This component is used to form the basic pattern of a shelf system.

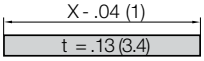
Slotted vertical separator 302-24



Slotted Separator

Unassembled	**Part No. 302-24**
Assembled	**Part No. 312-24**

- **Slotted separator 302-24 for E-Chains®**
  This separator features a wide base. It can be used in side mounted applications.

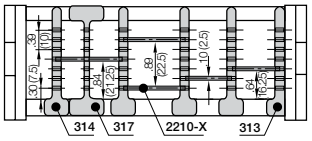


Width X in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Part No Unassembled	Part No. Assembled
1.97	(50)	**320-050**	**321-050**	5.91	(150)	**320-150**	**321-150**
2.95	(75)	**320-075**	**321-075**	6.89	(175)	**320-175**	**321-175**
3.94	(100)	**320-100**	**321-100**	7.87	(200)	**320-200**	**321-200**
4.53	(115)	**320-115**	**321-115**	8.86	(225)	**320-225**	**321-225**
4.92	(125)	**320-125**	**321-125**	9.84	(250)	**320-250**	**321-250**

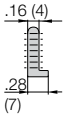
E-Chain System® E2 Medium
Series 340/350
Interior Separation

Option 3: Shelves

This option is available for the Series 340/350 snap-open chains. It is ideal for use in applications involving many cables with different diameters. This option allows for variable compartment heights and widths across the chain width, but can also be used for level separation across the entire width.



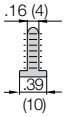
Side plate 303



Side plate	
Unassembled	**Part No. 303**
Assembled	**Part No. 313**

- **Slotted separator 303 for E-Chains®**
  This component is used to form the basic pattern of a shelf system.

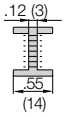
Vertical separator 304



Slotted Separator	
Unassembled	**Part No. 304**
Assembled	**Part No. 314**

- **Slotted separator 304 for E-Chains®**
  This component is used to form the basic pattern of a shelf system.

Open slotted separator 307



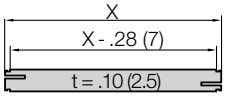
Slotted separator, open	
Unassembled	**Part No. 307**
Assembled	**Part No. 317**

- **Open slotted separator 307 for E-Chains®**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into the 5 middle slots only.

Shelves 2200-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 5 different heights in .20" (5mm) increments

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	**2200-18**	**2210-18**
.91	(23)	**2200-23**	**2210-23**
1.10	(28)	**2200-28**	**2210-28**
1.30	(33)	**2200-33**	**2210-33**
1.50	(38)	**2200-38**	**2210-38**
1.69	(43)	**2200-43**	**2210-43**
1.89	(48)	**2200-48**	**2210-48**
2.28	(58)	**2200-58**	**2210-58**
2.68	(68)	**2200-68**	**2210-68**
2.87	(73)	**2200-73**	**2210-73**
3.46	(88)	**2200-88**	**2210-88**
3.90	(99)	**2200-99**	**2210-99**
4.88	(124)	**2200-124**	**2210-124**



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

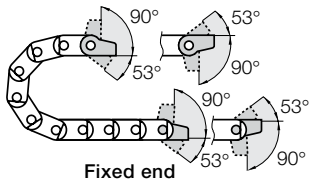
E-Chain System® E2 Medium
Series 340/350
Mounting Brackets - Plastic

Telephone 1-800-521-2747
Fax 1-401-438-7270

Option 1: pivoting

- Short and long travels
- Space-restricted conditions
- Corrosion resistant

Moving end
3...3PZB

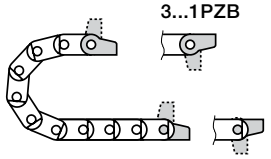


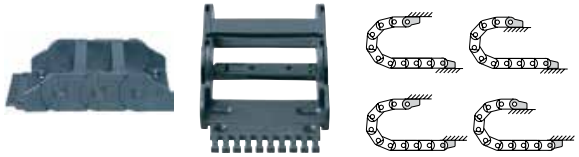
Fixed end
3...4PZB

Option 2: locking

- Vertical hanging/standing travels
- Extreme accelerations
- Corrosion resistant

Moving end
3...1PZB



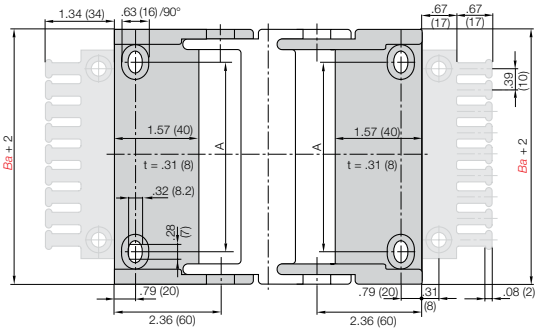


Fixed end
3...2PZB

Part Number Structure

3075- | 34 | PZ | B | K1

- With 10 cable tiewraps
- With tiewrap plates
- Mounting brackets only
- Complete Set
  34 = Pivoting
  12 = Locking
- Mounting brackets for selected chain type



Full set, for both ends:
3075- | 34 | PZB Full set, **each part with pin/bore + tiewrap plate**

Single-part order:
3075- | 3 | PZB Mounting bracket **with bore + tiewrap plate**
3075- | 4 | PZB Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
Series 340, 350:
3075-34PZ

Part No. Full Set (pivoting)
With Tiewrap Plates
Series 340, 350:
3075-34PZB

Part No. Full Set (pivoting)
With Tiewrap Plates + 10 cable ties
Series 340, 350:
3075-34PZBK1

For Chain Type	Part No. Mounting Bracket Full Set	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 Cable Ties	Dimension A in.	(mm)
340/350-050	3050- ☐ PZ	3050- ☐ PZB	3050- ☐ PZBK1	1.10	(28)
340/350-075	3075- ☐ PZ	3075- ☐ PZB	3075- ☐ PZBK1	2.09	(53)
340/350-100	3100- ☐ PZ	3100- ☐ PZB	3100- ☐ PZBK1	3.07	(78)
340/350-115	3115- ☐ PZ	3115- ☐ PZB	3115- ☐ PZBK1	3.66	(93)
340/350-125	3125- ☐ PZ	3125- ☐ PZB	3125- ☐ PZBK1	4.06	(103)
340/350-150	3150- ☐ PZ	3150- ☐ PZB	3150- ☐ PZBK1	5.04	(128)
340/350-175	3175- ☐ PZ	3175- ☐ PZB	3175- ☐ PZBK1	6.02	(153)
340/350-200	3200- ☐ PZ	3200- ☐ PZB	3200- ☐ PZBK1	7.01	(178)
340/350-225	3225- ☐ PZ	3225- ☐ PZB	3225- ☐ PZBK1	7.99	(203)
340/350-250	3250- ☐ PZ	3250- ☐ PZB	3250- ☐ PZBK1	8.98	(228)

34 or 12

34 For pivoting brackets choose
12 For locking brackets choose
Example: 3075- 34 PZB

Cable tiewraps as individual parts

Cable tiewraps 100 pieces/bag	Width x Length in.	(mm)	Maximum Ø in.	(mm)	Tensile Strength lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)

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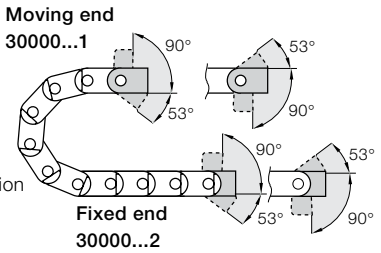
E-Chain System® E2 Medium
Series 340/350
Mounting Brackets - KMA

Standard

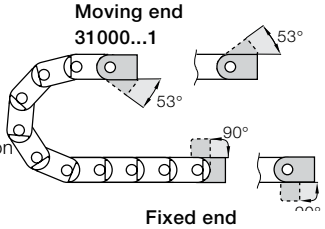
Option 1: pivoting

- Short and long travels
- Optional integrated profile rail for strain relief
- Bolted connection outside of chain cross section
- Space-restricted conditions
- Corrosion resistant
- Universal use



Option 2: locking

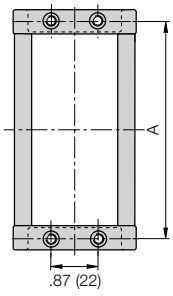
- Short and long travels
- Optional integrated profile rail for strain relief
- Bolted connection outside of chain cross section
- Extreme accelerations
- Corrosion resistant
- Universal use

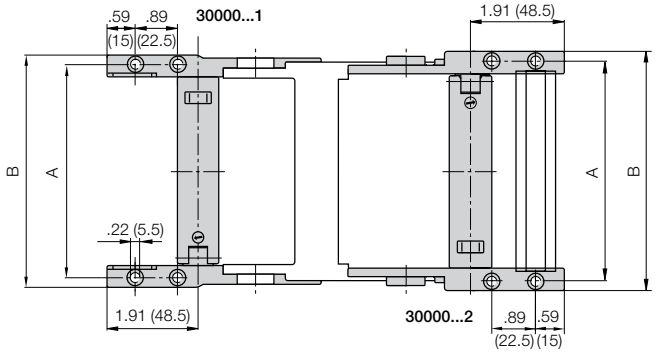


Part Number Structure

30000- 075- 12 P

- With Profile Rail
- Complete Set
- Width
- 30000 = Pivoting, 31000 = Locking





Full set, for both ends:

30000- 075- 12 Full set, **each part with pin/bore**

Single-part order:

30000- 075- 1 Mounting bracket **with bore**

30000- 075- 2 Mounting bracket **with pin**

Part number examples are shown for pivoting brackets. For locking brackets change part number to 31000

Part No. Full Set (pivoting)
Series 340/350:
30000-Width-12

Part No. Full Set (pivoting)
with profile rail
Series 340/350:
30000-Width-12P

Width	Part No. Full Set			With	Dimension A		Dimension B	
	Pivoting	Locking		Profile Rail	in.	(mm)	in.	(mm)
-050	30000	31000	-050-12	P	2.48	(63)	2.91	(74)
-075	30000	31000	-075-12	P	3.46	(88)	3.90	(99)
-100	30000	31000	-100-12	P	4.45	(113)	4.88	(124)
-115	30000	31000	-115-12	P	5.04	(128)	5.47	(139)
-125	30000	31000	-125-12	P	5.43	(138)	5.87	(149)
-150	30000	31000	-150-12	P	6.42	(163)	6.85	(174)
-175	30000	31000	-175-12	P	7.40	(188)	7.83	(199)
-200	30000	31000	-200-12	P	8.39	(213)	8.82	(224)
-225	30000	31000	-225-12	P	9.37	(238)	9.80	(249)
-250	30000	31000	-250-12	P	10.35	(263)	10.79	(274)

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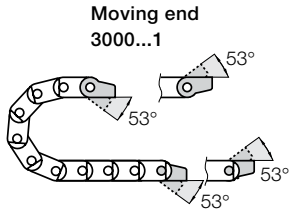
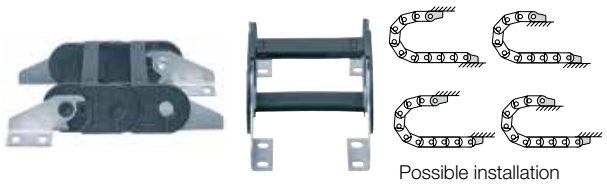
igus®

E-Chain System® E2 Medium
Series 340/350
Mounting Brackets - Steel

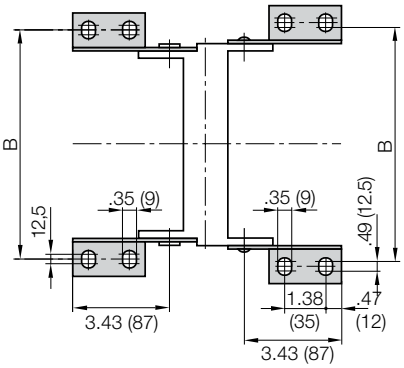
Option 1: Steel

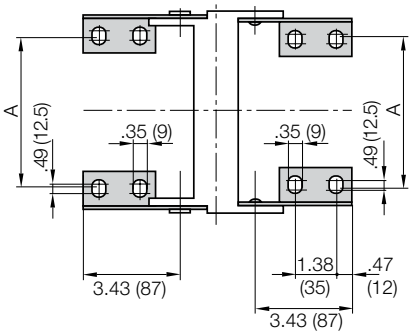
- Pivoting connections
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible





Possible installation configurations -





Chain Type	Part No. Full Set	Dimension A in.	(mm)	Dimension B in.	(mm)	Dimension C in.	(mm)
340/350-050	**3000-12**		–	3.39	(86)	3.82	(97)
340/350-075	**3000-12**	2.09	(53)	4.37	(111)	4.80	(122)
340/350-100	**3000-12**	3.07	(78)	5.35	(136)	5.79	(147)
340/350-115	**3000-12**	3.66	(93)	5.94	(151)	6.38	(162)
340/350-125	**3000-12**	4.06	(103)	6.34	(161)	6.77	(172)
340/350-150	**3000-12**	5.04	(128)	7.32	(186)	7.76	(197)
340/350-175	**3000-12**	6.02	(153)	8.35	(212)	8.82	(224)
340/350-200	**3000-12**	7.01	(178)	9.29	(236)	9.72	(247)
340/350-225	**3000-12**	7.99	(203)	10.28	(261)	10.71	(272)
340/350-250	**3000-12**	8.98	(228)	11.26	(286)	11.69	(297)

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 340/350:
3000-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right
Series 340/350:
3000-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right
Series 340/350:
3000-2

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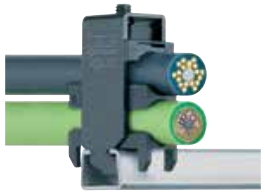
E-Chain System® E2 Medium Series 340/350 Strain Relief

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

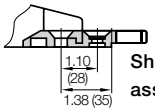
Chainfix Clip

Modular snap-on strain relief device

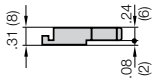
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(04-08)	CFC-08-M	CFC-08-C
.31-.47	(08-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

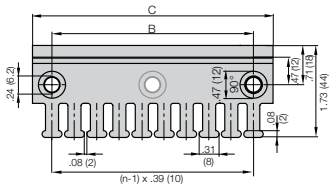


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



For more information please refer to strain relief section of Chapter 10

Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

For more information please refer to strain relief section of Chapter 10

Part No.	No of Teeth	Width of Strain Relief in.	(mm)
For Fixed Crossbar			
3050-Z	5	1.97	(50)
3075-Z	7	2.91	(74)
For Opening Crossbar			
3035-ZS	3	1.38	(35)
3050-ZS	5	1.97	(50)
3075-ZS	7	2.95	(75)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E2 Medium
Series 340/350
Guide Trough

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part Number 93-30
- 1/2 travel length of glide bars
  Part number 93-01
- Installation sets as end connectors
  Part Number 93-50 -XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

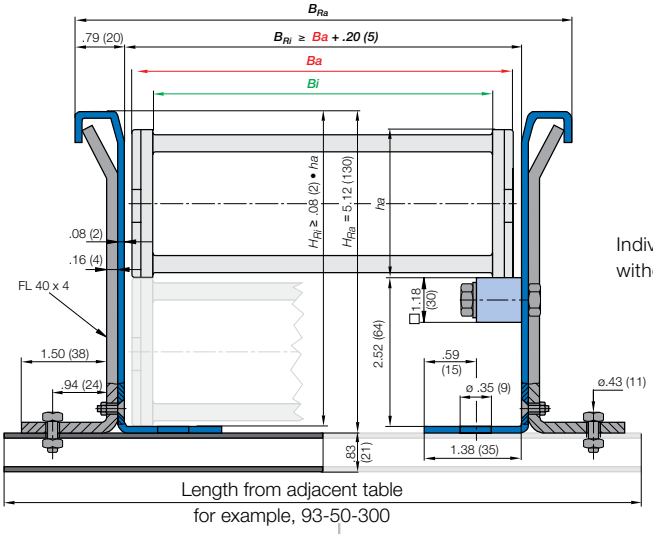
Example:

Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 93-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
Example: 93-50-300 for 15.75" (400 mm) long profile rail.

Width of Crossbar
350-**075**-200-0

	B_{Ri}	Installation Part No.
-050	2.95 (75)	**93-50-150**
-075	3.94 (100)	**93-50-200**
-100	4.92 (125)	**93-50-250**
-115	5.51 (140)	**93-50-250**
-125	5.91 (150)	**93-50-300**
-150	6.89 (175)	**93-50-300**
-175	7.87 (200)	**93-50-300**
-200	8.86 (225)	**93-50-350**
-225	9.84 (250)	**93-50-350**
-250	10.83 (275)	**93-50-400**

Standard length profile rail



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

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E-Chain System® E2 Medium
Series 340/350

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E2 Tubes

E2 Tubes - protection against hot chips and debris

E2 E-Tube
Series Zipper, R, R100 and R1000

Laboratory tests and numerous field applications over the past 20 years prove that igus®' E-Chains® and fully enclosed E-Tubes protect cables used in welding robots and machine tools. For extreme-temperature applications, igus® offers E-Tubes made from its igumid HT material, which repels hot chips and flying debris reaching 1,562°F (850°C). All standard E2 and E4 E-Tubes are available made from igumid HT, upon request.

Typical industries and applications

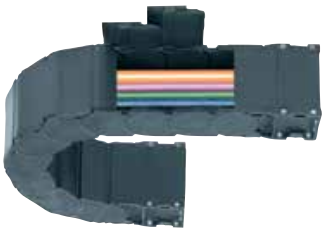
- Tooling machines
- Woodworking machines
- All kind of industries and machines with chip, dirt and dust

iF-Design Awards -
Series R117/118 and Series R68

ESD Classification: Electrically conductive
ESD/ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

Series R - For higher speeds and smooth running



Series R100 - Cost effective alternative, for applications with low and medium speeds

E2 E-Tubes in chip-area of a tooling machine. Resistant against hot metal chips up to 1,562°F (850°C)

U-shaped supported E-Tube
for high lateral acceleration

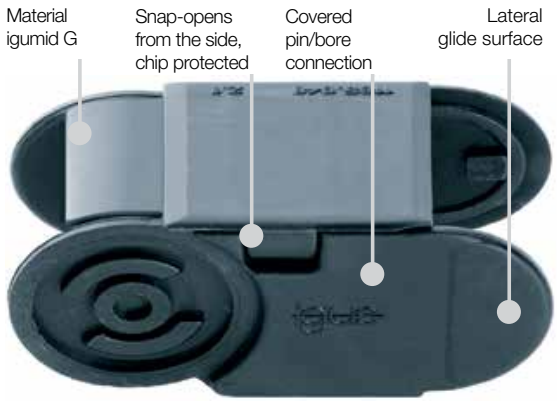
Standing application - R68 Tube -
Note: the first links are supported

RX40 - New E-Tube with chip repellent design

A world premiere from igus®- a totally redesigned E-Tube - repels chips, is extremely tight, and can still be opened!

Series RX40 ➤ Page 5.52

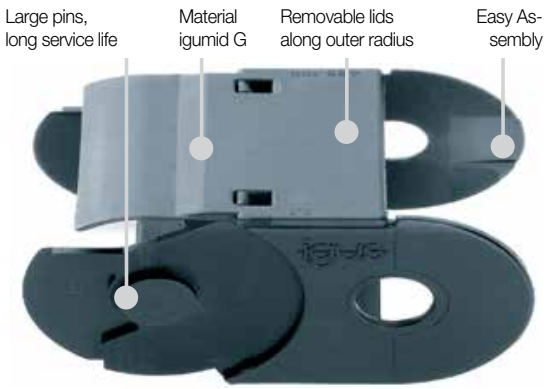
E-Chain System® E2 Tubes
Selection Guide



E2 Series R100 - robust and tight

- Very good protection against chips (also hot chips)
- Hinged, snap-open, removable lids along inner or outer radius reduce assembly time
- Space-efficient with optimized ratio of inner dimension to outer dimension
- Double stop dog for long service life and strong unsupported lengths
- Universal KMA mounting brackets with attachment capability on all sides
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
R117/118	.83	(21)	.79-3.94	(20-100)	1.26-4.41	(32-112)	1.10	(28)	2.48-7.09	(63 - 180)
R157/158	1.57	(40)	1.57-7.87	(40-200)	2.20-8.50	(56-216)	1.97	(50)	3.94-9.84	(100 - 250)
R167/168	1.97	(50)	1.97-9.84	(50-250)	2.68-10.55	(68-268)	2.52	(64)	3.94-11.81	(100 - 300)



E2 Series R - small pitch for smooth motion

- Protection for cables and hoses against chips (also hot chips)
- Small pitch for low noise, smooth operation
- Smooth, chip repellant exterior
- Lids removable for assembly time reduction
- Double stop dog for strong unsupported lengths
- KMA mounting brackets with attachment capability on all sides
- Very small radii possible due to small pitch
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
R48	.98	(25)	.98-5.12	(25-130)	1.42-5.55	(36-141)	1.42	(36)	2.36-9.84	(60 - 250)
R58	1.38	(35)	1.97-7.87	(50-200)	2.60-8.50	(66-216)	1.97	(50)	2.95-9.84	(75 - 250)
R68	1.77	(45)	1.97-9.84	(50-250)	2.68-10.55	(68-268)	2.52	(64)	3.94-11.81	(100 - 300)

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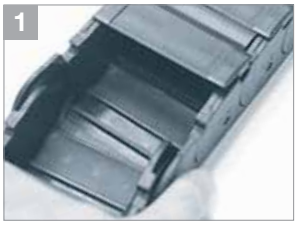
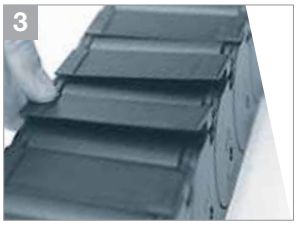
E-Chain System® E2 Tubes
Assembly Instructions

E-Chains® - Assembling E2 Series R100 E-Tubes

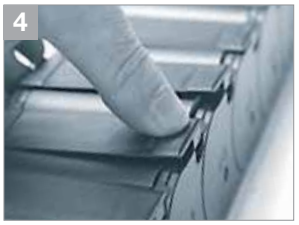


Push, click - and snap in pin

Swivel lids - push and snap

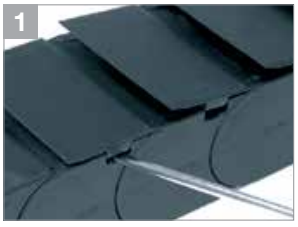


Slide last lid



Push and snap

E-Chains® - Separating E2 Series R100 E-Tubes



Lever open lid

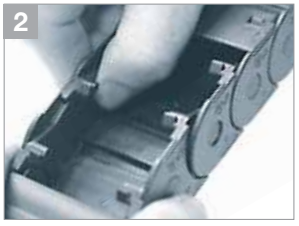
Bend E-Tube to remove lid

Release side-link

Twist and pull apart

E-Chains® - Assembling E2 Series R48, R58, R68 E-Tubes

Push and click



Snap in pin

Slide lid

Push and snap

E-Chains® - Separating E2 Series R48, R58, R68 E-Tubes

Lever open lid

Remove lid

Release side-link

Twist and pull apart

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R117
R118

igus®

E-Chain System® E2 Medium
Series R117/R118

.83 .83

Price Index

Series R117/R118

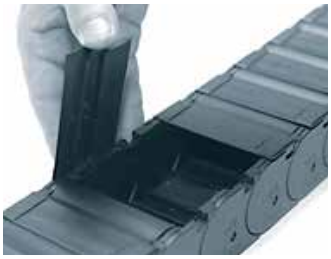
Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

iF-Design Award Winner

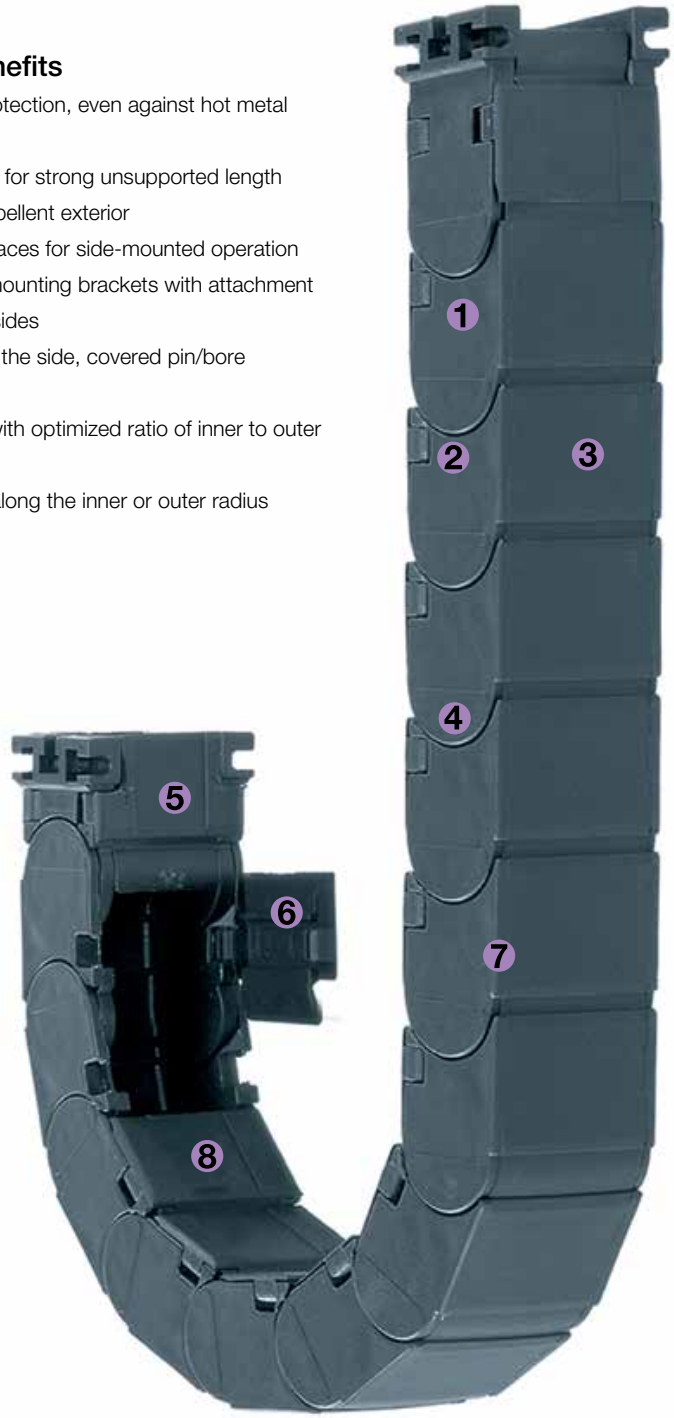
Assembly Tips



Lids of the E-Tube Series R100 are hinged for easy access

Features & Benefits

1. Effective chip protection, even against hot metal chips
2. Double stop dog for strong unsupported length
3. Smooth, chip-repellent exterior
4. Lateral glide surfaces for side-mounted operation
5. Universal KMA mounting brackets with attachment capability on all sides
6. Snap-open from the side, covered pin/bore connection
7. Space-efficient with optimized ratio of inner to outer dimension
8. Snap-open lids along the inner or outer radius



Other Installation Methods

Vertical, hanging ≤ 65.6 ft (20 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupp. ≤ 2.29 ft (0.7 m)
Rotary requires further calculation

Usage Guidelines

- If snap-open accessibility along inner or outer radius is required
- If price is an issue
- If flush attachment is required

- For smoother running and smaller pitch
  ➤ **Series R48 E2 Tubes**
- If accessibility along the sides of the radius is required
  ➤ **Series R760 E4/100**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **117-100-100-0**	**E-Chain®**
With 2 separators **1186-01** assembled every 2nd link	**Interior Separation**
1 Set **11800-100-14**	**Mounting Bracket**

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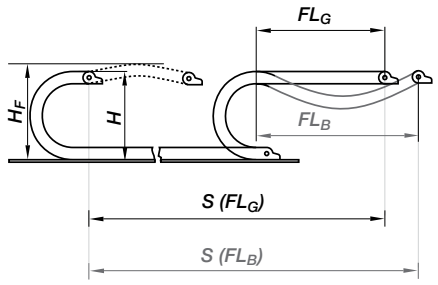
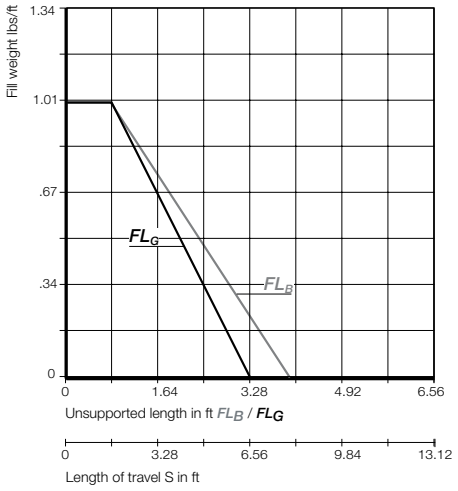
E-Chain System® E2 Medium Series R117/R118 Installation Dimensions

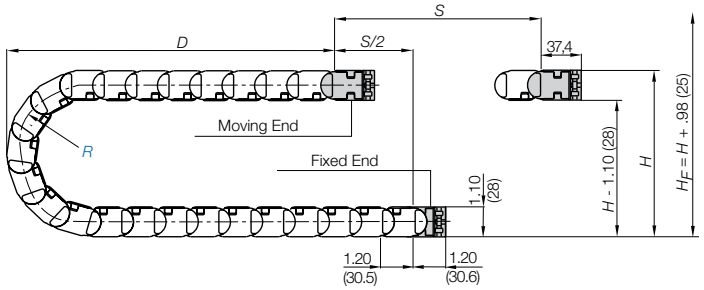
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: $H_F = H + .98$ **in. (25 mm)** (with .67 lbs/ft (1.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	2.48 (063)	2.95 (075)	3.94 (100)	4.33 (110)	4.92 (125)	5.71 (145)	7.09 (180)
H	6.06 (154)	7.01 (178)	8.98 (228)	9.76 (248)	10.94 (278)	12.52 (318)	15.28 (388)
D	4.84 (123)	5.31 (135)	6.30 (160)	6.69 (170)	7.28 (185)	8.07 (205)	9.45 (240)
K	10.24 (260)	1181 (300)	14.96 (380)	16.14 (410)	17.91 (455)	20.47 (520)	24.80 (630)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 1.64 ft/s (0.5 m/s) / max. 16.4 ft/s² (5 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

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igus®

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Series R117/R118

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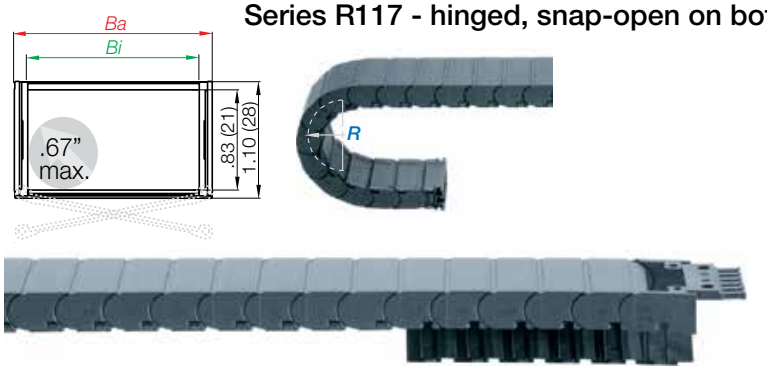
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

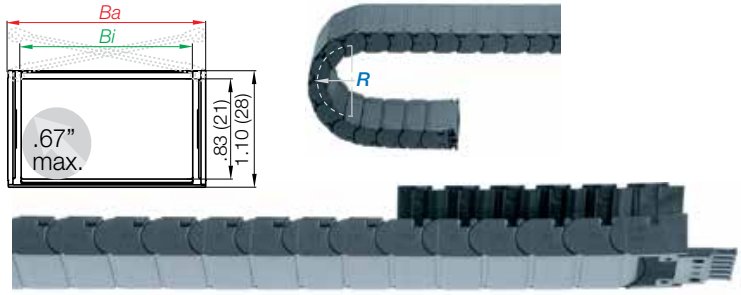
Series R117 - hinged, snap-open on both sides of the inner radius



Part Number Structure

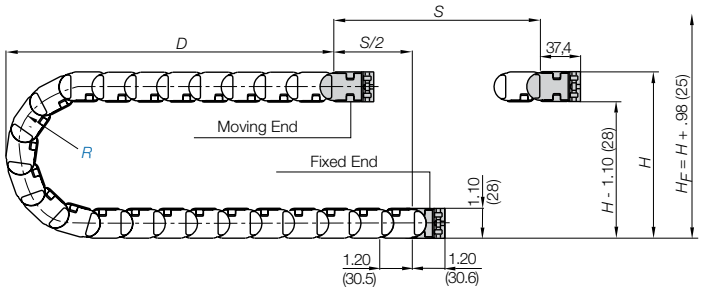
117- 100- 100- 0
- Color - Black
- Bending radius
- Width
- Series

Series R118 - hinged, snap-open on both sides of the outer radius



Part Number Structure

118- 100- 100- 0
- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: 117-100-100-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

Part Number. Snap-open inner radius	Snap-open outer radius		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
117-020-		-0	.79 (20)	1.26 (32)	≈ 0.29 (0.43)
117-025-	118-025-	-0	.98 (25)	1.46 (37)	≈ 0.31 (0.46)
117-038-		-0	1.50 (38)	1.97 (50)	≈ 0.38 (0.56)
117-048-	118-048-	-0	1.89 (48)	2.40 (60)	≈ 0.44 (0.66)
117-063-		-0	2.48 (63)	2.95 (75)	≈ 0.51 (0.76)
117-080-	118-080-	-0	3.15 (80)	3.62 (92)	≈ 0.60 (0.89)
117-100-		-0	3.94 (100)	4.41 (112)	≈ 0.71 (1.06)

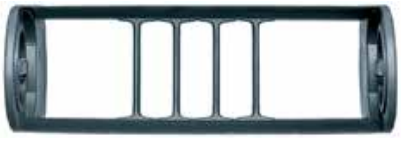
Choose from the radii below for all of the above sizes
Radius (mm) Example: 117-100-100-0

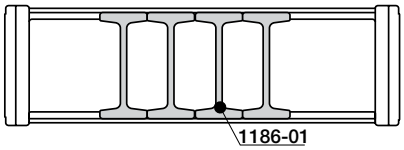
	063	075	100	110	125	145	180
R	2.48 (063)	2.95 (075)	3.94 (100)	4.33 (110)	4.92 (125)	5.71 (145)	7.09 (180)
H	6.06 (154)	7.01 (178)	8.98 (228)	9.76 (248)	10.94 (278)	12.52 (318)	15.28 (388)
D	4.84 (123)	5.31 (135)	6.30 (160)	6.69 (170)	7.28 (185)	8.07 (205)	9.45 (240)
K	10.24 (260)	1181 (300)	14.96 (380)	16.14 (410)	17.91 (455)	20.47 (520)	24.80 (630)

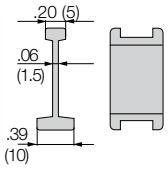
E-Chain System® E2 Tubes
Series R117/R118
Interior Separation
Mounting Brackets - KMA

Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link. .







Vertical Separator

Unassembled	**Part No. 1185-01**
Assembled	**Part No. 1186-01**

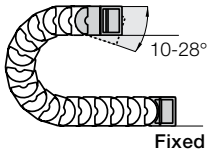
- **Standard separator 1185-01 for E-Chains®**
  This separator is used for general subdivision of E-Chain®.

Mounting Brackets - KMA

Option: KMA pivoting

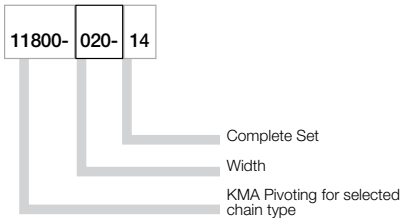
- Short and long travels
- Space restricted
- Corrosion-resistant

Moving end
11800...1



Fixed end
11800...4

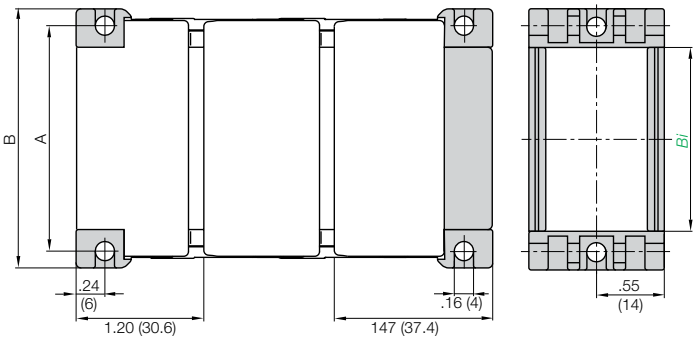
Part Number Structure



Full set, for both ends:
11800- 020- 14 Full set, **each part with pin/bore**
Single-part order:
11800- 020- 1 Mounting bracket **with bore**
11800- 020- 4 Mounting bracket **with pin**

Fixed end
11800...4

Moving end
11800...1



Series	Part No. Full Set	Dimension A in.	(mm)	Dimension B in.	(mm)
117-020	**11800-020-14**	1.14	(29)	1.42	(36)
117/118-025	**11800-025-14**	1.34	(34)	1.61	(41)
117-038	**11800-038-14**	1.85	(47)	2.13	(54)
117/118-048	**11800-048-14**	2.24	(57)	2.52	(64)
117-063	**11800-063-14**	2.83	(72)	3.11	(79)
117/118-080	**11800-080-14**	3.50	(89)	3.78	(96)
117-100	**11800-100-14**	4.29	(109)	4.57	(116)

- **The mounting brackets are supplied with hexagon nuts and can be attached with M4 bolts, or the mounting brackets may also be attached with M4 socket head cap bolts**

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igus®

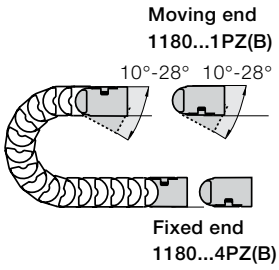
E-Chain System® E2 Tubes
Series R117/R118
Mounting Brackets - Plastic

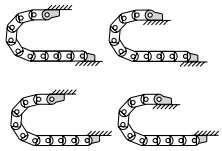
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

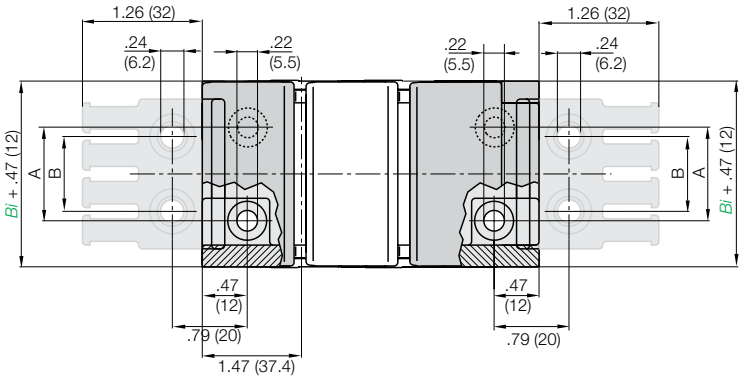
Option: plastic bracket

- For long travels
- Attachment option for strain relief tiewrap plate
- Locked connection to E-Tube
- Minimized external width





Possible installation configurations -



Part Number Structure

1180- | 048- | 14- | PZB

- With tiewrap plate
- Complete Set
- Width
- Mounting brackets for selected chain type

Full set, for both ends:
1180- 048- 14 Full set, **each part with pin/bore**

Single-part order:
1180- 048- 1 Mounting bracket **with bore**
1180- 048- 4 Mounting bracket **with pin**

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series R117/R118:
1180-Width-14

Part No. Mounting bracket with bore
2 parts, 1 left & 1 right
Series R117/R118:
1180-Width-1

Part No. Mounting bracket with pin
2 parts, 1 left & 1 right
Series R117/R118:
1180-Width-4

For Series	Part No. Full Set without Tiewrap Plate	Part No. Full Set with Tiewrap Plate	Dimension A in.	(mm)	Dimension B in.	(mm)
R117/R118-025	**1180-025-14PZ**	**1180-025-14PZB**	.47	(12)	.59	(15)
R117-038	**1180-038-14PZ**	**1180-038-14PZB**	.98	(25)	.79	(20)
R117/R118-048	**1180-048-14PZ**	**1180-048-14PZB**	1.38	(35)	1.18	(30)
R117-063	**1180-063-14PZ**	**1180-063-14PZB**	1.97	(50)	1.57	(40)
R117/R118-080	**1180-080-14PZ**	**1180-080-14PZB**	2.64	(67)	2.36	(60)
R117-100	**1180-100-14PZ**	**1180-100-14PZB**	3.43	(87)	3.15	(80)

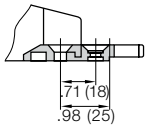
The following parts are required for attachment of the mounting brackets:

- **Countersunk bolt M5* DIN 912-8.8**
- **Hexagon nut M5 DIN 934-8**
  4 pieces/set

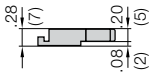
* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

E-Chain System® E2 Tubes
Series R117/R118
Strain Relief

Tiewrap Plates



Shown assembled

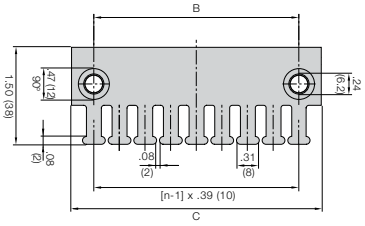


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2125-ZB	12	4.72 (120)	3.94 (100)



For more information please refer to strain relief section of Chapter 10

Cable tiewraps as individual parts

Cable tiewraps 100 pieces/bag	Width x Length in.	(mm)	Maximum Ø in.	(mm)	Tensile Strength lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)

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Specs/CAD/RFQ: www.igus.com/e-chains
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R157
R158

igus®

E-Chain System® E2 Tubes Series R157/R158

1.57 1.57

Features & Benefits

1. Effective chip protection even against hot chips
2. Space-efficient with optimized ratio of inner dimension to outer dimension
3. Snap-open lids along the inner and outer radius
4. Snap-open from the side, covered pin/bore connection
5. Double stop dog for strong unsupported length
6. Universal KMA mounting brackets with attachment capability on all sides
7. Lateral glide surfaces for side mounted operation

Price Index

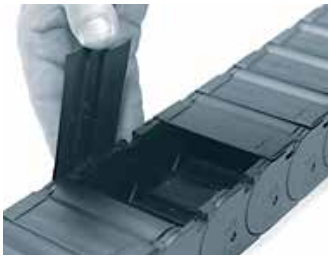
Series R157/R158

Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

Assembly Tips



Lids of the E-Tube Series R100 are hinged for easy access

Other Installation Methods

- Vertical, hanging ≤ 131.2 ft (40 m)
- Vertical, standing ≤ 9.84 ft (3 m)
- Side-mounted, unsupp. ≤ 3.28 ft (1 m)
- Rotary requires further calculation

Usage Guidelines

- If hinged, snap-open accessibility along inner **or** outer radius is required
- If a low-cost, lightweight E-Tube for many types of applications is required
- If flush attachment is required
- If chip-repellent features are required

- If particularly quiet operation is required
  ➤ **Series R58 E2 Tubes**
- If snap-open accessibility along both radii simultaneously is required
  ➤ **Series R770 E4/100**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **157-088-100-0**	**E-Chain®**
With 2 separators **1586-01** assembled every 2nd link	**Interior Separation**
1 Set **15800-088-12**	**Mounting Bracket**

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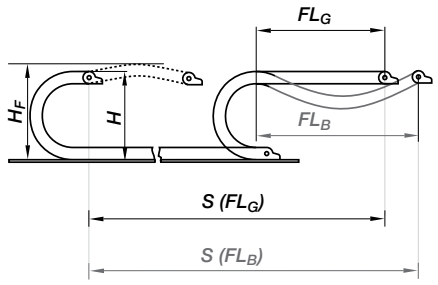
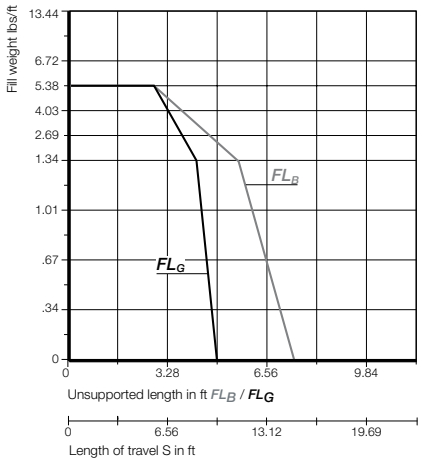
E-Chain System® E2 Tubes
Series R157/R158
Installation Dimensions

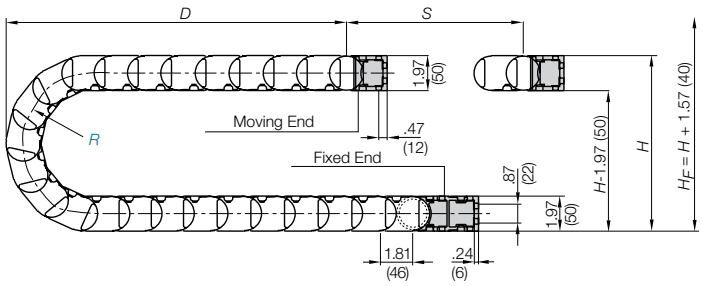
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.81" (46 mm)
Links per ft (m): = 6.71 (22)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with .67 lbs/ft (1.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	21.65 (550)
D	7.64 (194)	8.62 (219)	9.61 (244)	10.59 (269)	11.57 (294)	13.54 (344)
K	16.14 (410)	19.09 (485)	22.24 (565)	25.39 (645)	28.54 (725)	34.65 (880)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 1.64 ft/s (0.5 m/s) / max. 16.4 ft/s² (5 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

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Specs/CAD/RFQ: www.igus.com/e-chains
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E-Chain System® E2 Tubes
Series R157/R158

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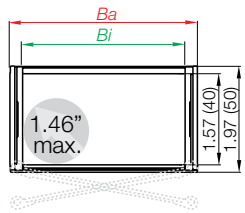
Series R157 - hinged, snap-open on both sides of the inner radius

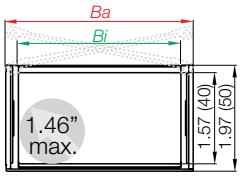


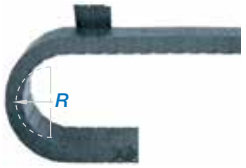
Part Number Structure

157- 100- 100- 0

- Color - Black
- Bending radius
- Width
- Series

Series R158 - hinged, snap-open on both sides of the outer radius

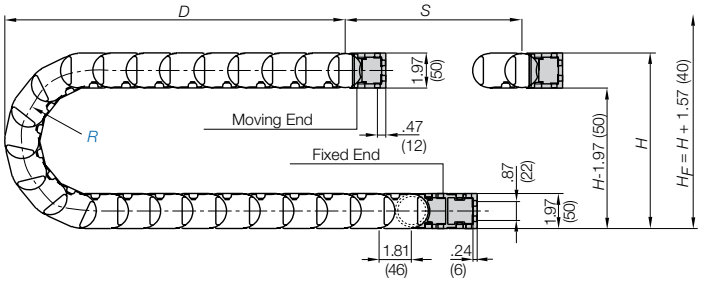




Part Number Structure

158- 100- 100- 0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius.
Example: 157-100-[100]-0
Pitch: 1.81 in. (46 mm) per link links/ft (m) = 6.71 (22)

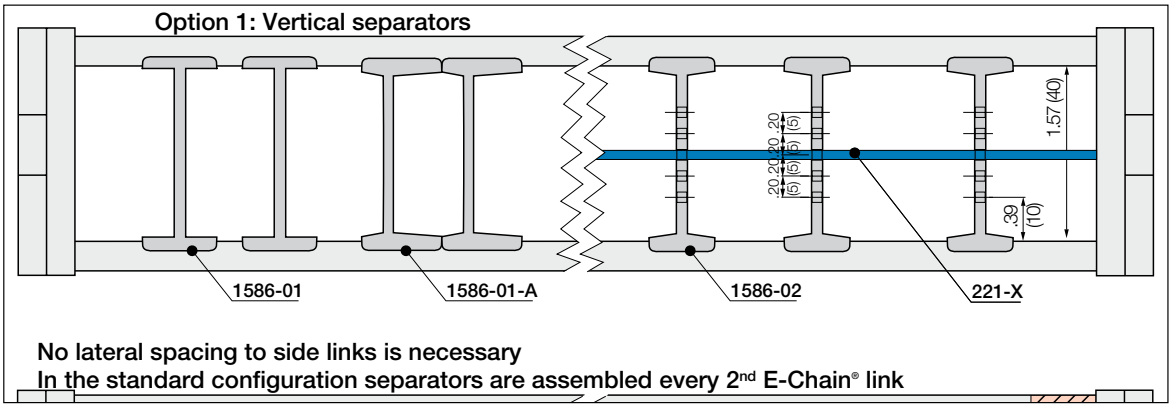
Part Number. Snap-open inner radius	Snap-open outer radius		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
157-040-*	158-040-*	[ ] -0	1.57 (40)	2.20 (56)	≈ 0.81 (1.21)
157-050-	158-050-	[ ] -0	1.97 (50)	2.60 (66)	≈ 0.87 (1.30)
157-075-	158-075-	[ ] -0	2.95 (75)	3.58 (91)	≈ 1.01 (1.50)
157-088-	158-088-	[ ] -0	3.46 (88)	4.09 (104)	≈ 1.06 (1.57)
157-090-**	158-090-**	[ ] -0	3.46 (88)	4.09 (104)	≈ 1.10 (1.63)
157-100-	158-100-	[ ] -0	3.94 (100)	4.57 (116)	≈ 1.15 (1.71)
157-125-	158-125-	[ ] -0	4.92 (125)	5.55 (141)	≈ 1.29 (1.92)
157-135-	158-135-	[ ] -0	5.31 (135)	5.91 (150)	≈ 1.41 (2.10)
157-150-	158-150-	[ ] -0	5.91 (150)	6.54 (166)	≈ 1.43 (2.13)
157-175-	158-175-	[ ] -0	6.89 (175)	7.52 (191)	≈ 1.57 (2.34)
157-200-	158-200-	[ ] -0	7.87 (200)	8.50 (216)	≈ 1.71 (2.55)

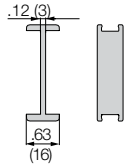
Choose from the radii below for all of the above sizes
Radius (mm) Example: 157-100-[100]-0

	100	125	150	175	200	250
R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	21.65 (550)
D	7.64 (194)	8.62 (219)	9.61 (244)	10.59 (269)	11.57 (294)	13.54 (344)
K	16.14 (410)	19.09 (485)	22.24 (565)	25.39 (645)	28.54 (725)	34.65 (880)

*Removable lid only, not hinged
**Same dimensions as 157/158-088 - removable lids only

E-Chain System® E2 Tubes
Series R157/R158
Interior Separation - New Generation

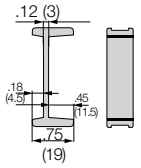




Separator for E-Tubes

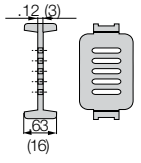
Unassembled	**Part No. 1585-01**
Assembled	**Part No. 1586-01**

- **Separator 1585-01**
  For vertical separation with wide base for maximum stability when used with thick cables or hoses



Unassembled	
Assembled	

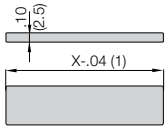
- **Asymmetrical separator 1585-01-A**
  For side-mounted applications. Asymmetrical separator for defined distance. No additional spacers necessary.



Slotted Separator for E-Tubes

Unassembled	**Part No. 1585-02**
Assembled	**Part No. 1586-02**

- **Slotted separator 1585-02**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Full width shelf for E-Tubes

Unassembled	**Part No. 220-X**
Assembled	**Part No. 221-X**

- **Full width shelf 220-X**
  is used in applications with many thin cables with similar diameters. Full-width shelves can be arranged at 5 different heights in .20" (5mm) increments.

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.57	(040)	220-40	221-40
1.97	(050)	**220-50**	**221-50**
2.95	(075)	**220-75**	**221-75**
3.46	(088)	**220-88**	**221-88**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
3.94	(100)	**220-100**	**221-100**
4.92	(125)	**220-125**	**221-125**
5.31	(135)	**220-135**	**221-135**
5.91	(150)	**220-150**	**221-150**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
6.89	(175)	**220-175**	**221-175**
7.87	(200)	**220-200**	**221-200**

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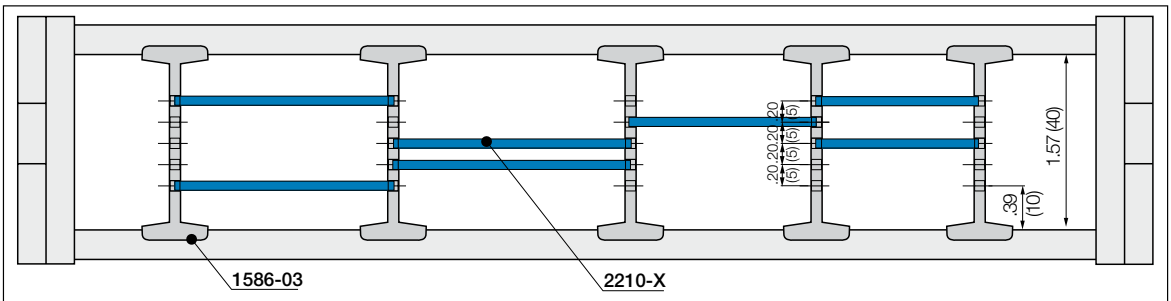
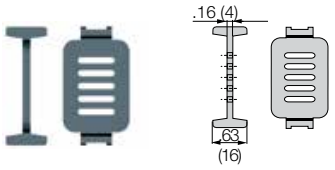
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

E-Chain System® E2 Tubes
Series R157/R158
Interior Separation - New Generation



No lateral spacing to side links is necessary
In the standard configuration separators are assembled every 2nd E-Chain® link

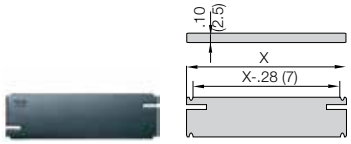


Separator, narrow base

Unassembled	**Part No. 1585-03**
Assembled	**Part No. 1586-03**

- **Slotted separator 1585-03**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Full-width shelves - for the standard interior separation



Full width shelf

Unassembled	**Part No. 2200-X**
Assembled	**Part No. 2210-X**

- **Full width shelf 2200-X**
  For applications involving many cables with different diameters, shelves can be arranged at alternate heights. They can be arranged at 5 different heights in .20" (5mm) increments.

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	**2200-18**	**2210-18**
.91	(23)	**2200-23**	**2210-23**
1.10	(28)	**2200-28**	**2210-28**
1.30	(33)	**2200-33**	**2210-33**
1.50	(38)	**2200-38**	**2210-38**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.69	(43)	**2200-43**	**2210-43**
1.89	(48)	**2200-48**	**2210-48**
2.28	(58)	**2200-58**	**2210-58**
2.68	(68)	**2200-68**	**2210-68**
2.87	(73)	**2200-73**	**2210-73**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
3.46	(88)	**2200-88**	**2210-88**
3.90	(99)	**2200-99**	**2210-99**
4.88	(124)	**2200-124**	**2210-124**
5.87	(149)	**2200-149**	**2210-149**

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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E-Chain System® E2 Tubes
Series R157/R158
Strain Relief

Separator with integrated strain relief

Strain relief separator Part No. 1585-01-Z can be integrated into the mounting bracket and can be placed there at any point of the E-Tube®. It combines strain relief and interior separation, it can be installed on the first or last E-Tube® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E2 Tubes
Series R157/R158
Mounting Brackets - KMA Extended

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
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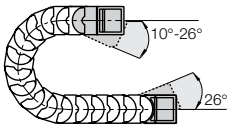
QuickSpec: http://www.igus.com/quickspec

Option 1: KMA pivoting

- Extended, pivoting
- Easy to install
- Universal use
- Corrosion-resistant
- Long travels with lowered mounting height possible

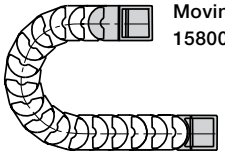
Moving end
15800/15801...1



Fixed end
15800/15801...2

Option 2: KMA locking

- Extended, locking
- Easy to install
- Flush mounting at both ends of the E-Tube
- Mounting points on all sides
- Corrosion resistant



Moving end
15800/15801...3

Fixed end
15800/15801...4

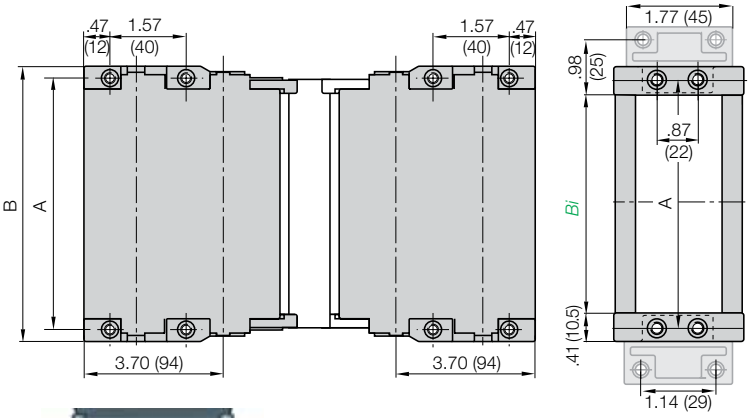
Part Number Structure

15800- 100- 12

- 12 = Complete Set (12 = Pivoting, 34 = Locking)
- 100- = Width
- 15800- = KMA Pivoting for selected chain type

Moving end
1580...1/1580...3

Fixed end
1580...2/1580...4



Full set, for both ends:
15800- 100- 12 Full set, **each part with pin/bore**
Single-part order:
15800- 100- 1 Mounting bracket **with bore**
15800- 100- 2 Mounting bracket **with pin**

Quickflange upon request
- Unassembled

Part number 16800-QF

Series	Part No. Full Set	Dimension A in.	Dimension A (mm)	Dimension B in.	Dimension B (mm)
157/158-040	15801-040- ☐	1.97	(50)	2.40	(61)
157/158-050	15800-050- ☐	2.40	(60)	2.80	(71)
157/158-075	15800-075- ☐	3.35	(85)	3.78	(96)
157/158-088	15800-088- ☐	3.86	(98)	4.29	(109)
157/158-090	15801-090- ☐	3.86	(98)	4.29	(109)
157/158-100	15800-100- ☐	4.33	(110)	4.76	(121)
157/158-125	15800-125- ☐	5.31	(135)	5.75	(146)
157/158-135	15800-135- ☐	5.71	(145)	6.14	(156)
157/158-150	15800-150- ☐	6.30	(160)	6.73	(171)
157/158-175	15800-175- ☐	7.28	(185)	7.72	(196)
157/158-200	15800-200- ☐	8.27	(210)	8.70	(221)

☐ = 12 or 34

For pivoting brackets choose 12
For locking brackets choose 34
Example: 15800-100- 34

The following parts are required for attachment of the mounting brackets:

- **Socket head cap bolt**
  M5* DIN 912-8.8
  8 pieces/set
- **Washer**
  5.3 DIN 125-ST
  8 pieces/set
- **Hexagon nut**
  M5 DIN 934-8
  8 pieces/set

* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

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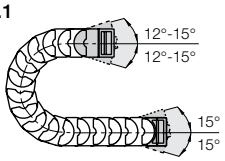
E-Chain System® E2 Tubes
Series R157/R158
Mounting Brackets - KMA Abbreviated

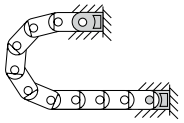
Option 1: KMA pivoting

- Extended, pivoting
- Easy to install
- Universal use
- Corrosion-resistant
- Long travels with lowered mounting height possible

Moving end
1580...1



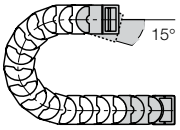
Fixed end
1580...2



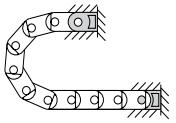
Option 2: KMA locking

- Extended, locking
- Easy to install
- Flush mounting at both ends of the E-Tube
- Mounting points on all sides
- Corrosion resistant

Moving end
1585...1

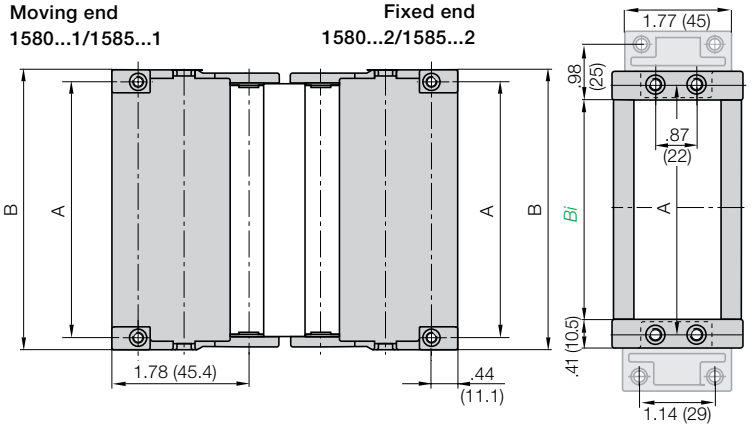


Fixed end
1585...2

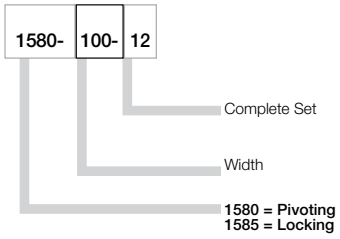


Moving end
1580...1/1585...1

Fixed end
1580...2/1585...2



Part Number Structure



Part number examples are shown for pivoting brackets.
For locking brackets change part number to 1585

Full set, for both ends:
1580- 100- 12 Full set, **each part with pin/bore**
Single-part order:
1580- 100- 1 Mounting bracket **with bore**
1580- 100- 2 Mounting bracket **with pin**

Quickflange upon request
- Unassembled

Part number 16800-QF

Series	Part No. Full Set		Dimension A		Dimension B	
	Pivoting	Locking	in.	(mm)	in.	(mm)
157/158-040	**1580-040-12**	**1585-040-12**	1.97	(50)	2.40	(61)
157/158-050	**1580-050-12**	**1585-050-12**	2.40	(60)	2.80	(71)
157/158-075	**1580-075-12**	**1585-075-12**	3.35	(85)	3.78	(96)
157/158-088	**1580-088-12**	**1585-088-12**	3.86	(98)	4.29	(109)
157/158-090	**1580-090-12**	**1585-090-12**	3.86	(98)	4.29	(109)
157/158-100	**1580-100-12**	**1585-100-12**	4.33	(110)	4.76	(121)
157/158-125	**1580-125-12**	**1585-125-12**	5.31	(135)	5.75	(146)
157/158-135	**1580-135-12**	**1585-135-12**	5.71	(145)	6.14	(156)
157/158-150	**1580-150-12**	**1585-150-12**	6.30	(160)	6.73	(171)
157/158-175	**1580-175-12**	**1585-175-12**	7.28	(185)	7.72	(196)
157/158-200	**1580-200-12**	**1585-200-12**	8.27	(210)	8.70	(221)

The following parts are required for attachment of the mounting brackets:

- **Socket head cap bolt**
  M5* DIN 912-8.8
  8 pieces/set
- **Washer**
  5.3 DIN 125-ST
  8 pieces/set
- **Hexagon nut**
  M5 DIN 934-8
  8 pieces/set

* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

PDF: www.igus.com/e-chain-pdfs
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RoHS info: www.igus.com/RoHS

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R167
R168

igus®

E-Chain System® E2 Tubes
Series R167/R168

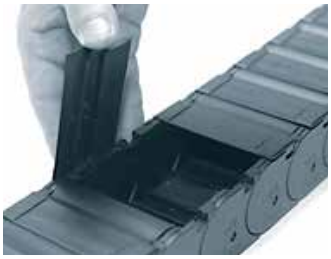
1.97 1.97

Series R167/R168

Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB



Lids of the E-Tube Series R100 are hinged for easy access

Other Installation Methods

Vertical, hanging ≤ 164 ft (50 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.28 ft (1 m)
Rotary requires further calculation

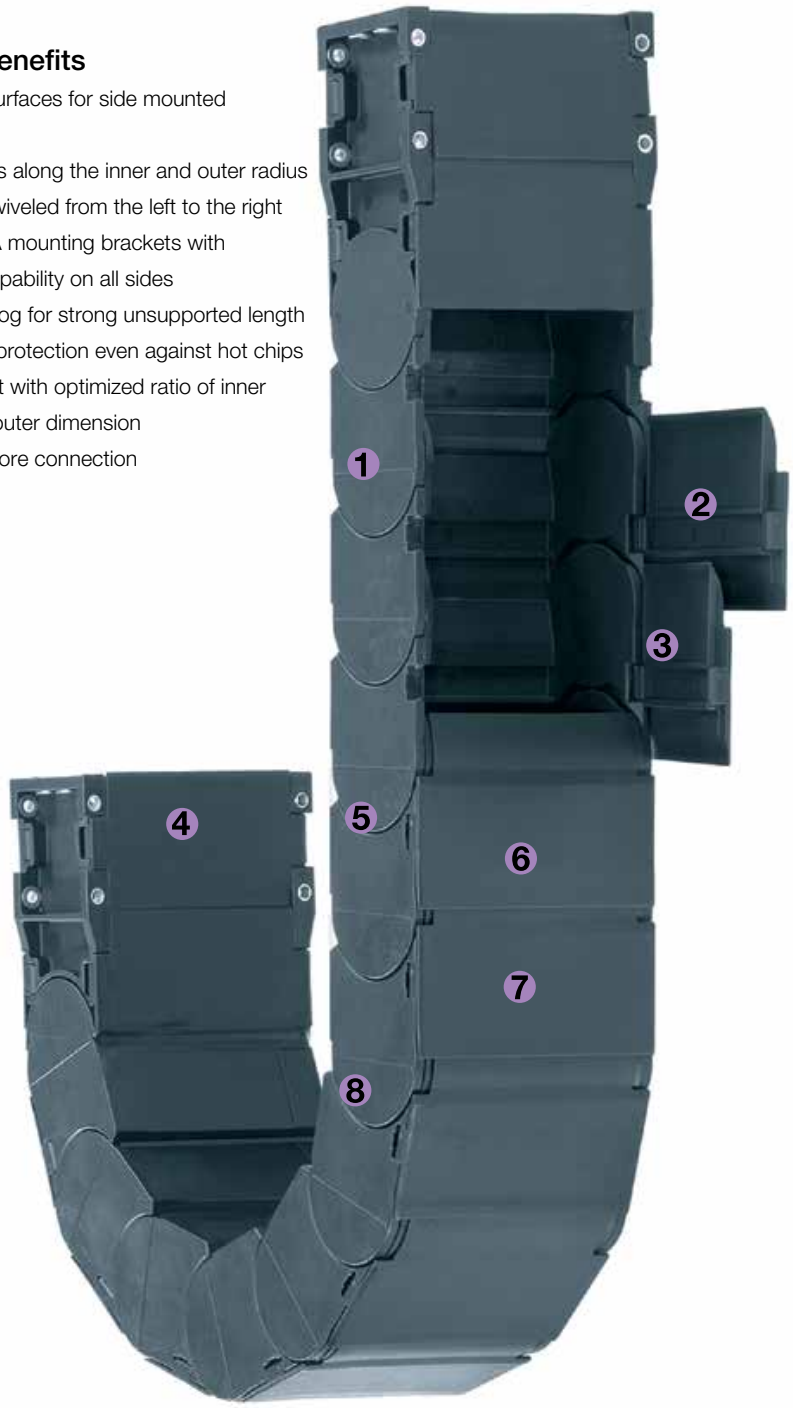
Usage Guidelines

- If snap-open accessibility along inner outer radius is required
- If a low-cost, lightweight E-Tube for many types of applications is required
- If flush attachment is required
- If chip-repellent features are required

- If very smooth travel due to small pitch is required
  ➤ **Series R68 E2 Tubes**
- If snap-open accessibility along both radii simultaneously is required
  ➤ **Series R780 E4/100**

Features & Benefits

1. Lateral glide surfaces for side mounted operation
2. Snap-open lids along the inner and outer radius
3. Lids can be swiveled from the left to the right
4. Universal KMA mounting brackets with attachment capability on all sides
5. Double stop dog for strong unsupported length
6. Effective chip protection even against hot chips
7. Space-efficient with optimized ratio of inner dimension to outer dimension
8. Covered pin/bore connection



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **167-100-100-0**	**E-Chain®**
With 2 separators **1686-01** assembled every 2nd link	**Interior Separation**
1 Set **1680-100-12**	**Mounting Bracket**

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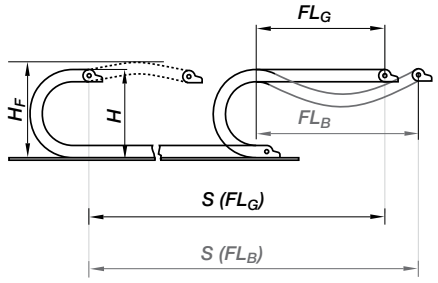
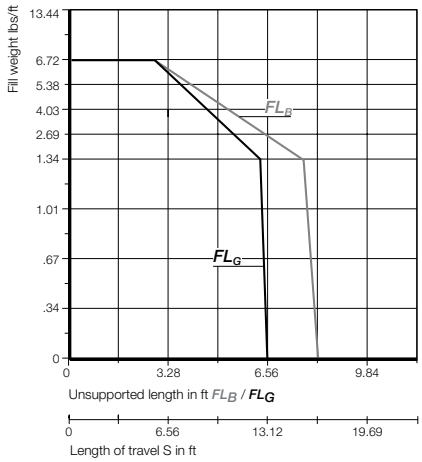
E-Chain System® E2 Tubes Series R167/R168 Installation Dimensions

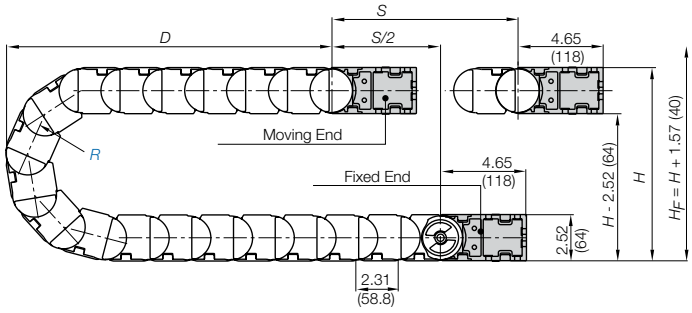
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.31" (58.8 mm)
Links per ft (m): = 5.18 (17)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: H_F **= H + 1.57 in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)	11.81 (300)
H	10.39 (264)	12.36 (314)	14.33 (364)	16.30 (414)	18.27 (464)	20.24 (514)	22.20 (564)	26.14 (664)
D	8.66 (220)	9.65 (245)	10.63 (270)	11.61 (295)	12.60 (320)	13.58 (345)	14.57 (370)	16.54 (420)
K	17.12 (435)	20.28 (515)	23.23 (590)	26.38 (670)	29.53 (750)	32.48 (825)	35.63 (905)	41.93 (1065)

Speed / acceleration FL_G	max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 1.64 ft/s (0.5 m/s) / max. 16.4 ft/s² (5 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + safety buffer
H_F = Required clearance height

Technical Data

Details of material properties
➤ Chapter 1

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Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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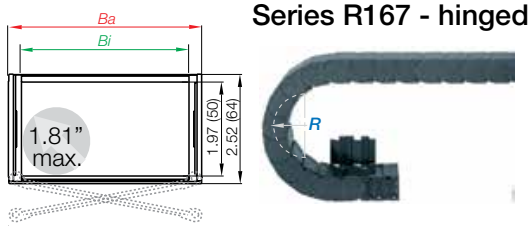
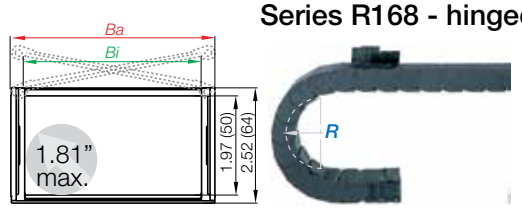
Series R167 - hinged, snap-open on both sides of the inner radius



Part Number Structure

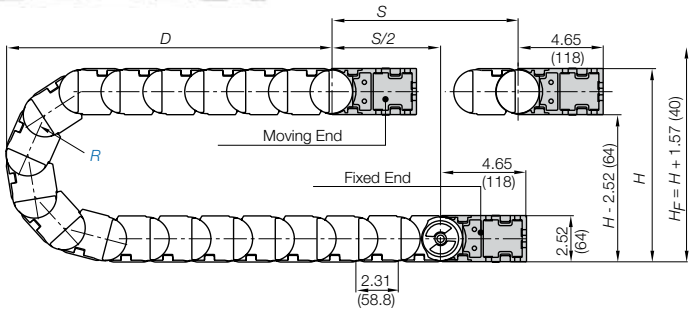
167- 100- 100- 0
- Color - Black
- Bending radius
- Width
- Series

Series R168 - hinged, snap-open on both sides of the outer radius



Part Number Structure

168- 100- 100- 0
- Color - Black
- Bending radius
- Width
- Series



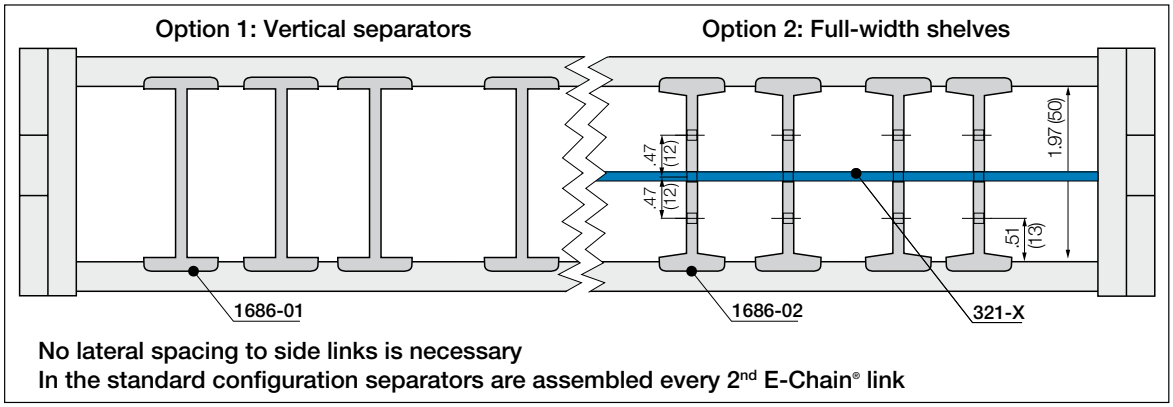
Supplement part number with required radius.
Example: 167-100-100-0
Pitch: 2.31 in. (58.8 mm) per link links/ft (m) = 5.18 (17)

Part Number. Snap-open inner radius	Snap-open outer radius		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
167-050-	168-050-	-0	1.97 (50)	2.68 (68)	≈ 1.06 (1.58)
167-075-	168-075-	-0	2.95 (75)	3.66 (93)	≈ 1.24 (1.84)
167-100-	168-100-	-0	3.94 (100)	4.65 (118)	≈ 1.40 (2.09)
167-115-	168-115-	-0	4.53 (115)	5.24 (133)	≈ 1.51 (2.24)
167-125-	—	-0	4.92 (125)	5.63 (143)	≈ 1.58 (2.35)
167-150-	168-150-	-0	5.91 (150)	6.61 (168)	≈ 1.75 (2.60)
167-175-	168-175-	-0	6.89 (175)	7.60 (193)	≈ 1.92 (2.86)
167-200-	168-200-	-0	7.87 (200)	8.58 (218)	≈ 2.09 (3.11)
167-225-	—	-0	8.86 (225)	9.57 (243)	≈ 2.26 (3.37)
167-250-	—	-0	9.84 (250)	10.55 (268)	≈ 2.43 (3.62)

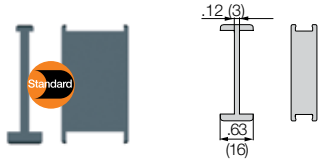
Choose from the radii below for all of the above sizes
Radius (mm) Example: 167-100-100-0

100	125	150	175	200	225	250	300
10.39 (264)	12.36 (314)	14.33 (364)	16.30 (414)	18.27 (464)	20.24 (514)	22.20 (564)	26.14 (664)
8.66 (220)	9.65 (245)	10.63 (270)	11.61 (295)	12.60 (320)	13.58 (345)	14.57 (370)	16.54 (420)
17.12 (435)	20.28 (515)	23.23 (590)	26.38 (670)	29.53 (750)	32.48 (825)	35.63 (905)	41.93 (1065)

E-Chain System® E2 Tubes
Series R167/R168
Interior Spearation



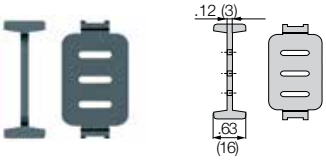
No lateral spacing to side links is necessary
In the standard configuration separators are assembled every 2nd E-Chain® link



Separator for E-Tubes

Unassembled	**Part No. 1685-01**
Assembled	**Part No. 1686-01**

- **Separator 1685-01**
  For vertical separation with wide base for maximum stability when used with thick cables or hoses

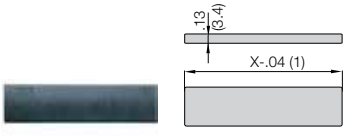


Slotted Separator for E-Tubes

Unassembled	**Part No. 1685-02**
Assembled	**Part No. 1686-02**

- **Slotted separator 1685-02**
  is used when vertical subdivision is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Full-width shelves - for the standard interior separation



Full width shelf for E-Tubes

Unassembled	**Part No. 320-X**
Assembled	**Part No. 321-X**

- **Full width shelf 320-X**
  is used in applications with many thin cables with similar diameters. Full-width shelves can be arranged at 3 different heights in .47" (12mm) increments.

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.97	(50)	**320-50**	**321-50**
2.95	(75)	**320-75**	**321-75**
4.53	(115)	**320-115**	**321-115**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
4.92	(125)	**320-125**	**321-125**
5.91	(150)	**320-150**	**321-150**
6.89	(175)	**320-175**	**321-175**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
7.87	(200)	**320-200**	**321-200**
8.86	(225)	**320-225**	**321-225**
9.84	(250)	**320-250**	**321-250**

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Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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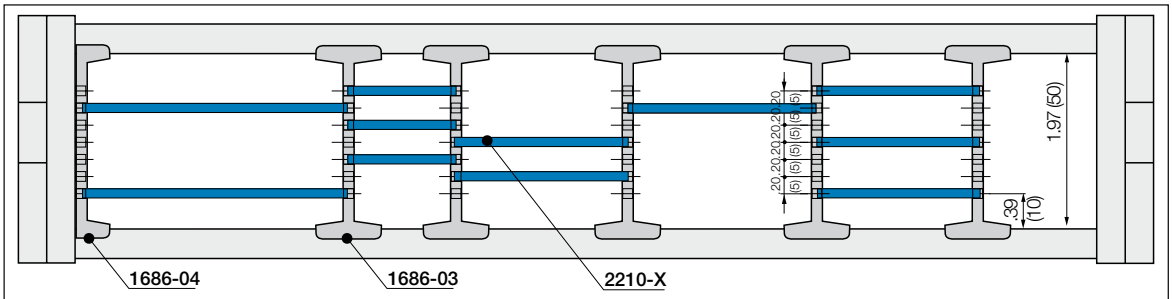
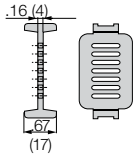
igus®

E-Chain System® E2 Tubes
Series R167/R168
Mounting Brackets



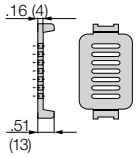
No lateral spacing to side links is necessary
In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, narrow base

Unassembled	**Part No. 1685-03**
Assembled	**Part No. 1686-03**

- **Middle plate 1685-03**
  To achieve modular separation the shelf 2200-X can be arranged at 7 different heights in .20" (5mm) increments.

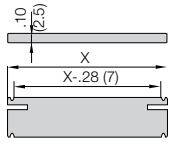


Separator, narrow base

Unassembled	**Part No. 1685-04**
Assembled	**Part No. 1686-04**

- **Side plate 1685-04**
  For use with shelf 2200-X and middle plate 1685-03

Full-width shelves - for the standard interior separation



Full width shelf

Unassembled	**Part No. 2200-X**
Assembled	**Part No. 2210-X**

- **Full width shelf 2200-X**
  For applications involving many cables with different diameters, shelves can be arranged at alternate heights. They can be arranged at 5 different heights in .20" (5mm) increments.

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	**2200-18**	**2210-18**
.91	(23)	**2200-23**	**2210-23**
1.10	(28)	**2200-28**	**2210-28**
1.30	(33)	**2200-33**	**2210-33**
1.50	(38)	**2200-38**	**2210-38**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.69	(43)	**2200-43**	**2210-43**
1.89	(48)	**2200-48**	**2210-48**
2.28	(58)	**2200-58**	**2210-58**
2.68	(68)	**2200-68**	**2210-68**
2.87	(73)	**2200-73**	**2210-73**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
3.46	(88)	**2200-88**	**2210-88**
3.90	(99)	**2200-99**	**2210-99**
4.88	(124)	**2200-124**	**2210-124**
5.87	(149)	**2200-149**	**2210-149**

Separator with integrated strain relief

Strain relief separator Part No. 1685-01-Z can be integrated into the mounting bracket and can be placed there at any point of the E-Tube®. It combines strain relief and interior separation, it can be installed on the first or last E-Tube® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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E-Chain System® E2 Tubes
Series R167/R168
Mounting Brackets - KMA Extended

Option 1: pivoting

- Unsupported and gliding applications
- Mounting points on all sides
- Quickflange Option, bolted outside of E-Tube cross section
- Long travels with lowered mounting height possible
- Corrosion-resistant

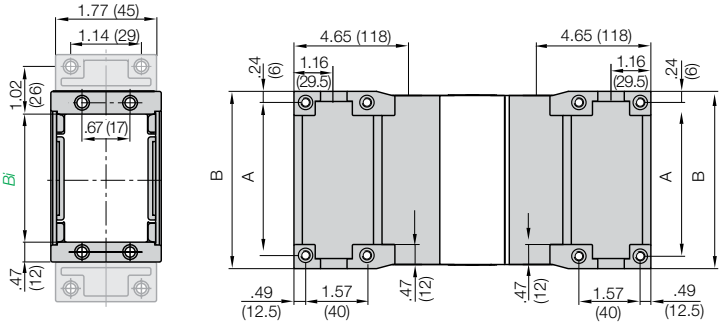
Option 2: locking

- Vertical hanging/standing applications
- Quickflange Option, bolted outside of E-Tube cross section
- Extreme speeds and accelerations
- Mounting points on all sides
- Flush mounting at both ends of the E-Tube

Part Number Structure

1680- 100- 12 QF

- With Quickflange
- Complete Set
  12 = Pivoting
  14 = Locking
- Width
- Mounting brackets for selected chain type



Full set, for both ends:
1680-100-12 QF Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
1680-100-1 QF Mounting bracket **with bore + tiewrap plate**
1680-100-2 QF Mounting bracket **with pin + tiewrap plate**

Quickflange Unassembled
Part number 16800-QF

For Tube Type	Part No. Full set with Tiewrap Plate	Part No. Full Set with Quickflange	Dimension A in.	(mm)	Dimension B in.	(mm)
167/168-050	1680-050-☐	1680-050-☐ QF	2.44	(62)	2.91	(74)
167/168-075	1680-075-☐	1680-075-☐ QF	3.43	(87)	3.90	(99)
167/168-100	1680-100-☐	1680-100-☐ QF	4.41	(112)	4.88	(124)
167/168-115	1680-115-☐	1680-115-☐ QF	5.00	(127)	5.47	(139)
167/168-125	1680-125-☐	1680-125-☐ QF	5.39	(137)	5.87	(149)
167/168-150	1680-150-☐	1680-150-☐ QF	6.38	(162)	6.85	(174)
167/168-175	1680-175-☐	1680-175-☐ QF	7.36	(187)	7.83	(199)
167/168-200	1680-200-☐	1680-200-☐ QF	8.35	(212)	8.82	(224)
167/168-225	1680-225-☐	1680-225-☐ QF	9.33	(237)	9.80	(249)
167/168-250	1680-250-☐	1680-250-☐ QF	10.31	(262)	10.79	(274)

☐ 12 or 14

For pivoting brackets choose 12
For locking brackets choose 14
Example: 1680-100-14 QF

The following parts are required for attachment of the mounting brackets:
* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

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R48

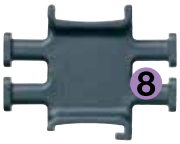
igus®

E-Chain System® E2 Tubes Series R48

.98

Features & Benefits

1. Large pins for high stability
2. Protection for cables and hoses against hot chips
3. Removable lids along the outer radius
4. Small pitch for low-noise, smooth operation
5. KMA mounting brackets with attachment capabilities on all sides
6. Smooth, chip-repellent exterior
7. Fully enclosed
8. Strain relief separator option: Separator with integrated strain relief for use in the first or last chain link ➤ **Strain Relief, Chapter 10**



Price Index

Series R48

Special Features / Options

EX ESD classification: Electrically conductive ESD/ ATEX version upon request

Flammability Class VDE 0304 IIC UL94 HB

Assembly Tips

To open the E-Tube Series R, lift up the lid (with a screwdriver) and remove the lid

Other Installation Methods

Vertical, hanging ≤ 164 ft (50 m)
Vertical, standing ≤ 13.12 ft (4 m)
Side-mounted, unsupp. ≤ 4.92 ft (1.5 m)
Rotary requires further calculation

Usage Guidelines

- If particularly quiet operation is required
- If very high speeds are required
- If chip repellent features are required

- If a particularly low-cost solution is the main factor
  ➤ **Series R117/R118 E2 Tubes**
- If no chip protection is required
  ➤ **Series 250 E2 Medium**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **48-075-060-0**	**E-Chain®**
With 2 separators **482** assembled every 2nd link	**Interior Separation**
1 Set **480-075-12**	**Mounting Bracket**

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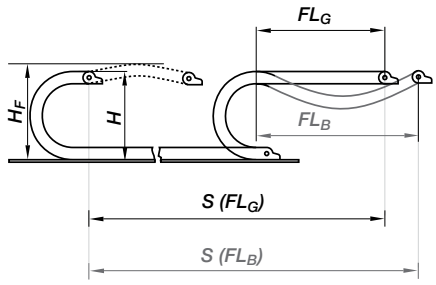
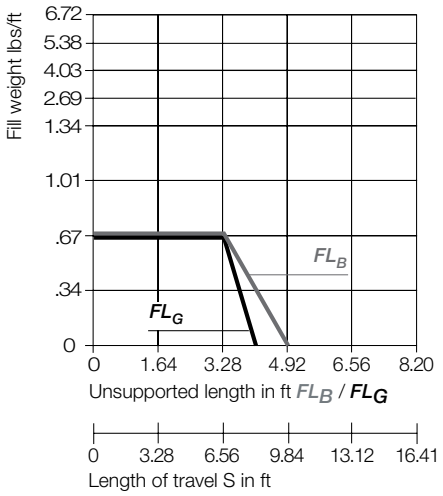
E-Chain System® E2 Tubes
Series R48
Installation Dimensions

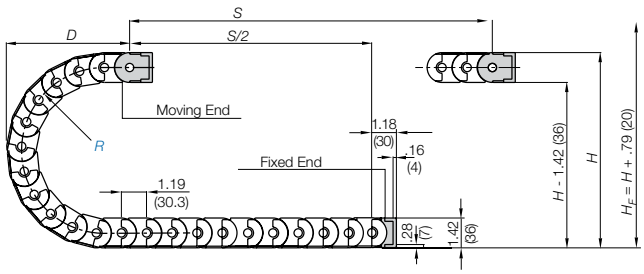
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.19" (30.3 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $S/2 + K$

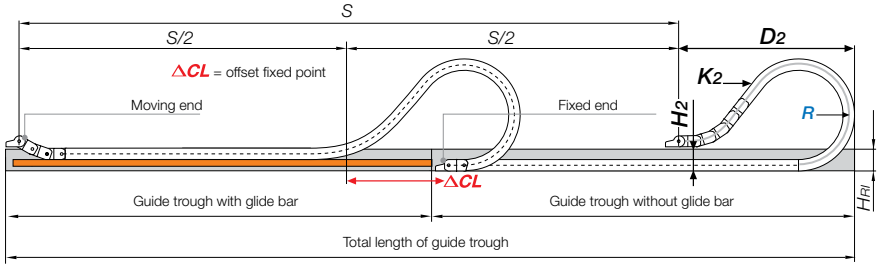
The required clearance height: $H_F = H + .79$ **in. (20 mm)** (with .34 lbs/ft (0.5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	2.36 (060)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	6.14 (156)	7.32 (186)	9.29 (236)	11.26 (286)	13.23 (336)	15.20 (386)	17.17 (436)	21.10 (536)
D	4.84 (123)	5.43 (138)	6.42 (163)	7.40 (188)	8.39 (213)	9.37 (238)	10.35 (263)	12.32 (313)
K	9.84 (250)	11.81 (300)	14.76 (375)	17.91(455)	21.06 (535)	24.21 (615)	27.17 (690)	33.46 (850)

For long travels with lowered mounting height

Long travel lengths from 16.41 ft. (5 m) to max. 164 ft. (50 m)

For center mount applications:
Chain length: = $S/2 + K_2$



R	2.36 (060)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	6.14 (156)	7.32 (186)	6.93 (176)	6.93 (176)	6.93 (176)	6.93 (176)	6.93 (176)	*
D	4.33 (110)	4.92 (125)	12.99 (330)	17.72 (450)	24.02 (610)	28.74 (730)	27.16 (690)	*
K	9.84 (250)	11.81 (300)	21.46 (545)	29.84 (758)	38.19 (970)	45.31 (1151)	46.54 (1182)	*
ΔCL	*	*	6.69 (170)	10.63 (270)	14.96 (380)	18.50 (470)	*	*

Speed / acceleration FL_G	max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
$K = \pi \bullet R + safety\ buffer$
H_F = Required clearance height

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.

Design, Chapter 1

Technical Data

Details of material properties

➤ **Chapter 1**

PDF: www.igus.com/e-chain-pdfs
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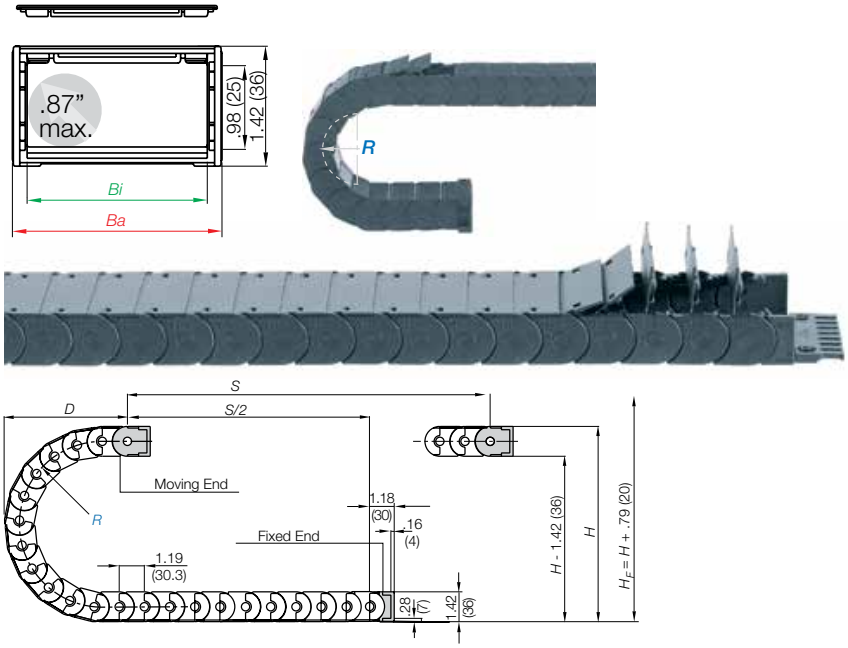
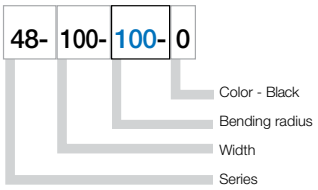
igus®

E-Chain System® E2 Tubes
Series R48

Series R48 - E-Tube snap-open along the outer radius



Part Number Structure



Supplement part number with required radius. Example: R48-100-100-0
Pitch: 1.19 in. (30.3 mm) per link links/ft (m) = 10.06 (33)

Part Number	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
48-025-☐-0	.98 (25)	1.42 (36)	≈ 0.43 (0.64)
48-050-☐-0	1.97 (50)	2.40 (61)	≈ 0.56 (0.84)
48-075-☐-0	2.95 (75)	3.39 (86)	≈ 0.69 (1.03)
48-100-☐-0	3.94 (100)	4.37 (111)	≈ 0.83 (1.23)
48-130-☐-0	5.12 (130)	5.55 (141)	≈ 0.98 (1.46)

Choose from the radii below for all of the above sizes
Radius (mm) Example: R48-100-100-0

	060	075	100	125	150	175	200	250
R	2.36 (060)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	6.14 (156)	7.32 (186)	9.29 (236)	11.26 (286)	13.23 (336)	15.20 (386)	17.17 (436)	21.10 (536)
D	4.84 (123)	5.43 (138)	6.42 (163)	7.40 (188)	8.39 (213)	9.37 (238)	10.35 (263)	12.32 (313)
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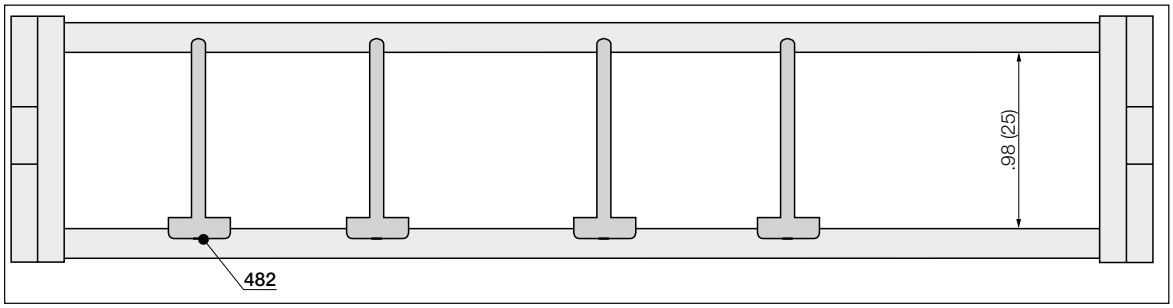
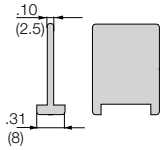
E-Chain System® E2 Tubes
Series R48
Interior Separation



No lateral spacing to side links is necessary.
In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 481**
Assembled	**Part No. 482**

- **Standard separator 481**
  Vertical separators are used if a vertical subdivision of the E-Tube is required. By standard vertical separators are assembled every other E-Tube link.

Separator with integrated strain relief

Strain relief separator Part No. 481-ZR can be integrated into the mounting bracket and can be placed there at any point of the E-Tube®. It combines strain relief and interior separation, it can be installed on the first or last E-Tube® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

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Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E-Chain System® E2 Tubes
Series R48
Mounting Bracket - Plastic

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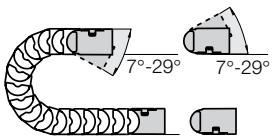
QuickSpec: http://www.igus.com/quickspec

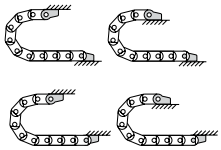
Option 1: Plastic

- Attachment option for strain relief tiewrap plate
- Locked connection to E-Tube
- Minimized external width

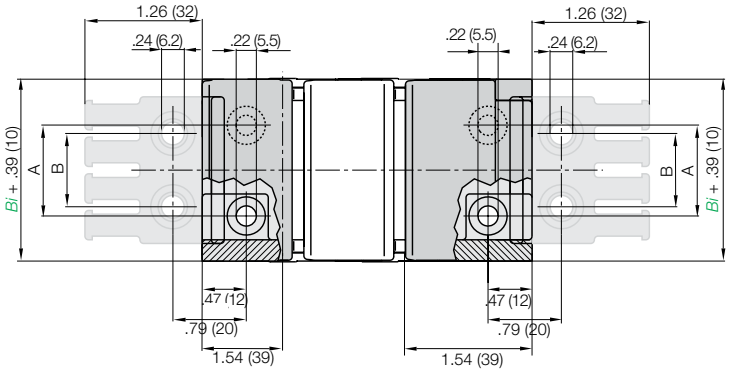
Moving end
4800...1



Fixed end
4800...2



Possible installation configurations -



Part Number Structure

4800- | 025- | 12- | PZB

- PZB: With tiewrap plate
- 12: Complete Set
- 025: Width
- 4800: Mounting brackets for selected chain type

Full set, for both ends:

4800- 025- 12 Full set, **each part with pin/bore**

Single-part order:

4800- 025- 1 Mounting bracket **with bore**

4800- 025- 2 Mounting bracket **with pin**

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series R48:
4800-Width-12

Part No. Mounting bracket with bore
2 parts, 1 left & 1 right
Series R48:
4800-Width -1

Part No. Mounting bracket with pin
2 parts, 1 left & 1 right
Series R48:
4800-Width-2

For Series	Part No. Full Set	Part No. Full Set with Tiewrap Plate	Dimension A in.	(mm)	Dimension B in.	(mm)	Number of teeth
48-025	**4800-025-12**	**4800-025-12PZB**	.47	(12)	.59	(15)	3
48-050	**4800-050-12**	**4800-050-12PZB**	1.46	(37)	1.18	(30)	5
48-075	**4800-075-12**	**4800-075-12PZB**	2.44	(62)	2.36	(60)	8
48-100	**4800-100-12**	**4800-100-12PZB**	3.43	(87)	3.15	(80)	10
48-130	**4800-130-12**	**4800-130-12PZB**	4.61	(117)	–	–	–

The following parts are required for attachment of the mounting brackets:

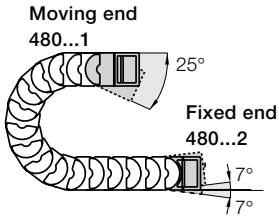
- **Socket head cap bolt M5* DIN 912-8.8**
  4 pieces/set
- **Washer 5.3 DIN 125-ST**
  8 pieces/set
- **Hexagon nut M5 DIN 934-8**
  4 pieces/set

* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

E-Chain System® E2 Tubes
Series R48
Mounting Bracket - KMA

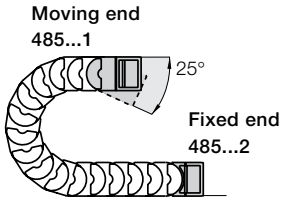
Option 1: KMA pivoting

- Attachment points on all sides
- Corrosion resistant

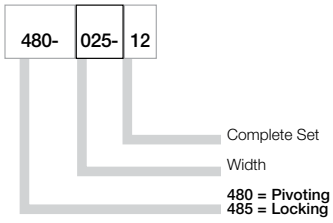


Option 2: KMA locking

- Vertical hanging, standing travel
- Attachment points on all sides
- Corrosion resistant



Part Number Structure



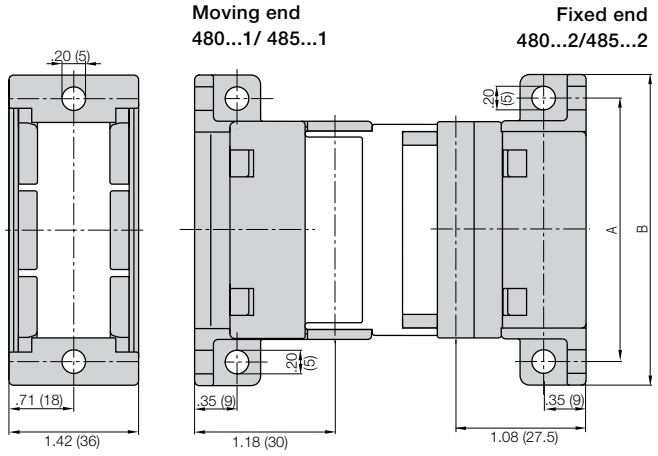
Full set, for both ends:

480- 025- 12 Full set, **each part with pin/bore**

Single-part order:

480- 025- 1 Mounting bracket **with bore**

480- 025- 2 Mounting bracket **with pin**



Width	Part No. Full Set			Dimension A		Dimension B	
	Pivoting	Locking		in.	(mm)	in.	(mm)
-025	480	485	-025-12	1.77	(45)	2.17	(55)
-050	480	485	-050-12	2.76	(70)	3.15	(80)
-075	480	485	-075-12	3.74	(95)	4.13	(105)
-100	480	485	-100-12	4.72	(120)	5.12	(130)
-130	480	485	-130-12	5.91	(150)	6.30	(160)

The following parts are required for attachment of the mounting brackets:

- **Socket head cap bolt M5* DIN 912-8.8**
  4 pieces/set
- **Washer 5.3 DIN 125-ST**
  8 pieces/set
- **Hexagon nut M5 DIN 934-8**
  4 pieces/set

* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

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Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E-Chain System® E2 Tubes
Series R48
Mounting Bracket - Steel

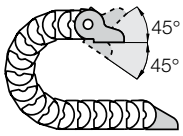
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

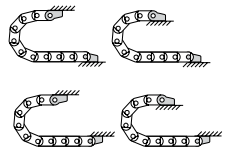
Option 1: Steel

- Locked connection to E-Tube
- Electrically conductive
- Minimized external width

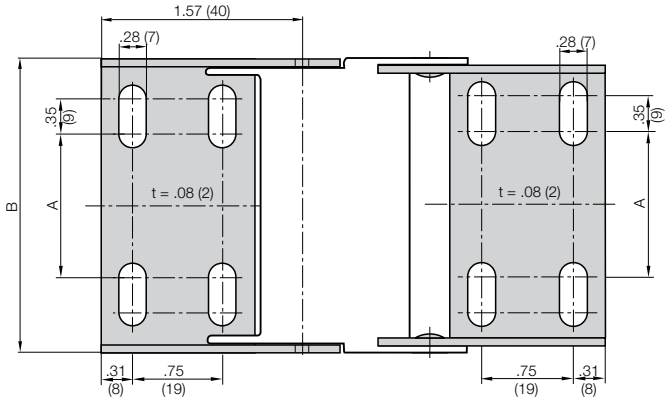
Moving end
482...1



Fixed end
482...2



Possible installation configurations -



Full set, for both ends:

482-	025-	12	Full set, **each part with pin/bore**

Single-part order:

482-	025-	1	Mounting bracket **with bore**
482-	025-	2	Mounting bracket **with pin**

For Series	Part No. Full Set	Dimension A in.	(mm)	Dimension B in.	(mm)
48-025	**482-025-12**		–	1.38	(35)
48-050	**482-050-12**	.87	(22)	2.36	(60)
48-075	**482-075-12**	1.85	(47)	3.35	(85)
48-100	**482-100-12**	2.83	(72)	4.33	(110)
48-130	**482-130-12**	4.02	(102)	5.51	(140)

The following parts are required for attachment of the mounting brackets:

- **Socket head cap bolt M5* DIN 912-8.8**
  4 pieces/set
- **Washer 5.3 DIN 125-ST**
  8 pieces/set
- **Hexagon nut M5 DIN 934-8**
  4 pieces/set

* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

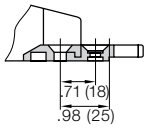
Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series R48:
482-Width-12

Part No. Mounting bracket with bore
2 parts, 1 left & 1 right
Series R48:
482-Width -1

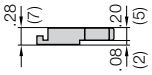
Part No. Mounting bracket with pin
2 parts, 1 left & 1 right
Series R48:
482-Width-2

E-Chain System® E2 Tubes
Series R48
Strain Relief

Tiewrap Plates



Shown assembled

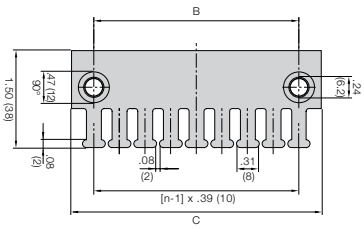


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component that can be fixed external to the mounting bracket.

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2120-ZB	12	4.72 (120)	3.94 (100)



For more information please refer to strain relief section of Chapter 10

Cable tiewraps as individual parts

Cable tiewraps 100 pieces/bag	Width x Length in.	(mm)	Maximum Ø in.	(mm)	Tensile Strength lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)

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E-Chain System® E2 Tubes
Series R58

1.38

Price Index

Series R58

Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

Features & Benefits

1. Protection for cables and hoses against hot chips
2. Large pins for high stability
3. Removable lids along the outer radius
4. Small pitch for low-noise, smooth operation
5. KMA mounting brackets with attachment capabilities on all sides
6. Smooth, chip-repellent exterior
7. Fully enclosed
8. Small pitch enable very small radii
9. Integrated strain relief available especially for E-Tubes

Assembly Tips

To open the E-Tube Series R, lift up the lid (with a screwdriver) and remove the lid

Other Installation Methods

Vertical, hanging ≤ 164 ft (50 m)
Vertical, standing ≤ 13.12 ft (4 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

Usage Guidelines

- If particularly quiet operation is required
- If very high speeds are required
- If chip protection is subject to stringent requirements

- If a particularly low-cost solution is the main factor
  ➤ **Series R157/R158 E2 Tubes**
- If no chip protection is required
  ➤ **Series 250 E2 Medium**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **58-100-100-0**	**E-Chain®**
With 2 separators **582** assembled every 2nd link	**Interior Separation**
1 Set **580-100-12**	**Mounting Bracket**

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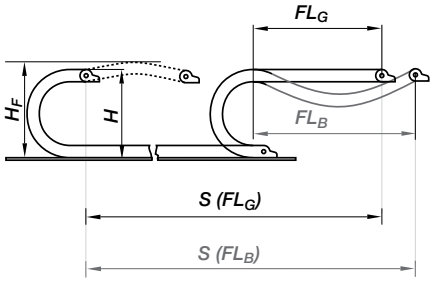
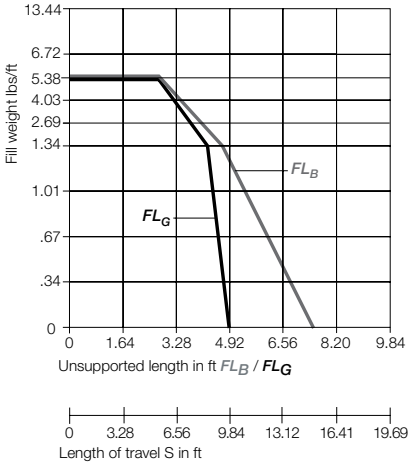
E-Chain System® E2 Tubes
Series R58
Installation Dimensions

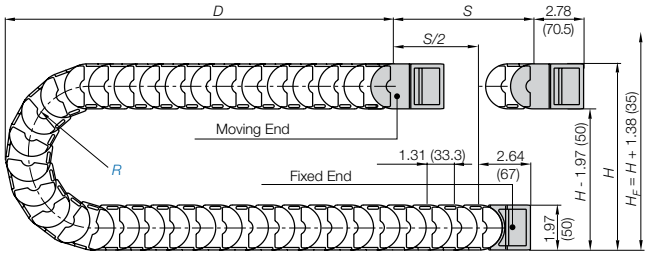
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.31" (33.3 mm)
Links per ft (m): = 9.14 (30)
For center mount applications:
Chain length = $S/2 + K$

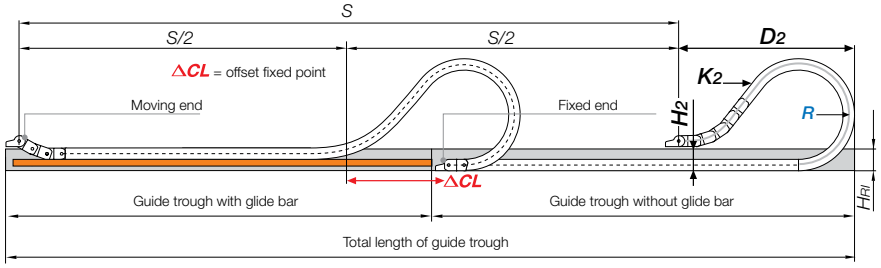
The required clearance height: $H_F = H$ **+ 1.38 in. (35 mm)** (with .34 lbs/ft (0.5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	17.72 (450)	21.65 (550)
D	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	10.83 (275)	12.80 (325)
K	12.96 (305)	15.16 (385)	18.11 (460)	21.26 (540)	27.36 (695)	33.66 (855)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 246 ft. (75 m)

For center mount applications:
Chain length: = $S/2 + K_2$



R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H_2	5.91 (150)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
D_2	5.91 (150)	12.20 (310)	14.96 (380)	18.90 (480)	31.50 (800)	41.34 (1050)
K_2	14.76 (375)	19.69 (500)	27.52 (699)	34.09 (866)	49.80 (1265)	65.55 (1665)
ΔCL	–	4.80 (122)	6.57 (167)	9.72 (247)	20.16 (512)	28.23 (717)

Speed / acceleration FL_G	max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

- S = Length of travel
- R = Bending radius
- H = Nominal clearance height
- D = Overlength E-Chain® radius in final position
- $K = \pi \bullet R +$ *safety buffer*
- H_F = Required clearance height
- H_{RI} = Trough inner height
- H_2 = *Mounting height
- D_2 = Overlength - long travels, gliding
- K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.

Design, Chapter 1

Technical Data

Details of material properties

➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
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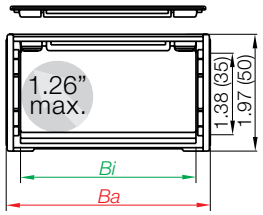
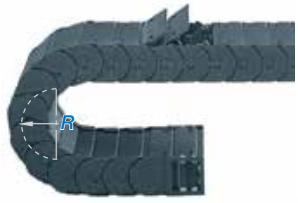
QuickSpec: http://www.igus.com/quickspec

Series R58 - E-Tube snap-open along the outer radius

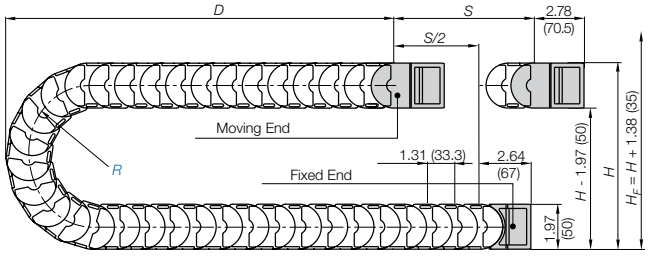




Part Number Structure

58- 100- 100- 0

- Color - Black
- Bending radius
- Width
- Series



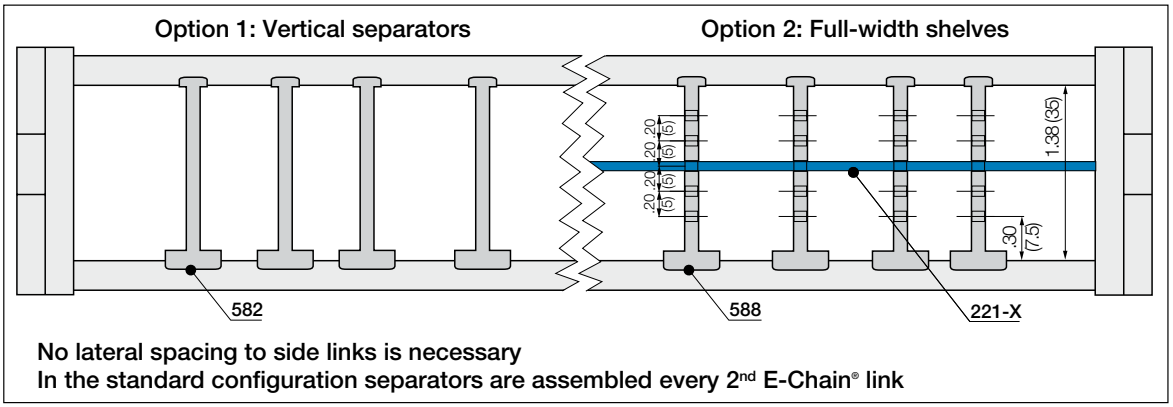
Supplement part number with required radius. Example: R58-100-100-0
Pitch: 1.31 in. (33.3 mm) per link links/ft (m) = 9.14 (30)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
58-050- ☐ -0	1.97 (50)	2.60 (66)	≈ 1.01 (1.50)
58-075- ☐ -0	2.95 (75)	3.58 (91)	≈ 1.19 (1.77)
58-100- ☐ -0	3.94 (100)	4.57 (116)	≈ 1.37 (2.04)
58-125- ☐ -0	4.92 (125)	5.55 (141)	≈ 1.55 (2.31)
58-150- ☐ -0	5.91 (150)	6.54 (166)	≈ 1.75 (2.61)
58-175- ☐ -0	6.89 (175)	7.52 (191)	≈ 1.94 (2.88)
58-200- ☐ -0	7.87 (200)	8.50 (216)	≈ 2.12 (3.15)

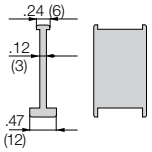
Choose from the radii below for all of the above sizes
Radius (mm)Example: R58-100-100-0

	075	100	125	150	200	250
R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	17.72 (450)	21.65 (550)
D	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	10.83 (275)	12.80 (325)
K	12.96 (305)	15.16 (385)	18.11 (460)	21.26 (540)	27.36 (695)	33.66 (855)

E-Chain System® E2 Tubes
Series R58
Interior Separation



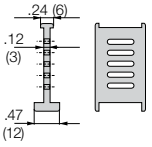
No lateral spacing to side links is necessary
In the standard configuration separators are assembled every 2nd E-Chain® link



Separator for E-Tubes

Unassembled	**Part No. 581**
Assembled	**Part No. 582**

- **Separator 581**
  For vertical separation with wide base for maximum stability when used with thick cables or hoses

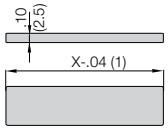


Slotted Separator for E-Tubes

Unassembled	**Part No. 587**
Assembled	**Part No. 588**

- **Separator 587**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Full-width shelves - for the standard interior separation



Full width shelf for E-Tubes

Unassembled	**Part No. 220-X**
Assembled	**Part No. 221-X**

- **Full width shelf 220-X**
  is used in applications with many thin cables with similar diameters. Full-width shelves can be arranged at 5 different heights in .20" (5mm) increments..

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.97	(50)	**220-50**	**221-50**
2.95	(75)	**220-75**	**221-75**
3.94	(100)	**220-100**	**221-100**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
4.92	(125)	**220-125**	**221-125**
5.91	(150)	**220-150**	**221-150**
6.89	(175)	**220-175**	**221-175**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
7.87	(200)	**220-200**	**221-200**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
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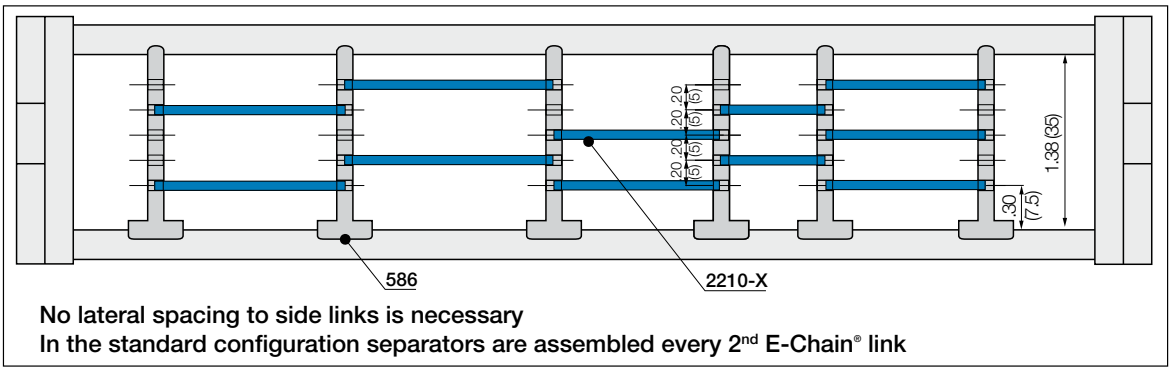
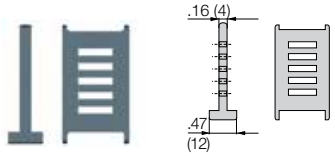
E-Chain System® E2 Tubes
Series R58
Interior Separation



No lateral spacing to side links is necessary
In the standard configuration separators are assembled every 2nd E-Chain® link

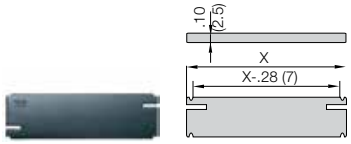


Separator, narrow base

Unassembled	**Part No. 585**
Assembled	**Part No. 586**

- **Slotted separator 585**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Full-width shelves - for the standard interior separation



Full width shelf

Unassembled	**Part No. 2200-X**
Assembled	**Part No. 2210-X**

- **Full width shelf 2200-X**
  For applications involving many cables with different diameters, shelves can be arranged at alternate heights. They can be arranged at 5 different heights in .20" (5mm) increments.

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	**2200-18**	**2210-18**
.91	(23)	**2200-23**	**2210-23**
1.10	(28)	**2200-28**	**2210-28**
1.30	(33)	**2200-33**	**2210-33**
1.50	(38)	**2200-38**	**2210-38**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.69	(43)	**2200-43**	**2210-43**
1.89	(48)	**2200-48**	**2210-48**
2.28	(58)	**2200-58**	**2210-58**
2.68	(68)	**2200-68**	**2210-68**
2.87	(73)	**2200-73**	**2210-73**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
3.46	(88)	**2200-88**	**2210-88**
3.90	(99)	**2200-99**	**2210-99**
4.88	(124)	**2200-124**	**2210-124**
5.87	(149)	**2200-149**	**2210-149**

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Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E2 Tubes
Series R58
Mounting Brackets - KMA

Option 1: pivoting

- Unsupported and gliding applications
- Space-restricted conditions
- Mounting points on all sides
- KMA with Quickflange option available for short and long travels

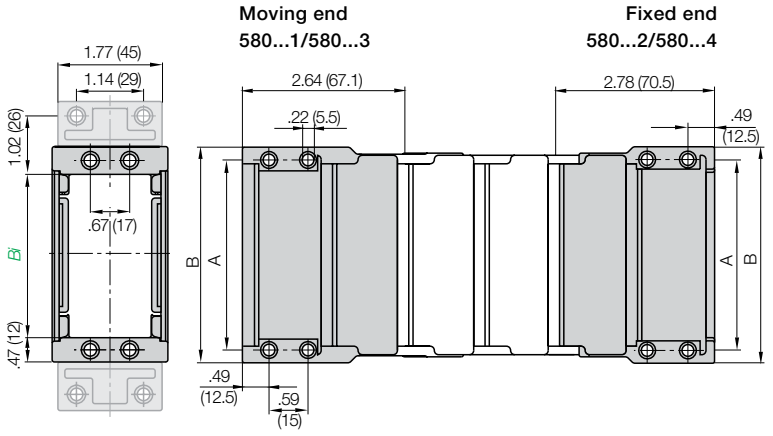
Option 2: locking

- Vertical hanging/standing travels
- Extreme speeds and accelerations
- Mounting points on all sides
- Flush mounting at both ends of the E-Tube
- KMA with Quickflange option

Part Number Structure

580- 050- 12 QF

- With Quickflange
- Complete Set
  12 = Pivoting
  34 = Locking
- Width
- Mounting brackets for selected chain type



Full set, for both ends:

580-050-12 QF Full set, **each part with pin/bore + Quickflange**

Single-part order:

580-050-1 QF Mounting bracket **with bore + Quickflange**

580-050-2 QF Mounting bracket **with pin + Quickflange**

Quickflange upon request

- Unassembled

For Tube Type	Part No. Full set without Quickflange	Part No. Full Set with Quickflange	Dimension A in.	(mm)	Dimension B in.	(mm)
58-050	580-050- ☐	580-050- ☐ QF	2.44	(62)	2.91	(74)
58-075	580-075- ☐	580-075- ☐ QF	3.43	(87)	3.90	(99)
58-100	580-100- ☐	580-100- ☐ QF	4.41	(112)	4.88	(124)
58-125	580-125- ☐	580-125- ☐ QF	5.39	(137)	5.87	(149)
58-150	580-150- ☐	580-150- ☐ QF	6.38	(162)	6.85	(174)
58-175	580-175- ☐	580-175- ☐ QF	7.36	(187)	7.83	(199)
58-200	580-200- ☐	580-200- ☐ QF	8.35	(212)	8.82	(224)

☐ 12 or 34

For pivoting brackets choose 12
For locking brackets choose 34
Example: 580-050- 34 QF

The following parts are required for attachment of the mounting brackets:

- **Socket head cap bolt M5* DIN 912-8.8**
  8 pieces/set
- **Washer 5.3 DIN 125-ST**
  8 pieces/set
- **Hexagon nut M5 DIN 934-8**
  8 pieces/set

* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E-Chain System® E2 Tubes
Series R58
Strain Relief

- Strain relief disappears completely within the E-Tube
- Easy to assemble, no screws required

Part. No.	Width (mm)	Number of teeth
5850-Z	1.81 (46)	4

Number of tiewrap plates 5850-Z for selected inner width *Bi*

Bin			
1.97 (50)	–	–	–
2.95 (75)	1.81 (46)	1	4
3.94 (100)	1.81 (46)	1	4
4.92 (125)	1.81 (46)	2	8
5.91 (150)	1.81 (46)	2	8
6.89 (175)	1.81 (46)	3	12
7.87 (200)	1.81 (46)	3	12

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E-Chain System® E2 Tubes
Series R58
Guide Trough

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part number 95-30
- 1/2 travel length glide bars
  Part number 92-01
- Installation sets as end connectors
  Part number 95-50-XX

-XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the right. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel.

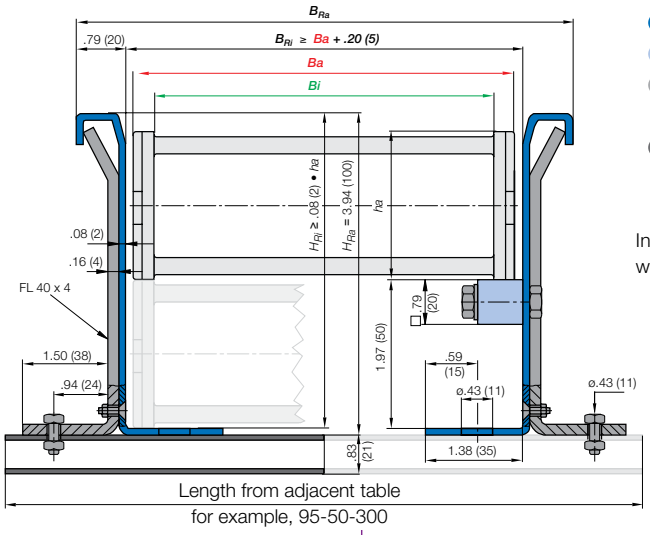
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough without glide bar
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 95-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 92-01
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
95-50-XXX
Example:
95-50-250 for 9.84" (250 mm) long profile rail.

Example:

Width of Crossbar
58-**075**-200-0

B_{Ri}		Part No. Installation Set
-050	2.80 (71)	**95-50-200**
-075	3.78 (96)	**95-50-225**
-100	4.76 (121)	**95-50-250**
-125	5.75 (146)	**95-50-275**
-150	6.73 (171)	**95-50-300**
-175	7.72 (196)	**95-50-325**
-200	8.70 (221)	**95-50-350**

Standard length profile rail



- Guide trough
- Glide bars
- Installation set "Basic"
- C-profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E-Chain System® E2 Tubes Series R68

1.77

Price Index

Series R68

Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

iF-Design Award Winner

Assembly Tips

To open the E-Tube Series R, lift up the lid (with a screwdriver) and remove the lid

Other Installation Methods

Vertical, hanging ≤ 197 ft (60 m)
Vertical, standing ≤ 13.12 ft (4 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

Usage Guidelines

- If particularly quiet operation is required
- If very high speeds are required
- If chip protection is subject to stringent requirements

- If a particularly low-cost solution is the main factor
  ➤ **Series R167/R168 E2 Tubes**
- If no chip protection is required
  ➤ **Series 340/350 E2 Medium**

Features & Benefits

1. Large pins for high stability
2. Protection for cables and hoses against hot chips
3. Small pitch for low-noise, smooth operation
4. Removable lids along the outer radius
5. Smooth, chip-repellent exterior
6. KMA mounting brackets with attachment capabilities on all sides
7. Fully enclosed
8. Integrated strain relief available especially for E-Tubes

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **68-100-100-0**	**E-Chain®**
With 2 separators **311** assembled every 2nd link	**Interior Separation**
1 Set **680-100-12**	**Mounting Bracket**

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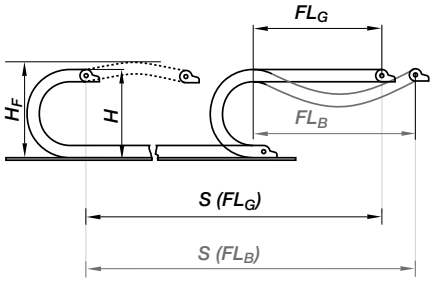
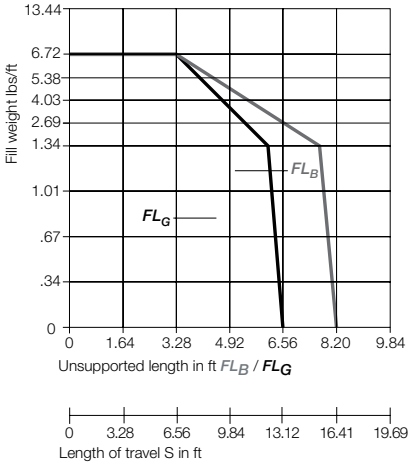
E-Chain System® E2 Tubes
Series R68
Installation Dimensions

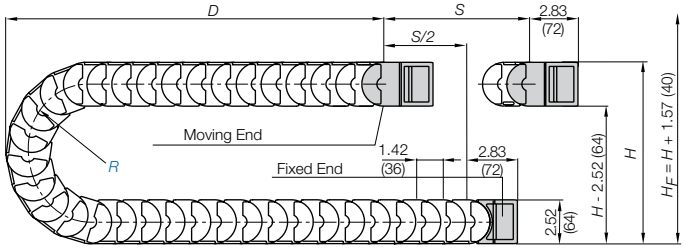
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.42" (36 mm)
Links per ft (m): = 8.53 (28)
For center mount applications:
Chain length = $_{S}/_{2} + K$

The required clearance height: ***HF* = *H* + 1.57 in. (40 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)	11.81 (300)
H	10.39 (264)	12.36 (314)	14.33 (364)	16.30 (414)	18.27 (464)	20.24 (514)	22.20 (564)	26.14 (664)
D	7.32 (186)	8.31 (211)	9.29 (236)	10.28 (261)	11.26 (286)	12.24 (311)	13.23 (336)	15.20 (386)
K	15.35 (390)	18.31 (465)	21.46 (545)	24.60 (625)	27.76 (705)	30.71 (780)	33.86 (860)	39.96 (1015)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

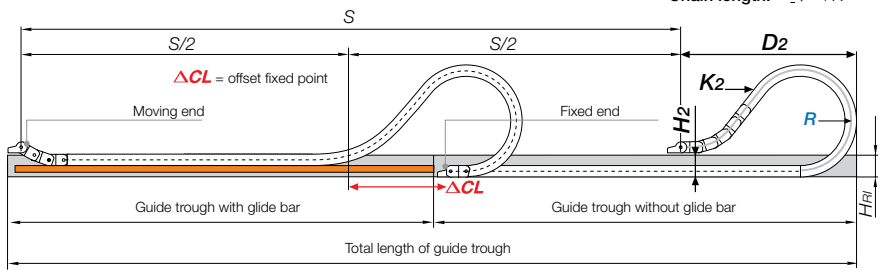
S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 328 ft. (100 m)

For center mount applications:
Chain length: = $_{S}/_{2} + K_2$



R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)	11.81 (300)
H_2	7.91 (201)	8.66 (220)	8.66 (220)	8.66 (220)	8.66 (220)	8.66 (220)	8.66 (220)	8.66 (220)
D_2	7.87 (200)	14.57 (370)	17.32 (440)	21.26 (540)	25.59 (650)	27.56 (700)	33.46 (850)	41.34 (1050)
K_2	19.69 (500)	25.51 (648)	31.18 (792)	35.43 (900)	43.94 (1116)	49.96 (1269)	58.11 (1476)	70.87 (1800)
ΔCL	–	6.46 (164)	8.03 (204)	11.57 (294)	14.33 (364)	17.28 (439)	20.24 (514)	26.14 (664)

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.

Design, Chapter 1

Speed / acceleration FL_G	max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties

➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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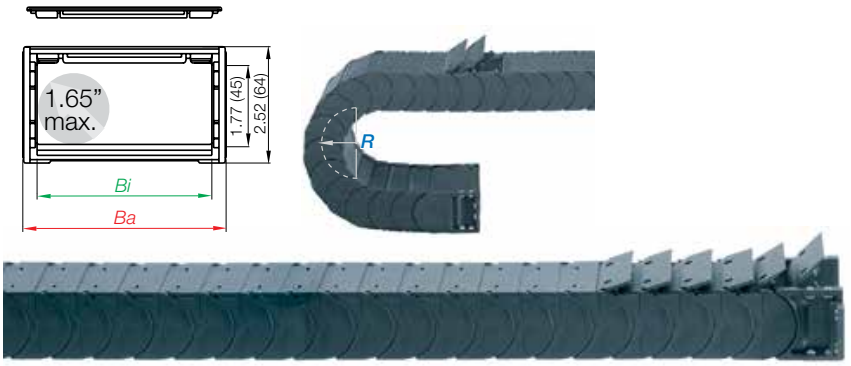
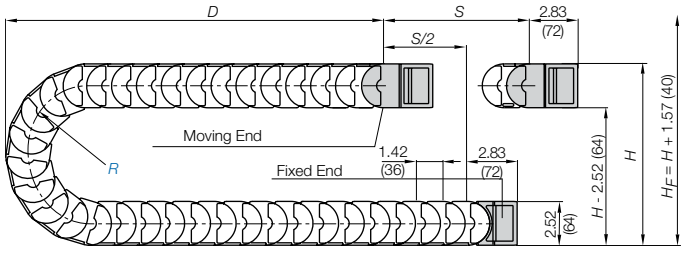
Series R68 - E-Tube snap-open along the outer radius



Part Number Structure

68- 100- 100- 0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: R68-100-100-0
Pitch: 1.42 in. (36 mm) per link links/ft (m) = 8.53 (28)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
68-050-□-0	1.97 (50)	2.68 (68)	≈ 1.28 (1.90)
68-075-□-0	2.95 (75)	3.66 (93)	≈ 1.46 (2.18)
68-100-□-0	3.94 (100)	4.65 (118)	≈ 1.65 (2.46)
68-115-□-0	4.53 (115)	5.24 (133)	≈ 1.77 (2.63)
68-125-□-0	4.92 (125)	5.63 (143)	≈ 1.86 (2.77)
68-150-□-0	5.91 (150)	6.61 (168)	≈ 2.05 (3.05)
68-175-□-0	6.89 (175)	7.60 (193)	≈ 2.26 (3.36)
68-200-□-0	7.87 (200)	8.58 (218)	≈ 2.45 (3.64)
68-225-□-0	8.86 (225)	9.57 (243)	≈ 2.63 (3.92)
68-250-□-0	9.84 (250)	10.55 (268)	≈ 2.84 (4.23)

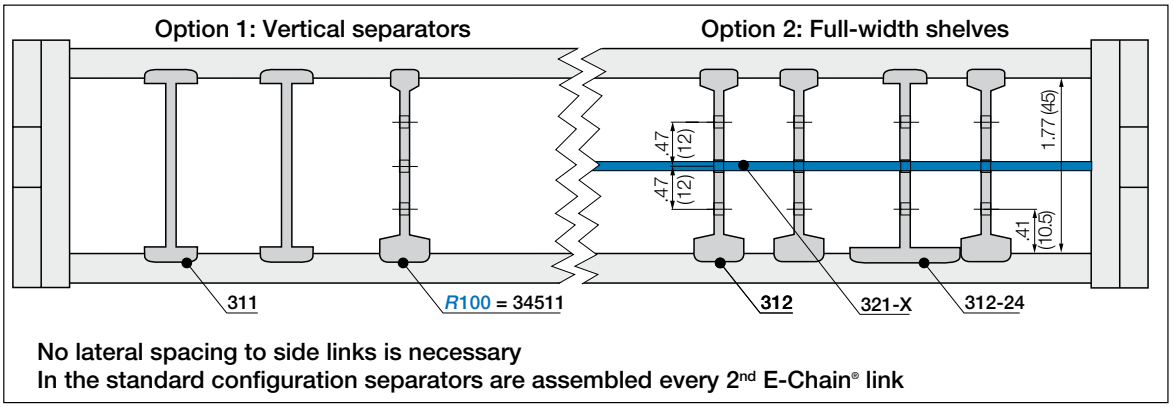
Choose from the radii below for all of the above sizes
Radius (mm) Example: R68-100-100-0

	100	125	150	175	200	225	250	300
R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)	11.81 (300)
H	10.39 (264)	12.36 (314)	14.33 (364)	16.30 (414)	18.27 (464)	20.24 (514)	22.20 (564)	26.14 (664)
D	7.32 (186)	8.31 (211)	9.29 (236)	10.28 (261)	11.26 (286)	12.24 (311)	13.23 (336)	15.20 (386)
K	15.35 (390)	18.31 (465)	21.46 (545)	24.60 (625)	27.76 (705)	30.71 (780)	33.86 (860)	39.96 (1015)

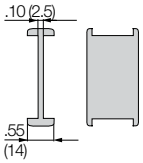
Separator with integrated strain relief

Strain relief separator Part No. 34501-Z can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

E-Chain System® E2 Tubes
Series R68
Interior Separation



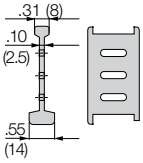
No lateral spacing to side links is necessary
In the standard configuration separators are assembled every 2nd E-Chain® link



Separator for E-Tubes

Unassembled	**Part No. 301**
Assembled	**Part No. 311**

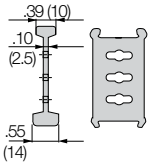
- **Separator 301**
  For vertical separation with wide base for maximum stability when used with thick cables or hoses



Slotted Separator for E-Tubes (for radius R 100)

Unassembled	**Part No. 34501**
Assembled	**Part No. 34511**

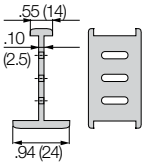
- **Separator 34501 (for radius R 100)**
  if you select bending radius R 100 please use this separator for a vertical subdivision.



Slotted Separator for E-Tubes

Unassembled	**Part No. 302**
Assembled	**Part No. 312**

- **Separator 302**
  is used when vertical separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

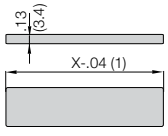


Slotted Separator with wide base* for E-Tubes

Unassembled	**Part No. 302-24**
Assembled	**Part No. 312-24**

- **Separator 302-24**
  If a wide space between the separators must be maintained or separators must be in a fixed position. Features a wide base.
  *(for side mounted applications).

Full-width shelves - for the standard interior separation



Full width shelf for E-Tubes

Unassembled	**Part No. 320-X**
Assembled	**Part No. 321-X**

- **Full width shelf 320-X**
  is used in applications with many thin cables with similar diameters. Full-width shelves can be arranged at 5 different heights in .20" (5mm) increments..

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.97	(50)	**320-50**	**321-50**	4.92	(125)	**320-125**	**321-125**	7.87	(200)	**320-200**	**321-200**
2.95	(75)	**320-75**	**321-75**	5.91	(150)	**320-150**	**321-150**	8.86	(225)	**320-225**	**321-225**
4.53	(115)	**320-115**	**321-115**	6.89	(175)	**320-175**	**321-175**	9.84	(250)	**320-250**	**321-250**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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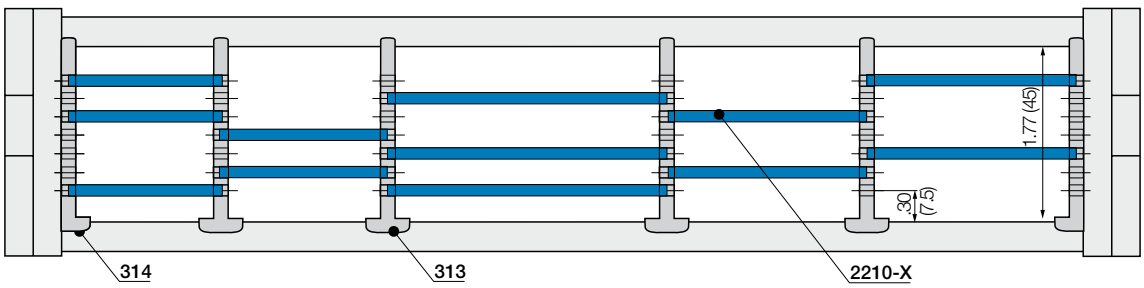
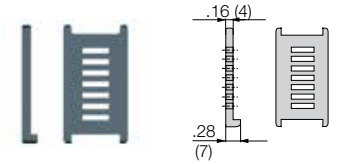
E-Chain System® E2 Tubes
Series R68
Interior Separation



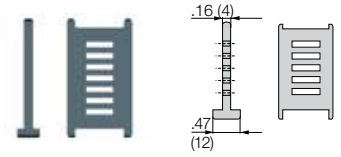
No lateral spacing to side links is necessary
In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, narrow base

Unassembled	**Part No. 303**
Assembled	**Part No. 313**

- **Side plate 303**
  Side plate for use with full-width sehlf 2200-X and middle plate 304

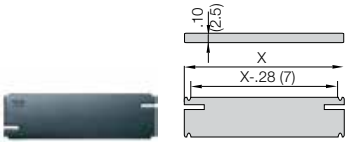


Separator, narrow base

Unassembled	**Part No. 304**
Assembled	**Part No. 314**

- **Middle plate 304**
  To achieve a modular interior separation the shelf 2200-X can be arranged at 7 different heights in .20" (5mm) increments.

Full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 2200-X**
Assembled	**Part No. 2210-X**

- **Full width shelf 2200-X**
  For applications involving many cables with different diameters, shelves can be arranged at alternate heights. They can be arranged at 7 different heights in .20" (5mm) increments.

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	**2200-18**	**2210-18**
.91	(23)	**2200-23**	**2210-23**
1.10	(28)	**2200-28**	**2210-28**
1.30	(33)	**2200-33**	**2210-33**
1.50	(38)	**2200-38**	**2210-38**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.69	(43)	**2200-43**	**2210-43**
1.89	(48)	**2200-48**	**2210-48**
2.28	(58)	**2200-58**	**2210-58**
2.68	(68)	**2200-68**	**2210-68**
2.87	(73)	**2200-73**	**2210-73**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
3.46	(88)	**2200-88**	**2210-88**
3.90	(99)	**2200-99**	**2210-99**
4.88	(124)	**2200-124**	**2210-124**
5.87	(149)	**2200-149**	**2210-149**

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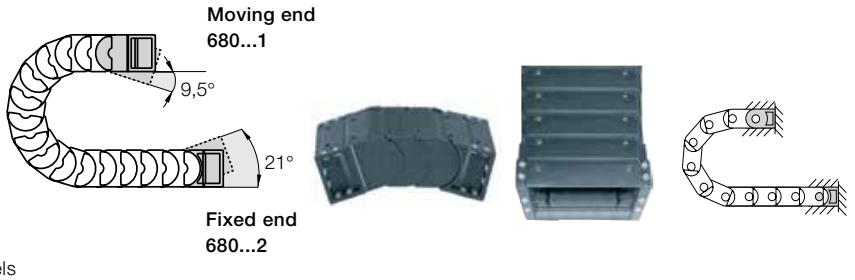
E-Chain System® E2 Tubes
Series R68
Interior Separation

Option 1: pivoting

- Unsupported and gliding applications
- Space-restricted conditions
- Mounting points on all sides
- KMA with Quickflange option available for short and long travels



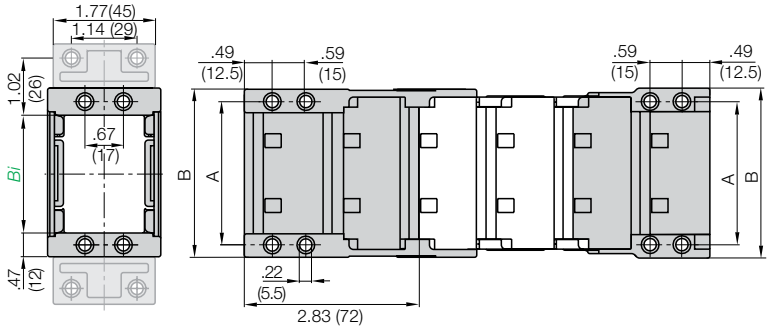
Option 2: locking

- Vertical hanging/standing travels
- Extreme speeds and accelerations
- Mounting points on all sides
- Flush mounting at both ends of the E-Tube
- KMA with Quickflange option

Part Number Structure

680- 050- 12 QF

- With Quickflange
- Complete Set
  12 = Pivoting
  34 = Locking
- Width
- Mounting brackets for selected chain type



Full set, for both ends:

680- 050- 12 QF Full set, **each part with pin/bore + tiewrap plate**

Single-part order:

680- 050- 1 QF Mounting bracket **with bore + tiewrap plate**

680- 050- 2 QF Mounting bracket **with pin + tiewrap plate**

Quickflange unassembled
Part number 16800-QF

For Tube Type	Part No. Full set with Tiewrap Plate	Part No. Full Set with Quickflange	Dimension A in.	Dimension A (mm)	Dimension B in.	Dimension B (mm)
68-050	680-050- ☐	680-050- ☐ QF	2.44	(62)	2.91	(74)
68-075	680-075- ☐	680-075- ☐ QF	3.43	(87)	3.90	(99)
68-100	680-100- ☐	680-100- ☐ QF	4.41	(112)	4.88	(124)
68-115	680-115- ☐	680-115- ☐ QF	5.00	(127)	5.47	(139)
68-125	680-125- ☐	680-125- ☐ QF	5.39	(137)	5.87	(149)
68-150	680-150- ☐	680-150- ☐ QF	6.38	(162)	6.85	(174)
68-175	680-175- ☐	680-175- ☐ QF	7.36	(187)	7.83	(199)
68-200	680-200- ☐	680-200- ☐ QF	8.35	(212)	8.82	(224)
68-225	680-225- ☐	680-225- ☐ QF	9.33	(237)	9.80	(249)
68-250	680-250- ☐	680-250- ☐ QF	10.31	(262)	10.79	(274)

12 or 34

For pivoting brackets choose 12

For locking brackets choose 34

Example: 680-050- 34 QF

The following parts are required for attachment of the mounting brackets:

- **Socket head cap bolt**
  M5* DIN 912-8.8
  8 pieces/set
- **Washer**
  5.3 DIN 125-ST
  8 pieces/set
- **Hexagon nut**
  M5 DIN 934-8
  8 pieces/set

* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
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E-Chain System® E2 Tubes
Series R68
Strain Relief

Integrated strain relief for E2 E-Tubes - Series R

- Strain relief disappears completely within the E-Tube
- Easy to assemble, no screws required

Part. No.	Width (mm)	Number of teeth
3050-Z	1.97 (50)	5
3075-Z	2.95 (75)	7

Number of tiewrap plates 3050-Z for selected inner width *Bi*

Bi		Width tiewrap plate		Number of tiewrap plates	Total
in.	(mm)	in.	(mm)	*n*	number of teeth
1.97	(50)	–		–	–
2.95	(75)	–		–	–
3.94	(100)	1.97	(50)	1	5
4.52	(115)	1.97	(50)	1	5
4.92	(125)	1.97	(50)	1	5
5.91	(150)	1.97	(50)	2	10
6.89	(175)	1.97	(50)	2	10
7.87	(200)	1.97	(50)	3	15
8.86	(225)	1.97	(50)	3	15
9.89	(250)	1.97	(50)	4	20

Number of tiewrap plates 3075-Z for selected inner width *Bi*

Bi		Width tiewrap plate		Number of tiewrap plates	Total
in.	(mm)	in.	(mm)	*n*	number of teeth
1.97	(50)	–		–	–
2.95	(75)	–		–	–
3.94	(100)	–		–	–
4.52	(115)	2.95	(75)	1	7
4.92	(125)	2.95	(75)	1	7
5.91	(150)	2.95	(75)	1	7
6.89	(175)	2.95	(75)	2	14
7.87	(200)	2.95	(75)	2	14
8.86	(225)	2.95	(75)	3	21
9.89	(250)	2.95	(75)	3	21

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QuickSpec: http://www.igus.com/quickspec

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E-Chain System® E2 Tubes
Series R68
Guide Trough

Guide troughs are used with applications where the upper run of the E-Tube glides on the lower run. If using igus steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part number 93-30
- 1/2 travel length glide bars
  Part number 93-01
- Installation sets as end connectors
  Part number 93-50-XX

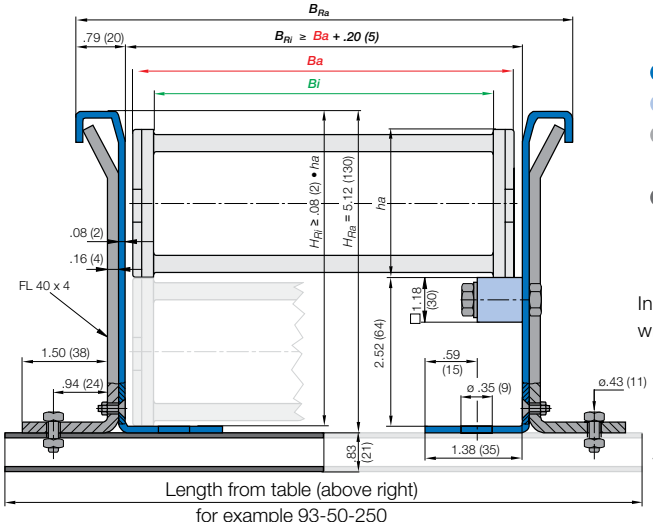
-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the right. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough, 82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough **Part No. 93-30**
= 13 sections of 6.56 ft (2 m) glide bar **Part No. 93-01**
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
93-50-XXX
Example:
93-50-250 for 9.84" (250 mm) long profile rail.

Width of Crossbar
68-**075**-200-0

	B_{Ri}	Installation Part No.
-050	2.87 (73)	**93-50-200**
-075	3.86 (98)	**93-50-225**
-100	4.84 (123)	**93-50-250**
-115	5.43 (138)	**93-50-250**
-125	5.83 (148)	**93-50-275**
-150	6.81 (173)	**93-50-300**
-175	7.80 (198)	**93-50-325**
-200	8.78 (223)	**93-50-350**
-225	9.76 (248)	**93-50-375**
-250	10.75 (273)	**93-50-400**

Standard length profile rail



- Guide trough
- Glide bars
- Installation set "Basic"
- C-profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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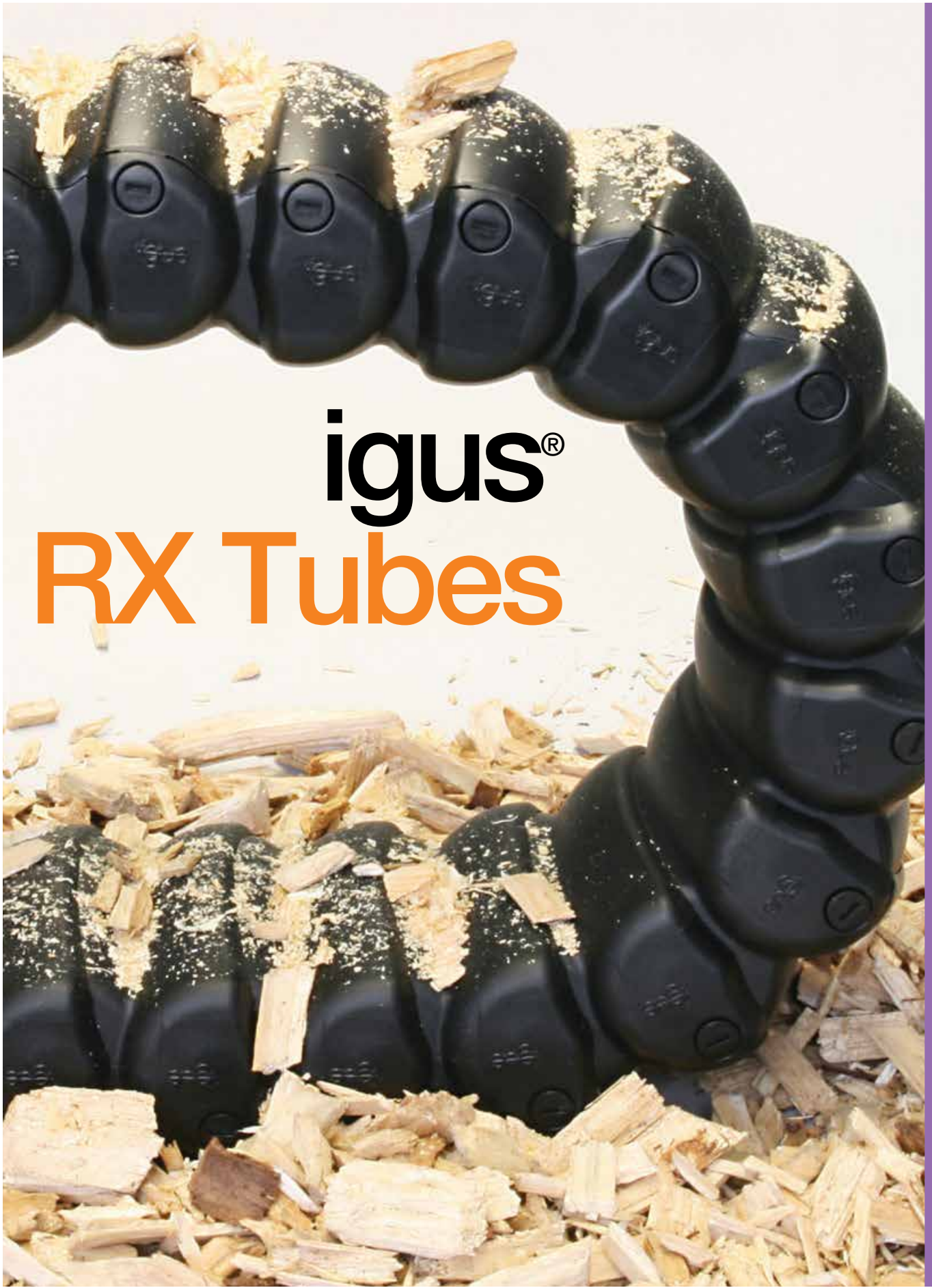


igus®
RX Tubes

RX Tube - Totally new E-Tube with chip repellent design

A world premiere from igus®- a totally redesigned E-Tube repels chips, is extremely tight, and can be opened!

- Full chip protection without undercuts, projecting edges and gaps
- Round contour prevents chip accumulation
- Large interior cross section with 2.87” (73 mm) max. inner height
- Covered pin/bore connection and stop dogs
- Reverse bending radius (RBR) becomes a standard option

Typical industries and applications

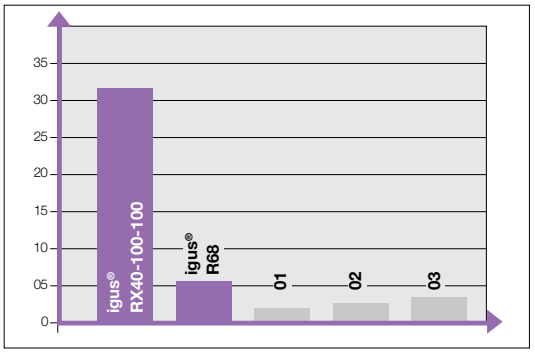
- Tooling machines
- Woodworking machines
- All kind of industries and machines with chip, dirt and dust

ESD Classification: Electrically conductive
ESD/ATEX version upon request

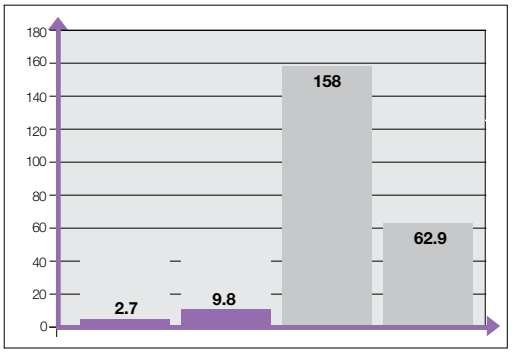
Flammability Class
VDE 0304 IIC UL94 HB

E-Tubes with HT-material for hot chips
up to 1562°F (850°C) available upon request

RX E-Tubes, without undercuts, projecting edges or gaps



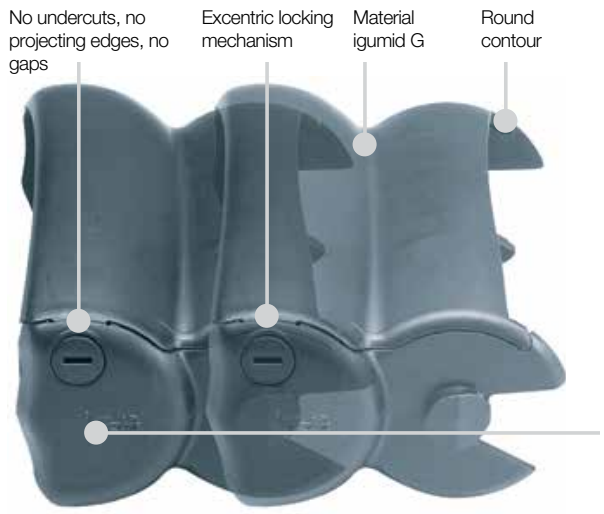
Test 1: Drowning - Various tube styles were submerged under water. For the RX E-Tube, it takes more than 30 sec. to fill up with water



Test 2: Chip intrusion - Various tube styles were charged with a defined quantity of chips. Only 3.7 g of chips were found inside the new RX E-Tube after 251,900 cycles

Chip-test at the igus® test-lab proven enormous tightness.

E-Chain System® E2 Medium
Series RX40



Series RX - new chip protected design, small pitch, lids open

- Full chip protection without undercuts, projecting edges or gaps
- Round contour prevents chip accumulation
- Large interior cross section with 2.05 (52 mm) maximum inner height
- Covered pin/bore connection and stop dogs
- Reverse bending radius (RBR) becomes a standard option
- Perfect fastening with flange mounting brackets
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

Selection table

Series	Inner height		Inner width		Outer width		Outer height		Bending ra-
	hi		*Bi*		*Ba*		*ha*		
R	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	*in.*
(mm)									
RX32	1.02-1.65	(26-42)	3.15	(80)	3.87	(98.4)	2.20	(56)	3.15-5.91 (80-150)
RX40	1.26/2.05	(32/52)	3.94	(100)	4.84	(123)	2.76	(70)	3.94-11.81 (100-300)
RX48	1.38-2.44	(35-62)	4.72	(120)	5.81	(147.6)	3.31	(84)	4.72-5.91 (120-150)
RX56	1.61-2.87	(41-73)	5.51	(140)	6.78	(172.2)	3.86	(98)	5.51 (140)

Protection from all kinds of chips

E-Chain System® E2 Medium
Series RX40

E-Tubes - Assembling RX E-Tube

Easy opening of lids on the outer radius with embedded excentric locking mechanism

E-Tubes - Interior Separation of the RX E-Tube

Interior separation with cable-friendly separators and shelves

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RX32

E-Chain System® E2 Tubes Series RX32

1.65

Price Index

Series RX32

Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

Features & Benefits

1. Mounting bracket available with or without strain relief
2. Full chip protection without undercuts, projecting edges or gaps
3. Large interior cross section
4. Round contour prevents chip accumulation
5. Covered pin/bore connection and stop dogs
6. Lids open from outer radius
7. Interior separation available

Assembly Tips

Easy opening of lids on the outer radius with embedded excentric locking mechanism

Usage Guidelines

- If fully protected E-Tube is desired
- If easy access from the outside is required

- If a particularly low-cost solution is the main factor
  ➤ **Series R168 E2 Tubes**
- If no chip protection is required
  ➤ **Series R4-56 E4-1**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **RX32-080-080-0**	**E-Chain®**
With 3 separators **RX32-1-1/RX32-1-2** assemb. every 2nd link	**Interior Separation**
1 Set **RX321-080-12**	**Mounting Bracket**

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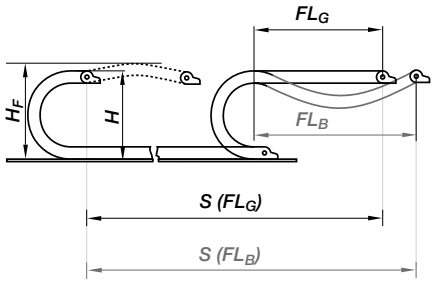
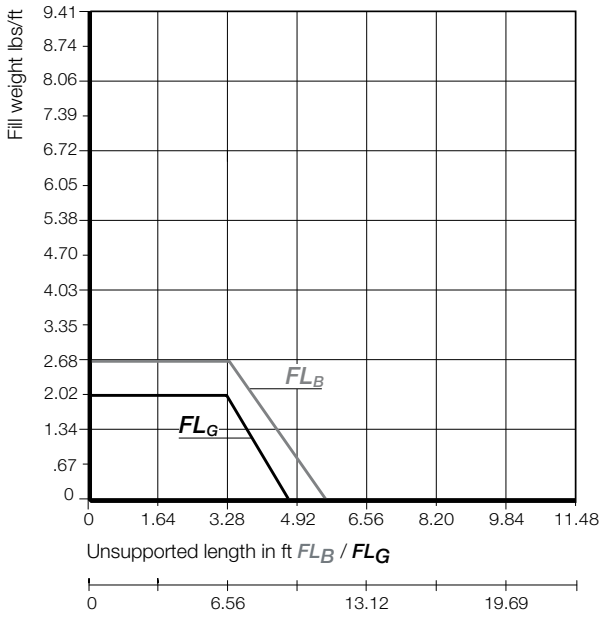
E-Chain System® E2 Tubes
Series RX32

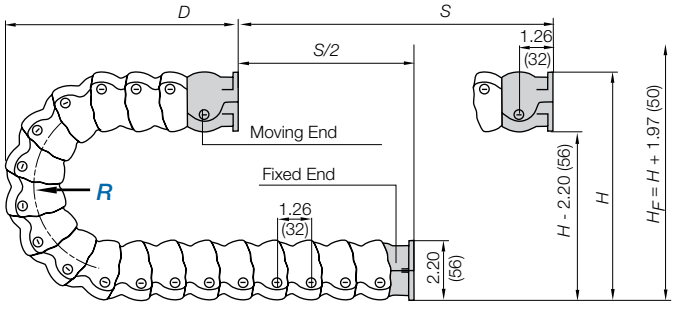
Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.26" (32 mm)
Links per ft (m): = 9.52 (32)
For center mount applications:
Chain length = $^{S}/_{2} + K$

The required clearance height: ***HF = H* + 1.97 in. (50 mm)** (with .34 lbs/ft (0.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	**3.15 (080)**	**5.91 (150)**
H	8.50 (216)	14.02 (356)
D	6.14 (156)	8.89 (226)
K	12.60 (320)	21.26 (540)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Technical Data

Speed / acceleration FL_G	max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E2 Tubes
Series RX32
Installation Dimensions, Interior Separation

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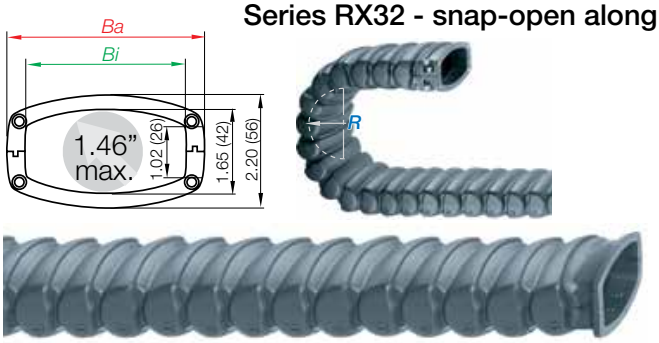
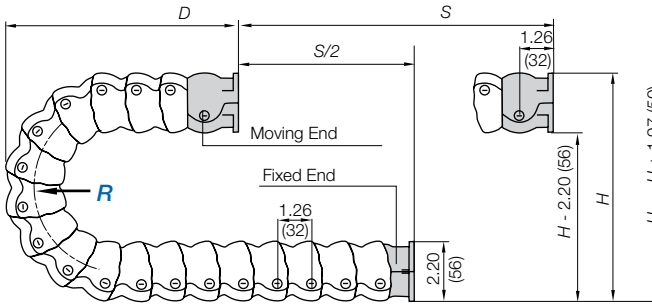
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/qs/echain.asp

Series RX32 - snap-open along the outer radius





Supplement part number with required radius. Example: RX32-080-080-0
Pitch: 1.26 in. (32 mm) per link links/ft (m) = 9.52 (32)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
RX32-080-□-0	3.15 (80)	3.87 (98.4)	≈ 0.83 (1.23)

Choose from the radii below for all of the above sizes
Radius (mm) Example: RX32-080-080-0

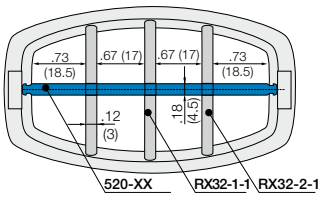
	080	150
R	3.15 (080)	5.91 (150)
H	8.50 (216)	14.02 (356)
D	6.14 (156)	8.89 (226)
K	12.60 (320)	21.26 (540)

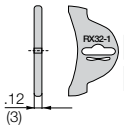
Part Number Structure

RX32-080-080-0
- Color - Black
- Bending radius
- Width
- Series

Separators and shelves

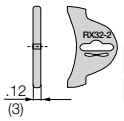
Vertical separators are used if a vertical subdivision of the E-Tube interior is required. By standard, vertical separators are assembled every other E-Tube link.





Separator, central

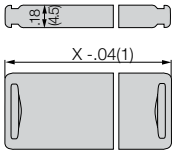
Unassembled	Part No. RX32-1
Assembled	Part No. RX32-1-1



Slotted Separator, lateral

Unassembled	Part No. RX32-1
Assembled	Part No. RX32-2-1

Shelves 520-XX
Full width shelves lock into separators on both ends, fixed width possible.



Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.14	(29)	520-29	521-29
2.13	(54)	520-54	521-54
3.11	(79)	520-79	521-79
4.09	(104)	520-104	521-104

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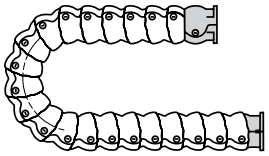
www.edfluidos.com

E-Chain System® E2 Tubes
Series RX32
Mounting Brackets

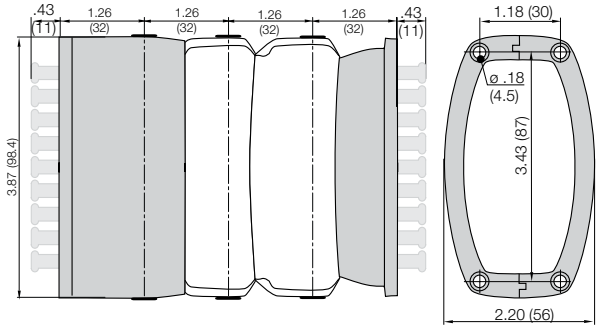
Option: Flange mounting brackets

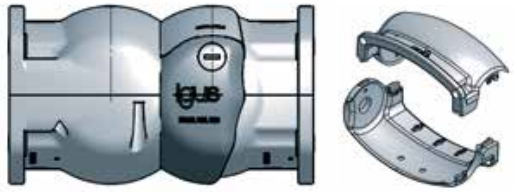
- Universally mountable with flange attachment capability
- Optional strain relief tiewrap plates
- Easy to open
- Optional M4 insert nuts

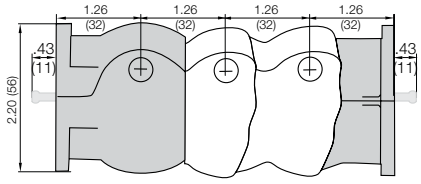
Moving end
RX321-080-1



Fixed end
RX321-080-2







Shown with strain relief

Chain Type	Part No. full set with tiewrap plate	Part No. full set without tiewrap plate	Number of Teeth
RX32	**RX321-080-12ZB**	**RX321-080-12**	8

Full set, for both ends:
RX321-080-12

Single-part order:
RX321-080-1 Mounting bracket **moving end**
RX321-080-2 Mounting bracket **fixed end**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

RX40

E-Chain System® E2 Tubes Series RX40

2.05

Price Index

Series RX40

Special Features / Options

ESD classification: Electrically conductive ESD/ ATEX version upon request

Flammability Class VDE 0304 IIC UL94 HB

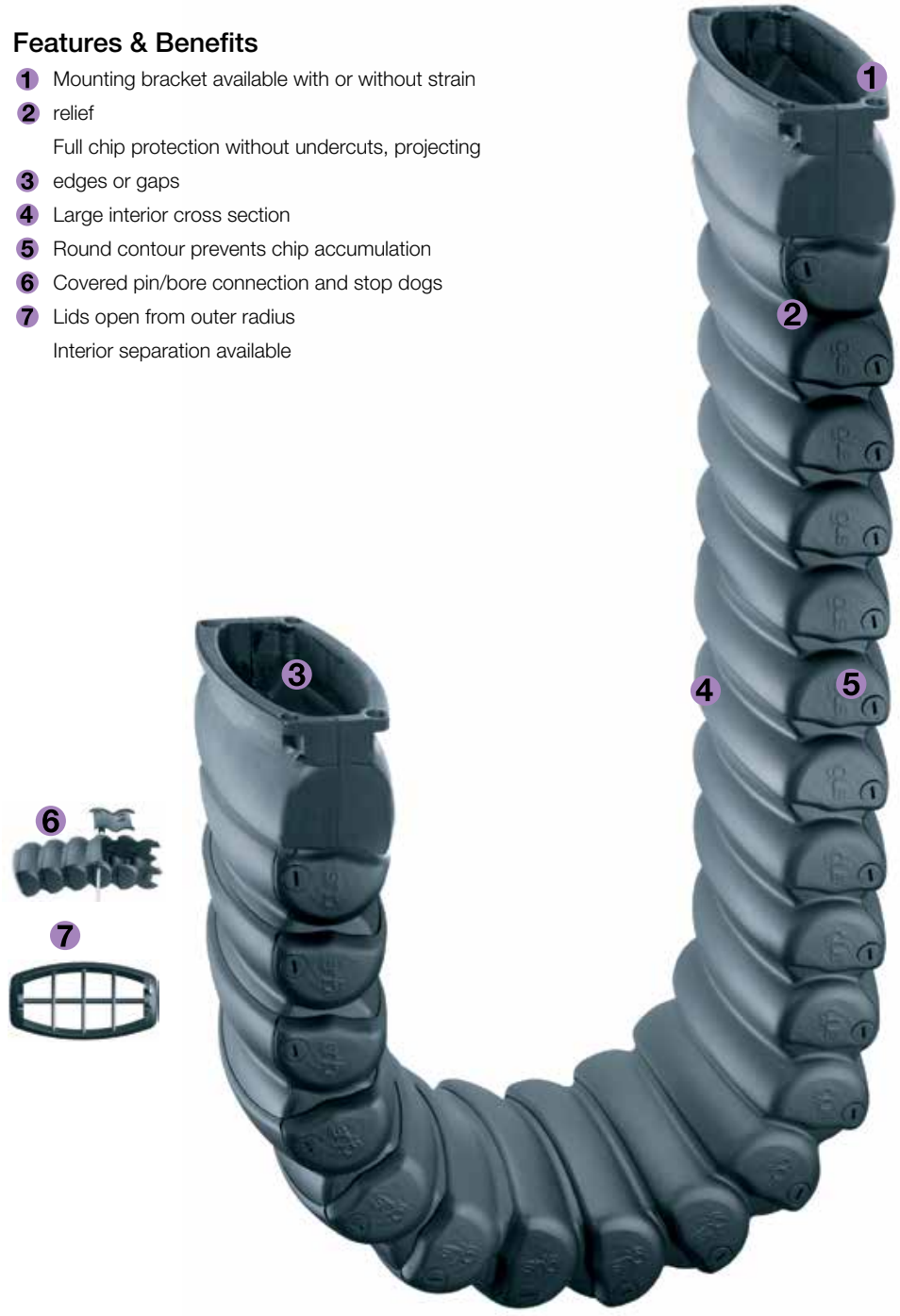
E-Tubes with HT-material for hot chips up to 1562°F (850°C) available upon request

Assembly Tips

Easy opening of lids on the outer radius with embedded excentric locking mechanism

Features & Benefits

1. Mounting bracket available with or without strain
2. relief
   Full chip protection without undercuts, projecting
3. edges or gaps
4. Large interior cross section
5. Round contour prevents chip accumulation
6. Covered pin/bore connection and stop dogs
7. Lids open from outer radius
   Interior separation available



Usage Guidelines

- If a fully protected E-Tube is desired
- If easy access from the outside is required

- If a particularly low-cost solution is the main factor
  ➤ **Series R68 E2 Tubes**
- If no chip protection is required
  ➤ **Series 340/350 E2 Medium**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **RX-40-100-100-0**	**E-Chain®**
With 3 separators **RX40-1-1/RX40-1-2** assemb. every 2nd link	**Interior Separation**
1 Set **RX401-100-12**	**Mounting Bracket**

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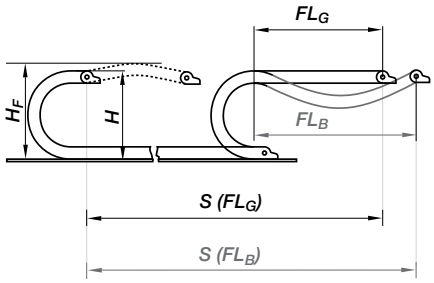
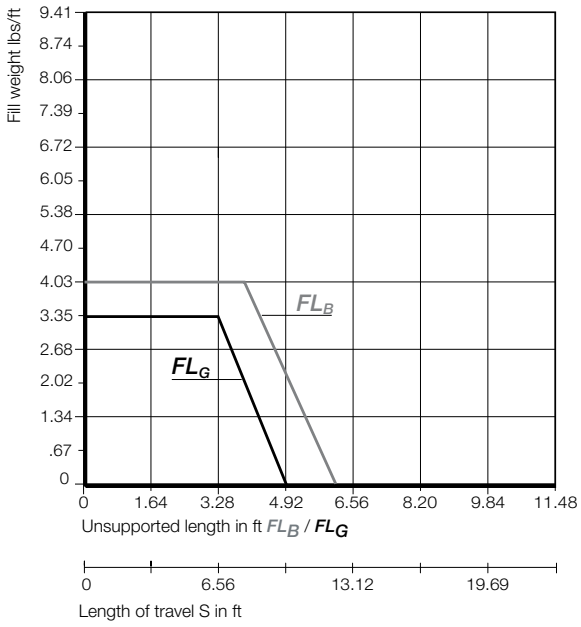
E-Chain System® E2 Tubes
Series RX40
Installation Dimensions

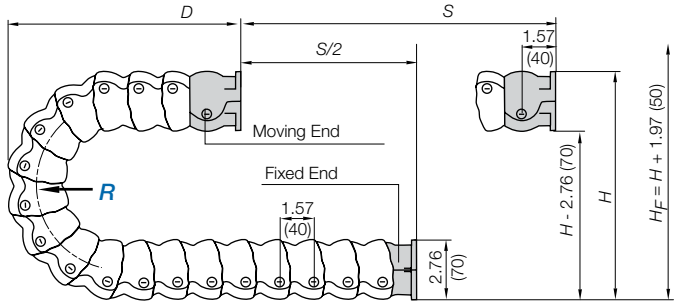
Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.57" (40 mm)
Links per ft (m): = 7.62 (25)
For center mount applications:
Chain length = $S/2 + K$

The required clearance height: ***HF = H* + 1.97 in. (50 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)	10.83 (275)	11.81 (300)
H	10.63 (270)	12.59 (320)	14.57 (370)	16.54 (420)	18.50 (470)	20.47 (520)	22.44 (570)	24.41 (620)	26.38 (670)
D	7.68 (195)	8.66 (220)	9.65 (245)	10.63 (270)	11.61 (295)	12.60 (320)	13.58 (345)	14.57 (370)	15.55 (395)
K	15.55 (395)	18.70 (475)	21.85 (555)	24.80 (630)	27.95(710)	31.10 (790)	34.25 (870)	37.20 (945)	40.35(1025)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Technical Data

Speed / acceleration FL_G	max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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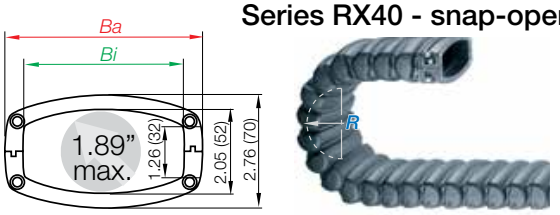
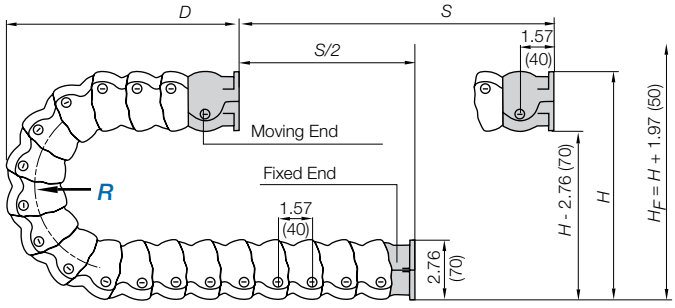
E-Chain System® E2 Tubes
Series RX40

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Series RX40 - snap-open along the outer radius





Part Number Structure

RX40-100-100-0

- Color - Black
- Bending radius
- Width
- Series

Supplement part number with required radius. Example: RX40-100-100-0
Pitch: 1.57 in. (40 mm) per link links/ft(m) = 7.62 (25)

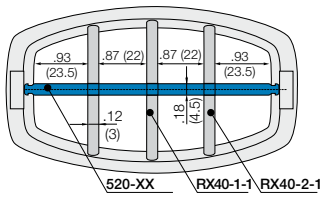
Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
RX40-100-□-0	3.94 (100)	4.84 (123)	≈ 1.27 (1.89)

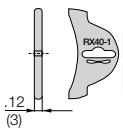
Choose from the radii below for all of the above sizes
Radius (mm) Example: RX40-100-100-0

	100	125	150	175	200	225	250	275	300
R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)	10.83 (275)	11.81 (300)
H	10.63 (270)	12.59 (320)	14.57 (370)	16.54 (420)	18.50 (470)	20.47 (520)	22.44 (570)	24.41 (620)	26.38 (670)
D	7.68 (195)	8.66 (220)	9.65 (245)	10.63 (270)	11.61 (295)	12.60 (320)	13.58 (345)	14.57 (370)	15.55 (395)
K	15.55 (395)	18.70 (475)	21.85 (555)	24.80 (630)	27.95(710)	31.10 (790)	34.25 (870)	37.20 (945)	40.35(1025)

Separators and shelves

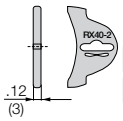
Vertical separators are used if a vertical subdivision of the E-Tube interior is required. By standard, vertical separators are assembled every other E-Tube link.





Separator, central

Unassembled	**Part No. RX40-1**
Assembled	**Part No. RX40-1-1**

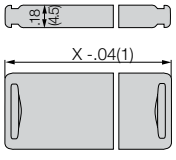


Slotted Separator, lateral

Unassembled	**Part No. RX40-1**
Assembled	**Part No. RX40-2-1**

Shelves 520-XX

Full width shelves lock into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally.



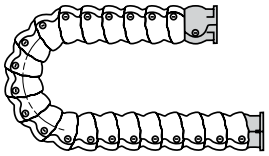
Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.14	(29)	520-24	521-24
2.13	(54)	520-44	521-44
3.11	(79)	520-64	521-64
4.09	(104)	520-84	521-84

E-Chain System® E2 Tubes
Series RX40
Mounting Brackets

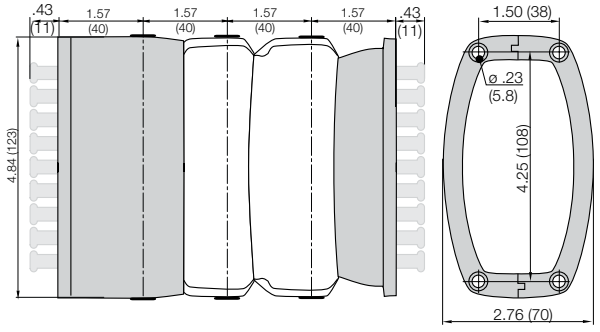
Option: Flange mounting brackets

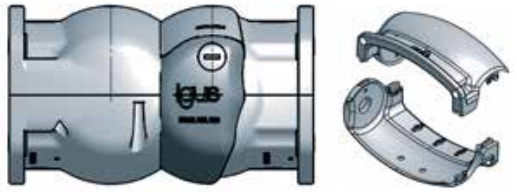
- Universally mountable with flange attachment capability
- Optional strain relief tiewrap plates
- Easy to open
- Optional M4 insert nuts

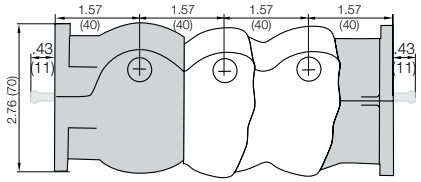
Moving end
RX401-100-1



Fixed end
RX401-100-2







Shown with strain relief

Chain Type	Part No. full set with tiewrap plate	Part No. full set without tiewrap plate	Number of Teeth
RX40	**RX401-100-12ZB**	**RX401-100-12**	10

Full set, for both ends:
RX401-100-12

Single-part order:
RX401-100-1 Mounting bracket **moving end**
RX401-100-2 Mounting bracket **fixed end**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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RX48

E-Chain System® E2 Tubes Series RX48

2.44

Price Index

Series RX48

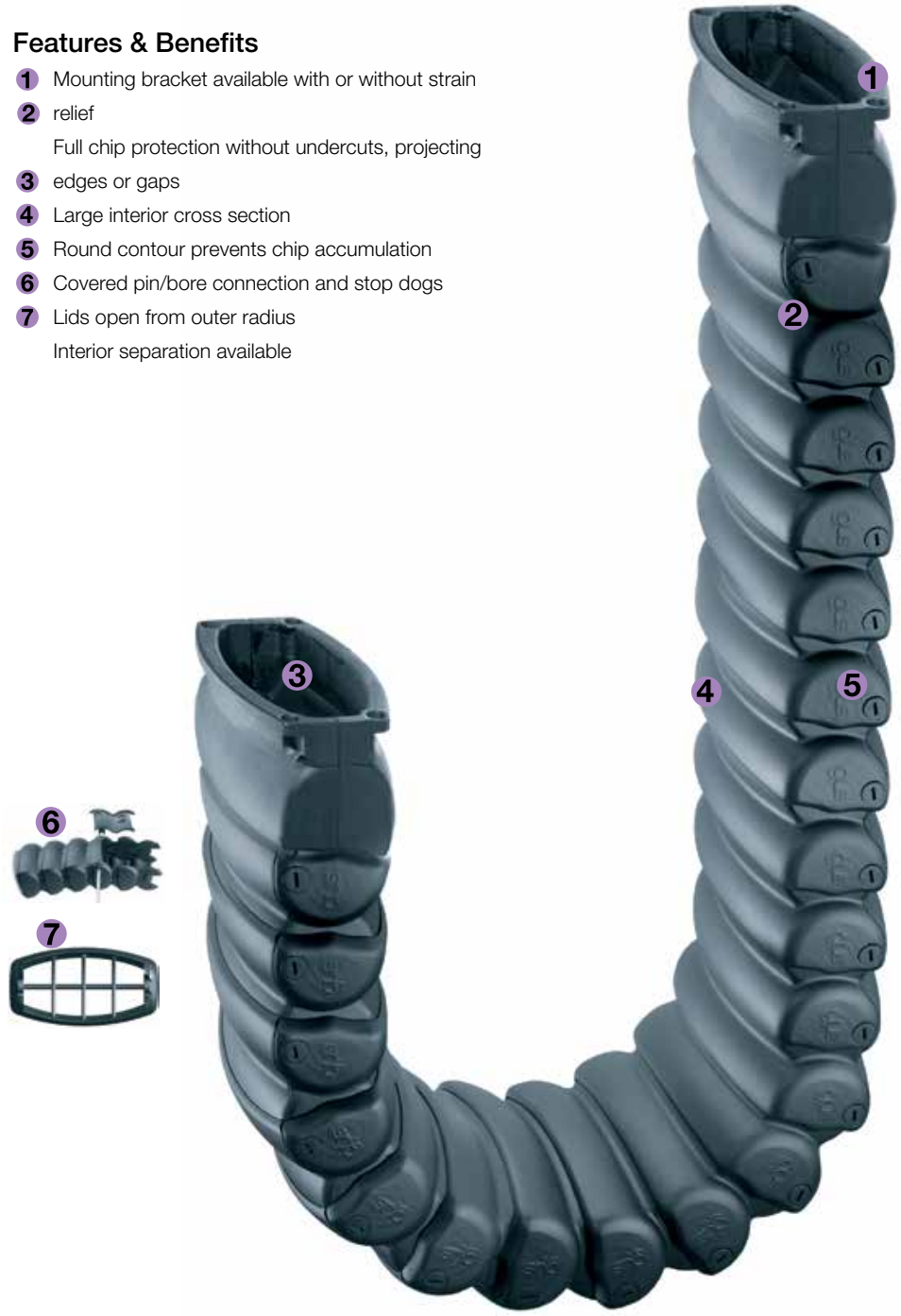
Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

Features & Benefits

1. Mounting bracket available with or without strain
2. relief
   Full chip protection without undercuts, projecting
3. edges or gaps
4. Large interior cross section
5. Round contour prevents chip accumulation
6. Covered pin/bore connection and stop dogs
7. Lids open from outer radius
   Interior separation available



Assembly Tips

Easy opening of lids on the outer radius with embedded excentric locking mechanism

Usage Guidelines

- If a fully protected E-Tube is desired
- If easy access from the outside is required

- For chip protection in gliding applications
  ➤ **Series R18840 E4 Light**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

9.84 ft (3 m) **RX48-120-120-0**	**E-Chain®**
With 3 separators **RX48-1-1/RX48-1-2** assemb. every 2nd link	**Interior Separation**
1 Set **RX48-120-12**	**Mounting Bracket**

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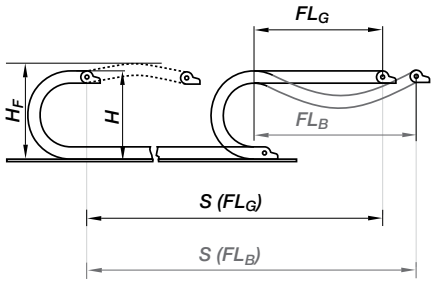
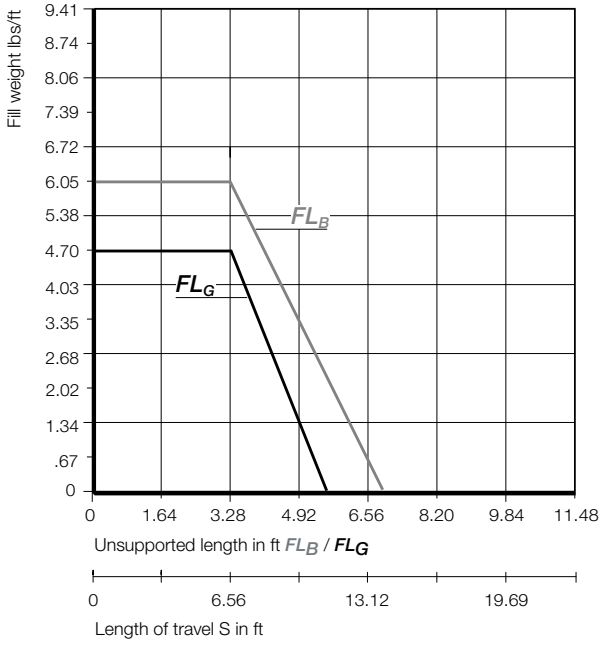
E-Chain System® E2 Tubes
Series RX48
Installation Dimensions

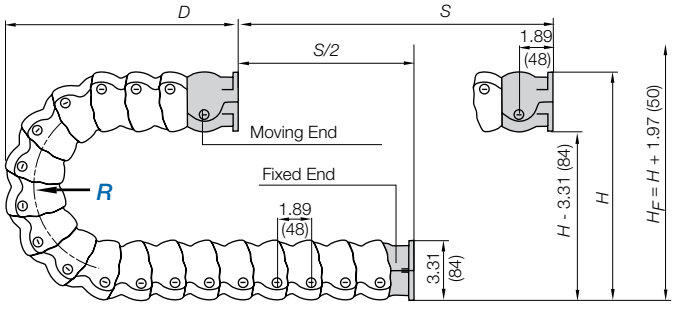
Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.89" (48 mm)
Links per ft (m): = 6.35 (21)
For center mount applications:
Chain length = $S/2 + K$

The required clearance height: ***HF = H* + 1.97 in. (50 mm)** (with .34 lbs/ft (0.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	4.72 (120)	5.91 (150)
H	12.76 (324)	15.12 (384)
D	9.21 (234)	10.39 (264)
K	18.70 (475)	22.44 (570)

Speed / acceleration FL_G	max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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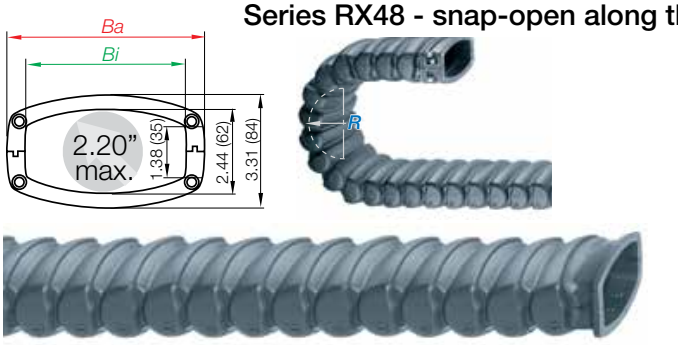
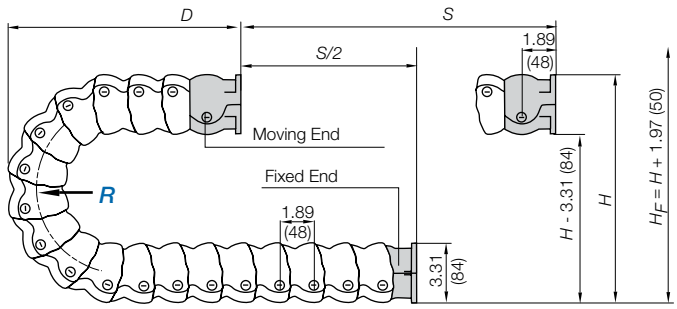
igus®

E-Chain System® E2 Tubes
Series RX48
Installation Dimensions, Interior Separation

Series RX48 - snap-open along the outer radius





Supplement part number with required radius. Example: RX48-120-120-0
Pitch: 1.89 in. (48 mm) per link links/ft(m) = 6.35 (21)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
RX48-120-□-0	4.72 (120)	5.81 (147.6)	≈ 1.85 (2.76)

Choose from the radii below for all of the above sizes
Radius (mm) Example: RX48-120-120-0

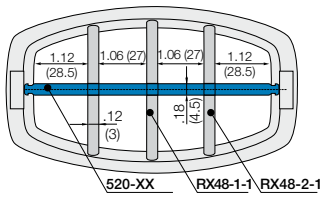
	120	150
R	4.72 (120)	5.91 (150)
H	12.76 (324)	15.12 (384)
D	9.21 (234)	10.39 (264)
K	18.70 (475)	22.44 (570)

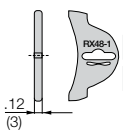
Part Number Structure

RX48-120-120-0
- Color - Black
- Bending radius
- Width
- Series

Separators and shelves

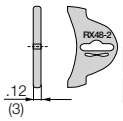
Vertical separators are used if a vertical subdivision of the E-Tube interior is required. By standard, vertical separators are assembled every other E-Tube link.





Separator, central

Unassembled	Part No. RX48-1
Assembled	Part No. RX48-1-1

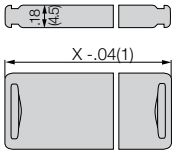


Slotted Separator, lateral

Unassembled	Part No. RX48-1
Assembled	Part No. RX48-2-1

Shelves 520-XX

Full width shelves lock into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally.



Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.34	(34)	520-34	521-34
2.52	(64)	520-64	521-64
3.70	(94)	520-94	521-94
4.88	(124)	520-124	521-124

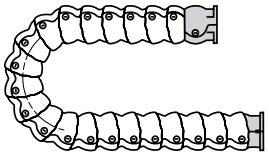
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/qs/echain.asp

E-Chain System® E2 Tubes
Series RX48
Mounting Brackets

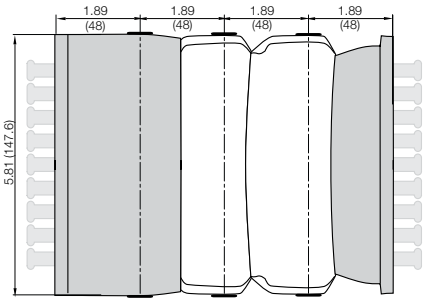
Option: Flange mounting brackets

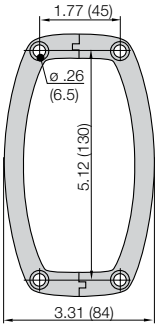
- Universally mountable with flange attachment capability
- Optional strain relief tiewrap plates
- Easy to open
- Optional M4 insert nuts

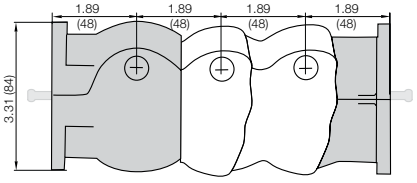
Moving end
RX481-120-1



Fixed end
RX481-120-2







Shown with strain relief

Chain Type	Part No. full set with tiewrap plate	Part No. full set without tiewrap plate	Number of Teeth
RX48	**upon request**	**RX481-120-12**	upon request

Full set, for both ends:
RX481-120-12

Single-part order:
RX481-120-1 Mounting bracket **moving end**
RX481-120-2 Mounting bracket **fixed end**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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RX56

E-Chain System® E2 Tubes Series RX56

2.87

Price Index

Series RX56

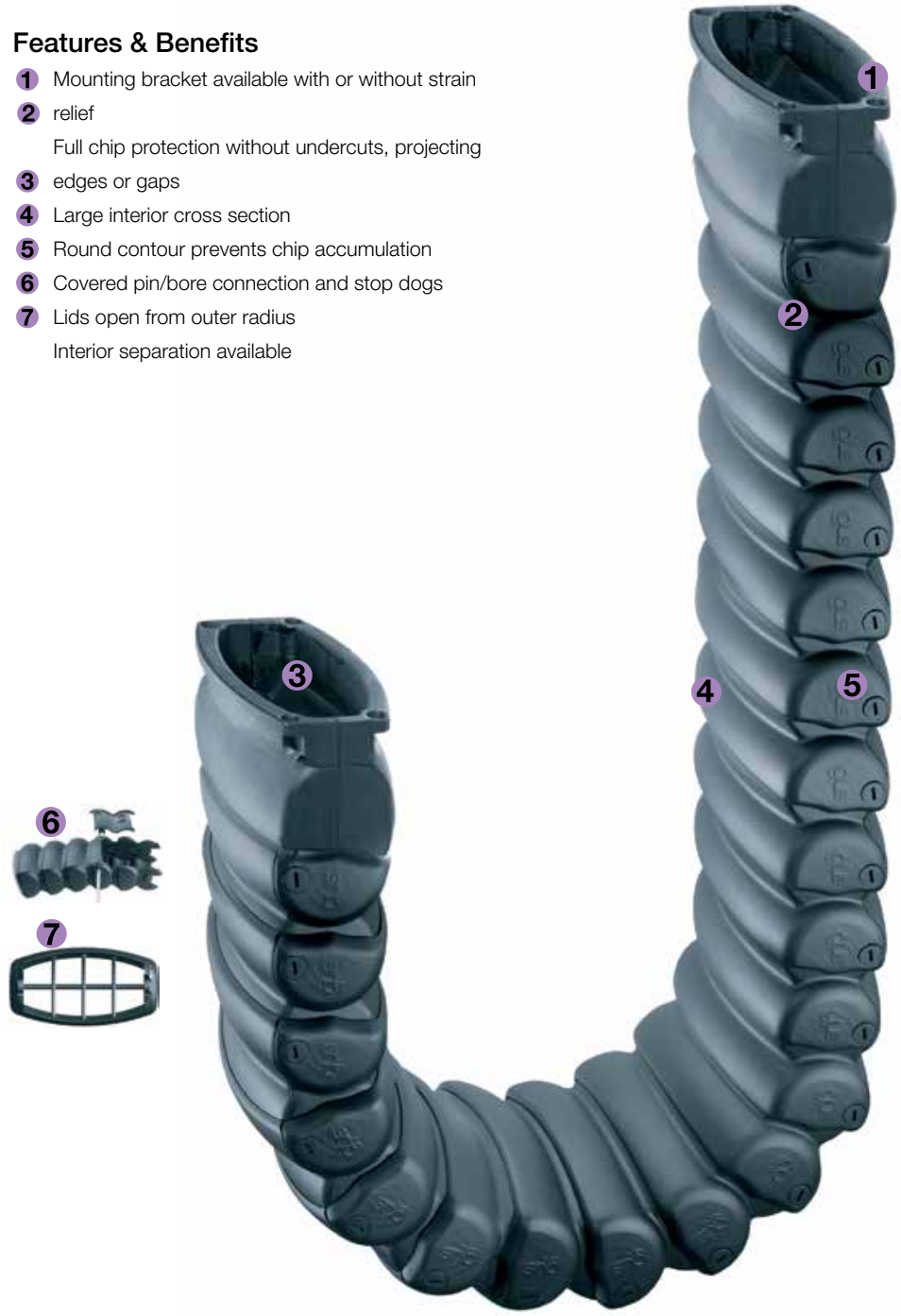
Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

Features & Benefits

1. Mounting bracket available with or without strain
2. relief
   Full chip protection without undercuts, projecting
3. edges or gaps
4. Large interior cross section
5. Round contour prevents chip accumulation
6. Covered pin/bore connection and stop dogs
7. Lids open from outer radius
   Interior separation available



Assembly Tips

Easy opening of lids on the outer radius with embedded excentric locking mechanism

Usage Guidelines

- If a fully protected E-Tube is desired
- If easy access from the outside is required

- For chip protection in gliding applications
  ➤ **Series R19850 E4 Light**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

9.84 ft (3 m) **RX56-140-140-0**	**E-Chain®**
With 3 separators **RX56-1-1/RX56-1-2** assemb. every 2nd link	**Interior Separation**
1 Set **RX561-140-12**	**Mounting Bracket**

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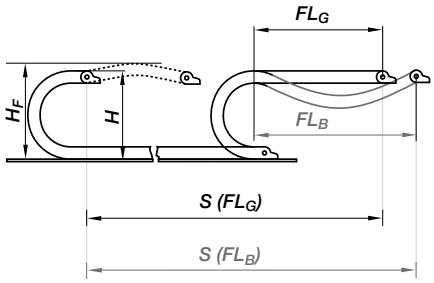
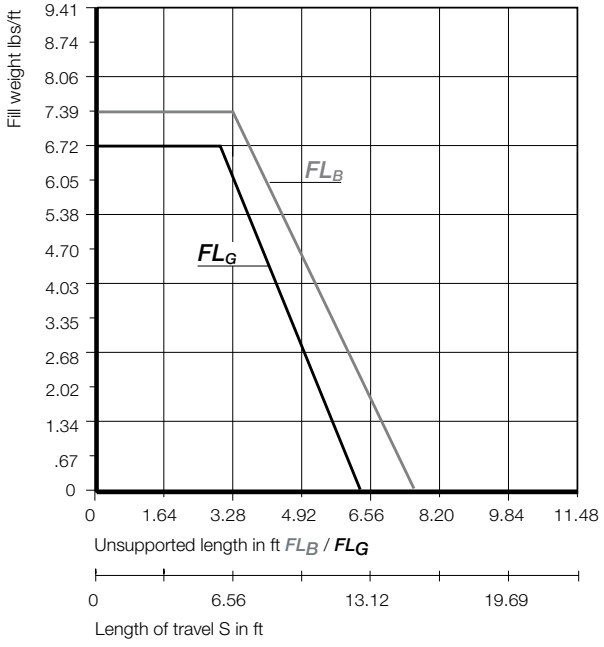
E-Chain System® E2 Tubes
Series RX56
Installation Dimensions

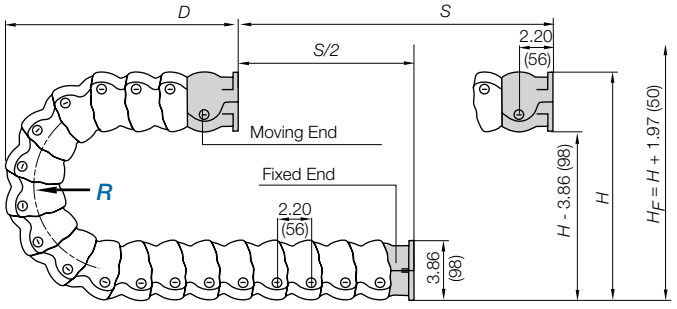
Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.45 (18)
For center mount applications:
Chain length = $_{S}/_{2} + K$

The required clearance height: $H_F = H + 1.97$ **in. (50 mm)** (with .34 lbs/ft (0.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	5.51 (140)
H	14.88 (378)
D	10.75 (273)
K	21.85 (555)

Speed / acceleration FL_G	max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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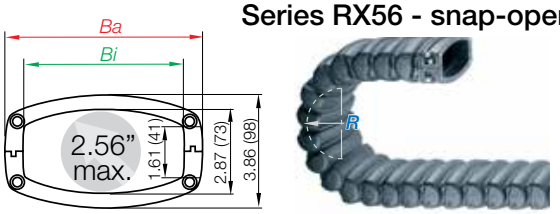
igus®

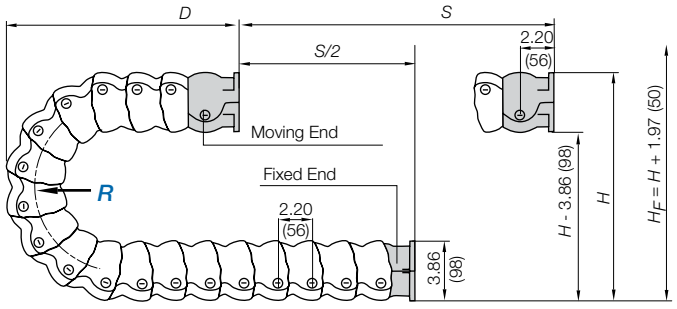
E-Chain System® E2 Tubes
Series RX56
Installation Dimensions, Interior Separation

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/qs/echain.asp

Series RX56 - snap-open along the outer radius





Supplement part number with required radius. Example: RX56-140-140-0
Pitch: 2.20 in. (56 mm) per link links/ft(m) = 5.45 (18)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
RX56-140-[ ]-0	5.51 (140)	6.78 (172.2)	≈ 2.57 (3.83)

Choose from the radii below for all of the above sizes
Radius (mm) Example: RX56-140-140-0

140

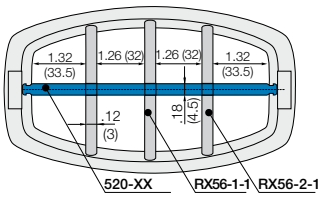
R	5.51 (140)
H	14.88 (378)
D	10.75 (273)
K	21.85 (555)

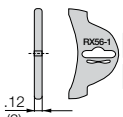
Part Number Structure

RX56-140-140-0
- Color - Black
- Bending radius
- Width
- Series

Separators and shelves

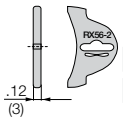
Vertical separators are used if a vertical subdivision of the E-Tube interior is required. By standard, vertical separators are assembled every other E-Tube link.





Separator, central

Unassembled	Part No. RX56-1
Assembled	Part No. RX56-1-1

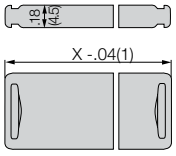


Slotted Separator, lateral

Unassembled	Part No. RX56-2
Assembled	Part No. RX56-2-1

Shelves RX520-XX

Full width shelves lock into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally.



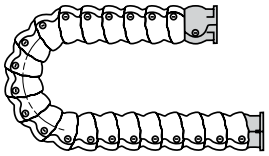
Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.54	(39)	520-39	521-39
2.91	(74)	520-74	521-74
4.29	(109)	520-109	521-109
5.67	(144)	520-144	521-144

E-Chain System® E2 Tubes
Series RX56
Mounting Brackets

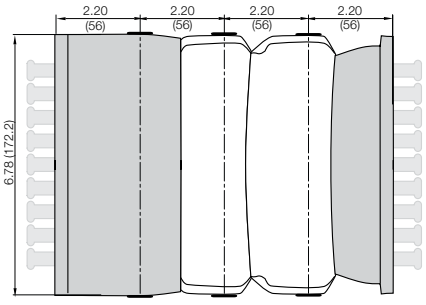
Option: Flange mounting brackets

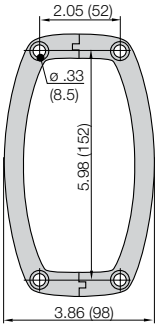
- Universally mountable with flange attachment capability
- Optional strain relief tiewrap plates
- Easy to open
- Optional M4 insert nuts

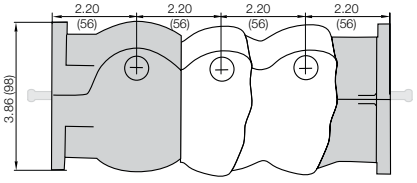
Moving end
RX561-140-1



Fixed end
RX561-140-2







Shown with strain relief

Chain Type	Part No. full set with tiewrap plate	Part No. full set without tiewrap plate	Number of Teeth
RX56	**upon request**	**RX561-120-12**	upon request

Full set, for both ends:
RX561-140-12

Single-part order:
RX561-140-1 Mounting bracket **moving end**
RX561-140-2 Mounting bracket **fixed end**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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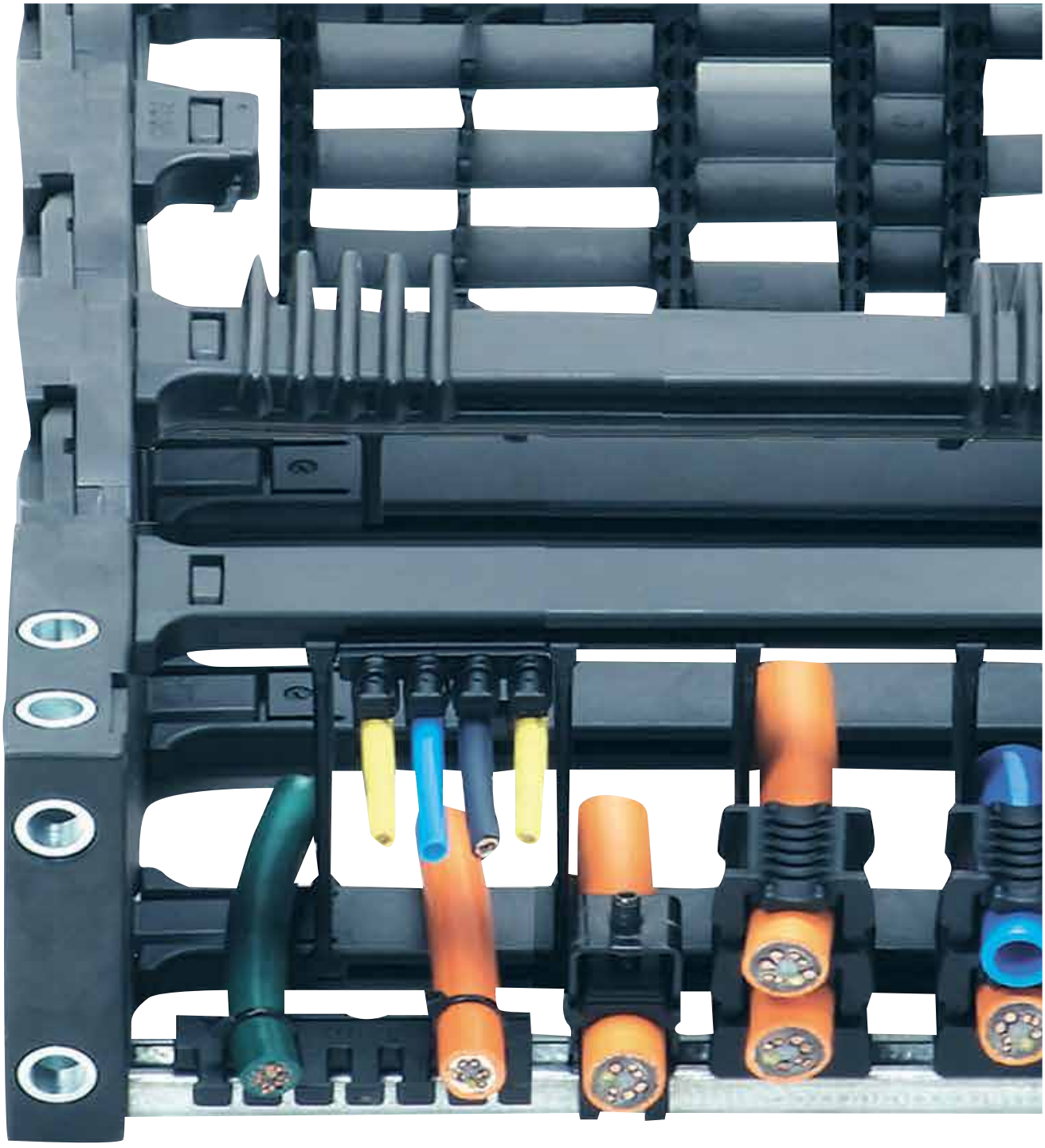

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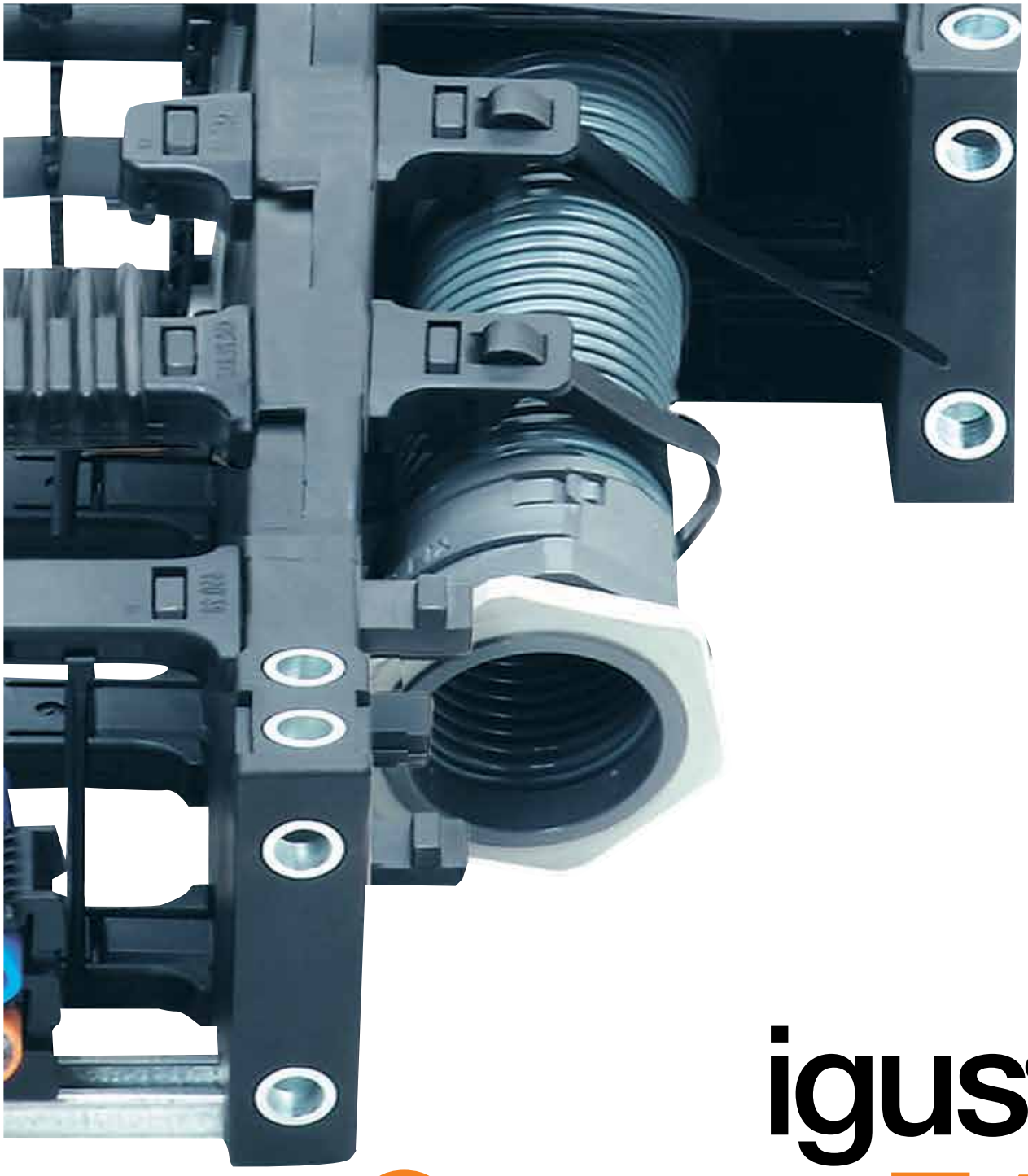


igus®
System E4
E4-1, E4/Light, E4-1 Light

E4-1 E-Chain® series for almost all applications

The E4-1 system combines all the advantages of its three predecessors:

- Tongue and groove design provides greater lateral stability, high shear force on long travels and for longer unsupported lengths
- Ideal for side-mounted applications
- Noise dampening “brakes” and rubber dampers available
- Snap-open links for quick assembly, with or without pretension
- Dirt repellant and wear-resistant
- Side wear pads

Almost all accessories and mounting dimensions are identical. With the E4-1, the service life of your application can be still increased with lower costs.

Typical industries and applications

- Crane
- Indoor crane
- Composting plants
- Sewage plants
- Machine tools
- General mechanical engineering
- Material handling technology
- Refrigeration engineering
- Construction machinery
- Wood working
- Robotics and handling systems

Clean-Room — Cleanroom test upon request

Reduced noise due to special rubber pads and special stop dog design

EX — ESD classification: Electrically conductive ESD/ATEX version upon request

System E4-1 field proven in long travels

Fully enclosed E-Tubes available as special design with HT material for 1562°F hot chips

The E4-42 series in a machine tool, completely assembled with igus® Chainflex® cables

Application	Design feature
Long unsupported length	Special stop dogs, tongue and groove link design
Low-noise operation, unsupported gliding	Integrated “brake”, smooth gliding surfaces - rubber dampers optional
Hanging and standing installation	Torsional stability through tongue and groove link design, “no camber” option by flipping the outer link
Long travels	High push/pull forces through tongue and groove link design and stop dogs, large and smooth gliding surfaces
Side-mounted, unsupported	Tongue and groove link design increases unsupported length by about 30% mounted on the side
Fast assembly	“Inner link/outer link” design
Rotary motion	Through simple flipping of links or easy modification, gliding surfaces on the side
Increase service life of cable	Smooth, wide solid polymer support for cables, many quick-mounting shelving options
Increase service life of chains	Large pins, optimized material, high stability
ESD, ATEX	Tongue and groove link design for secure contact surfaces in motion (special version in conductive material)
Operation under dirt, chips, humidity	Tongue and groove link design design prevents chain breakage, dirt-resistant design

E4-1 Design Features

The E4-1 Series combines the tongue and groove link design and the inner and outer link design of previous E4 constructions — all in one E-Chain®

E4-1 Design Features

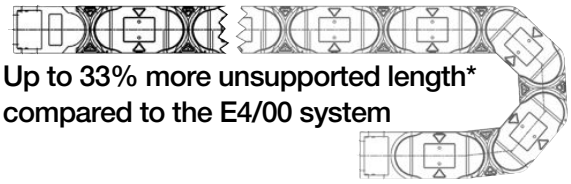
Stable crossbars with double locking

Types “with” or “without camber” by flipping outer links

Cable-friendly, rounded crossbar

Vertical stop dog system for larger unsupported lengths

Cut costs by eliminating additional components with E4-1 E-Chains® - Proven durability and stability

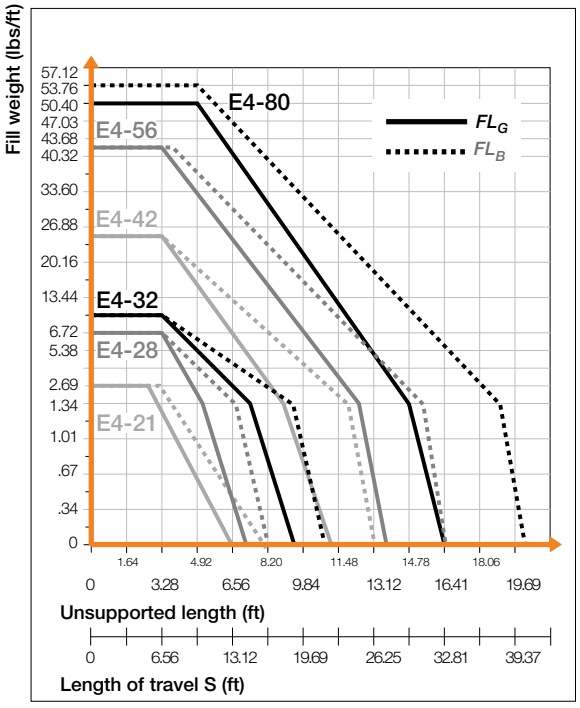


Up to 33% more unsupported length* compared to the E4/00 system

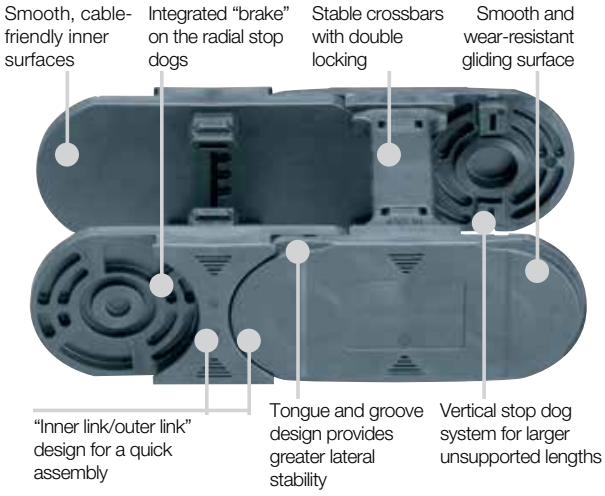
- Up to 133% higher tensile strength*
- Up to 33% more unsupported length*. Save in the purchase cost, as you can now use smaller E-Chains®
- Due to the large unsupported lengths or loads, oversized energy supply systems can be optimized with the igus® E4-1 system

* Compared to the igus® E4/00 system series
** Test at igus® laboratory: Sag tested with defined weight and length over 96h

Selection table and assembly instructions ➤ page 6.7



E4-1 Design Features



- Available in 40 width sizes in both E-Chain® and E-Tube
- Interlocking side links for optimum lateral stability, for high push/pull force on long travels
- Long unsupported lengths
- "Brake" and rubber dampers as additional noise-reducing options
- Inner link/outer link design for quick assembly with various interior separation options
- Double locking stable crossbars that open from both sides
- Support Tray tool kit for the support of the lower run
  ➤ **Chapter 9**
- Find more technical data about the material, chemical resistance, temperatures ➤ **Chapter 1**

Crossbars every link
for particularly demanding applications

Series	Inner height *hi* in.	(mm)	Inner width *Bi* in.	(mm)	Outer width *Ba* in.	(mm)	Outer height *ha* in.	(mm)	Bending radius *R* in.	(mm)
E4-21	.82	(21)	1.18-5.51	(30-140)	1.73-5.28	(44-134)	1.10	(28)	1.50-7.87	(38-200)
E4-28	1.10	(28)	1.57-11.81	(40-300)	2.36-12.60	(60-320)	1.65	(42)	2.16-9.84	(55-250)
E4-32	1.26	(32)	1.97-15.75	(50-400)	2.87-16.65	(73-423)	2.13	(54)	2.48-11.81	(63-300)
E4-42	1.65	(42)	1.97-15.75	(50-400)	2.99-16.77	(76-426)	2.52	(64)	2.95-13.78	(75-350)
E4-56	2.20	(56)	1.97-23.62	(50-600)	3.31-24.96	(84-634)	3.31	(84)	5.31-19.69	(135-500)
E4-80	3.15	(80)	1.97-23.62	(50-600)	3.94-25.59	(100-650)	4.25	(108)	5.91-39.37	(150-1000)
E4-112	4.41	(112)	1.97-23.62	(50-600)	4.02-25.67	(102-652)	5.51	(140)	7.87-39.37	(200-1000)
800	7.87	(200)	7.87-23.62	(200-600)	10.24-25.98	(260-660)	9.29	(236)	12.80-39.37	(325-1000)
840	8.03	(204)	3.94-22.16	(100-563)	6.30-24.53	(160-623)	9.29	(236)	12.80-39.37	(325-1000)
E4-350	13.78	(350)	15.75-31.50	(400-800)	21.26-37.01	(540-940)	17.72	(450)	19.69-39.37	(500-1000)

Crossbars every 2nd link
for almost all applications

Series	Inner height *hi* in.	(mm)	Inner width *Bi* in.	(mm)	Outer width *Ba* in.	(mm)	Outer height *ha* in.	(mm)	Bending radius *R* in.	(mm)
H4-32	1.26	(32)	1.97-15.75	(50-400)	2.87-16.65	(73-423)	2.13	(54)	2.48-11.81	(63-300)
H4-42	1.65	(42)	1.97-15.75	(50-400)	2.99-16.77	(76-426)	2.52	(64)	2.95-13.78	(75-350)
H4-56	2.20	(56)	1.97-23.62	(50-600)	3.31-24.96	(84-634)	3.31	(84)	5.31-19.69	(135-500)
H4-80	3.15	(80)	1.97-23.62	(50-600)	3.94-25.59	(100-650)	4.25	(108)	5.91-39.37	(150-1000)
E4-112	4.41	(112)	1.97-23.62	(50-600)	4.02-25.67	(102-652)	5.51	(140)	7.87-39.37	(200-1000)

E-Tubes
fully enclosed, for complete cable protection

Series	Inner height *hi* in.	(mm)	Inner width *Bi* in.	(mm)	Outer width *Ba* in.	(mm)	Outer height *ha* in.	(mm)	Bending radius *R* in.	(mm)
R4-28	1.10	(28)	1.97-11.81	(50-300)	2.76-12.60	(70-320)	1.65	(42)	2.95-9.84	(75-250)
R4-32	1.26	(32)	1.97-11.81	(50-300)	2.87-12.72	(73-323)	2.13	(54)	4.92-11.81	(125-300)
R4-42	1.65	(42)	1.97-11.81	(50-300)	2.99-12.83	(76-326)	2.52	(64)	4.92-13.78	(125-350)
R4-56	2.20	(56)	2.95-18.19	(75-462)	4.29-19.57	(109-497)	3.31	(84)	5.31-19.69	(135-500)
R4-80	3.15	(80)	5.91-18.19	(150-462)	7.87-20.20	(200-513)	4.25	(108)	7.87-39.37	(200-1000)
R4-112	4.25	(108)	7.87-19.69	(200-500)	9.92-21.73	(252-552)	5.51	(140)	9.84-39.37	(250-1000)

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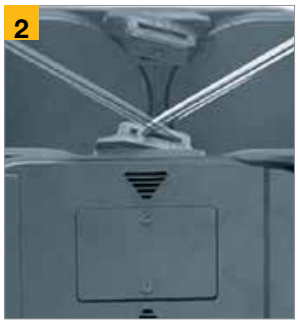
E-Chain System® E4-1
Assembly instructions

E-Chains® - Opening

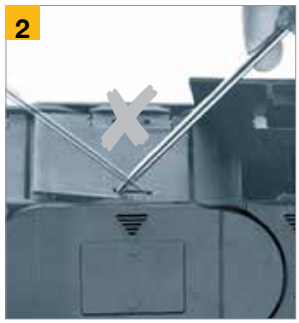
Remove crossbars - Insert screwdriver into the slot, using a lever action, apply pressure to the screwdriver to remove the crossbar.



Remove clips - Insert screwdriver into the slot, using a lever action, apply pressure to the screwdriver to remove the clip

E-Tube - Opening

Remove lids/bottoms - Insert screwdriver into the slot, using a lever action apply pressure to the screwdriver to release



Release only **one side** to open the lid

E-Chains® and E-Tubes - Assembling

Line up two inner side links side by side. Attach an outer side link between

Assemble crossbars - push down and snap in using a screwdriver

Assemble clips (for E-Chains with crossbars every other link) - push down and snap in using a screw-driver

Assemble E-Tube lids and bottoms - Attach to the connector at an angle and snap in place

E-Chains® and E-Tubes - Separating

Remove crossbars, clips, lids and bottoms at the outer links

Insert screwdriver into the slot between the side links. Using a lever action, release the side links

Remove the outer links

Separate the E-Chain®

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E4-21

E-Chain System® E4-1
Series E4-21

.83

Price Index

Series E4-21

Special Options Available

Low noise version available with special rubber pads

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Other Installation Methods

Vertical, hanging ≤ 131 ft (40 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.28 ft (1 m)
Rotary requires further calculation

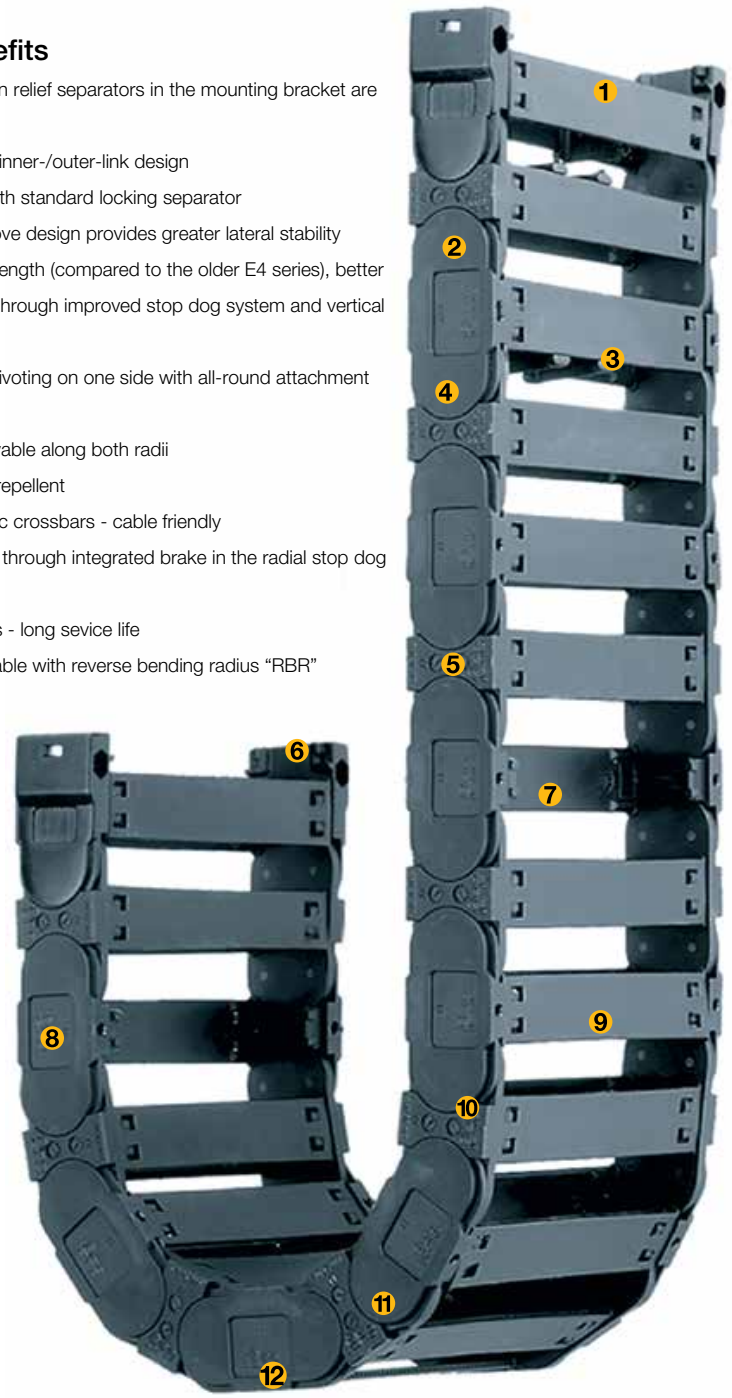
Usage Guidelines

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High fill weights

- When an economic one-sided snap-open E-Chain/tube is required
  ➤ **Series 1400/1450/1480/1500**
- When a one-sided snap-open E-Tube is required at a low price
  ➤ **Series R117/R118**

Features & Benefits

1. Strain relief with strain relief separators in the mounting bracket are available
2. Straight run through inner-/outer-link design
3. Interior separation with standard locking separator
4. The tongue and groove design provides greater lateral stability
5. 15% more tensile strength (compared to the older E4 series), better unsupported length through improved stop dog system and vertical radial stops
6. Mounting brackets pivoting on one side with all-round attachment option
7. Crossbars are removable along both radii
8. Smooth outline, dirt repellent
9. Wide, rounded plastic crossbars - cable friendly
10. Low-noise operation through integrated brake in the radial stop dog system
11. Optimized glide pads - long sevice life
12. E-Chains® also available with reverse bending radius “RBR”



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

6.56 ft (2 m) **E4-21-120-100-0**	**E-Chain®**
With 2 separators **T2112** assembled every 2nd link	**Interior Separation**
1 Set **E4-210-120-12**	**Mounting Bracket**

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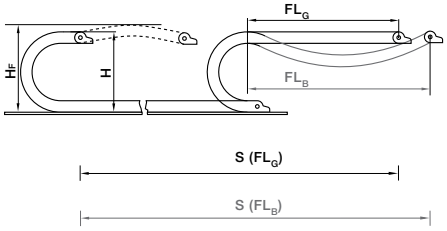
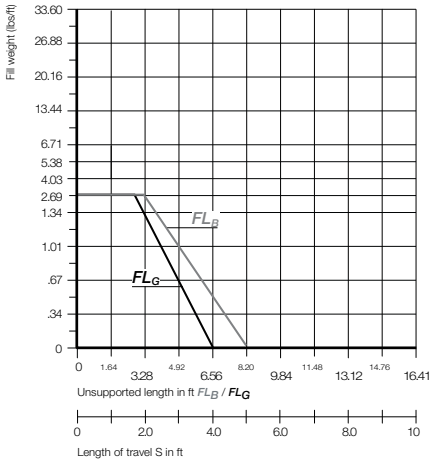
E-Chain System® E4-1
Series E4-21
Installation Dimensions

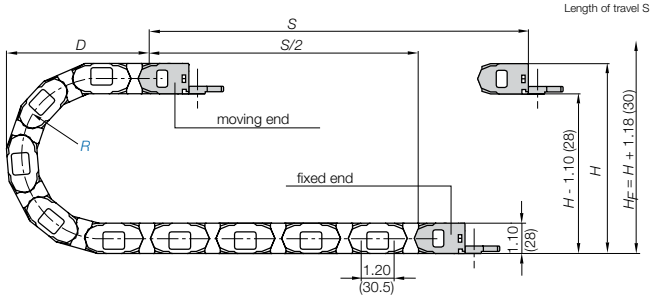
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $S/2 + K$

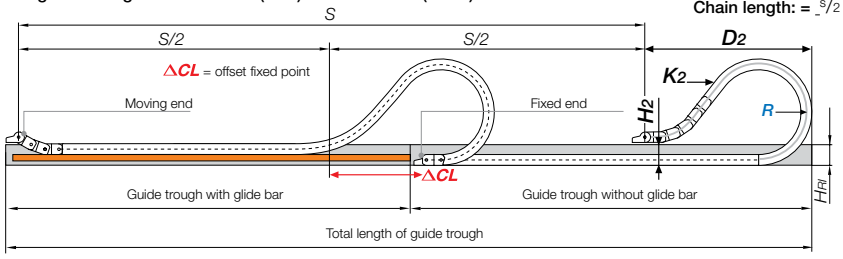
The required clearance height: $H_F = H + 1.18$ **in. (30 mm)** (with 1.01 lbs/ft (1.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.50 (038)	1.89 (048)	2.48 (063)	2.95 (075)	3.94 (100)	5.91 (150)	7.87 (200)
H	4.09 (104)	4.88 (124)	6.06 (154)	7.01 (178)	8.98 (228)	12.91 (328)	16.85 (428)
D	3.86 (98)	4.25 (108)	4.84 (123)	5.31 (135)	6.30 (160)	8.27 (210)	10.24 (260)
K	7.28 (185)	8.46 (215)	10.24 (260)	11.81 (300)	14.96 (380)	21.06 (535)	27.17 (690)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10m) to max. 394 ft. (120m)

For center mount applications:
Chain length: = $S/2 + K_2$



R	1.50 (038)	1.89 (048)	2.48 (063)	2.95 (075)	3.94 (100)	5.91 (150)	7.87 (200)
H_2	-	-	-	-	5.31 (135)	5.31 (135)	5.31 (135)
D_{2+25}	-	-	-	-	19.29 (490)	20.87 (530)	26.18 (665)
K_2	-	-	-	-	30.79 (782)	36.22 (920)	43.46 (1104)
ΔCL	-	-	-	-	10.63 (270)	14.57 (370)	18.50 (470)

In case of travels between 13 and 32.8 ft (4 and 10 m) we recommend a longer unsupported length.

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1 main catalog

Technical Data

Details of material properties
➤ **Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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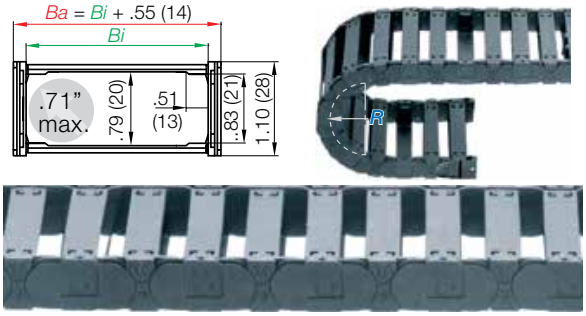
igus®

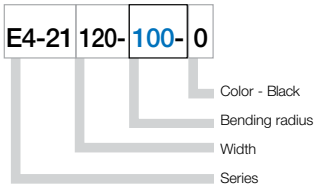
E-Chain System® E4-1
Series E4-21
Product Range

Series E4-21 - E-Chain® with crossbars every link

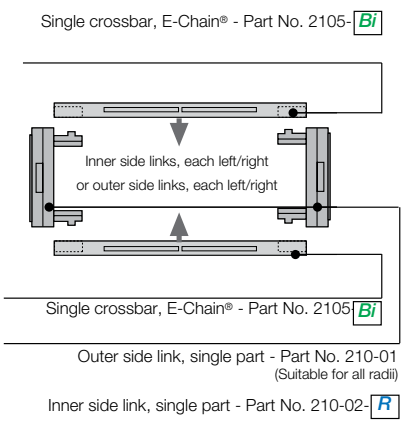


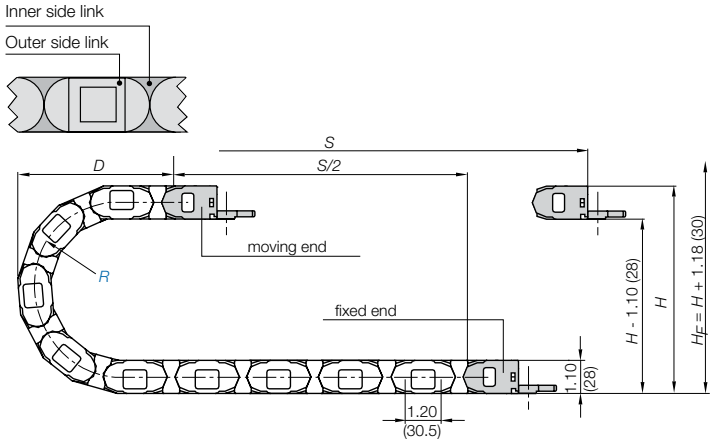
- Crossbars every link
- Removable crossbars
- Separator for locking crossbar (fixable) Standard
- Can be opened from both sides

Part Number Structure



E-Chain® as separate parts, links and side plates





Supplement part number with required radius. Example: E4-21-120-100-0
Pitch: 1.20 in. (30.5 mm) per link links/ft(m) = 10.06 (33)

Part Number. Snap-open inner radius	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E4-21-030-☐-0	1.18 (30)	1.73 (44)	≈ 0.40 (0.60)
E4-21-040-☐-0	1.57 (40)	2.13 (54)	≈ 0.43 (0.64)
E4-21-050-☐-0	1.97 (50)	2.52 (64)	≈ 0.45 (0.67)
E4-21-060-☐-0	2.36 (60)	2.91 (74)	≈ 0.48 (0.71)
E4-21-070-☐-0	2.76 (70)	3.31 (84)	≈ 0.50 (0.74)
E4-21-080-☐-0	3.15 (80)	3.70 (94)	≈ 0.52 (0.78)
E4-21-090-☐-0	3.54 (90)	4.09 (104)	≈ 0.55 (0.82)
E4-21-100-☐-0	3.94 (100)	4.49 (114)	≈ 0.57 (0.85)
E4-21-110-☐-0	4.33 (110)	4.88 (124)	≈ 0.60 (0.89)
E4-21-120-☐-0	4.72 (120)	5.28 (134)	≈ 0.62 (0.92)
E4-21-140-☐-0	5.51 (140)	(154)	≈ 0.67 (0.99)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E4-21-120-100-0

	038	048	063	075	100	150	200
R	1.50 (038)	1.89 (048)	2.48 (063)	2.95 (075)	3.94 (100)	5.91 (150)	7.87 (200)
H	4.09 (104)	4.88 (124)	6.06 (154)	7.01 (178)	8.98 (228)	12.91 (328)	16.85 (428)
D	3.86 (98)	4.25 (108)	4.84 (123)	5.31 (135)	6.30 (160)	8.27 (210)	10.24 (260)
K	7.28 (185)	8.46 (215)	10.24 (260)	11.81 (300)	14.96 (380)	21.06 (535)	27.17 (690)

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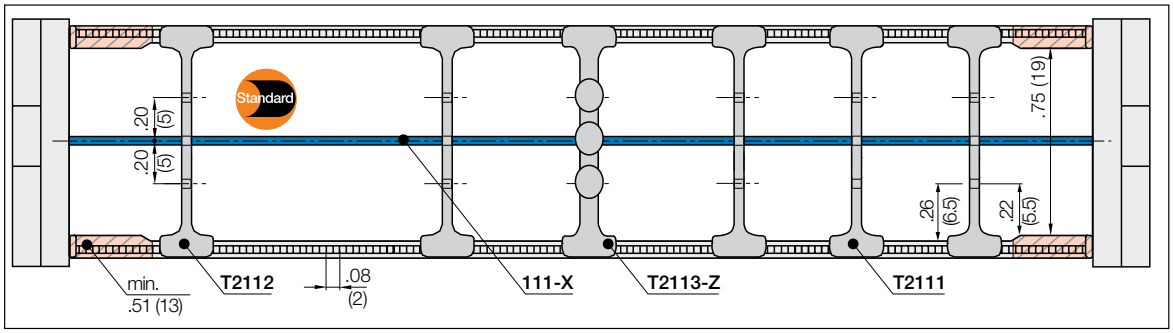
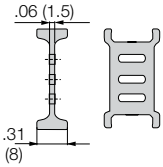
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E4-1
Series E4-21
Interior Separation - New Generation



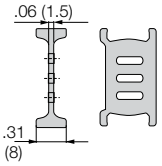
Note: Please maintain a lateral spacing of .51" (13 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. T2102**
Assembled	**Part No. T2112**

- **Standard separator T2102**
  is used when vertical separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

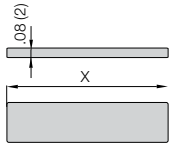


Separator, narrow head

Unassembled	**Part No. T2101**
Assembled	**Part No. T2111**

- **Notch separator T2101**
  Can be locked in .08 (2mm) increments due to notches on the crossbars of the E-Chain®. The separator cannot slide sideways during operation.

Full-width shelves - for the standard interior separation



Full width shelf

Unassembled	**Part No. 110-X**
Assembled	**Part No. 111-X**

- **Full width shelf 110-X**
  is used in applications with many thin cables with similar diameters. Full width shelves can be arranged at 3 different heights in .20" (5 mm) increments.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.18 (30)	**110-30**	**111-30**	2.76 (70)	**110-70**	**111-70**	4.33 (110)	**110-110**	**111-110**
1.57 (40)	**110-40**	**111-40**	3.15 (80)	**110-80**	**111-80**	4.72 (120)	**110-120**	**111-120**
1.97 (50)	**110-50**	**111-50**	3.54 (90)	**110-90**	**111-90**			
2.36 (60)	**110-60**	**111-60**	3.94 (100)	**110-100**	**111-100**			

Separator with integrated strain relief

Strain relief separator Part No. T2103-Z can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.

For more information ➤ **Chapter 10, Strain Relief**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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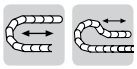
igus®

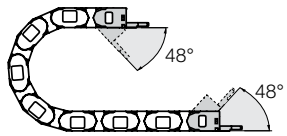
E-Chain System® E4-1
Series E4-21
Mounting Brackets - Polymer

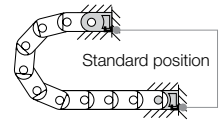


Standard

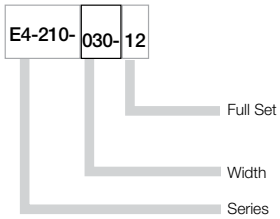
Option: pivoting

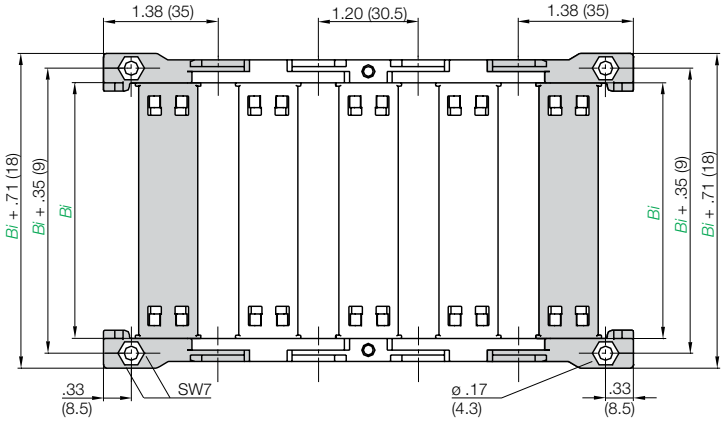
- Recommended for unsupported and gliding applications
- KMA mounting bracket with attachment points on all sides
- Well suited for tight installation conditions
- Integrated strain relief possible





Part Number Structure





Full set, for both ends:

E4-210- 030- 12

Single-part order:

E4-210- 030- 1 Mounting bracket **moving end**

E4-210- 030- 2 Mounting bracket **fixed end**

Width	Part No. Full Set	Bi in.	Bi (mm)	Width	Part No. Full Set	Bi in.	Bi (mm)
-030-	**E4-210-030-12**	1.18	(30)	-080-	**E4-210-080-12**	3.15	(80)
-040-	**E4-210-040-12**	1.57	(40)	-090-	**E4-210-090-12**	3.54	(90)
-050-	**E4-210-050-12**	1.97	(50)	-100-	**E4-210-100-12**	3.94	(100)
-060-	**E4-210-060-12**	2.36	(60)	-110-	**E4-210-110-12**	4.33	(110)
-070-	**E4-210-070-12**	2.75	(70)	-120-	**E4-210-120-12**	4.72	(120)

Special feature mounting brackets KMA: Series E4-21

- Mounting brackets with attachment points on all sides
- Mounting hole is countersunk for socket head screw (M4) and hexagon nut (M4)
- **Attention:** Mounting brackets always need to end with an inner link (odd number of links)

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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E4-28
R4-28

igus®

E-Chain System® E4-1
Series E4-28/R4-28

1.10 1.10

Price Index

Series E4-28 Series R4-28

Special Options Available

Low noise version available with special rubber pads

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 262 ft (80 m)
Vertical, standing ≤ 16.4 ft (5 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

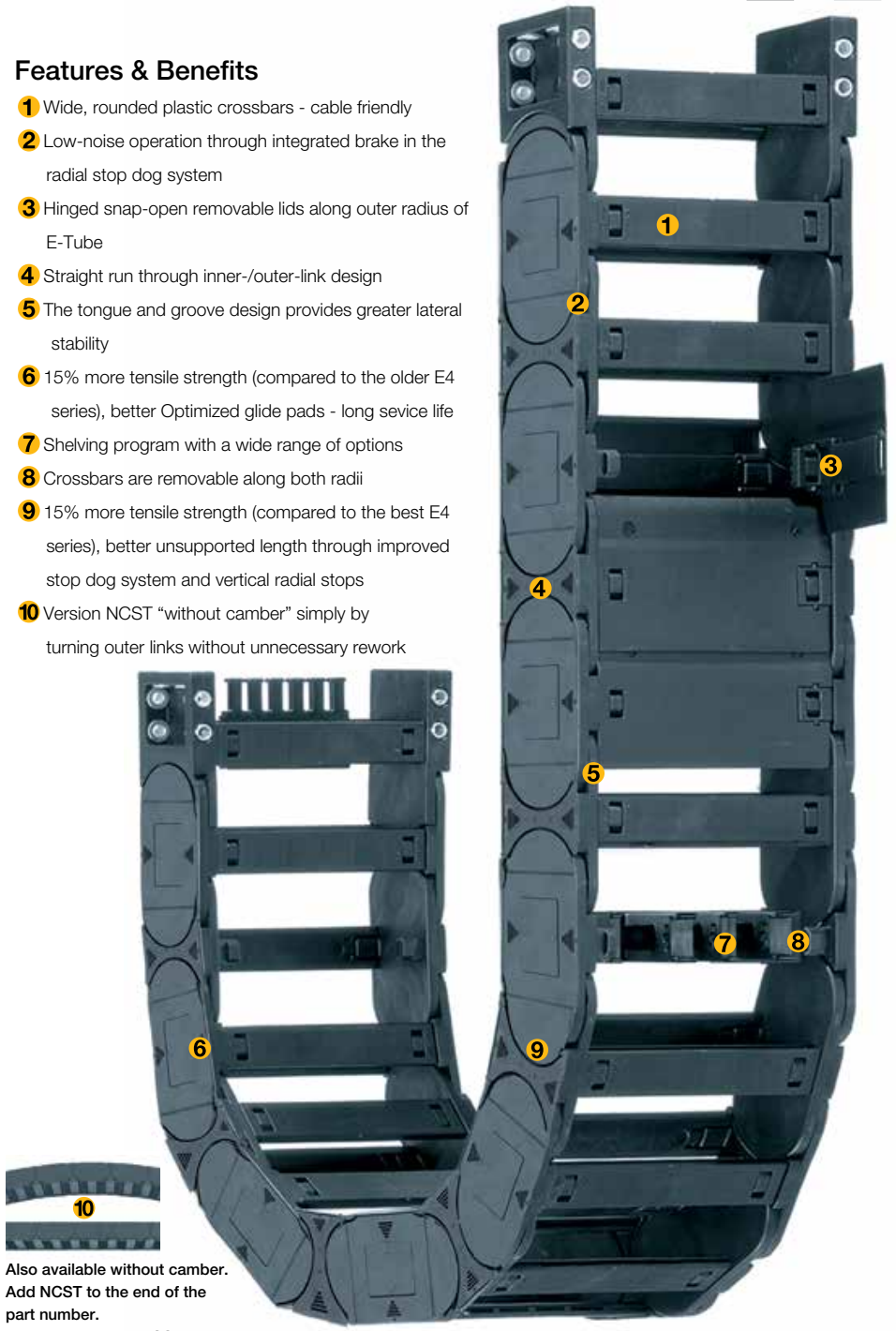
Usage Guidelines

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High fill weights

- When an extremely low vibration E-Chain®/E-Tube is required
  ➤ **Series E6-29**
  ➤ **Series R6-29**
- When an economic one-sided snap-open E-Chain®/E-Tube is required
  ➤ **Series 2400/2450/2480/2500**

Features & Benefits

1. Wide, rounded plastic crossbars - cable friendly
2. Low-noise operation through integrated brake in the radial stop dog system
3. Hinged snap-open removable lids along outer radius of E-Tube
4. Straight run through inner-/outer-link design
5. The tongue and groove design provides greater lateral stability
6. 15% more tensile strength (compared to the older E4 series), better Optimized glide pads - long sevice life
7. Shelving program with a wide range of options
8. Crossbars are removable along both radii
9. 15% more tensile strength (compared to the best E4 series), better unsupported length through improved stop dog system and vertical radial stops
10. Version NCST “without camber” simply by turning outer links without unnecessary rework



Also available without camber. Add NCST to the end of the part number. Ex: E4-28-300-250NCST

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

9.84 ft (3 m) **E4-28-300-250-0**	**E-Chain®**
With 2 separators **2211** assembled every 2nd link	**Interior Separation**
1 Set **E4-280-300-12**	**Mounting Bracket**

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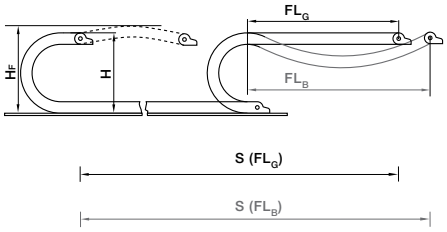
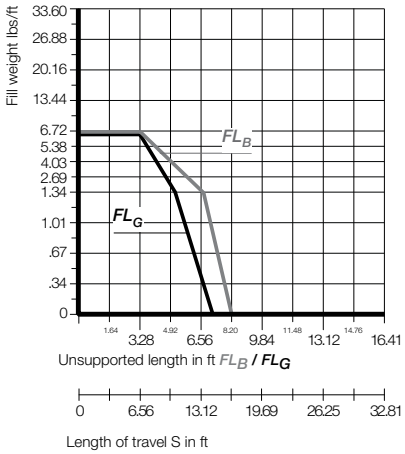
E-Chain System® E4-1
Series E4-28/R4-28
Installation Dimensions

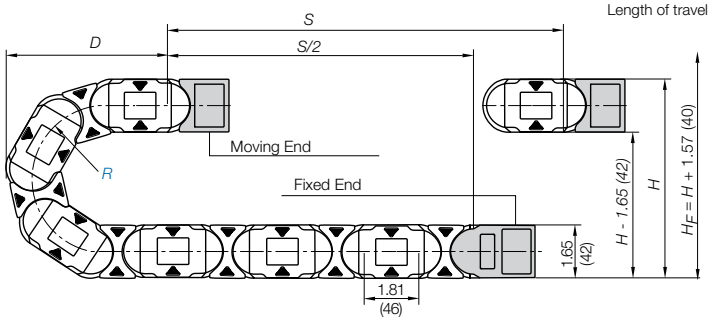
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.81" (46 mm)
Links per ft (m): = 6.71 (22)
For center mount applications:
Chain length = $S/2 + K$

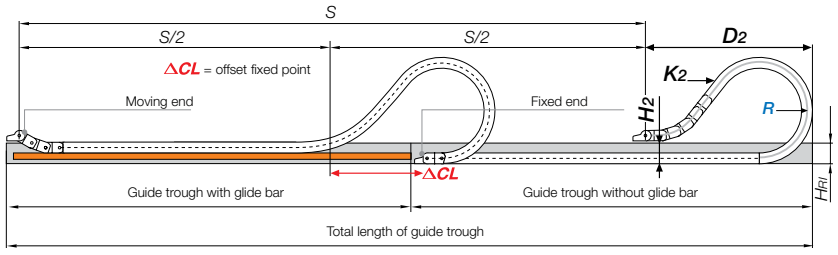
The required clearance height: $H_F = H +$ (with .67 lbs/ft (1.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.17 (055)	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	5.98 (152)	6.61 (168)	7.56 (192)	9.53 (242)	11.50 (292)	13.46 (342)	15.43 (392)	17.40 (442)	21.34 (542)
D	5.71 (145)	6.02 (153)	6.50 (165)	7.48 (190)	8.46 (215)	9.45 (240)	10.43 (265)	11.42 (290)	13.39 (340)
K	10.43 (265)	11.42 (290)	12.99 (330)	16.14 (410)	19.09 (485)	22.24 (565)	25.39 (645)	28.54 (725)	34.65 (880)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 656 ft. (200m)

$S/2 + K_2$



R	2.17 (055)	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H2	-	-	-	6.22 (158)	6.22 (158)	6.22 (158)	6.22 (158)	6.22 (158)	6.22 (158)
D2	-	-	-	13.78 (350)	19.29 (490)	20.87 (530)	26.18 (665)	28.74 (730)	36.81 (935)
K2	-	-	-	23.54 (598)	30.79 (782)	36.22 (920)	43.46 (1104)	48.89 (1242)	63.39 (1610)
ΔCL	-	-	-	5.91 (150)	10.63 (270)	11.81 (300)	15.75 (400)	17.72 (450)	23.62 (600)

In case of travels between 13 and 32.8 ft (4 and 10 m) we recommend a longer unsupported length.

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

- S = Length of travel
- R = Bending radius
- H = Nominal clearance height
- D = Overlength E-Chain® radius in final position
- K = π • R + *safety buffer*
- H_F = Required clearance height
- H_{RI} = Trough inner height
- H_2 = *Mounting height
- D_2 = Overlength - long travels, gliding
- K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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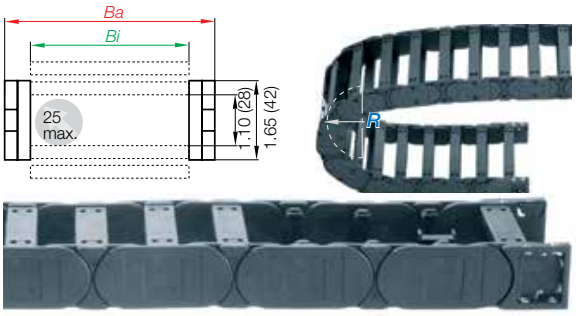
igus®

E-Chain System® E4-1
Series E4-28/R4-28
Product Range

Telephone 1-800-521-2747
Fax 1-401-438-7270

Series E4-28 - E-Chain® with crossbars every link



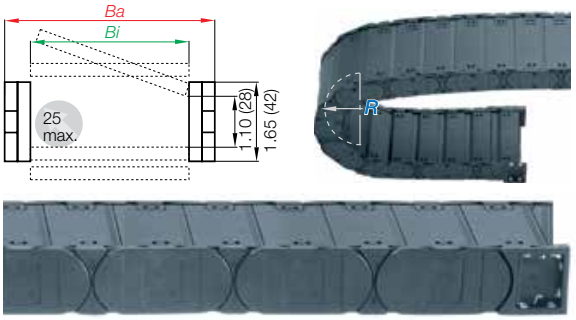
- Robust solution with rossbars every link
- Can be opened from two sides
- Removable crossbars

Part Number Structure

E4-28- 300- 250- 0

- Color - Black
- Bending radius
- Width
- Series

Series R4-28 - fully enclosed E-Tube



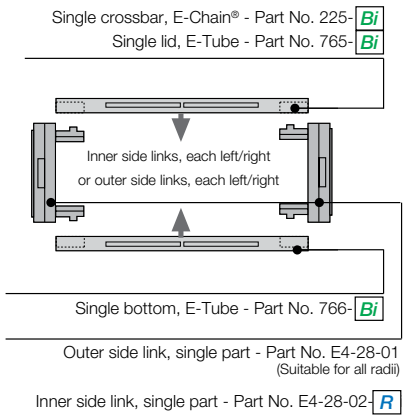
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

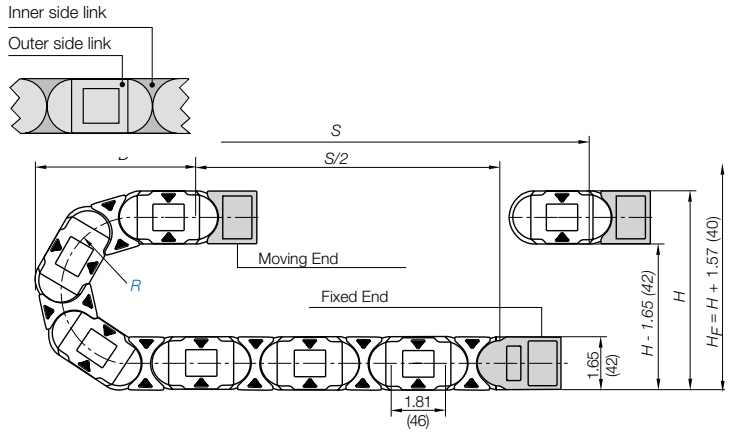
Part Number Structure

R4-28- 300- 250- 0

- Color - Black
- Bending radius
- Width
- Series

E-Chain® as separate parts, links and side plates





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E-Chain System® E4-1
Series E4-28/R4-28
Product Range

Supplement part number with required radius. Example: E4-28-300-250-0
Pitch: 1.81 in. (46mm) per link links/ft (m) = 6.71 (22)

Part Number. Crossbars Every link	Tube Version			*Bi* in. (mm)	*Ba* in. (mm)	E4-28 lbs/ft (kg/m)	R4-28 lbs/ft (kg/m)
E4-28-040-		☐	-0	1.57 (40)	2.36 (60)	≈ 0.71 (1.06)	–
E4-28-050-	R4-28-050-	☐	-0	1.97 (50)	2.76 (70)	≈ 0.75 (1.11)	≈ 1.48 (2.20)
E4-28-052		☐	-0	2.05 (52)	2.83 (72)	≈ 0.76 (1.13)	–
E4-28-062-		☐	-0	2.44 (62)	3.23 (82)	≈ 0.79 (1.17)	–
E4-28-070-		☐	-0	2.76 (70)	3.54 (90)	≈ 0.81 (1.20)	–
E4-28-075-	R4-28-075	☐	-0	2.95 (75)	3.74 (95)	≈ 0.83 (1.23)	≈ 1.56 (2.32)
E4-28-087-		☐	-0	3.43 (87)	4.21 (107)	≈ 0.86 (1.28)	–
E4-28-100-	R4-28-100-	☐	-0	3.94 (100)	4.72 (120)	≈ 0.92 (1.37)	≈ 1.71 (2.54)
E4-28-125-	R4-28-125-	☐	-0	4.92 (125)	5.71 (145)	≈ 1.01 (1.51)	≈ 1.87 (2.78)
E4-28-150-	R4-28-150-	☐	-0	5.91 (150)	6.69 (170)	≈ 1.08 (1.61)	≈ 2.03 (3.02)
E4-28-175-	R4-28-175-	☐	-0	6.89 (175)	7.68 (195)	≈ 1.15 (1.71)	≈ 2.19 (3.26)
E4-28-200-	R4-28-200-	☐	-0	7.87 (200)	8.66 (220)	≈ 1.24 (1.84)	≈ 2.35 (3.50)
E4-28-225-	R4-28-225-	☐	-0	8.86 (225)	9.65 (245)	≈ 1.34 (1.99)	≈ 2.57 (3.82)
E4-28-250-	R4-28-250-	☐	-0	9.84 (250)	10.63 (270)	≈ 1.44 (2.14)	≈ 2.67 (3.98)
E4-28-275-		☐	-0	10.83 (275)	11.61 (295)	≈ 1.53 (2.27)	–
E4-28-300-	R4-28-300-	☐	-0	11.81 (300)	12.60 (320)	≈ 1.61 (2.39)	≈ 3.00 (4.46)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E4-28-300-250-0

	055*	063*	075	100	125	150	175	200	250
R	2.17 (055*)	2.48 (063*)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	5.98 (152)	6.61 (168)	7.56 (192)	9.53 (242)	11.50 (292)	13.46 (342)	15.43 (392)	17.40 (442)	21.34 (542)
D	5.71 (145)	6.02 (153)	6.50 (165)	7.48 (190)	8.46 (215)	9.45 (240)	10.43 (265)	11.42 (290)	13.39 (340)
K	10.43 (265)	11.42 (290)	12.99 (330)	16.14 (410)	19.09 (485)	22.24 (565)	25.39 (645)	28.54 (725)	34.65 (880)

* This radius is not available for the R4-28 Series
0 = Standard color black.
For other colors see Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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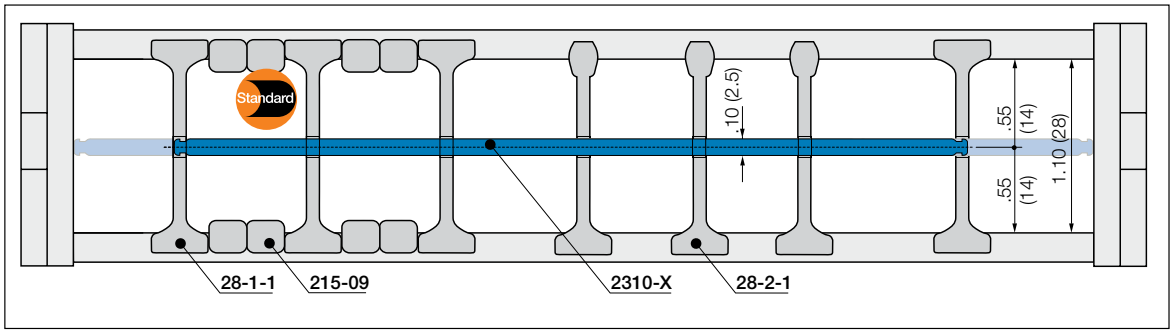
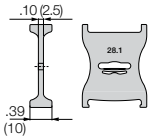
E-Chain System® E4-1
Series E4-28
Interior Separation - Only for E-Chains® - New Generation



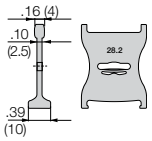
In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 28-1**
Assembled	**Part No. 28-1-1**

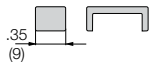
- **Standard separator 28-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator, narrow head

Unassembled	**Part No. 28-2**
Assembled	**Part No. 28-2-1**

- **Separator 28-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

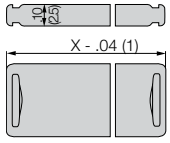


Spacer for E-Chains®

Unassembled	**Part No. 205-09**
Assembled	**Part No. 215-09**

- **Spacer 205-09**
  Separators can be fixed in position by spacers. The available interior height is reduced by .08 (2 mm) per spacer (.16 (4 mm) when spacers are fitted on both sides. To avoid this, the parts can also be installed from the outside on the opening crossbar. (Not for long travel applications.)

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
015	**2300-15**	**2310-15**	060	**2300-60**	**2310-60**	087	**2300-87**	**2310-87**
025	**2300-25**	**2310-25**	062	**2300-62**	**2310-62**	090	**2300-90**	**2310-90**
030	**2300-30**	**2310-30**	065	**2300-65**	**2310-65**	100	**2300-100**	**2310-100**
038	**2300-38**	**2310-38**	070	**2300-70**	**2310-70**	103	**2300-103**	**2310-103**
040	**2300-40**	**2310-40**	075	**2300-75**	**2310-75**	110	**2300-110**	**2310-110**
050	**2300-50**	**2310-50**	077	**2300-77**	**2310-77**	120	**2300-120**	**2310-120**
057	**2300-57**	**2310-57**	080	**2300-80**	**2310-80**	125	**2300-125**	**2310-125**

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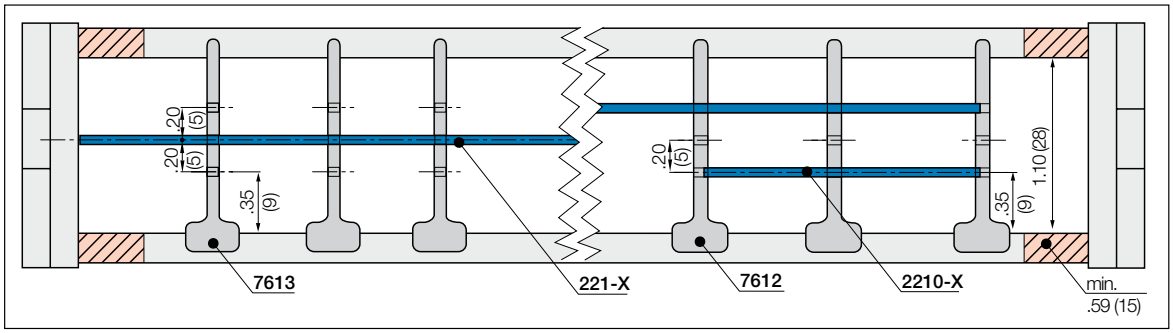
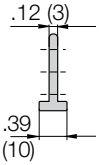
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E4-1
Series R4-28
Interior Separation - Only for E-Tubes® - New Generation



Note E-Tube: Please maintain a lateral spacing of .59" (15 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link

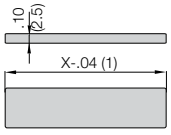


Separator, E-Tubes only

Unassembled	**Part No. 7603**
Assembled	**Part No. 7613**

- **Separator 7603 (E-Tubes only)**
  is used when vertical separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Full-width shelves - for the standard interior separation

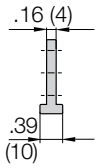


Full width shelf

Unassembled	**Part No. 220-X**
Assembled	**Part No. 221-X**

- **Full width shelf 220-X**
  is used in applications with many thin cables with similar diameters. Full width shelves can be arranged at 3 different heights in .20" (5 mm) increments.

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.57	(40)	**220-40**	**221-40**	2.95	(75)	**220-75**	**221-75**	5.91	(150)	**220-150**	**221-150**
1.97	(50)	**220-50**	**221-50**	3.43	(87)	**220-87**	**221-87**	6.89	(175)	**220-175**	**221-175**
2.44	(62)	**220-62**	**221-62**	3.94	(100)	**220-100**	**221-100**	7.87	(200)	**220-200**	**221-200**
2.76	(70)	**220-70**	**221-70**	1.92	(125)	**220-125**	**221-125**				



Separator, narrow head

Unassembled	**Part No. 7602**
Assembled	**Part No. 7612**

- **Notch separator 7602**
  Can be locked in .08 (2mm) increments due to notches on the crossbars of the E-Chain®. The separator cannot slide sideways during operation.

Separator with integrated strain relief

Strain relief separator Part No. T2103-Z can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.

For more information ➤ **Chapter 10, Strain Relief**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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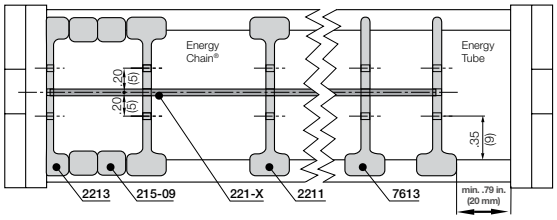
igus®

E-Chain System® E4-1
Series E4-28
Interior Separation - Previous Generation

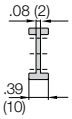
Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.
NOTE: Observe a lateral spacing of at least .79 in. (20mm) for E-Tubes and



STANDARD

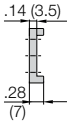
Vertical separator 2201



Vertical separator (Chain only)	
Unassembled	**Part No. 2201**
Assembled	**Part No. 2211**

- **Vertical separator 2201 for E-Chains®**
  This separator is used for vertical subdivision. Because they are slotted, separators can also be used horizontally to form simple compartments.

Side plate 2203



Side plate (chain only)	
Unassembled	**Part No. 2203**
Assembled	**Part No. 2213**

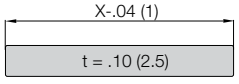
- **Side plate 2203 for E-Chains®**
  Used in conjunction with full-width shelf 220-X, this option is used for applications involving many thin cables with similar diameters.

Spacers 205-09

Spacer (chain only)	
Unassembled	**Part No. 205-09**
Assembled	**Part No. 215-09**

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Full-width shelf 220-XX



Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.57	(040)	**220-40**	**221-40**
1.97	(050)	**220-50**	**221-50**
2.44	(062)	**220-62**	**221-62**
2.76	(070)	**220-70**	**221-70**
2.95	(075)	**220-75**	**221-75**
3.43	(087)	**220-87**	**221-87**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
3.94	(100)	**220-100**	**221-100**
4.92	(125)	**220-125**	**221-125**
5.91	(150)	**220-150**	**221-150**
6.89	(175)	**220-175**	**221-175**
7.87	(200)	**220-200**	**221-200**

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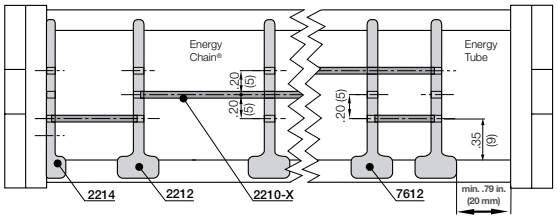
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E4-1
Series R4-28
Interior Separation - Previous Generation

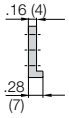
Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1,** for layout recommendations.



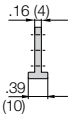
- **Side plates 2204**
  This component is used to form the basic pattern of a shelf system.



Side plate	
Unassembled	**Part No. 2204**
Assembled	**Part No. 2214**

Side plate 2204

- **Vertical separator 2202 for E-Chain®**
  This component is used to form the basic pattern of a shelf system.



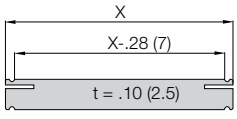
Vertical separator (chain only)	
Unassembled	**Part No. 2202**
Assembled	**Part No. 2212**

Vertical separator 2202

Shelves 420-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 3 different heights in .20" (5mm) increments

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	**2200-18**	**2210-18**	2.28	(58)	**2200-58**	**2210-58**
.91	(23)	**2200-23**	**2210-23**	2.68	(68)	**2200-68**	**2210-68**
1.10	(28)	**2200-28**	**2210-28**	2.87	(73)	**2200-73**	**2210-73**
1.30	(33)	**2200-33**	**2210-33**	3.46	(88)	**2200-88**	**2210-88**
1.50	(38)	**2200-38**	**2210-38**	3.90	(99)	**2200-99**	**2210-99**
1.69	(43)	**2200-43**	**2210-43**	4.88	(124)	**2200-124**	**2210-124**
1.89	(48)	**2200-48**	**2210-48**	5.87	(149)	**2200-149**	**2210-149**



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
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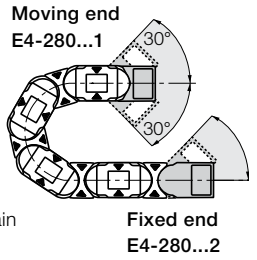
igus®

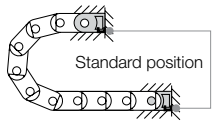
E-Chain System® E4-1
Series E4-28/R4-28
Mounting Bracket - KMA

Standard

Option 1: pivoting

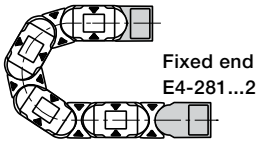
- Unsupported and gliding applications
- mounting capabilites on all sides
- Bolted connection outside of chain cross-section
- Space-restricted conditions
- corrosion-resistant

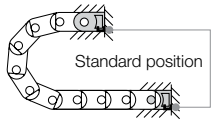




Option 2: locking

- Vertical hanging/standing applications
- For high accelerations
- Universally mountable
- Various mounting positions
- Corrosion-resistant





Part Number Structure

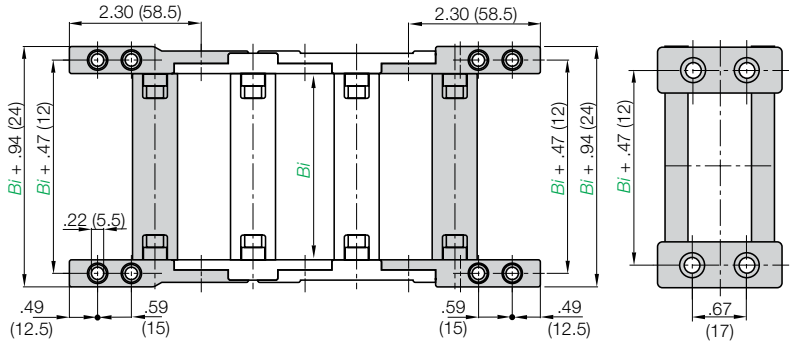
E4-281- 040- 2- 12

- 12 = Full Set
- 2 = Complete Set
- 040 = Width
- E4-280 = Pivoting, E4-281 = Locking

Full set, for both ends:
E4-280- 040- 12

Single-part order:
E4-280- 040- 1
Mounting bracket **moving end**

E4-280- 040- 2
Mounting bracket **fixed end**



Part number example is shown for pivoting brackets.
For locking brackets change part number to E4-281

Part No. Full Set (pivoting)
Series E4-28
E4-28-Width-12

Width	Part No. Full Set Pivoting		Part No. Full Set Locking			*Bi* in. (mm)
-040	E4-280		E4-281		-040-12	1.57 (40)
-050	E4-280	R4-280	E4-281	R4-281	-050-12	1.97 (50)
-052	E4-280		E4-281		-052-12	2.05 (52)
-062	E4-280		E4-281		-062-12	2.44 (62)
-070	E4-280		E4-281		-070-12	2.76 (70)
-075	E4-280	R4-280	E4-281	R4-281	-075-12	2.95 (75)
-087	E4-280		E4-281		-087-12	3.43 (87)
-100	E4-280	R4-280	E4-281	R4-281	-100-12	3.94 (100)
-125	E4-280	R4-280	E4-281	R4-281	-125-12	4.92 (125)
-150	E4-280	R4-280	E4-281	R4-281	-150-12	5.91 (150)
-175	E4-280	R4-280	E4-281	R4-281	-175-12	6.89 (175)
-200	E4-280	R4-280	E4-281	R4-281	-200-12	7.87 (200)
-225	E4-280	R4-280	E4-281	R4-281	-225-12	8.86 (225)
-250	E4-280	R4-280	E4-281	R4-281	-250-12	9.84 (250)
-275	E4-280		E4-281		-275-12	10.83 (275)
-300	E4-280	R4-280	E4-281	R4-281	-300-12	11.81 (300)

Due to the design of the E4-28 series chains, please note the following when ordering brackets:

Even number of links = full set, part number ending in **-12**
Odd number of links = 2 pieces, part number ending in **-1**

Strain relief tiewrap plate
Part No. 2050-Z can be fixed on the last crossbar.
Details ➤ chapter 10 main catalog

Part. No.	Width [mm]	Number of teeth
2050.Z	60	6

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E-Chain System® E4-1
Series E4-28/R4-28
Guide Trough

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

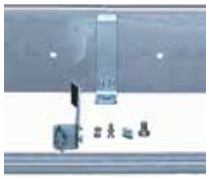
- Full travel length of guide trough
  Part No. 96-30
- 1/2 travel length of glide bars
  Part No. 92-01
- Installation sets as end connectors
  Part No. 95-50-XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. Standard length of the trough components and glide bars is 6.56 ft (2m). The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft. (50 m)
Center mounted

Required guide troughs:
164 ft (50 m) guide trough,
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 96-30
= 13 sections of 6.56 ft. (2 m) glide bar
Part No. 92-01
Required number of installation sets
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
95-50-XXX
Example: 95-50-400 for 15.75 (400 mm) long profile rail

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

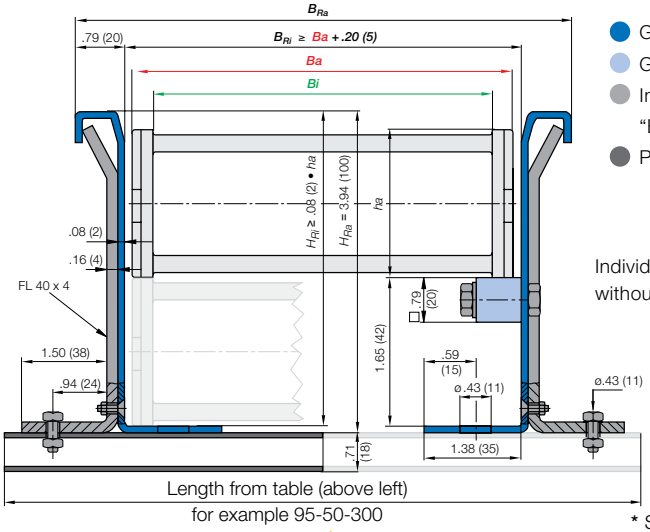


Installation sets as section connectors

Width of Crossbar
E4-28-**040**-200-0

B_{Ri}		Installation Part No.
-040	2.56 (65)	*
-050	2.95 (75)	**95-50-200**
-052	2.99 (76)	**95.50-200**
-062	3.43 (87)	**95-50-200**
-070	3.74 (95)	**95-50-200**
-075	3.94 (100)	**95-50-225**
-100	4.92 (125)	**95-50-250**
-125	5.91 (150)	**95-50-275**
-150	6.89 (175)	**95-50-300**
-175	7.87 (200)	**95-50-325**
-200	8.86 (225)	**95-50-350**
-225	9.84 (250)	**95-50-375**
-250	10.83 (275)	**95-50-400**
-275	11.81 (300)	**95-50-425**
-300	12.80 (325)	**95-50-450**

Standard length profile rail



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
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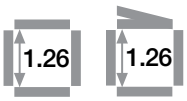
E4-32
H4-32
R4-32

igus®

E-Chain System® E4-1
Series E4-32/H4-32/R4-32



Price Index

Series E4-32 ●●○
Series H4-32 ●◐○
Series R4-32 ●●◐

Special Options Available

Low noise version available with special rubber pads

Clean-Room — Cleanroom test upon request

EX — ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 262 ft (80 m)
Vertical, standing ≤ 16.4 ft (5 m)
Side-mounted, unsupp. ≤ 4.92 ft (1.5 m)
Rotary requires further calculation

Usage Guidelines

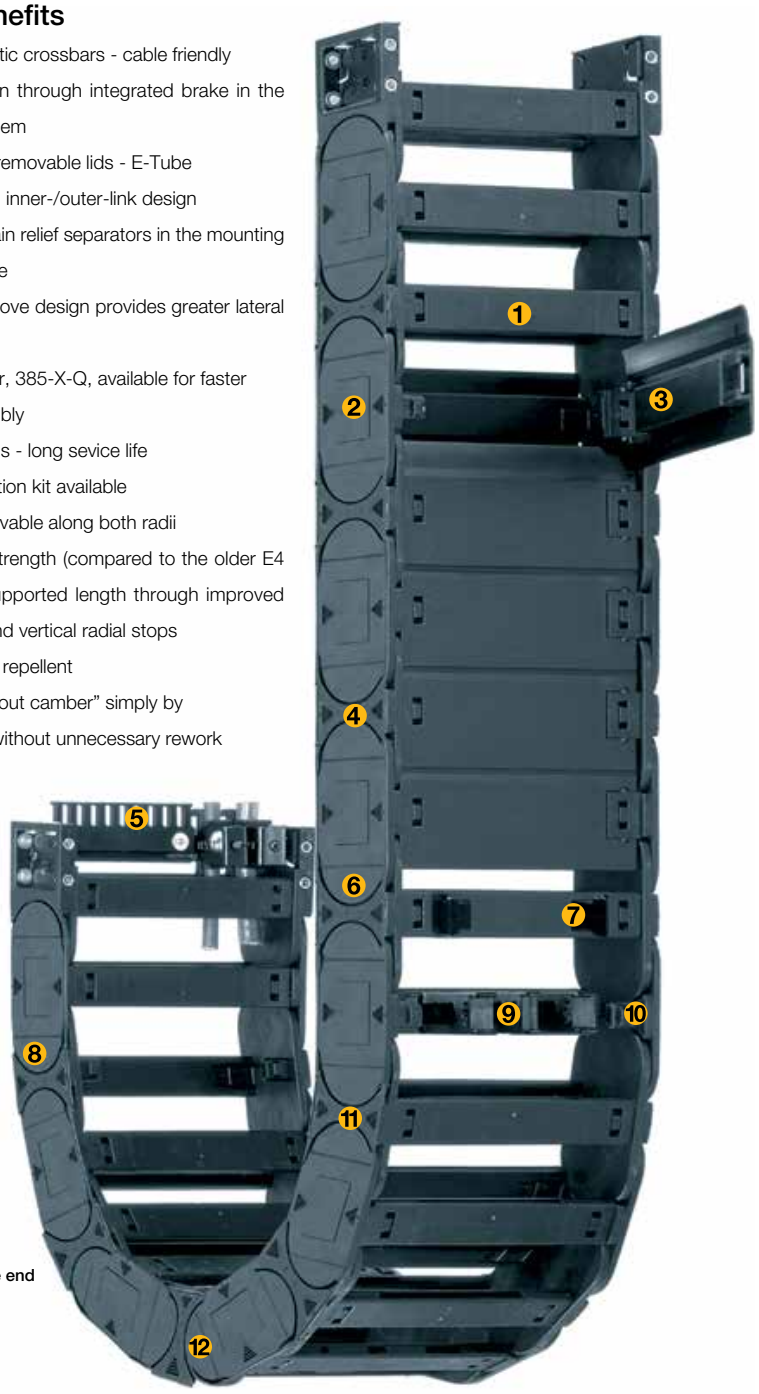
- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High additional loads

- When an extremely low vibration E-Chain® is required
  ➤ **Series E6-35**
- When an economic one-sided snap-open E-Chain®/E-Tube is required
  ➤ **Series 2600/2650/2680/2700**

Features & Benefits

1. Wide, rounded plastic crossbars - cable friendly
2. Low-noise operation through integrated brake in the radial stop dog system
3. Hinged snap-open removable lids - E-Tube
4. Straight run through inner-/outer-link design
5. Strain relief with strain relief separators in the mounting bracket are available
6. The tongue and groove design provides greater lateral stability
7. QuickLock Crossbar, 385-X-Q, available for faster assembly/disassembly
8. Optimized glide pads - long sevice life
9. New Interior separation kit available
10. Crossbars are removable along both radii
11. 15% more tensile strength (compared to the older E4 series), better unsupported length through improved stop dog system and vertical radial stops
12. Smooth outline, dirt repellent
13. Version NCST “without camber” simply by turning outer links without unnecessary rework

Also available without camber. Add NCST to the end of the part number.
Ex: E4-32-30-300NCST



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

13.12 ft (4 m) **E4-32-30-300-0**	**E-Chain®**
With 2 separators **282** assembled every 2nd link	**Interior Separation**
1 Set **E4-320-30-12P**	**Mounting Bracket**

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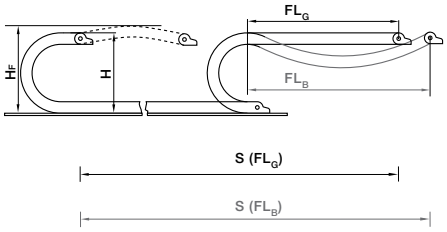
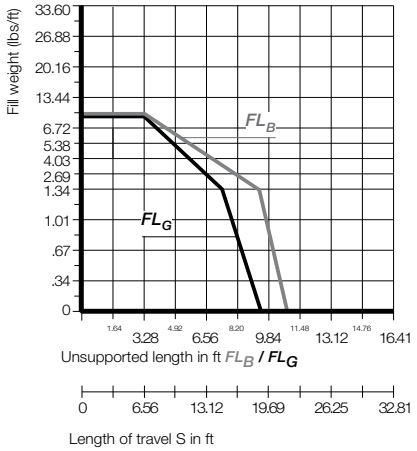
E-Chain System® E4-1
Series E4-32/H4-32/R4-32
Installation Dimensions

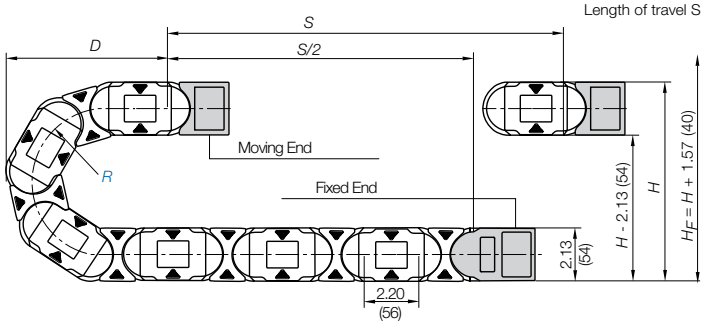
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.49 (18)
For center mount applications:
Chain length = $S/2 + K$

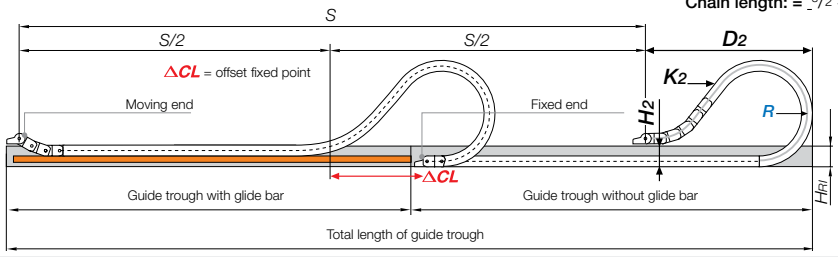
The required clearance height: H_F **= H + 1.57 in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
H	7.09 (180)	8.03 (204)	10.00 (254)	11.97 (304)	13.94 (354)	15.91 (404)	17.87 (454)	19.45 (494)	21.81 (554)	25.75 (654)
D	6.85 (174)	7.32 (186)	8.31 (211)	9.29 (236)	10.28 (261)	11.26 (286)	12.24 (311)	13.03 (331)	14.21 (361)	16.18 (411)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.88 (505)	23.03 (585)	26.18 (665)	29.33 (745)	31.69 (805)	35.43 (900)	41.54 (1055)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 656 ft. (200m)

For center mount applications:
Chain length: = $S/2 + K_2$



R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
H_2	-	-	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
D_2	-	-	14.57 (370)	18.50 (470)	19.69 (500)	25.79 (655)	30.31 (770)	35.43 (900)	36.61 (930)	43.31 (1100)
K_2	-	-	24.25 (616)	30.87 (784)	35.27 (896)	44.10 (1120)	50.71 (1288)	57.32 (1456)	61.73 (1568)	75.00 (1904)
ΔCL	-	-	6.30 (160)	8.27 (210)	9.45 (240)	14.57 (370)	18.11 (460)	21.26 (540)	22.44 (570)	27.17 (690)

In case of travels between 22.9 and 32.8 ft (7 and 10 m) we recommend a longer unsupported length.

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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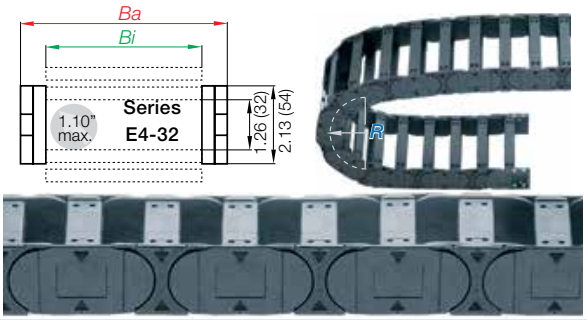
igus®

E-Chain System® E4-1
Series E4-32/H4-32/R4-32
Product Range

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Series E4-32 - E-Chain® with crossbars every link



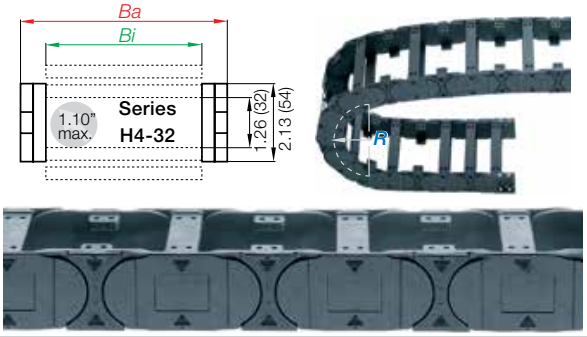
- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

E4-32 | 30- | 300- | 0

- 300- : Color - Black
- 30- : Bending radius
- E4-32 : Width
- 0 : Series

Series H4-32 - E-Chain® with crossbars every other link



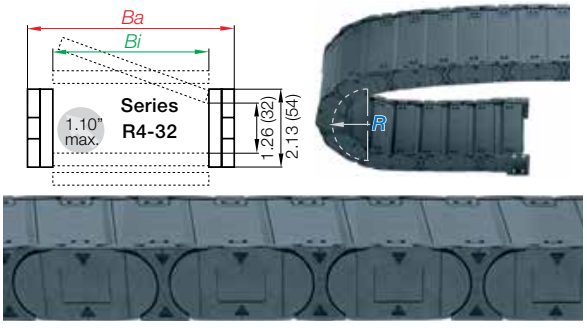
- Crossbars every other link Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

H4-32- | 20- | 300- | 0

- 300- : Color - Black
- 20- : Bending radius
- H4-32- : Width
- 0 : Series

Series R4-32 - fully enclosed E-Tube



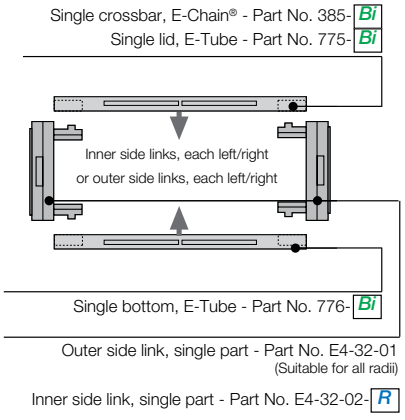
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

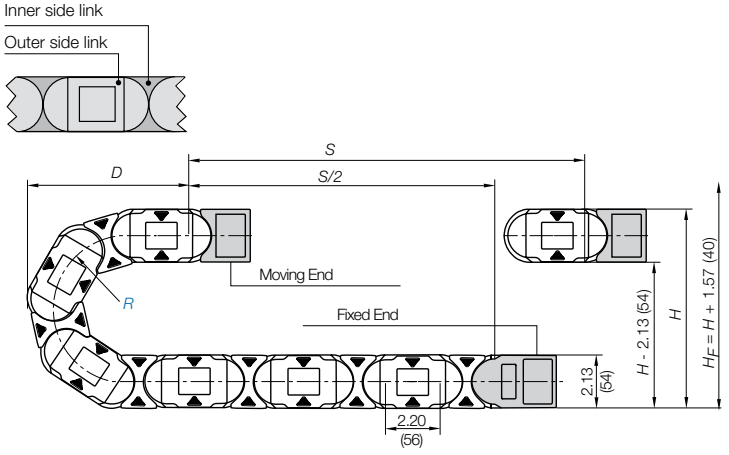
Part Number Structure

R4-32- | 30- | 300- | 0

- 300- : Color - Black
- 30- : Bending radius
- R4-32- : Width
- 0 : Series

E-Chain® as separate parts, links and side plates





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E-Chain System® E4-1
Series E4-32/H4-32/R4-32
Product Range

Supplement part number with required radius. Example: E4-32-30-300-0
Pitch: 2.20 in. (56mm) per link links/ft(m) = 5.49 (18)

Part Number					Bi	Ba	Weight		
Crossbars Every link	Crossbars Every other	Tube Version			in. (mm)	in. (mm)	E4-32 lbs/ft (kg/m)	H4-32 lbs/ft (kg/m)	R4-32 lbs/ft (kg/m)
E4-32-05-	H4-32-05	*R4-32-05-		-0	1.97 (50)	2.87 (73)	≈ 1.05 (1.57)	≈ 0.96 (1.43)	≈ 1.65 (2.45)
E4-32-06-	H4-32-06-			-0	2.68 (68)	3.58 (91)	≈ 1.14 (1.70)	≈ 1.00 (1.49)	–
E4-32-07-	H4-32-07	R4-32-07-		-0	2.95 (75)	3.86 (98)	≈ 1.16 (1.73)	≈ 1.01(1.51)	≈ 1.73 (2.57)
E4-32-087-	H4-32-087-			-0	3.43 (87)	4.33 (110)	≈ 1.21 (1.80)	≈ 1.03 (1.54)	–
E4-32-097-	H4-32-097-			-0	3.82 (97)	4.72 (120)	≈ 1.25 (1.86)	≈ 1.05 (1.57)	–
E4-32-10-	H4-32-10-	R4-32-10-		-0	3.94 (100)	4.84 (123)	≈ 1.27 (1.89)	≈ 1.06 (1.58)	≈ 1.78 (2.65)
E4-32-11-	H4-32-11-	R4-32-11-		-0	4.25 (108)	5.16 (131)	≈ 1.30 (1.94)	≈ 1.08 (1.61)	≈ 1.85 (2.76)
E4-32-112-	H4-32-112-			-0	4.41(112)	5.35 (136)	≈ 1.32 (1.96)	≈ 1.09 (1.62)	–
E4-32-12-	H4-32-12-	R4-32-12-		-0	4.92 (125)	5.83 (148)	≈ 1.39 (2.07)	≈ 1.13 (1.68)	≈ 1.92 (2.85)
E4-32-137-	H4-32-137-			-0	5.39 (137)	6.34 (161)	≈ 1.42 (2.12)	≈ 1.14 (1.70)	–
E4-32-15-	H4-32-15-	R4-32-15-		-0	5.91 (150)	6.81 (173)	≈ 1.49 (2.21)	≈ 1.18 (1.75)	≈ 2.02 (3.01)
E4-32-162-	H4-32-162-			-0	6.38 (162)	7.32 (186)	≈ 1.50 (2.24)	≈ 1.18 (1.76)	–
E4-32-17-	H4-32-17-	R4-32-17-		-0	6.61 (168)	7.52 (191)	≈ 1.56 (2.32)	≈ 1.21 (1.80)	≈ 2.16 (3.21)
E4-32-18-	H4-32-18-			-0	6.89 (175)	7.80 (198)	≈ 1.58 (2.35)	≈ 1.22 (1.81)	–
E4-32-187-	H4-32-187-			-0	7.36 (187)	8.31 (211)	≈ 1.61 (2.39)	≈ 1.24 (1.84)	–
E4-32-20-	H4-32-20-	R4-32-20-		-0	7.87 (200)	8.78 (223)	≈ 1.69 (2.52)	≈ 1.28 (1.90)	≈ 2.29 (3.41)
E4-32-212-	H4-32-212-			-0	8.35 (212)	9.29 (236)	≈ 1.73 (2.57)	≈ 1.30 (1.93)	–
E4-32-23-	H4-32-23-			-0	8.86 (225)	9.76 (248)	≈ 1.79 (2.67)	≈ 1.33 (1.98)	–
E4-32-237-	H4-32-237-			-0	9.33 (237)	10.28 (261)	≈ 1.81 (2.70)	≈ 1.34 (1.99)	–
E4-32-25-	H4-32-25-	R4-32-25-		-0	9.84 (250)	10.75 (273)	≈ 1.90 (2.83)	≈ 1.38 (2.06)	≈ 2.59 (3.86)
E4-32-262-	H4-32-262-			-0	10.31 (262)	11.26 (286)	≈ 1.96 (2.92)	≈ 1.41 (2.10)	–
E4-32-28	H4-32-28-			-0	10.83 (275)	11.73 (298)	≈ 2.01 (2.99)	≈ 1.44 (2.14)	–
E4-32-29-	H4-32-29-			-0	11.30 (287)	12.24 (311)	≈ 2.02 (3.02)	≈ 1.44 (2.15)	–
E4-32-30-	H4-32-30-	R4-32-30-		-0	11.81 (300)	12.72 (323)	≈ 2.12 (3.15)	≈ 1.49 (2.22)	≈ 2.85 (4.25)
E4-32-312-	H4-32-312-			-0	12.28 (312)	13.23 (336)	≈ 2.14 (3.18)	≈ 1.50 (2.23)	–
E4-32-325-	H4-32-325-			-0	12.79 (325)	13.70 (348)	≈ 2.20 (3.28)	≈ 1.53 (2.28)	–
E4-32-337-	H4-32-337-			-0	13.27 (337)	14.21 (361)	≈ 2.24 (3.34)	≈ 1.55 (2.31)	–
E4-32-350-	H4-32-350-			-0	13.78 (350)	14.69 (373)	≈ 2.40 (3.57)	≈ 1.63 (2.42)	–
E4-32-362-	H4-32-362-			-0	14.25 (362)	15.20 (386)	≈ 2.46 (3.66)	≈ 1.66 (2.47)	–
E4-32-375-	H4-32-375-			-0	14.76 (375)	15.67 (398)	≈ 2.51 (3.74)	≈ 1.69 (2.51)	–
E4-32-387-	H4-32-387-			-0	15.24 (387)	16.18 (411)	≈ 2.55 (3.80)	≈ 1.71 (2.54)	–
E4-32-400	H4-32-400-			-0	15.75 (400)	16.65 (423)	≈ 2.60 (3.87)	≈ 1.73 (2.58)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: E4-32-30-300-0

	063**	075**	100**	125	150	175	200	220	250	300
R	2.48 (063**)	2.95 (075**)	3.94 (100**)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
H $^{-0}_{+20}$	7.09 (180)	8.03 (204)	10.00 (254)	11.97 (304)	13.94 (354)	15.91 (404)	17.87 (454)	19.45 (494)	21.81 (554)	25.75 (654)
D	6.85 (174)	7.32 (186)	8.31 (211)	9.29 (236)	10.28 (261)	11.26 (286)	12.24 (311)	13.03 (331)	14.21 (361)	16.18 (411)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.88 (505)	23.03 (585)	26.18 (665)	29.33 (745)	31.69 (805)	35.43 (900)	41.54 (1055)

** This radius is not available for the R4-32 Series
*Removable lid only, no hinged option
0 = Standard color black.
For other colors see Chapter 1

For wider chains see page 6.32.
For large diameter hoses see page 6.32

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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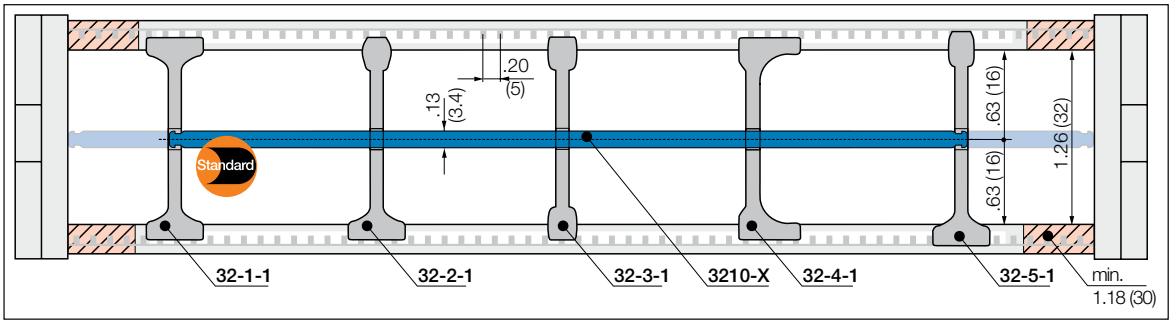
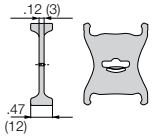
E-Chain System® E4-1
Series Series E4-32/H4-32/R4-32
Interior Separation - New Generation



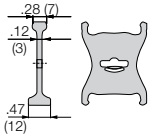
Note E-Tube: Please maintain a lateral spacing of 1.18" (30 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 32-1**
Assembled	**Part No. 32-1-1**

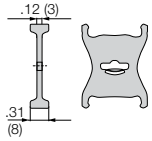
- **Standard separator 32-1**
  for all applications
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator, narrow head

Unassembled	**Part No. 32-2**
Assembled	**Part No. 32-2-1**

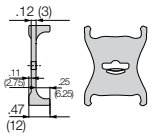
- **Separator 32-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 32-3**
Assembled	**Part No. 32-3-1**

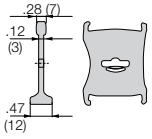
- **Separator 32-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, asymmetrical

Unassembled	**Part No. 32-4**
Assembled	**Part No. 32-4-1**

- **Separator 32-4**
  For side mounted applications
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

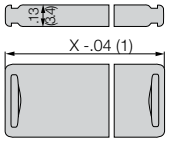


Separator, asymmetrical

Unassembled	**Part No. 32-5**
Assembled	**Part No. 32-5-1**

- **Separator 32-5**
  Locks safely in .20" (5 mm) increments
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be used at one height.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	4.92 (125)	**3200-125**	**3210-125**	8.86 (225)	**3200-225**	**3210-225**
2.95 (075)	**3200-75**	**3210-75**	5.91 (150)	**3200-150**	**3210-150**	9.84 (250)	**3200-250**	**3210-250**
3.94 (100)	**3200-100**	**3210-100**	6.89 (175)	**3200-175**	**3210-175**			
4.53 (115)	**3200-115**	**3210-115**	7.87 (200)	**3200-200**	**3210-200**			

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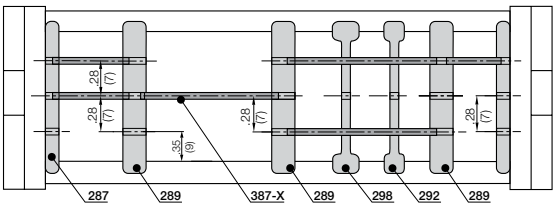
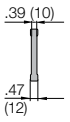
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E4-1
Series Series E4-32/H4-32/R4-32
Interior Separation - Previous Generation

Shelves and Separators

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements. ➤ **Design, Chapter 1** for layout recommendations.

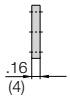




Split Separator (chain only)

Unassembled	**Part No. T323**
Assembled	**Part No. T323M**

- **Split separator T323 for E-Chains®**
  This separator is ideal for subsequent shelving or the initial assembly of the E-Chain. Fast assembly and disassembly using a hinge/push mechanism. Enhances flexibility



Side Plate

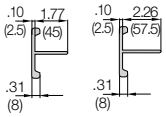
Unassembled	**Part No. 286**
Assembled	**Part No. 287**

- **Side plates 286**
  This component is used to form the basic pattern of a shelf system.

Vertical Separator

Unassembled	**Part No. 288**
Assembled	**Part No. 289**

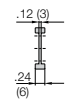
- **Vertical separator 288**
  This component is used to form the basic pattern of a shelf system.



Separators w/Integrated Shelf

Unassembled	**Part No. 281-S-45**
Assembled	**Part No. 282-S-45**
Unassembled	**Part No. 281-S-57**
Assembled	**Part No. 282-S-57**

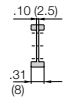
- **Locking vertical separator 281-S**
  This separator is slotted and able to be combined with shelves



Slotted Separators

Unassembled	**Part No. 291**
Assembled	**Part No. 292**

- **Closed Slotted separators 291**
  These are used for complex subdivisions. However, they cannot be retrofitted into an existing interior separation system without removing the shelves first.



Slotted Separators, Open

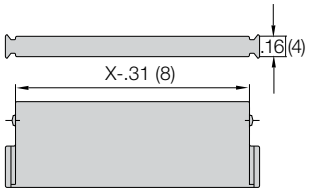
Unassembled	**Part No. 297**
Assembled	**Part No. 298**

- **Open slotted separator 297**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into the middle slot only.

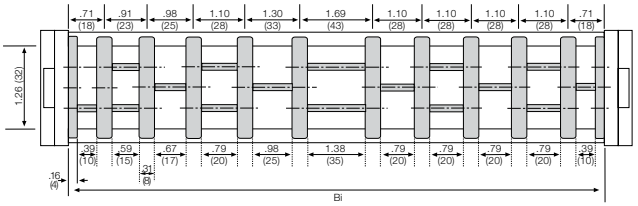
Width X in.	(mm)	Usable Width in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	.39	(10)	**386-18**	**387-18**
.91	(23)	.59	(15)	**386-23**	**387-23**
.98	(25)	.67	(17)	**386-25**	**387-25**
1.10	(28)	.79	(20)	**386-28**	**387-28**
1.30	(33)	.98	(25)	**386-33**	**387-33**
1.69	(43)	1.38	(35)	**386-43**	**387-43**
1.97	(50)	1.65	(42)	**386-50**	**387-50**
2.13	(54)	1.81	(46)	**386-54**	**387-54**
2.44	(62)	2.13	(54)	**386-62**	**387-62**
2.95	(75)	2.64	(67)	**386-75**	**387-75**
3.43	(87)	3.12	(87)	**386-87**	**387-87**
3.94	(100)	3.62	(92)	**386-100**	**387-100**
4.25	(108)	3.94	(100)	**386-108**	**387-108**
4.92	(125)	4.61	(117)	**386-125**	**387-125**
5.91	(150)	5.59	(142)	**386-150**	**387-150**
6.89	(175)	6.57	(167)	**386-175**	**387-175**
7.87	(200)	7.56	(192)	**386-200**	**387-200**
8.19	(208)	7.87	(200)	**386-208**	**387-208**
8.86	**(225)**	**8.54**	**(217)**	**386-225**	**387-225**

Shelves 386-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 3 different heights in .28" (7mm) increments



The diagram below is for reference purposes only. Multiple configurations are possible. To create your e-chain shelving cross section please see our online e-chain configurator. Call 1-800-521-2747 for assistance and/or go to igus.com click on the ***Products*** drop down menu, choose ***E-Chain Cable Carriers*** and on the next drop down menu simply click on ***e-chain Configurator.***



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

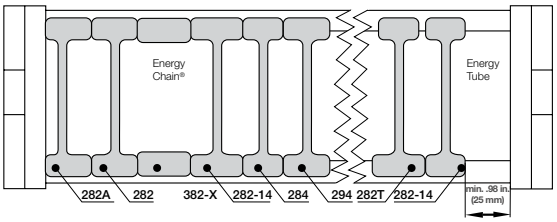
E-Chain System® E4-1
Series Series E4-32/H4-32/R4-32
Interior Separation - Previous Generation

Telephone 1-800-521-2747
Fax 1-401-438-7270

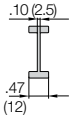
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.



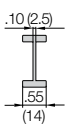
NOTE: Observe a lateral spacing of at least .98 in. (25mm) for E-Tubes



Separator (chain/tube)

Unassembled	**Part No. 280**
Assembled	**Part No. 281**

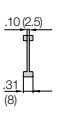
- **Standard separator 280 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.



Separator (chain/tube)

Unassembled	**Part No. 280-14**
Assembled	**Part No. 281-14**

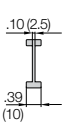
- **Vertical separator 280-14 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its broad base design when used with thick cables or hoses.



Separator (chain only)

Unassembled	**Part No. 283**
Assembled	**Part No. 284**

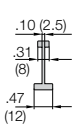
- **Vertical separator 283 for E-Chains®**
  This separator features a narrow base for use in applications where a large number of small cables need to be individually separated.



Locking Separator (chain only)

Unassembled	**Part No. 293**
Assembled	**Part No. 294**

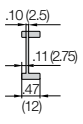
- **Locking separator 293 for E-Chains®**
  This separator is used in applications with very high relative humidity It features increased retention force which is produced by asymmetrical retention “clamps” attached to the chain’s cross-bar. Please ensure that they are properly aligned.



Locking Separator (tubes only)

Unassembled	**Part No. 281T**
Assembled	**Part No. 282T**

- **Locking separator 281T for E-Tubes**
  It clamps to the fixed radius and remains free along the other radius to facilitate lid removal.



Asymmetric separator (chain only)

Unassembled	**Part No. 280A**
Assembled	**Part No. 281A**

- **Asymmetrical separator 281A for E-Chains®**
  This separator features an (12mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

Spacer (chain only)

Unassembled	**Part No. 381-XX**
Assembled	**Part No. 382-XX**

XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08” (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16” (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
381 -10	382 -10	.39”	(10)
381 -15	382 -15	.59”	(15)
381 -20	382 -20	79”	(20)

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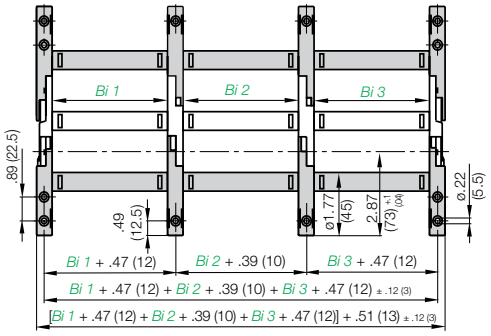
E-Chain System® E4-1
Series E4-32/H4-32/R4-32
Special Accessories

Part number example for E-Chain®
E4-32-10/20/10-200-0
E4-32-*Bi1*/*Bi2*/*Bi3*-R-0

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

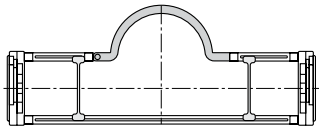
- For applications in which particularly high fill weights necessitate extremely wide E-Chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



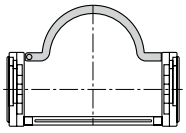
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

- Intended for cables and hoses with a maximum outer diameter of 4.13 in. (105 mm).
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



Round extender crossbar combined with standard snap-open crossbars.

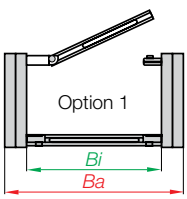


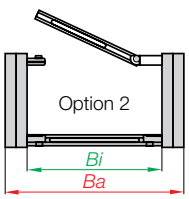
Attached directly to the side link.

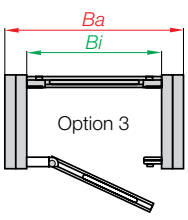
Part No.	Max Ø Hose in. (mm)	Style	Installation Side Link	Combined with Snap-Open Crossbars
385-15-RHD115	4.13 (105)	Round	No	Yes
385-18-RD115	4.13 (105)	Round	Yes	No

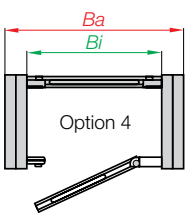
Hinged crossbars

- Typically, E-Chain® crossbars are completely removable. In cases where it is preferable that the opening crossbars remain on the E-Chain®, a hinged design has been developed.
- Hinged crossbar: Part No. 385-02
- Snap-open crossbar (shortened): Bi-1.48" (37.5 mm) Part No. 385-03 (smallest inner width Bi = 3.44" (87.5 mm)









PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E4-1
Series E4-32/H4-32/R4-32
Mounting Brackets - KMA

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Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Standard

Option 1: pivoting

- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant

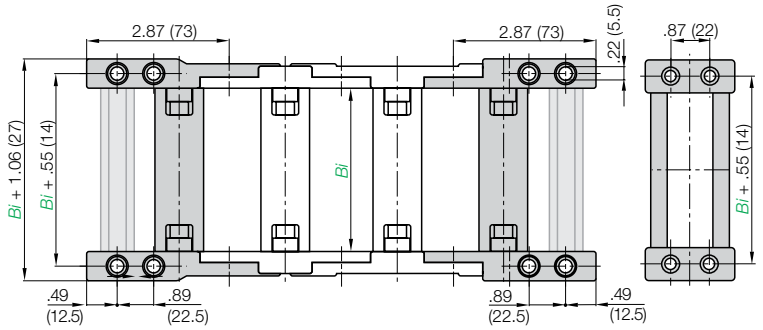
Option 2: locking

- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations

Part Number Structure

E4-320- | 07- | 12 | P

- P = With Profile Rail
- 12 = Complete Set
- 07- = Width
- E4-320 = Pivoting for chain, R4-320 = Pivoting for tube
- E4-321 = Locking for chain, R4-321 = Locking for tube



Due to the design of the E4-32 series chains, please note the following when ordering brackets:
Even number of links = full set, part number ending in **-12**; **Odd number of links =** 2 pieces, part number ending in **-1**

Part number examples are shown for pivoting brackets for E-Chain.
For locking brackets change part number to 321

Part No. Full Set (pivoting)
Series E4-32 or H4-32
E4-320-Width-12

Part No. Full Set (pivoting)
with profile rail
Series E4-32 or H4-32
E4-320-Width-12P

Part No. Full Set (pivoting)
Tube Series R4-32
R4-320-Width-12

Part No. Full Set (pivoting)
with Profile Rail
Tube Series R4-32
R4-320-Width-12P

Width	Part No. Full Set chain/tube			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-05*	E4-320/R4-320	E4-321/R4-321	-05-12	P	1.97 (50)
-06	E4-320	E4-321	-06-12	P	2.68 (68)
-07	E4-320/R4-320	E4-321/R4-321	-07-12	P	2.95 (75)
-087	E4-320	E4-321	-087-12	P	3.43 (87)
-097	E4-320	E4-321	-097-12	P	3.82 (97)
-10	E4-320/R4-320	E4-321/R4-321	-10-12	P	3.94 (100)
-11	E4-320/R4-320	E4-321/R4-321	-11-12	P	4.25 (108)
-112	E4-320	E4-321	-112-12	P	4.41 (112)
-12	E4-320/R4-320	E4-321/R4-321	-12-12	P	4.92 (125)
-137	E4-320	E4-321	-137-12	P	5.39 (137)
-15	E4-320/R4-320	E4-321/R4-321	-15-12	P	5.91 (150)
-162	E4-320	E4-321	-162-12	P	6.38 (162)
-17	E4-320/R4-320	E4-321/R4-321	-17-12	P	6.61 (168)
-18	E4-320	E4-321	-18-12	P	6.89 (175)
-187	E4-320	E4-321	-187-12	P	7.36 (187)
-20	E4-320/R4-320	E4-321/R4-321	-20-12	P	7.87 (200)

Width	Part No. Full Set chain/tube			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-212	E4-320	E4-321	-212-12	P	8.35 (212)
-23	E4-320	E4-321	-23-12	P	8.86 (225)
-237	E4-320	E4-321	-237-12	P	9.33 (237)
-25	E4-320/R4-320	E4-321/R4-321	-25-12	P	9.84 (250)
-262	E4-320	E4-321	-262-12	P	10.31 (262)
-28	E4-320	E4-321	-28-12	P	10.83 (275)
-29	E4-320	E4-321	-29-12	P	11.30 (287)
-30	E4-320/R4-320	E4-321/R4-321	-30-12	P	11.81 (300)
-312	E4-320	E4-321	-312-12	P	12.28 (312)
-325	E4-320	E4-321	-325-12	P	12.79 (325)
-337	E4-320	E4-321	-337-12	P	13.27 (337)
-350	E4-320	E4-321	-350-12	P	13.78 (350)
-362	E4-320	E4-321	-362-12	P	14.25 (362)
-375	E4-320	E4-321	-375-12	P	14.76 (375)
-387	E4-320	E4-321	-387-12	P	15.24 (387)
-400	E4-320	E4-321	-400-12	P	15.75 (400)

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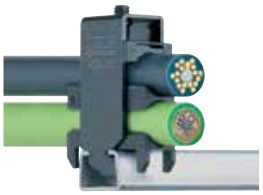
E-Chain System® E4-1
Series E4-32/H4-32/R4-32
Strain Relief

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1M	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1M	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1M	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1M	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1M	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1M	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1M	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1M	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1M	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1M	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1M	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

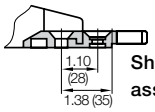
Chainfix Clip

Modular snap-on strain relief device

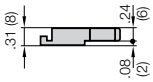
Chainfix clips are available for cable diameters ranging from .16" (4mm) to .94" (24 mm). They are for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(04-08)	CFC-08-M	CFC-08-C
.31-.47	(08-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

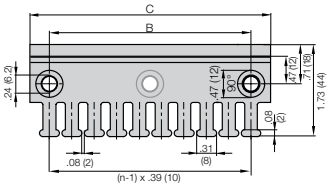


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10

Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E-Chain System® E4-1
Series E4-32/H4-32/R4-32
Guide Trough

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part Number 98-30
- 1/2 travel length of glide bars
  Part number 92-01
- Installation sets as end connectors
  Part Number 93-50-XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 98-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 92-01
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
93-50-XXX
Example: 93-50-400 for 15.75" (400 mm) long profile rail.

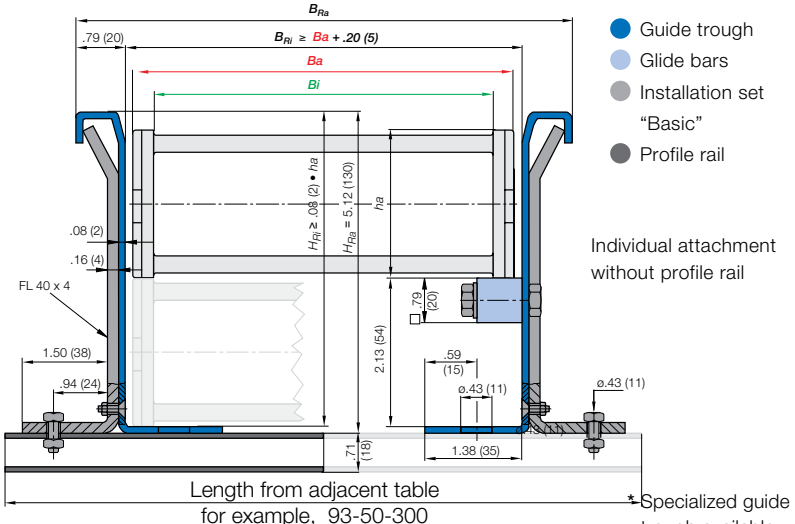
Left: Guide trough with glide bars
Right: Guide troughs without glide bars

Installation sets as section connectors

Width of Crossbar
E4-32-**05**-200-0

	B_{Ri}	Installation Part No.
-05	3.15 (78)	**93-50-200**
-06	3.86 (96)	**93-50-225**
-07	4.13 (103)	**93-50-225**
-087	4.61 (115)	**93-50-225**
-097	4.92 (125)	**93-50-250**
-10	5.12 (128)	**93-50-250**
-11	5.43 (136)	**93-50-250**
-112	5.59 (141)	**93-50-250**
-12	6.10 (153)	**93-50-275**
-137	6.57 (166)	**93-50-275**
-15	7.09 (178)	**93-50-300**
-162	7.56 (191)	**93-50-300**
-17	7.80 (196)	**93-50-325**
-18	8.07 (203)	**93-50-325**
-187	8.54 (216)	**93-50-325**
-20	9.06 (228)	**93-50-350**
-212	9.53 (241)	**93-50-350**
-23	10.04 (253)	**93-50-375**
-237	10.51 (266)	**93-50-375**
-25	11.02 (278)	**93-50-400**
-262	11.50 (291)	**93-50-400**
-28	12.01 (303)	**93-50-425**
-29	12.48 (316)	**93-50-425**
-30	12.99 (328)	**93-50-450**
-312	13.46 (341)	**93-50-450**
-325	13.98 (353)	**93-50-475**
-337	14.45 (366)	**93-50-475**
-350	14.96 (378)	**93-50-500**
-362	15.43 (391)	**93-50-500**
-375	15.94 (403)	**93-50-525**
-387	16.42 (416)	**93-50-525**
-400	16.93 (428)	**93-50-550**

Standard length profile rail



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

*Specialized guide trough available upon request

Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E4-42
H4-42
R4-42

igus®

E-Chain System® E4-1
Series E4-42/H4-42/R4-42

Price Index

Series E4-42

Series H4-42

Series R4-42

Special Options Available

Low noise version available with special rubber pads

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 328 ft (100 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

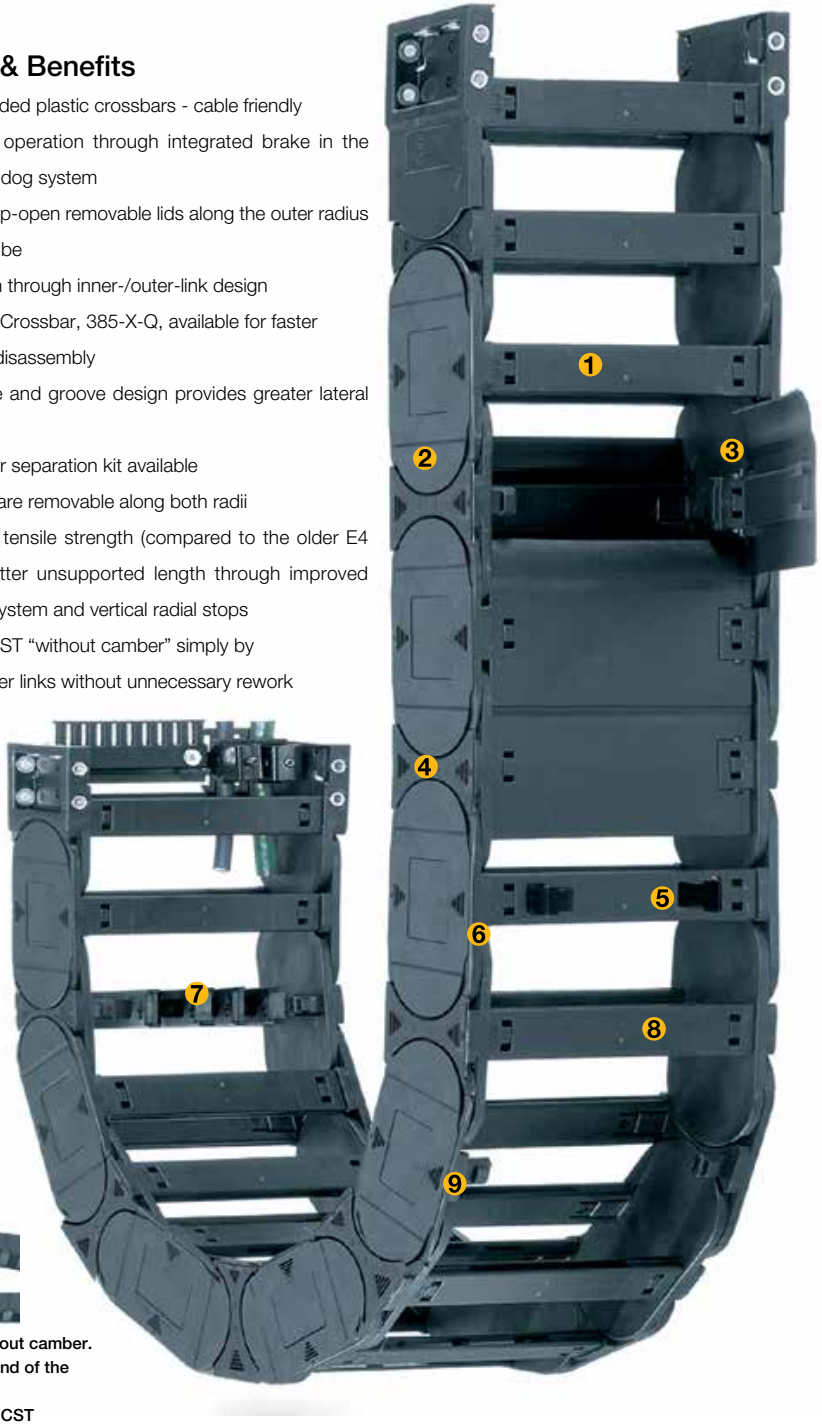
Usage Guidelines

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High additional loads

- When an extremely low vibration E-Chain®/E-Tube is required
  ➤ **Series E6-40/R6-40**
- When an economic one-sided snap-open E-Chain®/E-Tube is required
  ➤ **Series 3400/3450/3480/3500**

Features & Benefits

1. Wide, rounded plastic crossbars - cable friendly
2. Low-noise operation through integrated brake in the radial stop dog system
3. Hinged snap-open removable lids along the outer radius of the E-Tube
4. Straight run through inner-/outer-link design
5. QuickLock Crossbar, 385-X-Q, available for faster assembly/disassembly
6. The tongue and groove design provides greater lateral stability
7. New Interior separation kit available
8. Crossbars are removable along both radii
9. 15% more tensile strength (compared to the older E4 series), better unsupported length through improved stop dog system and vertical radial stops
10. Version NCST “without camber” simply by turning outer links without unnecessary rework



Also available without camber. Add NCST to the end of the part number.
Ex: E4-42-20-300NCST

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

16.4 ft (5 m) **E4-42-20-300-0**	**E-Chain®**
With 2 separators **382** assembled every 2nd link	**Interior Separation**
1 Set **E4-420-20-12P**	**Mounting Bracket**

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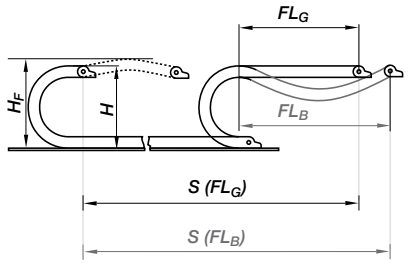
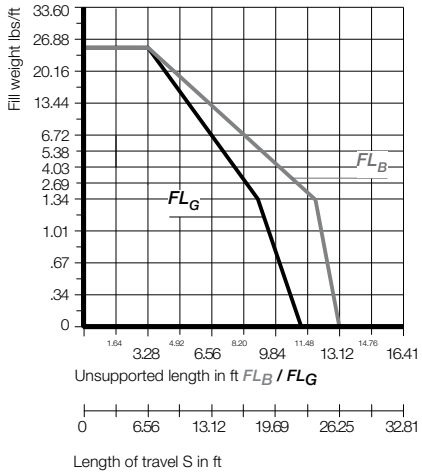
E-Chain System® E4-1
Series E4-42/H4-42/R4-42
Installation Dimensions

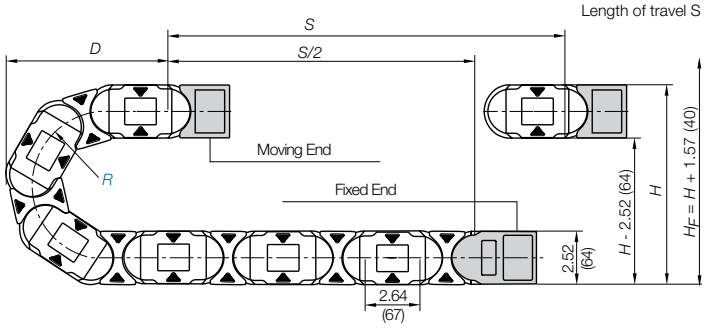
Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.64" (67 mm)
Links per ft (m): = 4.57 (15)
For center mount applications:
Chain length = $^{S}/_{2} + K$

The required clearance height: $H_F = H + 1.57$ in. (40 mm) (with 2.02 lbs/ft (3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

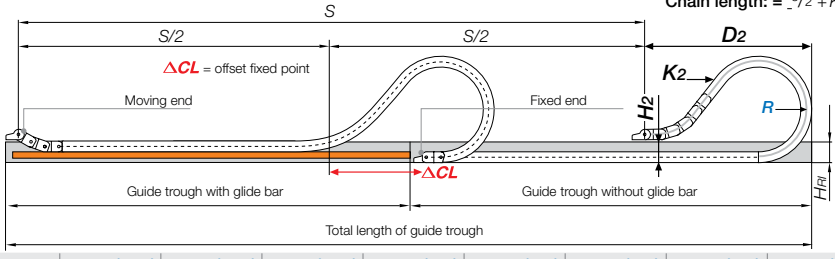
R	2.95 (075*)	3.94 (100*)	4.53 (115*)	4.92 (125)	5.91 (150)	6.30 (160)	6.69 (175)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H $^{0}_{+25}$	8.43 (214)	10.39 (264)	11.57 (294)	12.36 (314)	14.33 (364)	15.12 (384)	16.30 (414)	18.27 (464)	22.20 (564)	26.14 (664)	30.08 (764)
D	8.19 (208)	9.17 (233)	9.76 (248)	10.15 (258)	11.14 (283)	11.54 (293)	12.13 (308)	13.11 (333)	15.08 (383)	17.05 (433)	19.02 (483)
K	14.57 (370)	17.72 (450)	19.69 (500)	20.87 (530)	24.02 (610)	25.20 (640)	26.97 (685)	30.12 (765)	36.22 (920)	42.52 (1080)	48.62 (1235)

*Radius not available for E-Tubes

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 984 ft. (300 m)

For center mount applications:
Chain length: = $^{S}/_{2} + K_2$



R	2.95 (075*)	3.94 (100*)	4.53 (115*)	4.92 (125)	5.91 (150)	6.30 (160)	6.69 (175)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H2	-	-	9.06 (230)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)
D2 +25	-	-	17.13 (435)	18.70 (475)	22.44 (570)	24.53 (623)	26.38 (670)	30.71 (780)	40.55 (1030)	45.28 (1150)	59.06 (1500)
K2	-	-	29.02 (737)	31.65 (804)	36.93 (938)	42.20 (1072)	44.84 (1139)	52.76 (1340)	65.94 (1675)	76.50 (1943)	94.96 (2412)
ΔCL	-	-	7.87 (200)	9.06 (230)	11.81 (300)	14.96 (380)	14.96 (380)	18.11 (460)	25.98 (660)	28.74 (730)	40.55 (1030)

In case of travels between 26.3 and 29.4 ft (8 and 12 m) we recommend a longer unsupported length.

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

*Radius not available for E-Tubes

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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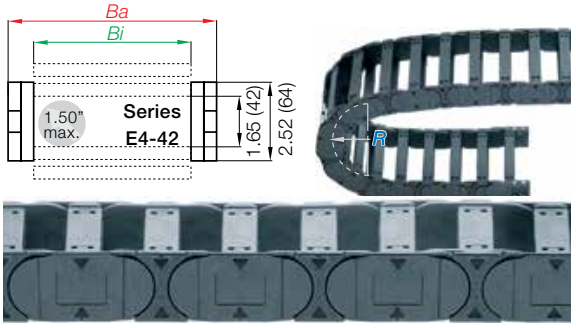
igus®

E-Chain System® E4-1
Series E4-42/H4-42/R4-42
Product Range

Telephone 1-800-521-2747
Fax 1-401-438-7270

Series E4-42 - E-Chain® with crossbars every link



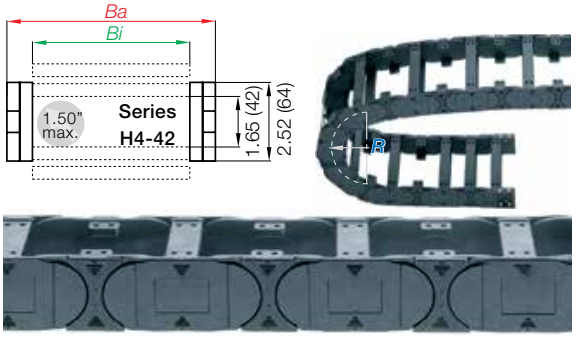
- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

E4-42- 400- 300- 0

- 0 – Color - Black
- 300 – Bending radius
- 400 – Width
- E4-42 – Series

Series H4-42 - E-Chain® with crossbars every other link



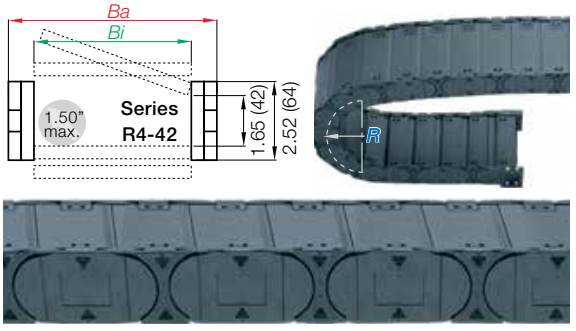
- Crossbars every other link Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

H4-42- 400- 300- 0

- 0 – Color - Black
- 300 – Bending radius
- 400 – Width
- H4-42 – Series

Series R4-42 - fully enclosed E-Tube



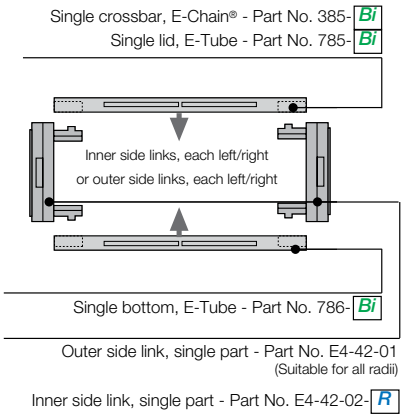
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

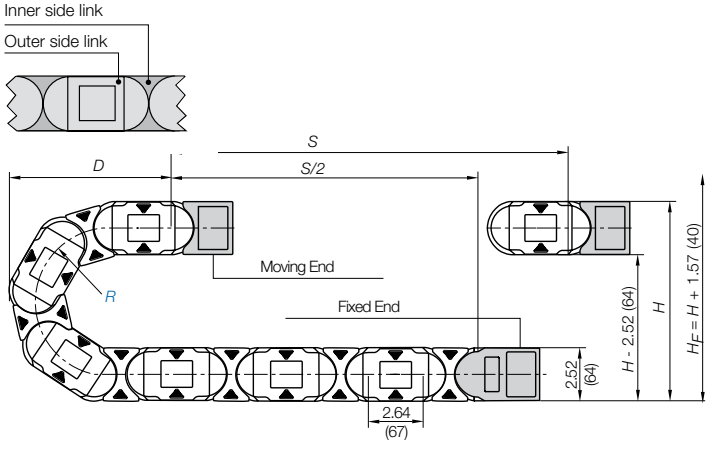
Part Number Structure

R4-42- 25- 300- 0

- 0 – Color - Black
- 300 – Bending radius
- 25 – Width
- R4-42 – Series

E-Chain® as separate parts, links and side plates





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E-Chain System® E4-1
Series E4-42/H4-42/R4-42
Product Range

igus®

E4-42
H4-42
R4-42

Supplement part number with required radius. Example: E4-42-400-300 -0
Pitch: 2.64 in. (67mm) per link, links/ft(m) = 4.57 (15)

Part Number					Bi	Ba	Weight		
Crossbars Every link	Crossbars Every other	Tube Version			in. (mm)	in. (mm)	E4-42 lbs/ft (kg/m)	H4-42 lbs/ft (kg/m)	R4-42 lbs/ft (kg/m)
E4-42-05-	H4-42-05	*R4-42-05-		-0	1.97 (50)	2.99 (76)	≈ 1.29 (1.92)	≈ 1.21 (1.80)	≈ 1.44 (2.15)
E4-42-06-	H4-42-06-			-0	2.68 (68)	3.70 (94)	≈1.36 (2.03)	≈ 1.25 (1.86)	–
E4-42-07-	H4-42-07	R4-42-07-		-0	2.95 (75)	3.98 (101)	≈ 1.38 (2.06)	≈ 1.26 (1.87)	≈ 1.53 (2.28)
E4-42-087-	H4-42-087-			-0	3.43 (87)	4.49 (114)	≈ 1.42 (2.12)	≈ 1.28 (1.90)	≈ 1.62 (2.41)
E4-42-097	H4-42-097			-0	3.82 (97)	4.72 (120)	≈ 1.43 (2.14)	≈ 1.29 (1.92)	–
E4-42-10-	H4-42-10-	R4-42-10-		-0	3.94 (100)	4.96 (126)	≈ 1.47 (2.19)	≈ 1.32 (1.96)	≈ 1.69 (2.52)
E4-42-11-	H4-42-11-	R4-42-11-		-0	4.25 (108)	5.28 (134)	≈ 1.50 (2.24)	≈ 1.32 (1.97)	≈ 1.73 (2.57)
E4-42-112-	H4-42-112-			-0	4.41(112)	5.47 (139)	≈ 1.51 (2.25)	≈ 1.32 (1.97)	–
E4-42-12-	H4-42-12-	R4-42-12-		-0	4.92 (125)	5.94 (151)	≈ 1.57 (2.34)	≈ 1.35 (2.01)	≈ 1.83 (2.73)
E4-42-137-	H4-42-137-			-0	5.39 (137)	6.46 (164)	≈ 1.61 (2.39)	≈ 1.37 (2.04)	–
E4-42-15-	H4-42-15-	R4-42-15-		-0	5.91 (150)	6.93 (176)	≈ 1.65 (2.46)	≈ 1.39 (2.07)	≈ 2.00 (2.98)
E4-42-162-	H4-42-162-			-0	6.38 (162)	7.44 (189)	≈ 1.67 (2.48)	≈ 1.40 (2.09)	–
E4-42-17-	H4-42-17-	R4-42-17-		-0	6.61 (168)	7.64 (194)	≈ 1.71 (2.55)	≈ 1.42 (2.12)	≈ 2.12 (3.15)
E4-42-18-	H4-42-18-			-0	6.89 (175)	7.91 (201)	≈ 1.73 (2.57)	≈ 1.43 (2.13)	–
E4-42-187-	H4-42-187-			-0	7.36 (187)	8.43 (214)	≈ 1.75 (2.61)	≈ 1.44 (2.15)	–
E4-42-20-	H4-42-20-	R4-42-20-		-0	7.87 (200)	8.90 (226)	≈ 1.83 (2.72)	≈ 1.48 (2.20)	≈ 2.32 (3.45)
E4-42-212-	H4-42-212-			-0	8.35 (212)	9.41 (239)	≈ 1.85 (2.76)	≈ 1.49 (2.22)	–
E4-42-23-	H4-42-23-			-0	8.86 (225)	9.88 (251)	≈ 1.90 (2.84)	≈ 1.52 (2.26)	–
E4-42-237-	H4-42-237-			-0	9.33 (237)	10.39 (264)	≈ 1.93 (2.87)	≈ 1.53 (2.28)	–
E4-42-25-	H4-42-25-	R4-42-25-		-0	9.84 (250)	10.87 (276)	≈ 2.00 (2.98)	≈ 1.57 (2.33)	≈ 2.86 (4.25)
E4-42-262-	H4-42-262-			-0	10.31 (262)	11.38 (289)	≈ 2.05 (3.05)	≈ 1.59 (2.37)	–
E4-42-28	H4-42-28-			-0	10.83 (275)	11.85 (301)	≈ 2.09 (3.11)	≈ 1.61 (2.40)	–
E4-42-29-	H4-42-29-			-0	11.30 (287)	12.36 (314)	≈ 2.11 (3.14)	≈ 1.62 (2.41)	–
E4-42-30-	H4-42-30-	R4-42-30-		-0	11.81 (300)	12.83 (326)	≈ 2.18 (3.24)	≈ 1.65 (2.46)	≈ 3.29 (4.89)
E4-42-312-	H4-42-312-			-0	12.28 (312)	13.35 (339)	≈ 2.19 (3.26)	≈ 1.66 (2.47)	–
E4-42-325-	H4-42-325-			-0	12.79 (325)	13.82 (351)	≈ 2.24 (3.34)	≈ 1.69 (2.52)	–
E4-42-337-	H4-42-337-			-0	13.27 (337)	14.33 (364)	≈ 2.28 (3.40)	≈ 1.71 (2.54)	–
E4-42-350-	H4-42-350-			-0	13.78 (350)	14.80 (376)	≈ 2.41 (3.59)	≈ 1.77 (2.64)	–
E4-42-362-	H4-42-362-			-0	14.25 (362)	15.31 (389)	≈ 2.47 (3.67)	≈ 1.80 (2.68)	–
E4-42-375-	H4-42-375-			-0	14.76 (375)	15.83 (402)	≈ 2.51 (3.73)	≈ 1.82 (2.71)	–
E4-42-387-	H4-42-387-			-0	15.24 (387)	16.30 (414)	≈ 2.55 (3.79)	≈ 1.84 (2.74)	–
E4-42-400	H4-42-400-			-0	15.75 (400)	16.77 (426)	≈ 2.58 (3.84)	≈ 1.85 (2.76)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: E4-42-400-300 -0

	075**	100**	115**	125	150	160	175	200	250	300	350
R	2.95 (075*)	3.94 (100*)	4.53 (115*)	4.92 (125)	5.91 (150)	6.30 (160)	6.69 (175)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H $^{-0}_{+20}$	8.43 (214)	10.39 (264)	11.57 (294)	12.36 (314)	14.33 (364)	15.12 (384)	16.30 (414)	18.27 (464)	22.20 (564)	26.14 (664)	30.08 (764)
D	8.19 (208)	9.17 (233)	9.76 (248)	10.15 (258)	11.14 (283)	11.54 (293)	12.13 (308)	13.11 (333)	15.08 (383)	17.05 (433)	19.02 (483)
K	14.57 (370)	17.72 (450)	19.69 (500)	20.87 (530)	24.02 (610)	25.20 (640)	26.97 (685)	30.12 (765)	36.22 (920)	42.52 (1080)	48.62 (1235)

** This radius is not available for the R4-42 Series
*Removable lid only, no hinged option
0 = Standard color black.
For other colors see Chapter 1

For wider chains see page 6.44.
For large diameter hoses see page 6.44.

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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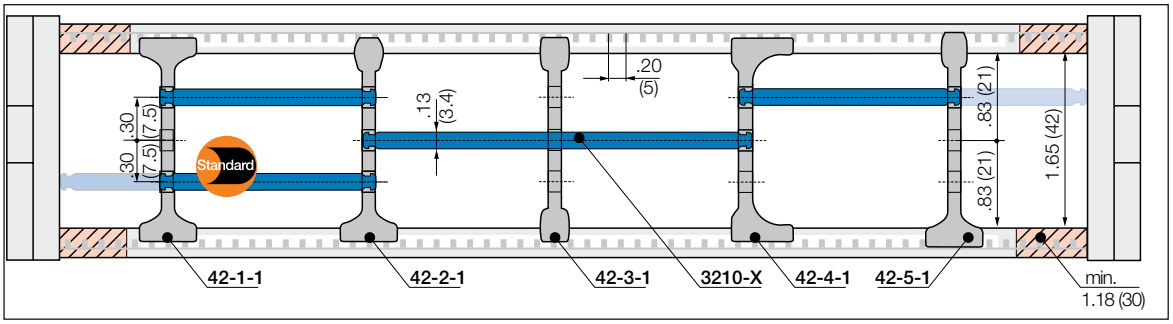
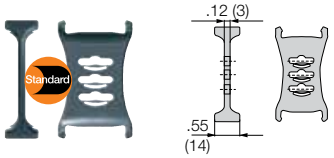
E-Chain System® E4-1
Series E4-42/H4-42/R4-42
Interior Separation - New Generation



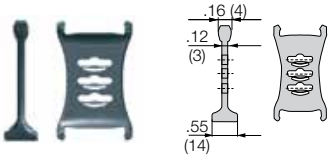
Note E-Tube: Please maintain a lateral spacing of 1.18" (30 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 42-1**
Assembled	**Part No. 42-1-1**

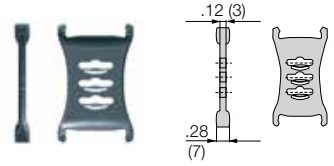
- **Standard separator 42-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator, narrow head

Unassembled	**Part No. 42-2**
Assembled	**Part No. 42-2-1**

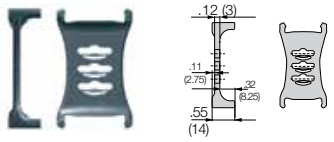
- **Separator 42-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 42-3**
Assembled	**Part No. 42-3-1**

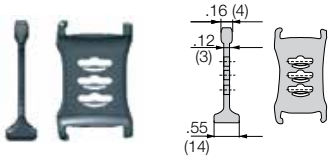
- **Separator 42-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, asymmetrical

Unassembled	**Part No. 42-4**
Assembled	**Part No. 42-4-1**

- **Separator 42-4**
  For side mounted applications
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

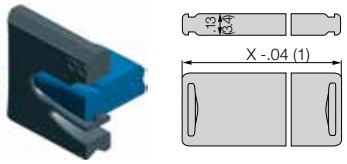


Separator, asymmetrical

Unassembled	**Part No. 42-5**
Assembled	**Part No. 42-5-1**

- **Separator 42-5**
  Locks safely in .30" (7.5 mm) increments
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be used at one height.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	4.92 (125)	**3200-125**	**3210-125**	8.86 (225)	**3200-225**	**3210-225**
2.95 (075)	**3200-75**	**3210-75**	5.91 (150)	**3200-150**	**3210-150**	9.84 (250)	**3200-250**	**3210-250**
3.94 (100)	**3200-100**	**3210-100**	6.89 (175)	**3200-175**	**3210-175**			
4.53 (115)	**3200-115**	**3210-115**	7.87 (200)	**3200-200**	**3210-200**			

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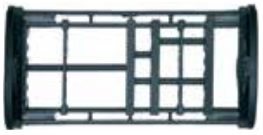
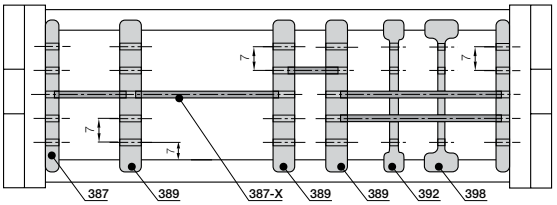
QuickSpec: http://www.igus.com/quickspec

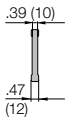
E-Chain System® E4-1
Series E4-42/H4-42/R4-42
Interior Separation - Previous Generation



Shelves and Separators

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements. ➤ **Design, Chapter 1** for layout recommendations.

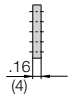




Split separator (chain only)

Unassembled	**Part No. T423**
Assembled	**Part No. T423M**

- **Split separator T423 for E-Chains®**
  This separator is ideal for subsequent shelving or the initial assembly of the E-Chain. Fast assembly and disassembly using a hinge/push mechanism. Enhances flexibility



Side Plate

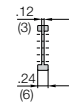
Unassembled	**Part No. 386**
Assembled	**Part No. 387**

- **Side plates 386**
  This component is used to form the basic pattern of a shelf system.

Vertical Separator

Unassembled	**Part No. 388**
Assembled	**Part No. 389**

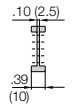
- **Vertical separator 388**
  This component is used to form the basic pattern of a shelf system.



Slotted Separators

Unassembled	**Part No. 391**
Assembled	**Part No. 392**

- **Closed Slotted separators 391**
  These are used for complex subdivisions. However, they cannot be retrofitted into an existing interior separation system without removing the shelves first.



Slotted Separators, Open

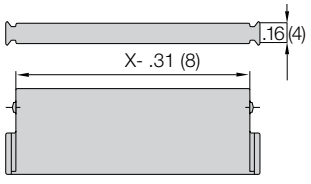
Unassembled	**Part No. 397**
Assembled	**Part No. 398**

- **Open slotted separator 397**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into the middle 3 slots only.

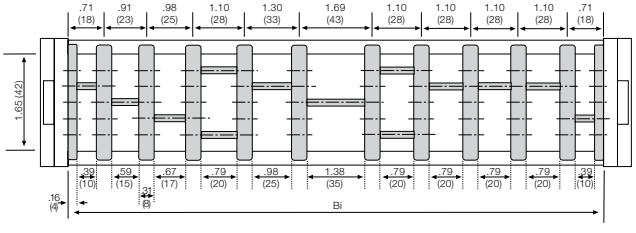
Width X in.	(mm)	Usable Width in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	.39	(10)	**386-18**	**387-18**
.91	(23)	.59	(15)	**386-23**	**387-23**
.98	(25)	.67	(17)	**386-25**	**387-25**
1.10	(28)	.79	(20)	**386-28**	**387-28**
1.30	(33)	.98	(25)	**386-33**	**387-33**
1.69	(43)	1.38	(35)	**386-43**	**387-43**
1.97	(50)	1.65	(42)	**386-50**	**387-50**
2.13	(54)	1.81	(46)	**386-54**	**387-54**
2.44	(62)	2.13	(54)	**386-62**	**387-62**
2.95	(75)	2.64	(67)	**386-75**	**387-75**
3.43	(87)	3.12	(87)	**386-87**	**387-87**
3.94	(100)	3.62	(92)	**386-100**	**387-100**
4.25	(108)	3.94	(100)	**386-108**	**387-108**
4.92	(125)	4.61	(117)	**386-125**	**387-125**
5.91	(150)	5.59	(142)	**386-150**	**387-150**
6.89	(175)	6.57	(167)	**386-175**	**387-175**
7.87	(200)	7.56	(192)	**386-200**	**387-200**
8.19	(208)	7.87	(200)	**386-208**	**387-208**

Shelves 386-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 5 different heights in .28" (7mm) increments



The diagram below is for reference purposes only. Multiple configurations are possible. To create your e-chain shelving cross section please see our online e-chain configurator. Call 1-800-521-2747 for assistance and/or go to igus.com click on the ***Products*** drop down menu, choose ***E-Chain Cable Carriers*** and on the next drop down menu simply click on ***e-chain Configurator***.



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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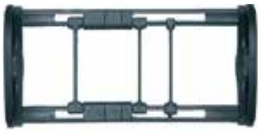
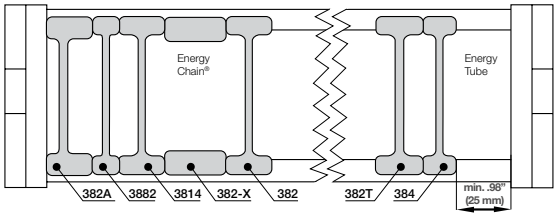
E-Chain System® E4-1
Series E4-42/H4-42/R4-42
Interior Separation - Previous Generation

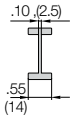


Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

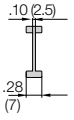
NOTE: Observe a lateral spacing of at least .98 in. (25mm) for E-Tubes





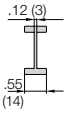
Separator (chain/tube)

Unassembled	**Part No. 380**
Assembled	**Part No. 381**



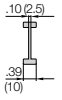
Separator (chain only)

Unassembled	**Part No. 3881**
Assembled	**Part No. 3882**



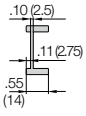
Vertical Separator (tubes only)

Part No. 380T	**Part No. 381T**



Separator (chain only)

Unassembled	**Part No. 383**
Assembled	**Part No. 384**



Asymmetric separator (chain only)

Unassembled	**Part No. 381A**
Assembled	**Part No. 382A**

Spacer (chain only)

Unassembled	**Part No. 381-XX**
Assembled	**Part No. 382-XX**

XX = width of the spacer

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
381 -10	382 -10	.39"	(10)
381 -15	382 -15	.59"	(15)
381 -20	382 -20	79"	(20)

- **Standard separator 380 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.
- **Vertical separator 3881 for E-Chains®**
  This separator features a narrow 7mm base for applications where a large number of small cables need to be individually separated.
- **Locking separator 380T for E-Tubes**
  It clamps to the fixed radius and remains free along the other radius to facilitate lid removal. When installing please ensure they are identically aligned.
- **Vertical separator 383 for E-Chains®**
  This separator features an increased retention force for applications exposed to very high humidity or extreme loads. It features asymmetric claws for the crossbar which results in the increased retention force.
- **Asymmetrical separator 381A for E-Chains®**
  This separator features an (14mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.
- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

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Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

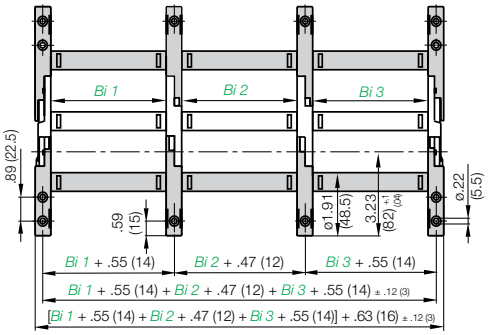
E-Chain System® E4-1
Series E4-42/H4-42/R4-42
Special Accessories

Part number example for E-Chain®
E4-42-10/20/10-200-0
E4-42-*Bi1*/*Bi2*/*Bi3*-R-0

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

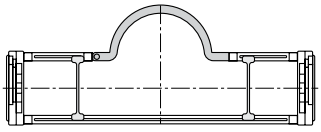
- For applications in which particularly high fill weights necessitate extremely wide E-Chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



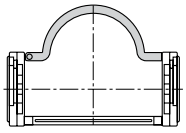
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

- Intended for cables and hoses with a maximum outer diameter of 4.53 in. (115 mm).
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



Round extender crossbar combined with standard snap-open crossbars.

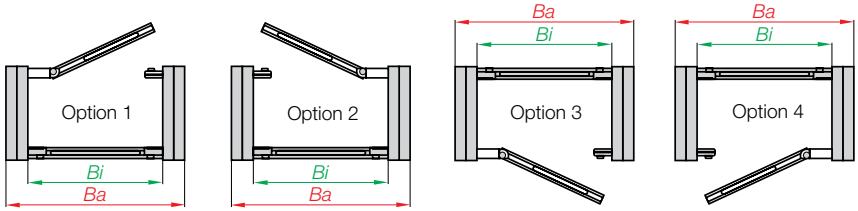


Attached directly to the side link.

Part No.	Max Ø Hose in. (mm)	Style	Installation Side Link	Combined with Snap-Open Crossbars
385-15-RHD115	4.13 (105)	Round	No	Yes
385-18-RD115	4.13 (105)	Round	Yes	No

Hinged crossbars

- Please consult igus® for design assistance
- Hinged crossbar: Part No. 385-02
- Snap-open crossbar (shortened): Bi - 1.48" (37.5 mm) Part No. 385-03 (smallest inner width Bi - 3.44" (87.5 mm)



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E4-1
Series E4-42/H4-42/R4-42
Mounting Brackets

Telephone 1-800-521-2747
Fax 1-401-438-7270

Standard

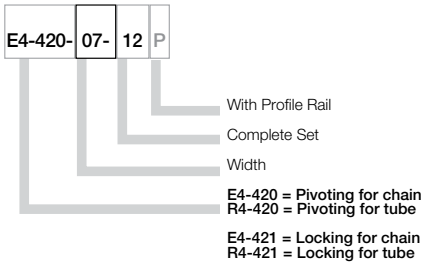
Option 1: pivoting

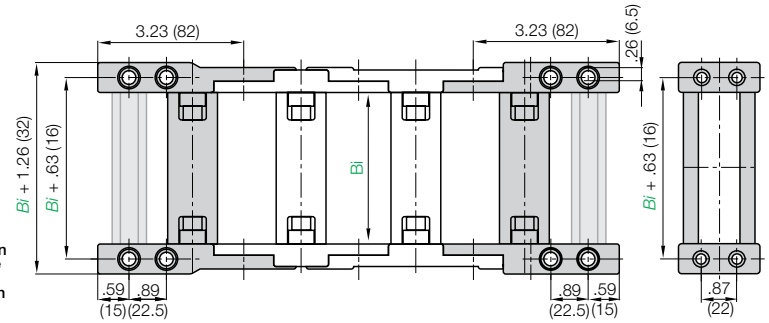
- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant

Option 2: locking

- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations

Part Number Structure





Due to the design of the E4-42 series chains, please note the following when ordering brackets:
Even number of links = full set, part number ending in **-12**; **Odd number of links =** 2 pieces, part number ending in **-1**

Part number examples are shown for pivoting brackets for E-Chain.
For locking brackets change part number to 421

Part No. Full Set (pivoting)
Series E4-42 or H4-42
E4-420-Width-12

Part No. Full Set (pivoting)
with profile rail
Series E4-42 or H4-42
E4-420-Width-12P

Part No. Full Set (pivoting)
Tube Series R4-42
R4-420-Width-12

Part No. Full Set (pivoting)
with Profile Rail
Tube Series R4-42
R4-420-Width-12P

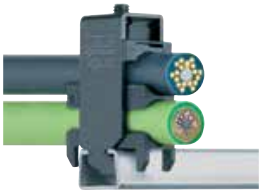
Width	Part No. Full Set chain/tube Pivoting	Locking		With Profile Rail	*Bi* in. (mm)
-05*	E4-420/R4-420	E4-421/R4-421	-05-12	P	1.97 (50)
-06	E4-420	E4-421	-06-12	P	2.68 (68)
-07	E4-420/R4-420	E4-421/R4-421	-07-12	P	2.95 (75)
-087	E4-420	E4-421/R4-421	-087-12	P	3.43 (87)
-097	E4-420	E4-421	-097-12	P	3.82 (97)
-10	E4-420/R4-420	E4-421/R4-421	-10-12	P	3.94 (100)
-11	E4-420/R4-420	E4-421/R4-421	-11-12	P	4.25 (108)
-112	E4-420	E4-421	-112-12	P	4.41 (112)
-12	E4-420/R4-420	E4-421/R4-421	-12-12	P	4.92 (125)
-137	E4-420	E4-421	-137-12	P	5.39 (137)
-15	E4-420/R4-420	E4-421/R4-421	-15-12	P	5.91 (150)
-162	E4-420	E4-421	-162-12	P	6.38 (162)
-17	E4-420/R4-420	E4-421/R4-421	-17-12	P	6.61 (168)
-18	E4-420	E4-421	-18-12	P	6.89 (175)
-187	E4-420	E4-421	-187-12	P	7.36 (187)
-20	E4-420/R4-420	E4-421/R4-421	-20-12	P	7.87 (200)

Width	Part No. Full Set chain/tube Pivoting	Locking		With Profile Rail	*Bi* in. (mm)
-212	E4-420	E4-421	-212-12	P	8.35 (212)
-23	E4-420	E4-421	-23-12	P	8.86 (225)
-237	E4-420	E4-421	-237-12	P	9.33 (237)
-25	E4-420/R4-420	E4-421/R4-421	-25-12	P	9.84 (250)
-262	E4-420	E4-421	-262-12	P	10.31 (262)
-28	E4-420	E4-421	-28-12	P	10.83 (275)
-29	E4-420	E4-421	-29-12	P	11.30 (287)
-30	E4-420/R4-420	E4-421/R4-421	-30-12	P	11.81 (300)
-312	E4-420	E4-421	-312-12	P	12.28 (312)
-325	E4-420	E4-421	-325-12	P	12.79 (325)
-337	E4-420	E4-421	-337-12	P	13.27 (337)
-350	E4-420	E4-421	-350-12	P	13.78 (350)
-362	E4-420	E4-421	-362-12	P	14.25 (362)
-375	E4-420	E4-421	-375-12	P	14.76 (375)
-387	E4-420	E4-421	-387-12	P	15.24 (387)
-400	E4-420	E4-421	-400-12	P	15.75 (400)

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E4-1
Series E4-42/H4-42/R4-42
Strain Relief

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10 in main catalog.

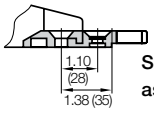
Chainfix Clip

Modular snap-on strain relief device

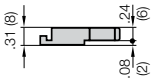
Chainfix clips are available for cable diameters ranging from .16" (4mm) to .94" (24 mm). They are for assembly on KMA mounting brackets, clip-on strain relief for cross-bars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10 in main catalog.**

Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(4-8)	CFC-08-M	CFC-08-C
.31-.47	(8-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

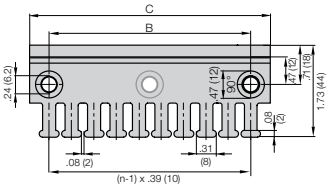


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

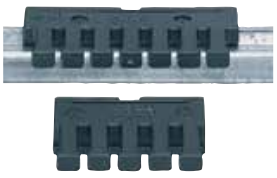
Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10 in main catalog.



Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10 in main catalog.

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Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E-Chain System® E4-1
Series E4-42/H4-42/R4-42
Strain Relief

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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Width of Crossbar
E4-42-**05**-200-0

B_{Ri}

Installation Part No.

-05	3.19 (81)	**93-50-200**
-06	3.90 (99)	**93-50-225**
-07	4.17 (106)	**93-50-225**
-087	4.69 (119)	**93-50-250**
-097	4.92 (125)	**93-50-250**
-10	5.16 (131)	**93-50-250**
-11	5.47 (139)	**93-50-250**
-112	5.67 (144)	**93-50-275**
-12	6.14 (156)	**93-50-275**
-137	6.65 (169)	**93-50-300**
-15	7.12 (181)	**93-50-300**
-162	7.64 (194)	**93-50-325**
-17	7.83 (199)	**93-50-325**
-18	8.11 (206)	**93-50-325**
-187	8.62 (219)	**93-50-350**
-20	9.09 (231)	**93-50-350**
-212	9.61 (244)	**93-50-375**
-23	10.08 (256)	**93-50-375**
-237	10.59 (269)	**93-50-400**
-25	11.06 (281)	**93-50-400**
-262	11.57 (294)	**93-50-425**
-28	12.05 (306)	**93-50-425**
-29	12.56 (319)	**93-50-450**
-30	13.03 (331)	**93-50-450**
-312	13.54 (344)	**93-50-475**
-325	14.01 (356)	**93-50-475**
-337	14.52 (369)	**93-50-500**
-350	15.00 (381)	**93-50-500**
-362	15.51 (394)	**93-50-525**
-375	16.02 (407)	**93-50-525**
-387	16.50 (419)	**93-50-550**
-400	16.97 (431)	**93-50-550**

Standard length profile rail

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 93-30
- 1/2 travel length of glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 93-50-XX

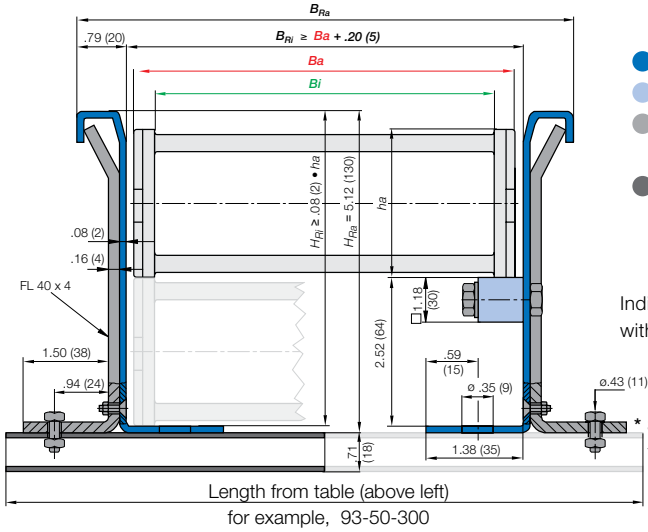
-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table below. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel

Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough,
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 93-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01

Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **93-50-XXX**
Example: 93-50-400 for 15.75 (400 mm) long profile rail

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

Installation sets as section connectors



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

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E4-56
H4-56
R4-56

igus®

E-Chain System® E4-1
Series E4-56/H4-56/R4-56

Price Index

Series E4-56

Series H4-56

Series R4-56

Special Options Available

Low noise version available with special rubber pads

Clean-Room — Cleanroom test upon request

EX — ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 328 ft (100 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 8.20 ft (2.5 m)
Rotary requires further calculation

Usage Guidelines

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High additional loads

- When an extremely low vibration E-Chain®/E-Tube is required
  ➤ **Series E6-52**
- When an economic one-sided snap-open E-Chain®/E-Tube is required
  ➤ **Series 14040/14140/R18840**

Features & Benefits

1. Wide, rounded plastic crossbars - cable friendly
2. Low-noise operation through integrated brake in the radial stop dog system
3. Hinged snap-open removable lids along the outer radius of the E-Tube
4. Straight run through inner-/outer-link design
5. The tongue and groove design provides greater lateral stability
6. QuickLock Crossbar, 450-X-Q, available for faster assembly/disassembly
7. New Interior separation kit available
8. Crossbars are removable along both radii
9. 15% more tensile strength (compared to the older E4 series), better unsupported length through improved stop dog system and vertical radial stops
10. Version NCST “without camber” simply by turning outer links without unnecessary rework

Also available without camber. Add NCST to the end of the part number.
Ex: E4-56-30-300NCST

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

9.84 ft (3 m) **E4-56-30-300-0**	**E-Chain®**
With 2 separators **411** assembled every 2nd link	**Interior Separation**
1 Set **E4-560-30-12P**	**Mounting Bracket**

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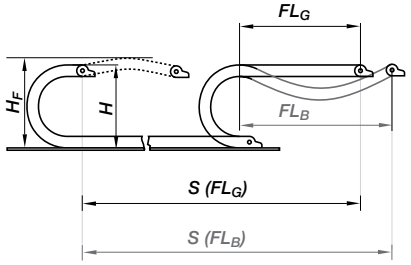
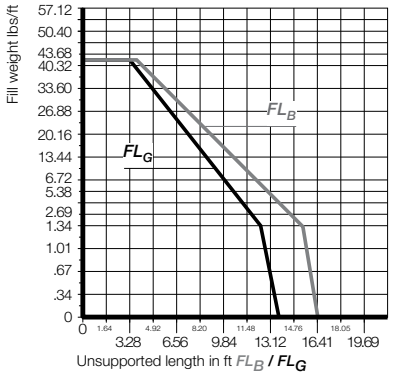
E-Chain System® E4-1
Series E4-56/H4-56/R4-56
Installation Dimensions

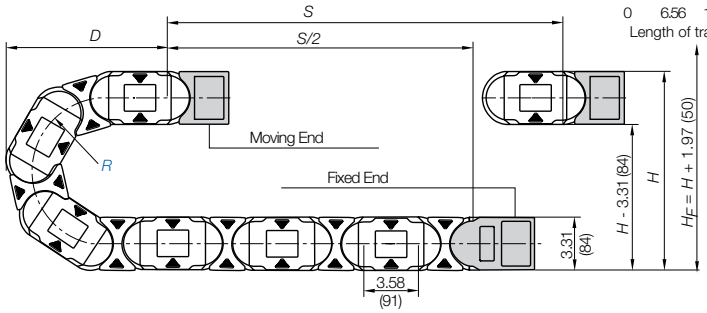
Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $\frac{S}{2} + K$

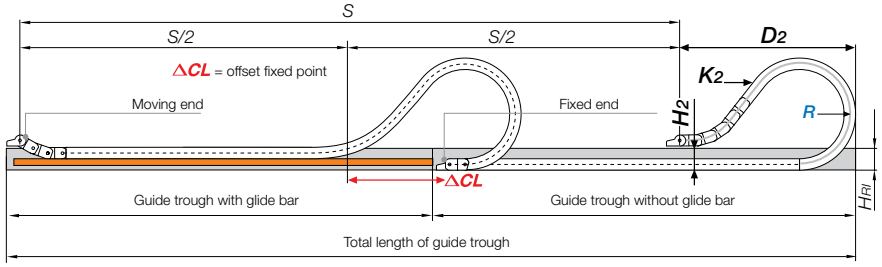
The required clearance height: $H_F = H + 1.96$ **in. (50 mm)** (with 2.02 lbs/ft (3 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.45 (240)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.68 (500)
H*+25	10.63 (270)	15.12 (384)	17.09 (434)	19.06 (484)	22.20 (564)	22.99 (584)	26.93 (684)	30.87 (784)	34.80 (884)	38.74 (984)	42.68 (1084)
D	12.36 (314)	12.95 (329)	13.94 (354)	14.92 (379)	16.50 (419)	16.89 (429)	18.86 (479)	20.83 (529)	22.79 (579)	24.76 (629)	26.73 (679)
K	24.02 (610)	25.79 (655)	28.94 (735)	32.09 (815)	37.01 (940)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.69 (1440)	62.99 (1600)	69.09 (1755)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 1,312.4 ft. (400m)

For center mount applications:
Chain length: = $\frac{S}{2} + K_2$



R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.45 (240)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.68 (500)
H2	13.94 (354)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)
D2	10.55 (268)	17.72 (450)	22.83 (580)	27.95 (710)	35.43 (900)	38.58 (980)	46.46 (1180)	56.69 (1440)	60.24 (1530)	66.93 (1700)	72.83 (1850)
K2	24.02 (610)	32.24 (819)	42.99 (1092)	50.16 (1274)	60.91 (1547)	64.49 (1638)	78.82 (2002)	89.57 (2275)	100.31 (2548)	114.64 (2912)	128.98 (3276)
ΔCL	-	6.26 (159)	10.20 (259)	14.54 (359)	20.04 (509)	22.01 (559)	27.91 (709)	35.79 (909)	37.76 (959)	41.69 (1059)	45.63 (1159)

In case of travels between 32.8 and 39.4 ft (10 and 12 m) we recommend a longer unsupported length.

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ **Chapter 1**

E4-56
H4-56
R4-56

2.20

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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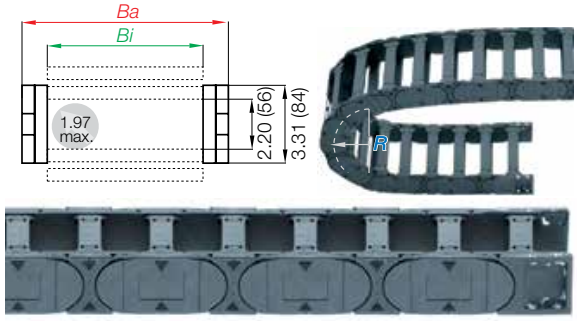
igus®

E-Chain System® E4-1
Series E4-56/H4-56/R4-56
Product Range

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Series E4-56 - E-Chain® with crossbars every link



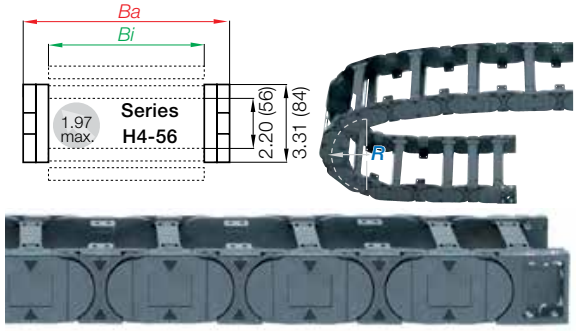
- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

E4-56- 13- 250- 0

- 0 – Color - Black
- 250 – Bending radius
- 13 – Width
- E4-56 – Series

Series H4-56 - E-Chain® with crossbars every other link

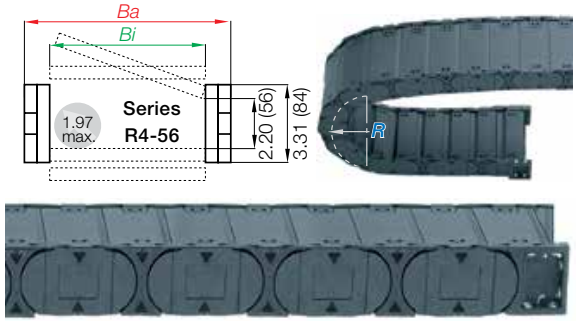


- Crossbars every other link
- Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

H4-56- 13- 250- 0

- 0 – Color - Black
- 250 – Bending radius
- 13 – Width
- H4-56 – Series

Series R4-56 - fully enclosed E-Tube



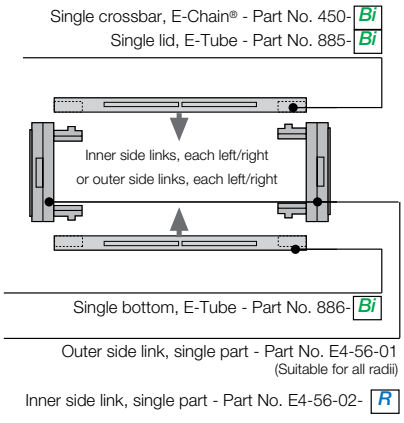
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

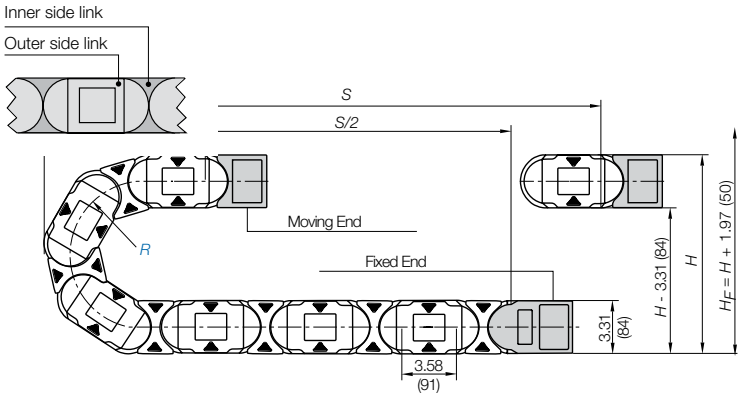
Part Number Structure

R4-56- 25- 250- 0

- 0 – Color - Black
- 250 – Bending radius
- 25 – Width
- R4-56 – Series

E-Chain® as separate parts, links and side plates





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E-Chain System® E4-1
Series E4-56/H4-56/R4-56
Product Range

Part Number						Weight		
Crossbars Every link	Crossbars Every other	Tube Version		*Bi* in. (mm)	*Ba* in. (mm)	E4-56 lbs/ft (kg/m)	H4-56 lbs/ft (kg/m)	R4-56 lbs/ft (kg/m)
E4-56-05-	H4-56-05-		-0	1.97 (50)	3.31 (84)	≈ 2.22 (3.30)	≈ 2.12 (3.16)	–
E4-56-06-	H4-56-06-		-0	2.56 (65)	3.90 (99)	≈ 2.28 (3.39)	≈ 2.15 (3.20)	–
E4-56-07-	H4-56-07-	*R4-56-07-	-0	2.95 (75)	4.29 (109)	≈ 2.33 (3.46)	≈ 2.18 (3.24)	≈ 2.63 (3.91)
E4-56-08-	H4-56-08-		-0	3.43 (87)	4.76 (121)	≈ 2.38 (3.54)	≈ 2.20 (3.28)	
E4-56-10-	H4-56-10-	R4-56-10-	-0	3.94 (100)	5.28 (134)	≈ 2.44 (3.63)	≈ 2.23 (3.32)	≈ 2.82 (4.20)
E4-56-11-	H4-56-11	-	-0	4.41 (112)	5.79 (147)	≈ 2.52 (3.75)	≈ 2.27 (3.38)	–
E4-56-12-	H4-56-12-	R4-56-12-	-0	4.92 (125)	6.26 (159)	≈ 2.57 (3.83)	≈ 2.30 (3.42)	≈ 3.06 (4.56)
E4-56-13-	H4-56-13-		-0	5.39 (137)	6.77 (172)	≈ 2.66 (3.96)	≈ 2.35 (3.49)	–
E4-56-15-	H4-56-15-	R4-56-15-	-0	5.91 (150)	7.24 (184)	≈ 2.69 (4.00)	≈ 2.36 (3.51)	≈ 3.32 (4.94)
E4-56-16-	H4-56-16-		-0	6.38 (162)	7.76 (197)	≈ 2.76 (4.11)	≈ 2.39 (3.56)	–
E4-56-17-	H4-56-17-	R4-56-17	-0	6.89 (175)	8.23 (209)	≈ 2.86 (4.25)	≈ 2.44 (3.63)	≈ 3.53 (5.25)
E4-56-18-	H4-56-18-		-0	7.36 (187)	8.74 (222)	≈ 2.93 (4.36)	≈ 2.48 (3.69)	–
E4-56-20-	H4-56-20-	R4-56-20-	-0	7.87 (200)	9.21 (234)	≈ 2.96 (4.41)	≈ 2.49 (3.71)	≈ 3.74 (5.56)
E4-56-21-	H4-56-21-		-0	8.35 (212)	9.72 (247)	≈ 3.01 (4.48)	≈ 2.52 (3.75)	–
E4-56-22-	H4-56-22-		-0	8.86 (225)	10.20 (259)	≈ 3.06 (4.55)	≈ 2.54 (3.78)	–
E4-56-23-	H4-56-23-		-0	9.33 (237)	10.71 (272)	≈ 3.13 (4.66)	≈ 2.58 (3.84)	–
E4-56-25-	H4-56-25-	R4-56-25-	-0	9.84 (250)	11.18 (284)	≈ 3.21 (4.77)	≈ 2.61 (3.89)	≈ 4.23 (6.29)
E4-56-26-	H4-56-26-		-0	10.31 (262)	11.69 (297)	≈ 3.27 (4.87)	≈ 2.65 (3.94)	–
E4-56-27-	H4-56-27-	R4-56-27-	-0	10.83 (275)	12.17 (309)	≈ 3.34 (4.97)	≈ 2.68 (3.99)	≈ 4.47 (6.65)
E4-56-28-	H4-56-28-		-0	11.30 (287)	12.68 (322)	≈ 3.38 (5.03)	≈ 2.70 (4.02)	–
E4-56-30-	H4-56-30-	R4-56-30-	-0	11.81 (300)	13.15 (334)	≈ 3.48 (5.18)	≈ 2.76 (4.10)	≈ 4.67 (6.95)
E4-56-31-	H4-56-31-		-0	12.28 (312)	13.66 (347)	≈ 3.50 (5.21)	≈ 2.76 (4.11)	–
E4-56-32-	H4-56-32-		-0	12.79 (325)	14.13 (359)	≈ 3.57 (5.32)	≈ 2.80 (4.17)	–
E4-56-33-	H4-56-33-		-0	13.27 (337)	14.65 (372)	≈ 3.66 (5.44)	≈ 2.84 (4.23)	–
E4-56-35-	H4-56-35-	R4-56-35-	-0	13.78 (350)	15.12 (384)	≈ 3.79 (5.64)	≈ 2.91 (4.33)	≈ 5.14 (7.65)
E4-56-36-	H4-56-36-		-0	14.25 (362)	15.63 (397)	≈ 3.73 (5.55)	≈ 2.88 (4.28)	–
E4-56-37-	H4-56-37-		-0	14.76 (375)	16.10 (409)	≈ 3.80 (5.65)	≈ 2.91 (4.33)	–
E4-56-38-	H4-56-38-		-0	15.24 (387)	16.61 (422)	≈ 3.87 (5.76)	≈ 2.95 (4.39)	–
E4-56-40-	H4-56-40-	R4-56-40-	-0	15.75 (400)	17.09 (434)	≈ 4.05 (6.03)	≈ 3.04 (4.52)	≈ 5.81 (8.65)
E4-56-41-	H4-56-41-		-0	16.22 (412)	17.60 (447)	≈ 4.00 (5.96)	≈ 3.01 (4.48)	–
E4-56-42-	H4-56-42-		-0	16.73 (425)	18.07 (459)	≈ 4.19 (6.23)	≈ 3.11 (4.63)	–
E4-56-43-	H4-56-43-		-0	17.20 (437)	18.58 (472)	≈ 4.09 (6.09)	≈ 3.06 (4.55)	–
E4-56-45-	H4-56-45-		-0	17.72 (450)	19.06 (484)	≈ 4.31 (6.42)	≈ 3.17 (4.72)	–
E4-56-46-	H4-56-46-	R4-56-46-	-0	18.19 (462)	19.57 (497)	≈ 4.28 (6.37)	≈ 3.15 (4.69)	≈ 6.13 (9.12)
E4-56-47-	H4-56-47-		-0	18.70 (475)	20.04 (509)	≈ 4.31 (6.41)	≈ 3.16 (4.71)	–
E4-56-48-	H4-56-48-		-0	19.17 (487)	20.55 (522)	≈ 4.48 (6.66)	≈ 3.25 (4.84)	–
E4-56-50-	H4-56-50-		-0	19.69 (500)	21.02 (534)	≈ 4.54 (6.76)	≈ 3.29 (4.89)	–
E4-56-51-	H4-56-51-		-0	20.16 (512)	21.54 (547)	≈ 4.48 (6.67)	≈ 3.25 (4.84)	–
E4-56-52-	H4-56-52-		-0	20.67 (525)	22.01 (559)	≈ 4.60 (6.84)	≈ 3.31 (4.93)	–
E4-56-53-	H4-56-53-		-0	21.14 (537)	22.52 (572)	≈ 4.66 (6.93)	≈ 3.34(4.97)	–
E4-56-55-	H4-56-55-		-0	21.65 (550)	22.99 (584)	≈ 4.95 (7.36)	≈ 3.48 (5.18)	–
E4-56-60-	H4-56-60-		-0	23.62 (600)	24.96 (634)	≈ 5.09 (7.58)	≈ 3.56 (5.30)	–

Choose from the radii below for all of the above sizes

Radius (mm) Example: E4-56-30-[300]-0

	135**	150	175	200	240	250	300	350	400	450	500
R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.45 (240)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.68 (500)
*H*** +25	13.94 (354)	15.12 (384)	17.09 (434)	19.06 (484)	22.20 (564)	22.99 (584)	26.93 (684)	30.87 (784)	34.80 (884)	38.74 (984)	42.68 (1084)
D	12.36 (314)	12.95 (329)	13.94 (354)	14.92 (379)	16.50 (419)	16.89 (429)	18.86 (479)	20.83 (529)	22.79 (579)	24.76 (629)	26.73 (679)
K	24.02 (610)	25.79 (655)	28.94 (735)	32.09 (815)	37.01 (940)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.69 (1440)	62.99 (1600)	69.09 (1755)

** This radius is not available for the R4-56 Series
*Removable lid only, no hinged option

0 = Standard color black. For other colors see Chapter 1
For wider chains see page 6.56. For large diameter hoses see page 6.56

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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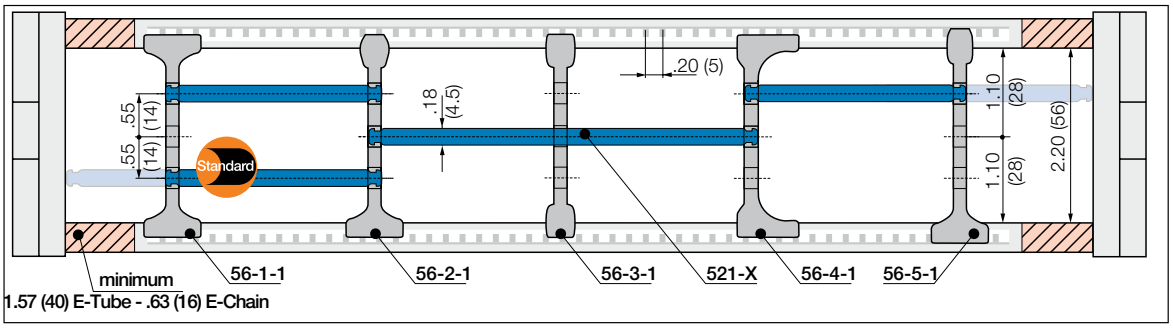
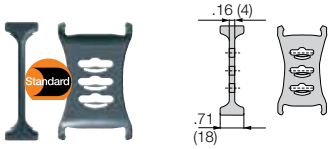
E-Chain System® E4-1
Series E4-56/H4-56/R4-56
Interior Separation - New Generation



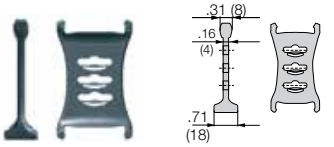
Note Please maintain a lateral spacing of 1.57" (40 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 56-1**
Assembled	**Part No. 56-1-1**

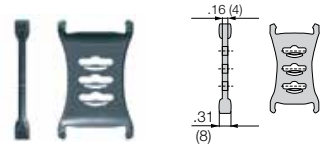
- **Standard separator 56-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator, narrow head

Unassembled	**Part No. 56-2**
Assembled	**Part No. 56-2-1**

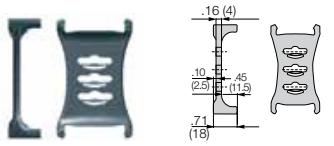
- **Separator 56-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 56-3**
Assembled	**Part No. 56-3-1**

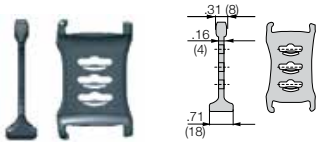
- **Separator 56-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, asymmetrical

Unassembled	**Part No. 56-4**
Assembled	**Part No. 56-4-1**

- **Separator 56-4**
  For side mounted applications
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

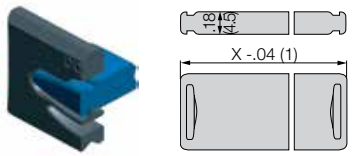


Separator, asymmetrical

Unassembled	**Part No. 56-5**
Assembled	**Part No. 56-5-1**

- **Separator 56-5**
  Locks safely in .30" (7.5 mm) increments
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 520-X**
Assembled	**Part No. 521-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**520-50**	**521-50**	5.91 (150)	**520-125**	**521-125**	11.81 (300)	**520-125**	**521-125**
2.56 (065)	**520-65**	**521-65**	6.89 (175)	**520-125**	**521-125**	13.78 (350)	**520-125**	**521-125**
2.95 (075)	**520-75**	**521-75**	7.87 (200)	**520-125**	**521-125**	14.76 (375)	**520-125**	**521-125**
3.94 (100)	**520-100**	**521-100**	8.86 (225)	**520-125**	**521-125**	15.24 (387)	**520-125**	**521-125**
4.92 (125)	**520-125**	**521-125**	9.84 (250)	**520-125**	**521-125**	17.723 (450)	**520-125**	**521-125**

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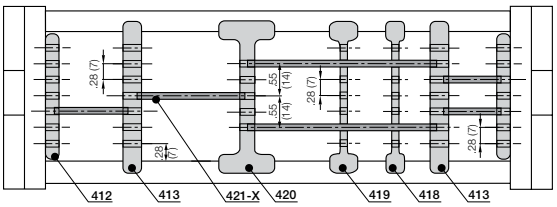
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

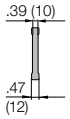
E-Chain System® E4-1
Series E4-56/H4-56/R4-56
Interior Separation - Previous Generation

Shelves and separators

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.

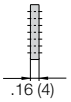




Split separator (chain only)

Unassembled	**Part No. T563**
Assembled	**Part No. T563M**

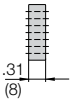
- **Split separator T563 for E-Chains®**
  This separator is ideal for subsequent shelving or the initial assembly of the E-Chain. Fast assembly and disassembly using a hinge/push mechanism. Enhances flexibility



Side plate

Unassembled	**Part No. 402**
Assembled	**Part No. 412**

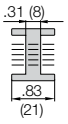
- **Side plates 402**
  This component is used to form the basic pattern of a shelf system.



Vertical separator

Unassembled	**Part No. 403**
Assembled	**Part No. 413**

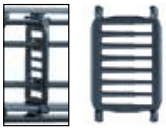
- **Vertical separator 403**
  This component is used to form the basic pattern of a shelf system.

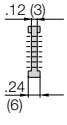


Locking vertical separator

Unassembled	**Part No. 410**
Assembled	**Part No. 420**

- **Locking vertical separator 410**
  This separator is slotted and able to be combined with shelves. For E-Chains® only

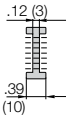




Slotted separators, closed

Unassembled	**Part No. 408**
Assembled	**Part No. 418**

- **Slotted separators 408**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.



Slotted separators, open

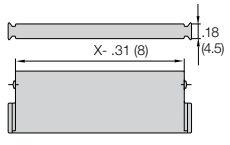
Unassembled	**Part No. 409**
Assembled	**Part No. 419**

- **Slotted separator 409**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 3 middle slots

Shelves 420-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled
.71 (18)	.39 (10)	**420-18**	**421-18**	2.95 (75)	2.64 (67)	**420-75**	**421-75**
.91 (23)	.59 (15)	**420-23**	**421-23**	3.46 (88)	3.15 (80)	**420-88**	**421-88**
.98 (25)	.67 (17)	**420-25**	**421-25**	3.94 (100)	3.62 (92)	**420-100**	**421-100**
1.10 (28)	.79 (20)	**420-28**	**421-28**	4.92 (125)	4.61(117)	**420-125**	**421-125**
1.30 (33)	.98 (25)	**420-33**	**421-33**	5.91 (150)	5.59(142)	**420-150**	**421-150**
1.69 (43)	1.38 (35)	**420-43**	**421-43**	6.89 (175)	6.57(167)	**420-175**	**421-175**
1.97 (50)	1.65 (42)	**420-50**	**421-50**	7.36 (187)	7.05(179)	**420-187**	**421-187**
2.44 (62)	2.13 (54)	**420-62**	**421-62**	7.87 (200)	7.56(192)	**420-200**	**421-200**



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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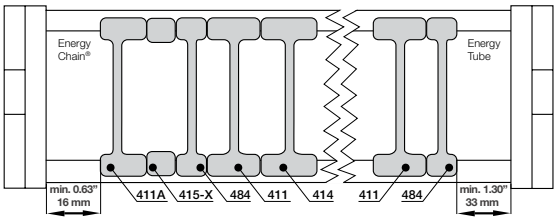
QuickSpec: http://www.igus.com/quickspec

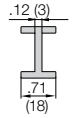
E-Chain System® E4-1
Series E4-56/H4-56/R4-56
Interior Separation - Previous Generation

Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. In standard configuration, a separator is installed every second chain link.

NOTE: Observe a lateral spacing of at least 1.26 in. (32mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates

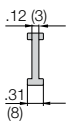




Vertical separator

Unassembled	**Part No. 401**
Assembled	**Part No. 411**

- **Standard separator 401 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design.



Vertical separator

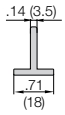
Unassembled	**Part No. 483**
Assembled	**Part No. 484**

- **Vertical separator 483 for E-Chains® and E-Tubes**
  This separator offers a narrow base for applications where a large number of small cables need to be individually separated.

Locking separator (chain only)

Unassembled	**Part No. 404**
Assembled	**Part No. 414**

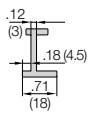
- **Locking separator 404 for E-Chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.



Locking separator (tube only)

Unassembled	**Part No. 406**
Assembled	**Part No. 416**

- **Locking separator 406 for E-Tubes**
  It features a single sided, secure fit, and can be placed on the lid or the bottom of the E-Tube. The single side locking design helps to eliminate difficulties in assembling the opposite cover or crossbar



Asymmetrical separator (chain only)

Unassembled	**Part No. 401A**
Assembled	**Part No. 411A**

- **Asymmetrical separator 401A for E-Chains®**
  This separator features an .71" (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

Spacer (chain only)

Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

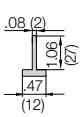
XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)	Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	415 -10	.39"	(10)	405 -30	415 -30	1.18"	(30)
405 -15	415 -15	.59"	(15)	405 -40	415 -40	1.57"	(40)
405 -20	415 -20	.79"	(20)				

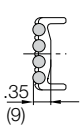
Center crossbar - for applications involving a very large number of thin cables This offers the option of subdividing the E-Chain® into upper and lower halves



Center crossbar

Unassembled	**Part No. 405**
Assembled	**Part No. 415**

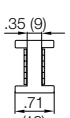
Rollclip - minimizes abrasion of particularly sensitive hoses or cables.The integrated rollers compensate for relative movement between the chain and the hose or cable.



Rollclip

Unassembled	**Part No. 489-27**
Assembled	**Part No. 490-27**

Roller separator - performs a similar function to the Rollclip, but doubles as a separator.



Center crossbar

Unassembled	**Part No. 429**
Assembled	**Part No. 430**

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E-Chain System® E4-1
Series E4-56/H4-56/R4-56
Special Accessories

igus®

E4-56
H4-56
R4-56

Part number example for E-Chain®

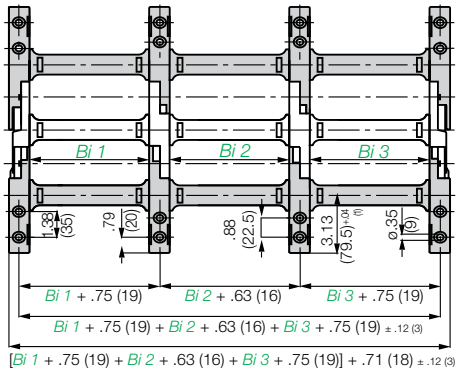
E4-56-10/20/10- 200 **-0**

E4-56-*Bi1*/*Bi2*/*Bi3*- *R* **-0**

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

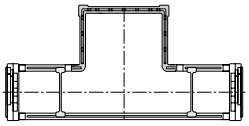
- For applications in which particularly high fill weights necessitate extremely wide E-Chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



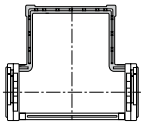
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

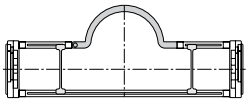
- Intended for cables and hoses with a maximum outer diameter of 9.65 in. (245 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



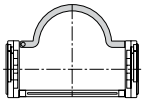
Square extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.



Round extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.

Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
450-15-RHD115	4.52 (115)	Round	No	Yes
450-17-RD115	4.52 (115)	Round	Yes	No
450-25-D150	5.91 (150)	Square	Yes	No
450-30-D200	7.09 (180)	Square	Yes	No
450-35-D250	7.68 (195)	Square	Yes	No
450-40-D300	9.65 (245)	Square	Yes	No
450-20-HD150	5.91 (150)	Square	No	Yes
450-25-HD200	7.09 (180)	Square	No	Yes
450-30-HD250	7.68 (195)	Square	No	Yes

E4 clip on cable binder

- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on E-Chains®
- The loops can be adjusted as needed
- Compatible with many E4 E-Chains®
- Economical
- One clip and one locking band are needed for each chain link

Part No.	Form
450-B12	Locking clip, comprised of a locking element
450-B12-200	Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E4-1
Series E4-56/H4-56/R4-56
Mounting Brackets

Telephone 1-800-521-2747
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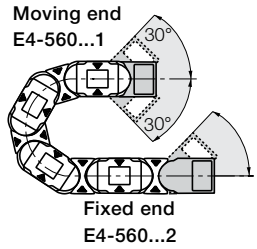
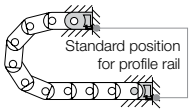
Option 1: pivoting

Standard

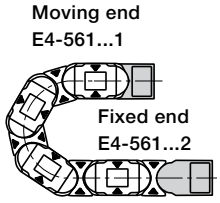
- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant

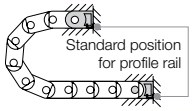




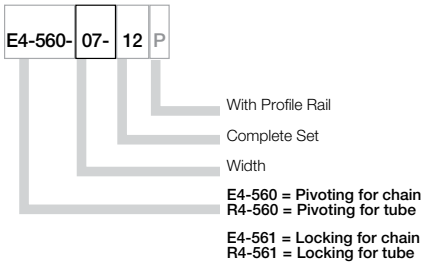
Option 2: locking

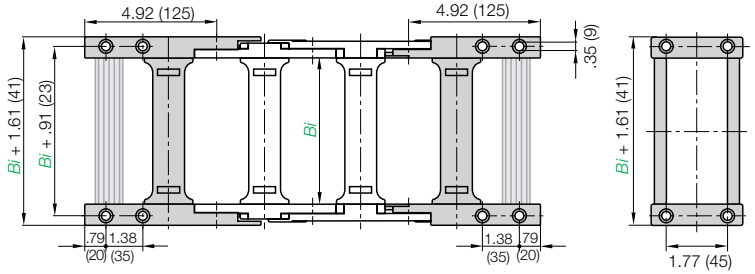
- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations





Part Number Structure





Due to the design of the E4-56 series chains, please note the following when ordering brackets:
Even number of links = full set, part number ending in **-12**
Odd number of links = 2 pieces, part number ending in **-1**

Part number examples are shown for pivoting brackets for E-Chain. For locking brackets change part number to 561

Part No. Full Set (pivoting)
Series E4-56 or H4-56
E4-560-Width-12

Part No. Full Set (pivoting)
with profile rail
Series E4-56 or H4-56
E4-560-Width-12P

Part No. Full Set (pivoting)
Tube Series R4-56
R4-560-Width-12

Part No. Full Set (pivoting)
with Profile Rail
Tube Series R4-56
R4-560-Width-12P

Width	Part No. Full Set chain/tube			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-05*	E4-560	E4-561	-05-12	P	1.97 (50)
-06	E4-560	E4-561	-06-12	P	2.56 (65)
-07	E4-560/R4-560	E4-561/R4-561	-07-12	P	2.95 (75)
-08	E4-560	E4-561	-08-12	P	3.43 (87)
-10	E4-560/R4-560	E4-561/R4-561	-10-12	P	3.94 (100)
-11	E4-560	E4-561	-11-12	P	4.41 (112)
-12	E4-560/R4-560	E4-561/R4-561	-12-12	P	4.92 (125)
-13	E4-560	E4-561	-13-12	P	5.39 (137)
-15	E4-560/R4-560	E4-561/R4-561	-15-12	P	5.91 (150)
-16	E4-560	E4-561	-16-12	P	6.38 (162)
-17	E4-560/R4-560	E4-561/R4-561	-17-12	P	6.89 (175)
-18	E4-560	E4-561	-18-12	P	7.36 (187)
-20	E4-560/R4-560	E4-561/R4-561	-20-12	P	7.87 (200)
-21	E4-560	E4-561	-21-12	P	8.35 (212)
-22	E4-560	E4-561	-22-12	P	8.86 (225)
-23	E4-560	E4-561	-23-12	P	9.33 (237)
-25	E4-560/R4-560	E4-561/R4-561	-25-12	P	9.84 (250)
-26	E4-560	E4-561	-26-12	P	10.31 (262)
-27	E4-560/R4-560	E4-561/R4-561	-27-12	P	10.83 (275)
-28	E4-560	E4-561	-28-12	P	11.30 (287)
-30	E4-560/R4-560	E4-561/R4-561	-30-12	P	11.81 (300)

Width	Part No. Full Set chain/tube			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-31	E4-560	E4-561	-31-12	P	12.28 (312)
-32	E4-560	E4-561	-32-12	P	12.79 (325)
-33	E4-560	E4-561	-33-12	P	13.27 (337)
-35	E4-560/R4-560	E4-561/R4-561	-35-12	P	13.78 (350)
-36	E4-560	E4-561	-36-12	P	14.25 (362)
-37	E4-560	E4-561	-37-12	P	14.76 (375)
-38	E4-560	E4-561	-38-12	P	15.24 (387)
-40	E4-560/R4-560	E4-561/R4-561	-40-12	P	15.75 (400)
-41	E4-560	E4-561	-41-12	P	16.22 (412)
-42	E4-560	E4-561	-42-12	P	16.73 (425)
-43	E4-560	E4-561	-43-12	P	17.20 (437)
-45	E4-560	E4-561	-45-12	P	17.72 (450)
-46	E4-560/R4-560	E4-561/R4-561	-46-12	P	18.19 (462)
-47	E4-560	E4-561	-47-12	P	18.70 (475)
-48	E4-560	E4-561	-48-12	P	19.17 (487)
-50	E4-560	E4-561	-50-12	P	19.69 (500)
-51	E4-560	E4-561	-51-12	P	20.16 (512)
-52	E4-560	E4-561	-52-12	P	20.67 (525)
-53	E4-560	E4-561	-53-12	P	21.14 (537)
-55	E4-560	E4-561	-55-12	P	21.65 (550)
-60	E4-560	E4-561	-60-12	P	23.62 (600)

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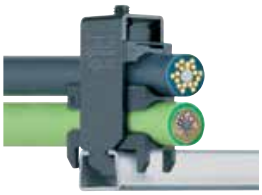
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E4-1
Series E4-56/H4-56/R4-56
Strain Relief

Chainfix clamps for the profile rail



For more information please refer to strain relief section of Chapter 10 in main catalog.

igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(6 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

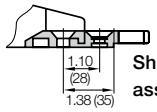
Chainfix Clip

Modular snap-on strain relief device

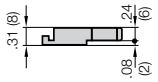
Chainfix clips are available for cable diameters ranging from .16" (4mm) to .94" (24 mm). They are for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10 in main catalog.**

Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(4-8)	CFC-08-M	CFC-08-C
.31-.47	(8-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

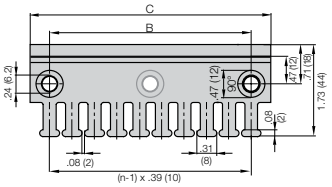


Single tiewrap plate

Option 1: Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10 in main catalog.

Option 2: Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10 in main catalog.

Option 3: Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
4550-ZS	5	1.89	(48)
4575-ZS	7	2.91	(74)

For more information please refer to strain relief section of Chapter 10

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E4-1
Series E4-56/H4-56/R4-56
Guide Trough

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Width of Crossbar
E4-56-**05**-200-0

B_{Ri}

	B_{Ri}	Installation Part No.
-05	3.50 (89)	*
-06	4.09 (104)	94-50-225
-07	4.49 (114)	94-50-225
-08	5.04 (128)	94-50-250
-10	5.47 (139)	94-50-250
-11	5.98 (152)	94-50-275
-12	6.46 (164)	94-50-275
-13	6.97 (177)	94-50-300
-15	7.44 (189)	94-50-300
-16	7.95 (202)	94-50-325
-17	8.42 (214)	94-50-325
-18	8.94 (227)	94-50-350
-20	9.41 (239)	94-50-350
-21	9.92 (252)	94-50-375
-22	10.39 (264)	94-50-375
-23	10.91 (277)	94-50-400
-25	11.38 (289)	94-50-400
-26	11.89 (302)	94-50-425
-27	12.36 (314)	94-50-425
-28	12.87 (327)	94-50-450
-30	13.35 (339)	94-50-450
-31	13.86 (352)	94-50-475
-32	14.33 (364)	94-50-475
-33	14.84 (377)	94-50-500
-35	15.31 (389)	94-50-500
-36	15.82 (402)	94-50-525
-37	16.30 (414)	94-50-525
-38	16.81 (427)	94-50-550
-40	17.28 (439)	94-50-550
-41	17.79 (452)	94-50-575
-42	18.27 (464)	94-50-575
-43	18.78 (477)	94-50-600
-45	19.25 (489)	94-50-600
-46	19.76 (502)	94-50-625
-47	20.24 (514)	94-50-625
-48	20.75 (527)	94-50-650
-50	21.22 (539)	94-50-650
-51	21.73 (552)	94-50-675
-52	22.20 (564)	94-50-675
-53	22.72 (577)	94-50-700
-55	23.19 (589)	94-50-700
-60	25.16 (639)	94-50-750

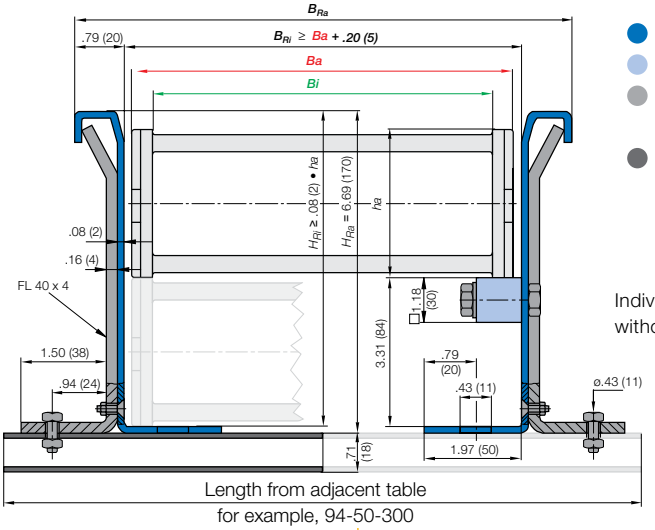
Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required.

- Full travel length of guide trough
  Part No. 94-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 94-50-XX

.XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2m). The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center mounted

Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 94-30
= 13 sections of 6.56 ft (2 m) glide bars
Part No. 93-01
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
94-50-XXX
Example:
94-50-400 for 15.75 (400 mm) long profile rail



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

Standard length profile rail

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

Installation sets as section connectors

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E-Chain System® E4-1
Series E4-56/H4-56/R4-56

igus®

E4-56
H4-56
R4-56

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E4-80
H4-80
R4-80

igus®

E-Chain System® E4-1
Series E4-80/H4-80/R4-80

Price Index

Series E4-80

Series H4-80

Series R4-80

Special Options Available

Low noise version available with special rubber pads

Clean-Room — Cleanroom test upon request

EX — ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 394 ft (120 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 9.84 ft (3 m)
Rotary requires further calculation

Usage Guidelines

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High additional loads

- When an extremely low vibration E-Chain®/E-Tube is required
  ➤ **Series E6-80**
- When an economic one-sided snap-open E-Chain®/E-Tube is required
  ➤ **Series 15050/15150/R19850**

Features & Benefits

1. Wide, rounded plastic crossbars - cable friendly
2. Low-noise operation through integrated brake in the radial stop dog system
3. Hinged snap-open removable lids along the outer radius of the E-Tube
4. Straight run through inner-/outer-link design
5. The tongue and groove design provides greater lateral stability
6. QuickLock Crossbar, 450-X-Q, available for faster assembly/disassembly
7. New Interior separation kit available
8. Crossbars are removable along both radii
9. 15% more tensile strength (compared to the older E4 series), better unsupported length through improved stop dog system and vertical radial stops
10. Version NCST “without camber” simply by turning outer links without unnecessary rework

Also available without camber. Add NCST to the end of the part number.
Ex: E4-80-30-300NCST

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

16.4 ft (5 m) **E4-80-30-300-0**	**E-Chain®**
With 2 separators **511** assembled every 2nd link	**Interior Separation**
1 Set **E4-800-30-12P**	**Mounting Bracket**

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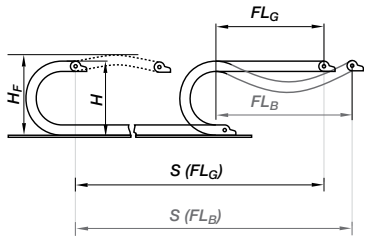
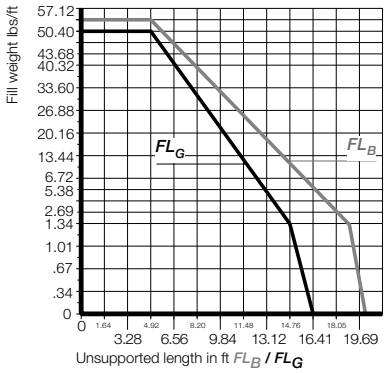
E-Chain System® E4-1
Series E4-80/H4-80/R4-80
Installation Dimensions

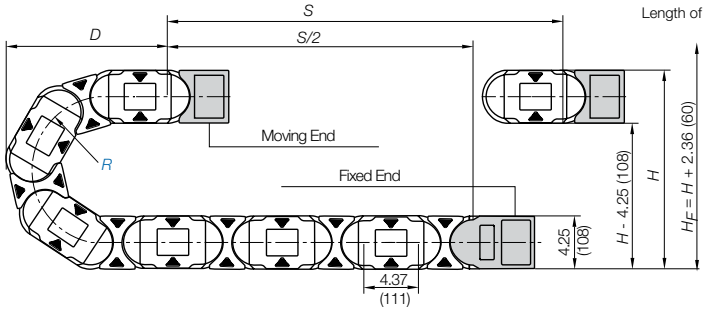
Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 4.37" (111 mm)
Links per ft (m): = 2.75 (9)
For center mount applications:
Chain length = $_{S}/_{2} + K$

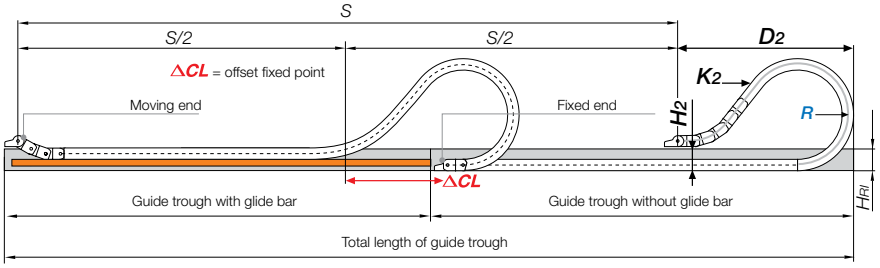
The required clearance height: $H_F = H + 2.36$ **in. (60 mm)** (with 2.02 lbs/ft (3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)	21.65 (550)	23.62 (600)	39.37 (1000)
H_{-0}^{+25}	16.06 (408)	20.00 (508)	23.94 (608)	27.87 (708)	31.81 (808)	35.75 (908)	43.62 (1108)	47.56 (1208)	51.50 (1308)	82.99 (2108)
D	14.61 (371)	16.57 (421)	18.54 (471)	20.51 (521)	22.48 (571)	24.45 (621)	28.38 (721)	30.35 (771)	32.32 (821)	48.07 (1221)
K	27.36 (695)	33.66 (855)	39.76 (1010)	45.87 (1165)	52.17 (1325)	58.27 (1480)	70.67 (1795)	76.77 (1950)	83.07 (2110)	132.48 (3365)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 1,312 ft. (400m)

For center mount applications:
Chain length: = $_{S}/_{2} + K_2$



R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)	21.65 (550)	23.62 (600)	39.37 (1000)
H_2	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	-	-	-
$D_{2\ +25}$	21.65 (550)	31.50 (800)	39.37 (1000)	47.24 (1200)	57.09 (1450)	62.99 (1600)	82.68 (2100)	-	-	-
K_2	35.04 (890)	52.36 (1330)	65.55 (1665)	78.74 (2000)	91.73 (2330)	104.72 (2660)	135.43 (3440)	-	-	-
ΔCL	7.44 (189)	15.61 (389)	21.22 (539)	27.13 (689)	35.00 (889)	38.94 (989)	54.69 (1389)	-	-	-

In case of travels between 13 and 32.8 ft (4 and 10 m) we recommend a longer unsupported length.

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
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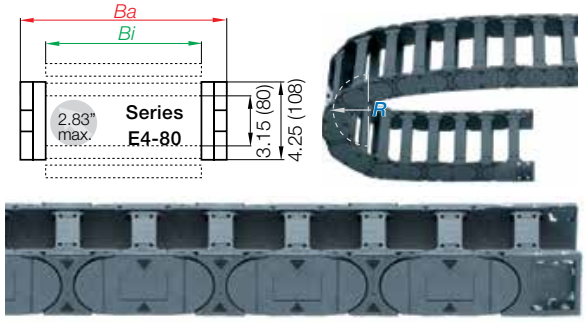
igus®

E-Chain System® E4-1
Series E4-80/H4-80/R4-80
Product Range

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Series E4-80 - E-Chain® with crossbars every link

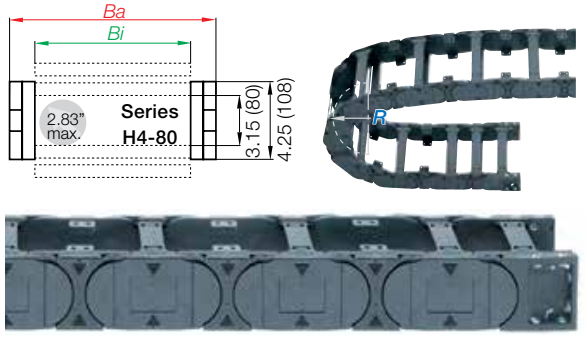


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

E4-80- 30- 300- 0
- 0 – Color - Black
- 300 – Bending radius
- 30 – Width
- E4-80 – Series

Series H4-80 - E-Chain® with crossbars every other link

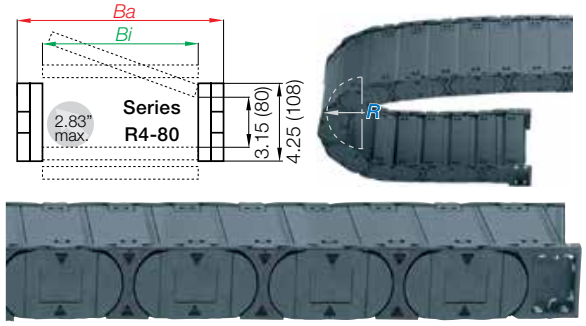


- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

H4-80- 30- 300- 0
- 0 – Color - Black
- 300 – Bending radius
- 30 – Width
- H4-80 – Series

Series R4-80 - fully enclosed E-Tube

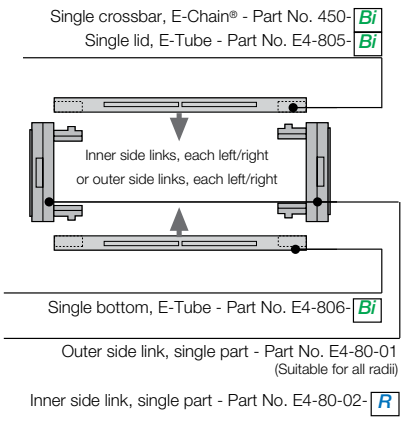


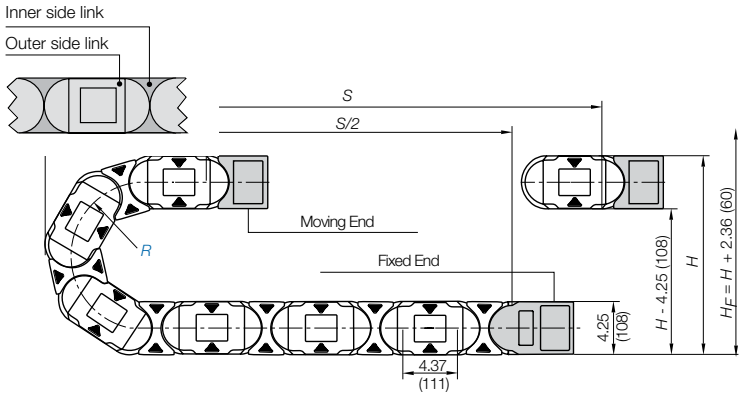
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

Part Number Structure

R4-80- 30- 300- 0
- 0 – Color - Black
- 300 – Bending radius
- 30 – Width
- R4-80 – Series

E-Chain® as separate parts, links and side plates





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E-Chain System® E4-1
Series E4-80/H4-80/R4-80

Supplement part number with required radius. Example: E4-80-30-300-0
Pitch: 4.37 in. (91mm) per link links/ft (m) = 2.75 (9)

Part Number						Weight		
Crossbars Every link	Crossbars Every other	Tube Version		*Bi* in. (mm)	*Ba* in. (mm)	E4-80 lbs/ft (kg/m)	H4-80 lbs/ft (kg/m)	R4-80 lbs/ft (kg/m)
E4-80-05-	H4-80-05-		-0	1.97 (50)	3.94 (100)	≈ 3.59 (5.34)	≈ 3.51 (5.22)	–
E4-80-06-	H4-80-06-		-0	2.56 (65)	4.53 (115)	≈ 3.64 (5.41)	≈ 3.53 (5.26)	–
E4-80-07-	H4-80-07-		-0	2.95 (75)	4.92 (125)	≈ 3.68 (5.47)	≈ 3.55 (5.29)	–
E4-80-08-	H4-80-08-		-0	3.43 (87)	5.39 (137)	≈ 3.74 (5.56)	≈ 3.57 (5.32)	–
E4-80-10-	H4-80-10-		-0	3.94 (100)	5.91 (150)	≈ 3.77 (5.61)	≈ 3.60 (5.36)	–
E4-80-11-	H4-80-11		-0	4.41 (112)	6.42 (163)	≈ 3.84 (5.71)	≈ 3.63 (5.40)	–
E4-80-12-	H4-80-12-		-0	4.92 (125)	6.89 (175)	≈ 3.88 (5.77)	≈ 3.66 (5.44)	–
E4-80-13-	H4-80-13-		-0	5.39 (137)	7.40 (188)	≈ 3.95 (5.88)	≈ 3.69 (5.49)	–
E4-80-15-	H4-80-15-	R4-80-15-	-0	5.91 (150)	7.87 (200)	≈ 3.97 (5.91)	≈ 3.70 (5.51)	≈ 6.86 (4.52)
E4-80-16-	H4-80-16-		-0	6.38 (162)	8.39 (213)	≈ 4.03 (6.00)	≈ 3.73 (5.55)	–
E4-80-17-	H4-80-17-		-0	6.89 (175)	8.86 (225)	≈ 2.76 (6.11)	≈ 3.77 (5.61)	–
E4-80-18-	H4-80-18-		-0	7.36 (187)	9.37 (238)	≈ 4.17 (6.20)	≈ 3.80 (5.65)	–
E4-80-20-	H4-80-20-	R4-80-20-	-0	7.87 (200)	9.84 (250)	≈ 4.20 (6.25)	≈ 3.82 (5.68)	≈ 6.86 (7.23)
E4-80-21-	H4-80-21-		-0	8.35 (212)	10.35 (263)	≈ 4.23 (6.31)	≈ 3.84 (5.71)	–
E4-80-22-	H4-80-22-		-0	8.86 (225)	10.83 (275)	≈ 4.27 (6.36)	≈ 3.85 (5.73)	–
E4-80-23-	H4-80-23-		-0	9.33 (237)	11.34 (288)	≈ 4.33 (6.45)	≈ 3.88(5.78)	–
E4-80-25-	H4-80-25-	R4-80-25-	-0	9.84 (250)	11.81 (300)	≈ 4.39 (6.54)	≈ 3.91 (5.82)	≈ 5.42 (8.06)
E4-80-26-	H4-80-26-		-0	10.31 (262)	12.32 (313)	≈ 4.45 (6.62)	≈ 3.94 (5.86)	–
E4-80-27-	H4-80-27-		-0	10.83 (275)	12.80 (325)	≈ 4.50 (6.70)	≈ 3.96 (5.90)	–
E4-80-28-	H4-80-28-		-0	11.30 (287)	13.31 (338)	≈ 4.54 (6.75)	≈ 3.98 (5.93)	–
E4-80-30-	H4-80-30-	R4-80-30-	-0	11.81 (300)	13.78 (350)	≈ 4.62 (6.87)	≈ 4.03 (5.99)	≈ 5.87 (8.73)
E4-80-31-	H4-80-31-		-0	12.28 (312)	14.29 (363)	≈ 4.64 (6.90)	≈ 4.03 (6.00)	–
E4-80-32-	H4-80-32-		-0	12.79 (325)	14.76 (375)	≈ 4.70 (6.99)	≈ 4.07 (6.05)	–
E4-80-33-	H4-80-33-		-0	13.27 (337)	15.28 (388)	≈ 4.76 (7.09)	≈ 4.10 (6.10)	–
E4-80-35-	H4-80-35-	R4-80-35-	-0	13.78 (350)	15.75 (400)	≈ 4.87 (7.25)	≈ 4.15 (6.18)	≈ 6.36 (9.47)
E4-80-36-	H4-80-36-		-0	14.25 (362)	16.26 (413)	≈ 4.82 (7.18)	≈ 2.53 (6.14)	–
E4-80-37-	H4-80-37-		-0	14.76 (375)	16.73 (425)	≈ 4.88 (7.26)	≈ 4.15 (6.18)	–
E4-80-38-	H4-80-38-		-0	15.24 (387)	17.24 (438)	≈ 4.94 (7.35)	≈ 4.19 (6.23)	–
E4-80-40-	H4-80-40-	R4-80-40-	-0	15.75 (400)	17.72 (450)	≈ 5.09 (7.57)	≈ 4.26 (6.34)	≈ 6.86 (10.21)
E4-80-41-	H4-80-41-		-0	16.22 (412)	18.23 (463)	≈ 5.05 (7.51)	≈ 4.24 (6.31)	–
E4-80-42-	H4-80-42-		-0	16.73 (425)	18.70 (475)	≈ 5.21 (7.75)	≈ 4.32 (6.43)	–
E4-80-43-	H4-80-43-		-0	17.20 (437)	19.21 (488)	≈ 5.12 (7.62)	≈ 4.27 (6.36)	–
E4-80-45-	H4-80-45-		-0	17.72 (450)	19.69 (500)	≈ 5.30 (7.89)	≈ 4.37 (6.50)	–
E4-80-46-	H4-80-46-	R4-80-46-	-0	18.19 (462)	20.20 (513)	≈ 5.27 (7.85)	≈ 4.35 (6.48)	≈ 7.36 (10.96)
E4-80-47-	H4-80-47-		-0	18.70 (475)	20.67 (525)	≈ 5.29 (7.88)	≈ 4.36 (6.49)	–
E4-80-48-	H4-80-48-		-0	19.17 (487)	21.19 (538)	≈ 5.44 (8.09)	≈ (4.43 6.60)	–
E4-80-50-	H4-80-50-		-0	19.69 (500)	21.65 (550)	≈ 5.44 (8.09)	≈ 4.43 (6.60)	–
E4-80-51-	H4-80-51-		-0	20.16 (512)	22.16 (563)	≈ 5.49 (8.17)	≈ 4.46 (6.63)	–
E4-80-52-	H4-80-52-		-0	20.67 (525)	22.64 (575)	≈ 5.54 (8.24)	≈ 4.48 (6.67)	–
E4-80-53-	H4-80-53-		-0	21.14 (537)	23.15 (588)	≈ 5.58 (8.31)	≈ 4.51 (6.71)	–
E4-80-55-	H4-80-55-		-0	21.65 (550)	23.62 (600)	≈ 5.82 (8.66)	≈ 4.62 (6.88)	–
E4-80-60-	H4-80-60-		-0	23.62 (600)	25.59 (650)	≈ 5.94 (8.84)	≈ 4.68 (6.97)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: E4-80-30-300-0

	150	200	250	300	350	400	500	550	600	1000
R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)	21.65 (550)	23.62 (600)	39.37 (1000)
H^{0}_{+25}	16.06 (408)	20.00 (508)	23.94 (608)	27.87 (708)	31.81 (808)	35.75 (908)	43.62 (1108)	47.56 (1208)	51.50 (1308)	82.99 (2108)
D	14.61 (371)	16.57 (421)	18.54 (471)	20.51 (521)	22.48 (571)	24.45 (621)	28.38 (721)	30.35 (771)	32.32 (821)	48.07 (1221)
K	27.36 (695)	33.66 (855)	39.76 (1010)	45.87 (1165)	52.17 (1325)	58.27 (1480)	70.67 (1795)	76.77 (1950)	83.07 (2110)	132.48 (3365)

0 = Standard color black. For other colors see Chapter 1
For wider chains see page 6.68. For large diameter hoses see page 6.68

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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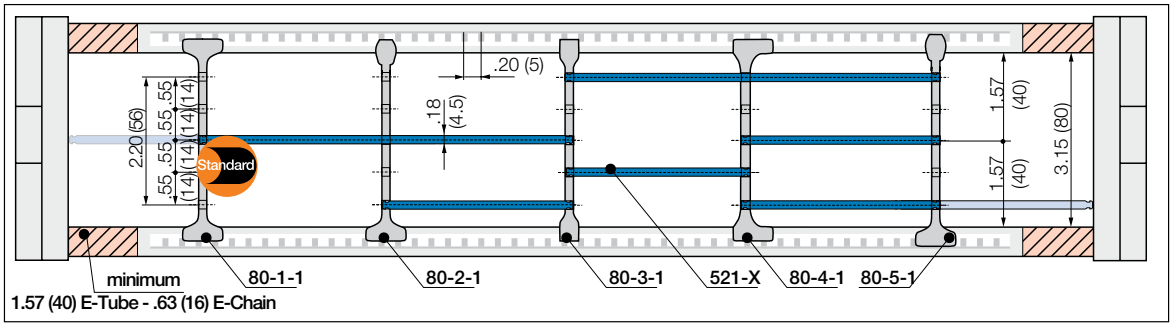
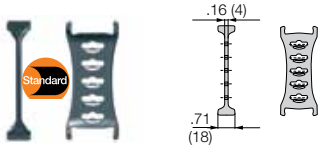
igus®

E-Chain System® E4-1
Series E4-80/H4-80/R4-80
Interior Separation - New Generation



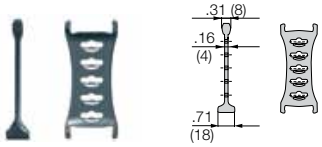
Note Please maintain a lateral spacing of 1.57" (40 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 80-1**
Assembled	**Part No. 80-1-1**

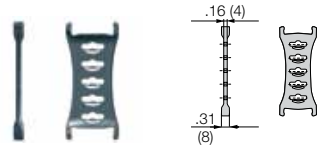
- **Standard separator 80-1**
  for all applications
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator, narrow head

Unassembled	**Part No. 80-2**
Assembled	**Part No. 80-2-1**

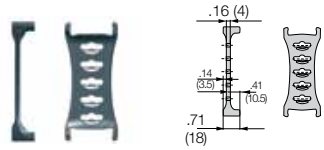
- **Separator 80-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 80-3**
Assembled	**Part No. 80-3-1**

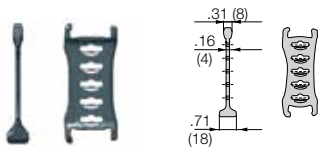
- **Separator 80-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, asymmetrical

Unassembled	**Part No. 80-4**
Assembled	**Part No. 80-4-1**

- **Separator 80-4**
  For side mounted applications
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

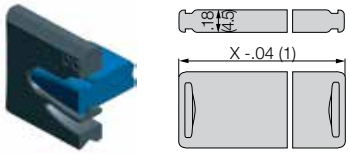


Separator, asymmetrical

Unassembled	**Part No. 80-5**
Assembled	**Part No. 80-5-1**

- **Separator 80-5**
  Locks safely in .30" (7.5 mm) increments
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 520-X**
Assembled	**Part No. 521-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 5 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**520-50**	**521-50**	5.91 (150)	**520-150**	**521-150**	11.81 (300)	**520-300**	**521-300**
2.56 (065)	**520-65**	**521-65**	6.89 (175)	**520-175**	**521-175**	13.78 (350)	**520-350**	**521-350**
2.95 (075)	**520-75**	**521-75**	7.87 (200)	**520-200**	**521-200**	14.76 (375)	**520-375**	**521-375**
3.94 (100)	**520-100**	**521-100**	8.86 (225)	**520-225**	**521-225**	15.24 (387)	**520-387**	**521-387**
4.92 (125)	**520-125**	**521-125**	9.84 (250)	**520-250**	**521-250**	17.723 (450)	**520-450**	**521-450**

igus® E-Chain System®
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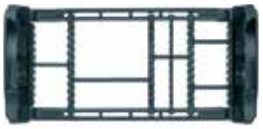
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

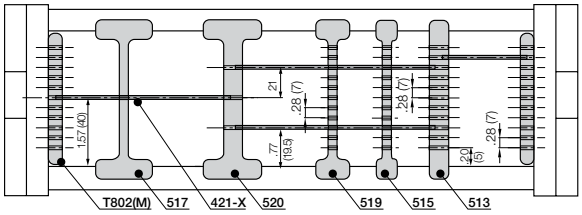
E-Chain System® E4-1
Series E4-80/H4-80/R4-80
Interior Separation - Previous Generation



Shelves and separators

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.



.39 (10)
.47 (12)

Side plate (for E-Chains®)

Unassembled	**Part No. T803**
Assembled	**Part No. T803M**

- **Split separator T803**
  This component is used to form the basic pattern of a shelf system.

.16 (4)

Side plate (for E-Chains®)

Unassembled	**Part No. T802**
Assembled	**Part No. T802M**

- **Side plates 802**
  This component is used to form the basic pattern of a shelf system.

.31 (8)

Vertical separator (for E-Chains®)

Unassembled	**Part No. 503**
Assembled	**Part No. 513**

- **Vertical separator 503**
  This component is used to form the basic pattern of a shelf system.

.16 (4)
.83 (21)

Locking vertical separator (for E-Chains®)

Unassembled	**Part No. 507**
Assembled	**Part No. 517**

- **Locking vertical separator 507**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.

.31 (8)
.83 (21)

Locking vertical separator (for E-Chains®)

Unassembled	**Part No. 510**
Assembled	**Part No. 520**

- **Locking vertical separator 510**
  This separator is slotted and able to be combined with shelves. For E-Chains® only.

.14 (3.5)
.24 (6)

Slotted separators, closed (for E-Chains®)

Unassembled	**Part No. 505**
Assembled	**Part No. 515**

- **Slotted separators 505**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.

.12 (3)
.39 (10)

Slotted separators, open (for E-Chains®)

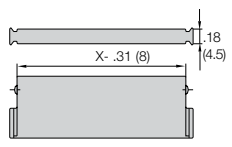
Unassembled	**Part No. 509**
Assembled	**Part No. 519**

- **Slotted separator 509**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 7 middle slots

Shelves 420-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 11 different heights in .28" (7mm) increments

Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled
.71 (18)	.39 (10)	**420-18**	**421-18**	2.95 (75)	2.64 (67)	**420-75**	**421-75**
.91 (23)	.59 (15)	**420-23**	**421-23**	3.46 (88)	3.15 (80)	**420-88**	**421-88**
.98 (25)	.67 (17)	**420-25**	**421-25**	3.94 (100)	3.62 (92)	**420-100**	**421-100**
1.10 (28)	.79 (20)	**420-28**	**421-28**	4.92 (125)	4.61(117)	**420-125**	**421-125**
1.30 (33)	.98 (25)	**420-33**	**421-33**	5.91 (150)	5.59(142)	**420-150**	**421-150**
1.69 (43)	1.38 (35)	**420-43**	**421-43**	6.89 (175)	6.57(167)	**420-175**	**421-175**
1.97 (50)	1.65 (42)	**420-50**	**421-50**	7.36 (187)	7.05(179)	**420-187**	**421-187**
2.44 (62)	2.13 (54)	**420-62**	**421-62**	7.87 (200)	7.56(192)	**420-200**	**421-200**



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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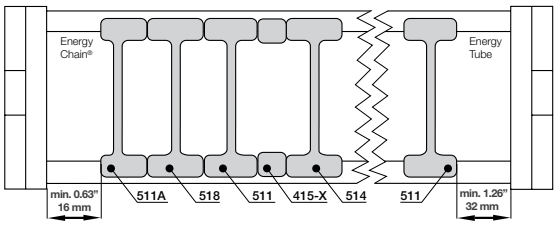
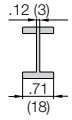
E-Chain System® E4-1
Series E4-80/H4-80/R4-80
Interior separation - Previous Generation

Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.
NOTE: Observe a lateral spacing of at least 1.30 in. (33mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates





Vertical separator

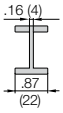
Unassembled	**Part No. 501**
Assembled	**Part No. 511**

- **Standard separator 501 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

Locking separator (for E-Chains®)

Unassembled	**Part No. 504**
Assembled	**Part No. 514**

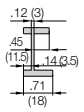
- **Locking separator 504 for E-Chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. If locking separators are used, the E-Chain® is more difficult to open.



Locking separator (for E-Chains®)

Unassembled	**Part No. 508**
Assembled	**Part No. 518**

- **Locking separator 508 for E-Tubes**
  This separator is used for applications that are exposed to extremely high humidity. The clamp at the side serves to uniformly align the separators. In order to avoid destroying the separators when opening the E-Chain®, make sure all separators are identically aligned.



Asymmetrical separator (for E-Chains®)

Unassembled	**Part No. 501A**
Assembled	**Part No. 511A**

- **Asymmetrical separator 501A for E-Chains®**
  This separator is NOT for E-Tubes. It features an (18mm) base and can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

Spacer (for E-Chains®)

Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

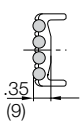
XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)	Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	415 -10	.39"	(10)	405 -30	415 -30	1.18"	(30)
405 -15	415 -15	.59"	(15)	405 -40	415 -40	1.57"	(40)
405 -20	415 -20	79"	(20)				

Rollclip - minimizes abrasion of particularly sensitive hoses or cables in an E-Chain®. The integrated rollers compensate for relative movement between the chain and the hose or cable. This reduces the abrasion of the hoses or cables



Rollclip

Unassembled	**Part No. 489-27**
Assembled	**Part No. 490-27**

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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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E-Chain System® E4-1
Series E4-80/H4-80/R4-80
Special Accessories

Part number example for E-Chain®

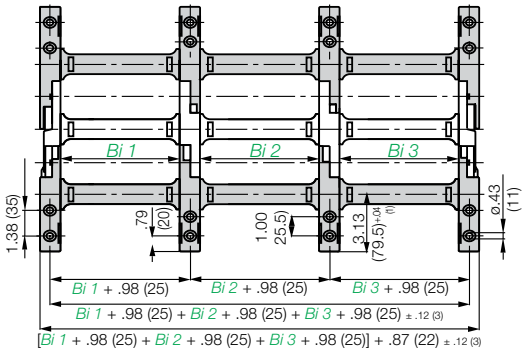
E4-80-10/20/10-200-0

E4-80-*Bi1*/*Bi2*/*Bi3*-R-0

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

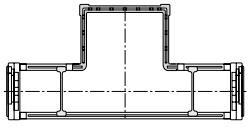
- For applications in which particularly high fill weights necessitate extremely wide E-Chains® (up to 118" (3000 mm)
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



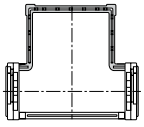
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

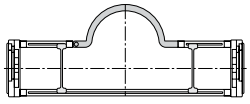
- Intended for cables and hoses with a maximum outer diameter of 10.63 in. (270 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



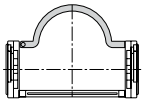
Square extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.



Round extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.

Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
450-15-RHD115	4.52 (115)	Round	No	Yes
450-17-RD115	4.52 (115)	Round	Yes	No
450-25-D150	5.91 (150)	Square	Yes	No
450-30-D200	7.87 (200)	Square	Yes	No
450-35-D250	8.66 (220)	Square	Yes	No
450-40-D300	10.63 (270)	Square	Yes	No
450-20-HD150	5.91 (150)	Square	No	Yes
450-25-HD200	7.87 (200)	Square	No	Yes
450-30-HD250	8.66 (220)	Square	No	Yes

E4 clip on cable binder

- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on E-Chains®
- The loops can be adjusted as needed
- Compatible with many E4 E-Chains®
- Economical
- One clip and one locking band are needed for each chain link

Part No.	Form
450-B12	Locking clip, comprised of a locking element
450-B12-200	Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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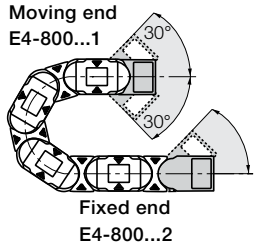
igus®

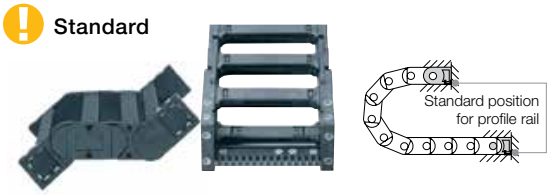
E-Chain System® E4-1
Series E4-80/H4-80/R4-80
Mounting Brackets KMA

Telephone 1-800-521-2747
Fax 1-401-438-7270

Option 1: pivoting

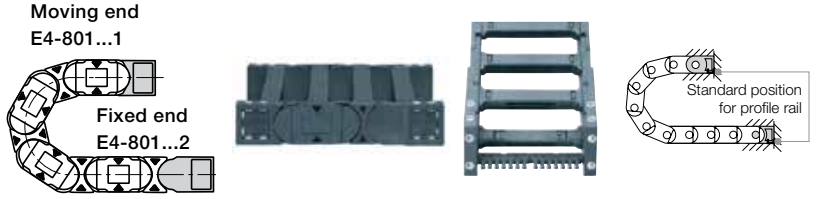
- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant



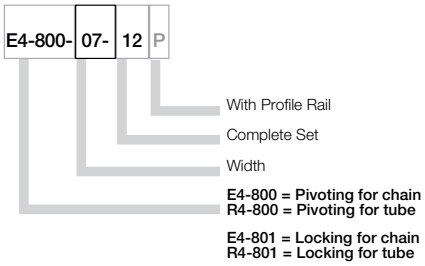


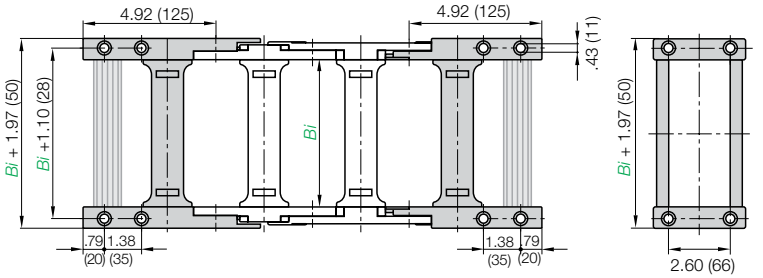
Option 2: locking

- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations



Part Number Structure





Due to the design of the E4-80 series chains, please note the following when ordering brackets:
Even number of links = full set, part number ending in **-12**
Odd number of links = 2 pieces, part number ending in **-1**

Part number examples are shown for pivoting brackets for E-Chain. For locking brackets change part number to 801

Part No. Full Set (pivoting)
Series E4-80 or H4-80
E4-800-Width-12

Part No. Full Set (pivoting)
with profile rail
Series E4-80 or H4-80
E4-800-Width-12P

Part No. Full Set (pivoting)
Tube Series R4-80
R4-800-Width-12

Part No. Full Set (pivoting)
with Profile Rail
Tube Series R4-80
R4-800-Width-12P

Width	Part No. Full Set chain/tube			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-05*	E4-800	E4-801	-05-12	P	1.97 (50)
-06	E4-800	E4-801	-06-12	P	2.56 (65)
-07	E4-800	E4-801	-07-12	P	2.95 (75)
-08	E4-800	E4-801	-08-12	P	3.43 (87)
-10	E4-800	E4-801	-10-12	P	3.94 (100)
-11	E4-800	E4-801	-11-12	P	4.41 (112)
-12	E4-800	E4-801	-12-12	P	4.92 (125)
-13	E4-800	E4-801	-13-12	P	5.39 (137)
-15	E4-800/R4-800	E4-801/R4-801	-15-12	P	5.91 (150)
-16	E4-800	E4-801	-16-12	P	6.38 (162)
-17	E4-800	E4-801	-17-12	P	6.89 (175)
-18	E4-800	E4-801	-18-12	P	7.36 (187)
-20	E4-800/R4-800	E4-801/R4-801	-20-12	P	7.87 (200)
-21	E4-800	E4-801	-21-12	P	8.35 (212)
-22	E4-800	E4-801	-22-12	P	8.86 (225)
-23	E4-800	E4-801	-23-12	P	9.33 (237)
-25	E4-800/R4-800	E4-801/R4-801	-25-12	P	9.84 (250)
-26	E4-800	E4-801	-26-12	P	10.31 (262)
-27	E4-800	E4-801	-27-12	P	10.83 (275)
-28	E4-800	E4-801	-28-12	P	11.30 (287)
-30	E4-800/R4-800	E4-801/R4-801	-30-12	P	11.81 (300)

Width	Part No. Full Set chain/tube			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-31	E4-800	E4-801	-31-12	P	12.28 (312)
-32	E4-800	E4-801	-32-12	P	12.79 (325)
-33	E4-800	E4-801	-33-12	P	13.27 (337)
-35	E4-800/R4-800	E4-801/R4-801	-35-12	P	13.78 (350)
-36	E4-800	E4-801	-36-12	P	14.25 (362)
-37	E4-800	E4-801	-37-12	P	14.76 (375)
-38	E4-800	E4-801	-38-12	P	15.24 (387)
-40	E4-800/R4-800	E4-801/R4-801	-40-12	P	15.75 (400)
-41	E4-800	E4-801	-41-12	P	16.22 (412)
-42	E4-800	E4-801	-42-12	P	16.73 (425)
-43	E4-800	E4-801	-43-12	P	17.20 (437)
-45	E4-800	E4-801	-45-12	P	17.72 (450)
-46	E4-800/R4-800	E4-801/R4-801	-46-12	P	18.19 (462)
-47	E4-800	E4-801	-47-12	P	18.70 (475)
-48	E4-800	E4-801	-48-12	P	19.17 (487)
-50	E4-800	E4-801	-50-12	P	19.69 (500)
-51	E4-800	E4-801	-51-12	P	20.16 (512)
-52	E4-800	E4-801	-52-12	P	20.67 (525)
-53	E4-800	E4-801	-53-12	P	21.14 (537)
-55	E4-800	E4-801	-55-12	P	21.65 (550)
-60	E4-800	E4-801	-60-12	P	23.62 (600)

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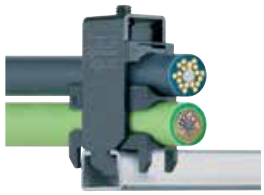
E-Chain System® E4-1
Series E4-80/H4-80/R4-80
Strain Relief

Chainfix clamps for the profile rail



For more information please refer to strain relief section of Chapter 10 in main catalog.

igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(6 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

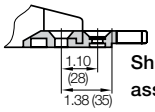
Chainfix Clip

Modular snap-on strain relief device

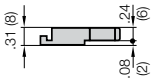
Chainfix clips are available for cable diameters ranging from .16" (4mm) to .94" (24 mm). They are for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10 in main catalog.**

Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(4-8)	CFC-08-M	CFC-08-C
.31-.47	(8-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

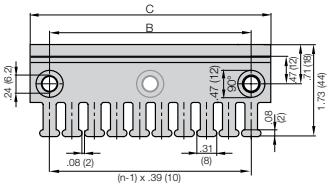


Single tiewrap plate

Option 1: Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10 in main catalog.

Option 2: Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10 in main catalog.

Option 3: Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
4550-ZS	5	1.89	(48)
4575-ZS	7	2.91	(74)

For more information please refer to strain relief section of Chapter 10

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E4-1
Series E4-80/H4-80/R4-80
Guide Trough

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 99-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 96-50-XX

-XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the right. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center-mounted

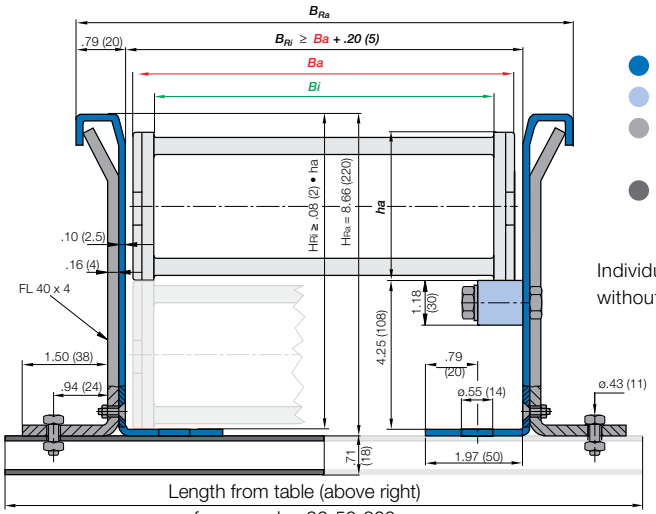
Required guide troughs:
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 99-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01
Required number of installation set:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **96-50-XXX**
Example: 96-50-400 for 15.75 (400 mm) long profile rail

Width of Crossbar
E4-80-**05**-200-0

	B_{Ri}	Installation Part No.
-05	4.13 (105)	**96-50-225**
-06	4.72 (120)	**96-50-250**
-07	5.12 (130)	**96-50-250**
-08	5.59 (142)	**96-50-275**
-10	6.10 (155)	**96-50-275**
-11	6.61 (168)	**96-50-300**
-12	7.09 (180)	**96-50-300**
-13	7.60 (193)	**96-50-325**
-15	8.07 (205)	**96-50-325**
-16	8.58 (218)	**96-50-350**
-17	9.06 (230)	**96-50-350**
-18	9.57 (243)	**96-50-375**
-20	10.04 (255)	**96-50-375**
-21	10.55 (268)	**96-50-400**
-22	11.02 (280)	**96-50-400**
-23	11.54 (293)	**96-50-425**
-25	12.01 (305)	**96-50-425**
-26	12.52 (318)	**96-50-450**
-27	12.99 (330)	**96-50-450**
-28	13.50 (343)	**96-50-475**
-30	13.98 (355)	**96-50-475**
-31	14.49 (368)	**96-50-500**
-32	14.96 (380)	**96-50-500**
-33	15.47 (393)	**96-50-525**
-35	15.94 (405)	**96-50-525**
-36	16.46 (418)	**96-50-550**
-37	16.93 (430)	**96-50-550**
-38	17.44 (443)	**96-50-575**
-40	17.91 (455)	**96-50-575**
-41	18.43 (468)	**96-50-600**
-42	18.90 (480)	**96-50-600**
-43	19.41 (493)	**96-50-625**
-45	19.88 (505)	**96-50-625**
-46	20.39 (518)	**96-50-650**
-47	20.87 (530)	**96-50-650**
-48	21.38 (543)	**96-50-675**
-50	21.85 (555)	**96-50-675**
-51	22.36 (568)	**96-50-700**
-52	22.83 (580)	**96-50-700**
-53	23.35 (593)	**96-50-725**
-55	23.82 (605)	**96-50-725**
-60	25.79 (655)	**96-50-775**

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

Installation sets as section connectors



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

Standard length profile rail

For further technical information on guide troughs
➤ Chapter 9

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec
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E-Chain System® E4-1
Series E4-80/H4-80/R4-80

igus®

E4-80
H4-80
R4-80

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E4-112
H4-112
R4-112

igus®

E-Chain System® E4-1
Series E4-112/H4-112/R4-112

4.41 4.25

Price Index

Series E4-112 Series H4-112

Series R4-112

Special Options Available

Low noise version available with special rubber pads

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 394 ft (120 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 9.84 ft (3 m)
Rotary requires further calculation

Usage Guidelines

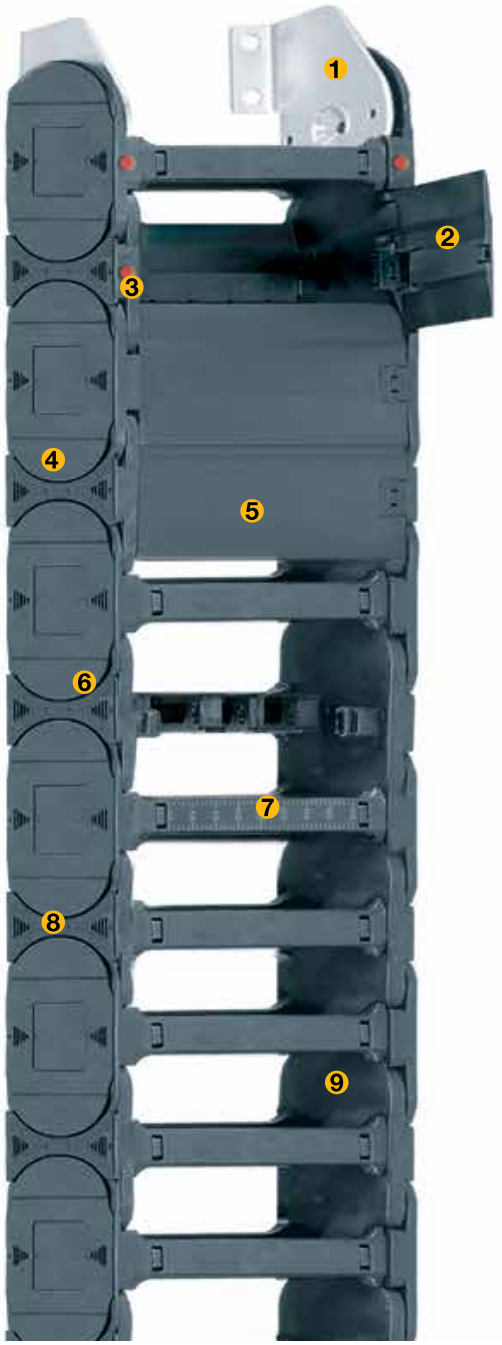
- If a robust E-Chain/Energy is required
- If inner widths up to 23.62" (600 mm) are required
- For unsupported lengths up to 21.3 ft. (6.5 m) and fill weights up to 57.12 lbs/ft. (85 kg/m)
- For long travels

- When an E-Chain is needed for rough applications with greater inner height
  ➤ **Series 800**
- When a lighter E-Chain® is needed
  ➤ **Series 1640**

Features & Benefits

1. Steel mounting brackets
2. Hinged, snap-open removable lids along the outer radius
3. Noise dampening pads, optional = -10dB(A)
4. Gliding surfaces, long travels
5. Chip protection with E-Tube
6. Undercut for more stability
7. Notch crossbar with backside scaling
8. Straight run due to the inner/outer link design
9. Low noise operation due to integrated "brake"

Also available without camber.
Add NCST to the end of the part number.
Ex: E4-112-30-300NCST



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

16.4 ft (5 m) **E4-80-30-300-0**	**E-Chain®**
With 2 separators **6401** assembled every 2nd link	**Interior Separation**
1 Set **E4-11210-12**	**Mounting Bracket**

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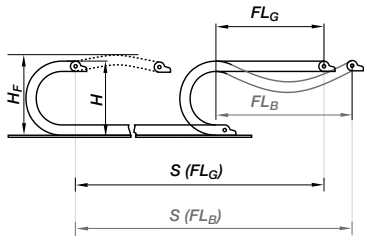
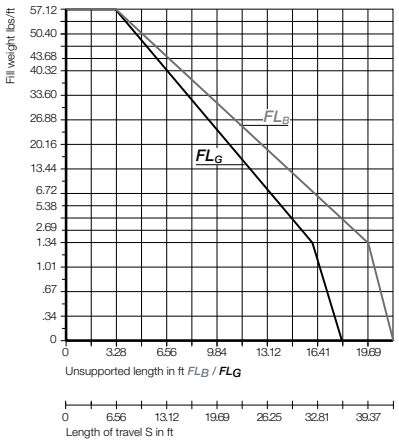
E-Chain System® E4-1
Series E4-112/H4-112/R4-112
Installation Dimensions

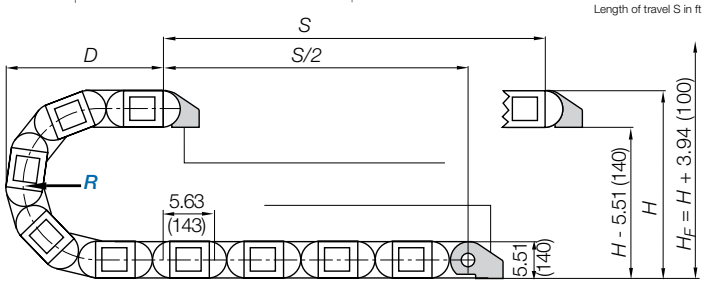
Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 5.63"(143 mm)
Links per ft (m): = 2.13 (7)
For center mount applications:
Chain length = $_{S}/_{2}$ + K

The required clearance height: H_F **= H + 3.94 in. (100 mm)** with 3.36 lbs/ft (5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + safety buffer
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

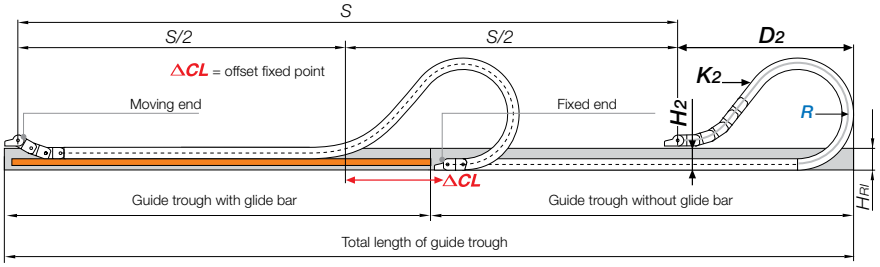
R	7.87 (200*)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	9.84 (450)	19.68 (500)	21.65 (550)	23.62 (600)	29.53 (750)	39.37 (1000)
H	21.46 (545)	25.39 (645)	29.33 (745)	33.27 (845)	37.20 (945)	41.14 (1045)	45.08 (1145)	49.02 (1245)	52.95 (1345)	64.76 (1645)	84.45 (2145)
D	16.34 (415)	18.31 (465)	20.27 (515)	22.24 (565)	24.21 (615)	26.18 (665)	28.15 (715)	30.12 (765)	32.09 (815)	37.99 (965)	47.83 (1215)
K	36.02 (915)	42.32 (1075)	48.43 (1230)	54.72 (1390)	60.83 (1545)	66.93 (1700)	75.86 (1860)	79.33 (2015)	85.63 (2175)	104.13 (2645)	135.04 (3430)

* Radius not available for E-Tubes

For long travels with lowered mounting height

Long travel lengths from 45.9 ft.(14m) to max. 1,476 ft. (450m)

For center mount applications:
Chain length: = $_{S}/_{2}$ + K_2



Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

R	7.87 (200**)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	9.84 (450)	19.68 (500)	21.65 (550)	23.62 (600)	29.53 (750)	39.37 (1000)
H_2	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	-	-
D_2	35.43 (900)	39.37 (1000)	43.31 (1100)	49.21 (1250)	57.09 (1450)	62.99 (1600)	66.93 (1700)	74.80 (1900)	80.71 (2050)	-	-
K_2	61.93 (1573)	67.56 (1716)	73.19 (1859)	90.08 (2288)	101.34 (2574)	112.60 (2860)	123.86 (3146)	135.12 (3432)	152.01 (3861)	-	-
ΔCL	17.72 (450)	19.68 (500)	21.65 (550)	25.59 (650)	31.50 (800)	35.43 (900)	37.40 (950)	43.31 (1100)	47.24 (1200)	-	-

In case of travels between 13 and 32.8 ft (4 and 10 m) we recommend a longer unsupported length.
****200 radius is not available for the E-Tubes**

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E4-1
Series E4-112/H4-112/R4-112

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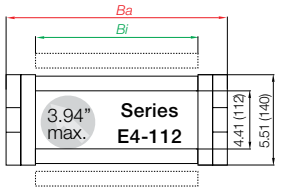
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Series E4-112 - E-Chain® with crossbars every link

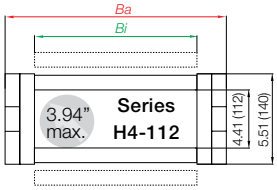


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

E4-112- 30- 300- 0
- Color - Black
- Bending radius
- Width
- Series

Series E4-112 - E-Chain® with crossbars every 2nd link

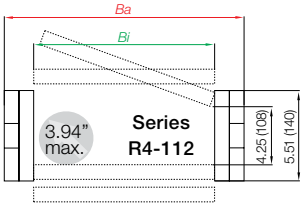


- Crossbars every other link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

H4-112- 30- 300- 0
- Color - Black
- Bending radius
- Width
- Series

Series R4-112 - fully enclosed E-Tube

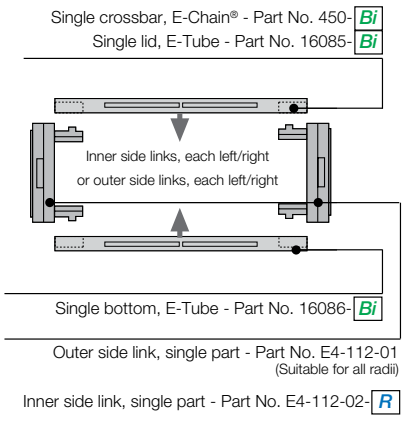


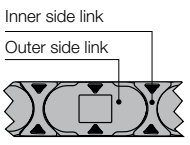
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

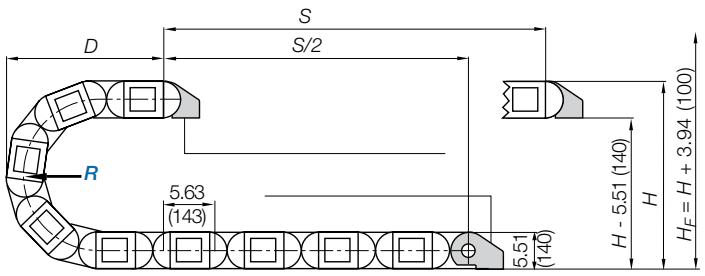
Part Number Structure

R4-112- 30- 300- 0
- Color - Black
- Bending radius
- Width
- Series

E-Chain® as separate parts, links and side plates







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Series E4-112/H4-112/R4-112

Supplement part number with required radius. Example: E4-112-30-[300]-0
Pitch: 5.63 in. (143mm) per link links/ft (m) = 2.13 (7)

Part Number				Bi	Ba	Weight		
Crossbars Every link	Crossbars Every other	Tube Version		in. (mm)	in. (mm)	E4-80 lbs/ft (kg/m)	H4-80 lbs/ft (kg/m)	R4-80 lbs/ft (kg/m)
E4-112-05-	H4-112-05-		[ ] -0	1.97 (50)	4.02 (102)	≈ 4.63 (6.89)	≈ 4.62 (6.88)	–
E4-112-06-	H4-112-06-		[ ] -0	2.56 (65)	4.61 (117)	≈ 4.67 (6.95)	≈ 4.64 (6.91)	–
E4-112-07-	H4-112-07-		[ ] -0	2.95 (75)	5.00 (127)	≈ 4.70 (6.99)	≈ 4.66 (6.93)	–
E4-112-08-	H4-112-08-		[ ] -0	3.43 (87)	5.47 (139)	≈ 4.74 (7.05)	≈ 4.68 (6.96)	–
E4-112-10-	H4-112-10-		[ ] -0	3.94 (100)	5.98 (152)	≈ 4.77 (7.10)	≈ 4.70 (6.99)	–
E4-112-11-	H4-112-11-		[ ] -0	4.41 (112)	6.46 (164)	≈ 4.82 (7.18)	≈ 4.72 (7.03)	–
E4-112-12-	H4-112-12-		[ ] -0	4.92 (125)	6.97 (177)	≈ 4.86 (7.23)	≈ 4.74 (7.05)	–
E4-112-13-	H4-112-13-		[ ] -0	5.39 (137)	7.44 (189)	≈ 4.91 (7.31)	≈ 4.76 (7.09)	–
E4-112-15-	H4-112-15-		[ ] -0	5.91 (150)	7.95 (202)	≈ 4.93 (7.34)	≈ 4.78 (7.11)	–
E4-112-16-	H4-112-16-		[ ] -0	6.38 (162)	8.43 (214)	≈ 4.98 (7.41)	≈ 4.80 (7.14)	–
E4-112-17-	H4-112-17-		[ ] -0	6.89 (175)	8.94 (227)	≈ 5.03 (7.49)	≈ 4.82 (7.18)	–
E4-112-18-	H4-112-18-		[ ] -0	7.36 (187)	9.41 (239)	≈ 5.08 (7.56)	≈ 4.85 (7.22)	–
E4-112-20-	H4-112-20-	R4-112-20-	[ ] -0	7.87 (200)	9.92 (252)	≈ 5.10 (7.60)	≈ 4.87 (7.24)	≈ 6.22 (9.26)
E4-112-21-	H4-112-21-		[ ] -0	8.35 (212)	10.39 (264)	≈ 5.13 (7.64)	≈ 4.88 (7.26)	–
E4-112-22-	H4-112-22-		[ ] -0	8.86 (225)	10.91 (277)	≈ 5.17 (7.69)	≈ 4.89 (7.28)	–
E4-112-23-	H4-112-23-		[ ] -0	9.33 (237)	11.38 (289)	≈ 5.21 (7.76)	≈ 4.92 (7.32)	–
E4-112-25-	H4-112-25-	R4-112-25-	[ ] -0	9.84 (250)	11.89 (302)	≈ 5.26 (7.83)	≈ 4.94 (7.35)	≈ 6.66 (9.91)
E4-112-26-	H4-112-26-		[ ] -0	10.31 (262)	12.36 (314)	≈ 5.30 (7.89)	≈ 4.96 (7.38)	–
E4-112-27-	H4-112-27-		[ ] -0	10.83 (275)	12.87 (327)	≈ 5.34 (7.95)	≈ 4.98 (7.41)	–
E4-112-28-	H4-112-28-		[ ] -0	11.30 (287)	13.35 (339)	≈ 5.37 (7.99)	≈ 4.99 (7.43)	–
E4-112-30-	H4-112-30-	R4-112-30-	[ ] -0	11.81 (300)	13.86 (352)	≈ 5.44 (8.09)	≈ 5.03 (7.48)	≈ 7.08 (10.53)
E4-112-31-	H4-112-31-		[ ] -0	12.28 (312)	14.33 (364)	≈ 5.45 (8.11)	≈ 5.03 (7.49)	–
E4-112-32-	H4-112-32-		[ ] -0	12.79 (325)	14.84 (377)	≈ 5.50 (8.18)	≈ 5.05 (7.52)	–
E4-112-33-	H4-112-33-		[ ] -0	13.27 (337)	15.31 (389)	≈ 5.54 (8.25)	≈ 5.08 (7.56)	–
E4-112-35-	H4-112-35-	R4-112-35-	[ ] -0	13.78 (350)	15.83 (402)	≈ 5.63 (8.38)	≈ 5.11 (7.60)	≈ 7.51 (11.18)
E4-112-36-	H4-112-36-		[ ] -0	14.25 (362)	16.30 (414)	≈ 5.59 (8.32)	≈ 5.13 (7.63)	–
E4-112-37-	H4-112-37-		[ ] -0	14.76 (375)	16.81 (427)	≈ 5.63 (8.38)	≈ 5.13 (7.63)	–
E4-112-38-	H4-112-38-		[ ] -0	15.24 (387)	17.28 (439)	≈ 5.68 (8.46)	≈ 5.15 (7.67)	–
E4-112-40-	H4-112-40-	R4-112-40-	[ ] -0	15.75 (400)	17.80 (452)	≈ 5.80 (8.63)	≈ 5.19 (7.73)	≈ 7.94 (11.82)
E4-112-41-	H4-112-41-		[ ] -0	16.22 (412)	18.27 (464)	≈ 5.77 (8.58)	≈ 5.21 (7.75)	–
E4-112-42-	H4-112-42-		[ ] -0	16.73 (425)	18.78 (477)	≈ 5.89 (8.77)	≈ 5.22 (7.77)	–
E4-112-43-	H4-112-43-		[ ] -0	17.20 (437)	19.25 (489)	≈ 5.83 (8.67)	≈ 5.25 (7.82)	–
E4-112-45-	H4-112-45-		[ ] -0	17.72 (450)	19.76 (502)	≈ 5.97 (8.88)	≈ 5.28 (7.86)	–
E4-112-46-	H4-112-46-		[ ] -0	18.19 (462)	20.24 (514)	≈ 5.95 (8.85)	≈ 5.29 (7.87)	-
E4-112-47-	H4-112-47-		[ ] -0	18.70 (475)	20.75 (527)	≈ 5.96 (8.87)	≈ 5.30 (7.88)	–
E4-112-48-	H4-112-48-		[ ] -0	19.17 (487)	21.22 (539)	≈ 6.07 (9.03)	≈ 5.34 (7.95)	–
E4-112-50-	H4-112-50-		[ ] -0	19.69 (500)	21.73 (552)	≈ 6.07 (9.03)	≈ 5.34 (7.95)	–
E4-112-51-	H4-112-51-		[ ] -0	20.16 (512)	22.20 (564)	≈ 6.11 (9.09)	≈ 5.36 (7.98)	–
E4-112-52-	H4-112-52-		[ ] -0	20.67 (525)	22.72 (577)	≈ 6.15 (9.15)	≈ 5.38 (8.01)	–
E4-112-53-	H4-112-53-		[ ] -0	21.14 (537)	23.19 (589)	≈ 6.18 (9.20)	≈ 5.40 (8.04)	–
E4-112-55-	H4-112-55-		[ ] -0	21.65 (550)	23.70 (602)	≈ 6.36 (9.47)	≈ 5.49 (8.17)	–
E4-112-60-	H4-112-60-		[ ] -0	23.62 (600)	25.67 (652)	≈ 6.46 (9.62)	≈ 5.54 (8.25)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: E4-112-30-[300]-0

	[200**]	[250]	[300]	[350]	[400]	[450]	[500]	[550]	[600]	[750]	[1000]
R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	9.84 (450)	19.68 (500)	21.65 (550)	23.62 (600)	29.53 (750)	39.37 (1000)
H	21.46 (545)	25.39 (645)	29.33 (745)	33.27 (845)	37.20 (945)	41.14 (1045)	45.08 (1145)	49.02 (1245)	52.95 (1345)	64.76 (1645)	84.45 (2145)
D	16.34 (415)	18.31 (465)	20.27 (515)	22.24 (565)	24.21 (615)	26.18 (665)	28.15 (715)	30.12 (765)	32.09 (815)	37.99 (965)	47.83 (1215)
K	36.02 (915)	42.32 (1075)	48.43 (1230)	54.72 (1390)	60.83 (1545)	66.93 (1700)	75.86 (1860)	79.33 (2015)	85.63 (2175)	104.13 (2645)	135.04 (3430)

0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.79. For large diameter hoses see page 6.79

**200 radius is not available for the E-Tubes

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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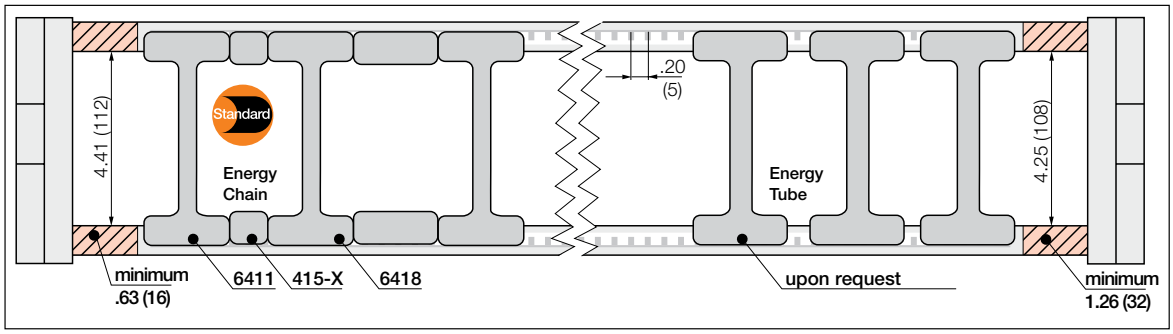
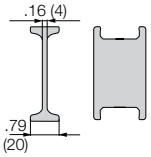
E-Chain System® E4-1
Series E4-112/H4-112/R4-112
Interior Separation



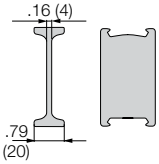
Note Please maintain a lateral spacing of 1.26" (32 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator (chain only)

Unassembled	**Part No. 6401**
Assembled	**Part No. 6411**

- **Standard separator 6401 for E-Chains®**
  For a vertical subdivision. Offers safe stability due to its wide base design, also when used with thick cables or hoses (Separator for E-Tubes 1608 upon request)



Separator, locking (chain only)

Unassembled	**Part No. 6408**
Assembled	**Part No. 6418**

- **Separator 6408 for E-Chains®**
  For applications exposed to very high humidity (>85%). Locks with extra retention force.
  Tip: one locking separator per E-Chain® link for better mounting.

Spacer (chain only)

Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

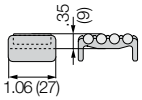
XX = width of the spacer

- **NOTE ON SPACERS for E-Chains®**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	Width in.	(mm)
405 -10	415 -10	.39"	(10)
405 -15	415 -15	.59"	(15)
405 -20	415 -20	.79"	(20)
405 -30	415 -30	1.18"	(30)
405 -40	415 -40	1.57"	(40)

Additional elements - interior separation



Rollclip

Unassembled	**Part No. 489-27**
Assembled	**Part No. 490-27**

Rollclip - minimizes abrasion of particularly sensitive hoses or cables in an E-Chain®. The integrated rollers compensate for relative movement between the chain and the hose or cable. This reduces the abrasion of the hoses or cables

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email: sales@igus.com
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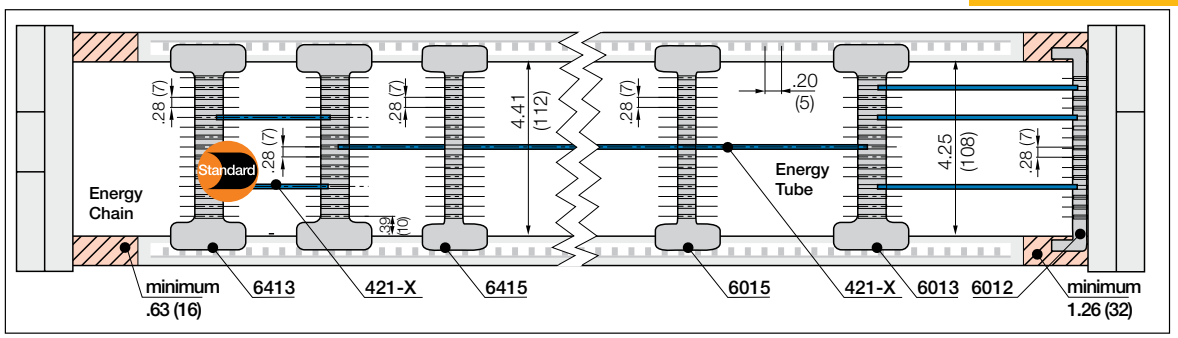
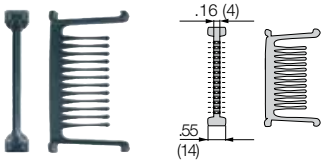
E-Chain System® E4-1
Series E4-112/H4-112/R4-112
Interior Separation



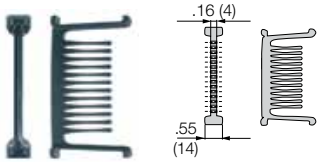
Note Please maintain a lateral spacing of 1.26" (32 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 6405**
Assembled	**Part No. 6415**

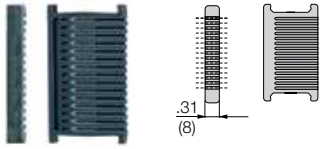
- **Open, slotted separator 6405**
  For E-Chains® (unilateral open)
  This separator can be retrofitted into an existing interior separation system without removing the shelves. The top and bottom botches cannot be occupied by shelves



Separator, narrow head

Unassembled	**Part No. 6005**
Assembled	**Part No. 6015**

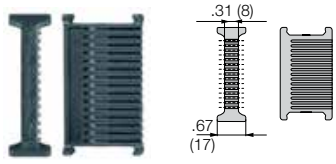
- **Open, slotted separator 6005**
  For E-Tubes (unilateral open)
  This separator can be retrofitted into an existing interior separation system without removing the shelves. The top and bottom botches cannot be occupied by shelves



Separator, narrow base

Unassembled	**Part No. 6403**
Assembled	**Part No. 6413**

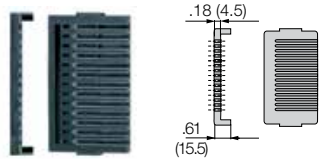
- **Vertical separator 6403**
  For E-Chains®
  This component is used to form the basic pattern of a shelf system. The shelf 420-X can be installed at 15 different heights in .28" (7 mm) increments



Separator, narrow base

Unassembled	**Part No. 6003**
Assembled	**Part No. 6013**

- **Locking vertical separator 6003**
  For E-Tubes
  This component is used to form the basic pattern of a shelf system.

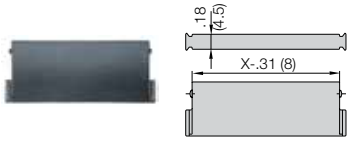


Separator, asymmetrical

Unassembled	**Part No. 6002**
Assembled	**Part No. 6012**

- **Side plate 6002**
  For E-Chains® / Tubes
  This component is used to form the basic pattern of a shelf system. Allows modular shelving close to the side links.

Full-width shelves - for the standard interior separation



Full width shelf

Unassembled	**Part No. 420-X**
Assembled	**Part No. 421-X**

- **Full width shelf 420-X**
  These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
.71(18)	**420-18**	**421-18**	1.97 (50)	**420-50**	**421-50**	5.91 (150)	**420-150**	**421-150**
.91(23)	**420-23**	**421-23**	2.44 (62)	**420-62**	**421-62**	6.89 (175)	**420-175**	**421-175**
.98 (25)	**420-25**	**421-25**	2.95 (75)	**420-75**	**421-75**	7.36 (187)	**420-187**	**421-187**
1.10 (28)	**420-28**	**421-28**	3.46 (88)	**420-88**	**421-88**	7.87 (200)	**420-200**	**421-200**
1.30 (33)	**420-33**	**421-33**	3.94 (100)	**420-100**	**421-100**			
1.69 (43	**420-43**	**421-43**	4.92 (125)	**420-125**	**421-125**			

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E4-1
Series E4-112/H4-112/R4-112
Special Accessories

Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

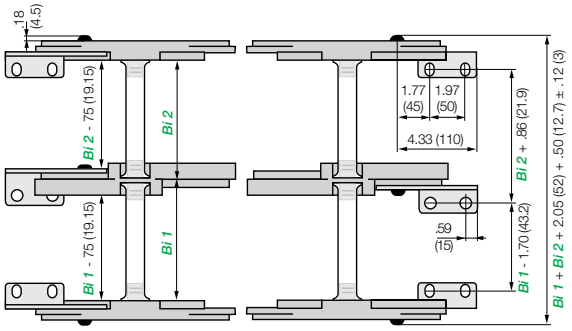
- For applications in which particularly high fill weights necessitate extremely wide E-Chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with steel mounting brackets.

Part number example for E-Chain®

E4-112-10/20/10-200-0

E4-112-*Bi1*/*Bi2*/*Bi3*-R-0

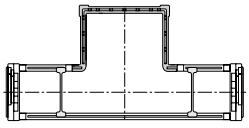
We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.



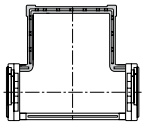
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

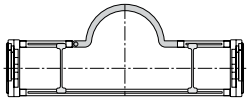
- Intended for cables and hoses with a maximum outer diameter of 11.81 in. (300 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



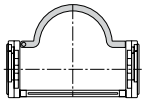
Square extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.



Round extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.

Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
450-15-RHD115	4.53 (115)	Round	No	Yes
450-17-RD115	4.53 (115)	Round	Yes	No
450-25-D150	5.91 (150)	Square	Yes	No
450-30-D200	7.87 (200)	Square	Yes	No
450-35-D250	8.66 (220)	Square	Yes	No
450-40-D300	10.63 (270)	Square	Yes	No
450-20-HD150	5.91 (150)	Square	No	Yes
450-25-HD200	7.87 (200)	Square	No	Yes
450-30-HD250	8.66 (220)	Square	No	Yes

E4 clip on cable binder

- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on E-Chains®
- The loops can be adjusted as needed
- Compatible with many E4 E-Chains®
- Economical
- One clip and one locking band are needed for each chain link

Part No.	Form
450-B12	Locking clip, comprised of a locking element
450-B12-200	Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm

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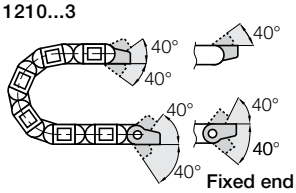
E-Chain System® E4-1
Series E4-112/H4-112/R4-112
Mounting Brackets - Steel

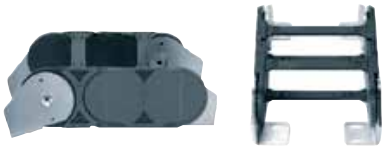
Option 1: pivoting

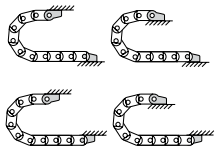
- For pivoting connections
- One part for all chain widths
- Electrically conductive

Moving end
11210...3



Fixed end
11210...4

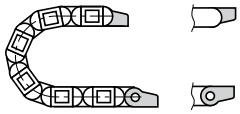




Option 2: Locking

- For pivoting connections
- One part for all chain widths
- Electrically conductive

Moving end
11210...1



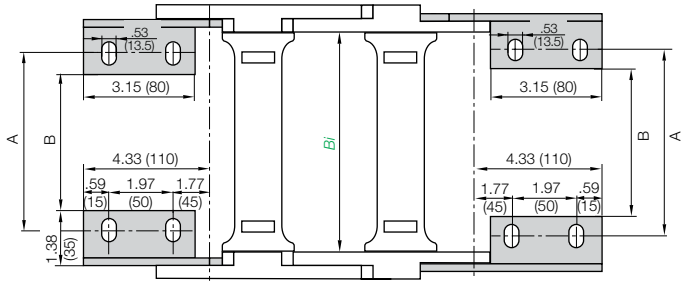
Fixed end
11210...2

Possible installation configurations -

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series E4-112/H4-112/R4-112
Pivoting E4-11210-☐-34VS/Locking E4-11210-☐-12VS

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right with bore
Series E4-112/H4-112/R4-112
Pivoting E4-11210-3VS / Locking E4-11210-1VS

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right with pin
Series E4-112/H4-112/R4-112
Pivoting E4-11210-4VS / Locking E4-11210-2VS



Due to the design of the E4-1 series E-Chains®, please note the following when ordering brackets

For Pivoting Mounting Brackets:
Even number of links = E4-11210-2-34VS
Odd number of links = E4-11212-1-34VS

For Locking Mounting Brackets:
Even number of links = E4-11210-2-12VS
Odd number of links = E4-11212-1-12VS

Bracket Mounting dimensions

Width of Chain *Bi*	Part Number	Mounting Brackets Full Set Locking	Mounting Brackets Full Set Pivoting	Dim. A *Bi - 30* in. (mm)	Dim. B *Bi - 49* in. (mm)
1.97 (50)	E4-11210-☐	-12VS	-34VS	.79 (20)	.04 (1)
2.56 (65)	E4-11210-☐	-12VS	-34VS	1.38 (35)	.63 (16)
2.95 (75)	E4-11210-☐	-12VS	-34VS	1.77 (45)	1.02 (26)
3.43 (87)	E4-11210-☐	-12VS	-34VS	2.24 (57)	1.50 (38)
3.94 (100)	E4-11210-☐	-12VS	-34VS	2.76 (70)	2.01 (51)
4.41 (112)	E4-11210-☐	-12VS	-34VS	3.23 (82)	2.48 (63)
4.92 (125)	E4-11210-☐	-12VS	-34VS	3.74 (95)	2.99 (76)
5.39 (137)	E4-11210-☐	-12VS	-34VS	4.21 (107)	3.46 (88)
5.91 (150)	E4-11210-☐	-12VS	-34VS	4.72 (120)	3.98 (101)
6.38 (162)	E4-11210-☐	-12VS	-34VS	5.20 (132)	4.45 (113)
6.89 (175)	E4-11210-☐	-12VS	-34VS	5.71 (145)	4.96 (126)
7.36 (187)	E4-11210-☐	-12VS	-34VS	6.18 (157)	5.43 (138)
7.87 (200)	E4-11210-☐	-12VS	-34VS	6.69 (170)	5.94 (151)
8.35 (212)	E4-11210-☐	-12VS	-34VS	7.16 (182)	6.42 (163)
8.86 (225)	E4-11210-☐	-12VS	-34VS	7.68 (195)	6.93 (176)
9.33 (237)	E4-11210-☐	-12VS	-34VS	8.15 (207)	7.40 (188)
9.84 (250)	E4-11210-☐	-12VS	-34VS	8.66 (220)	7.91 (201)
10.31 (262)	E4-11210-☐	-12VS	-34VS	9.13 (232)	8.39 (213)
10.83 (275)	E4-11210-☐	-12VS	-34VS	9.65 (245)	8.90 (226)
11.30 (287)	E4-11210-☐	-12VS	-34VS	10.12 (257)	9.37 (238)
11.81 (300)	E4-11210-☐	-12VS	-34VS	10.63 (270)	9.88 (251)
12.28 (312)	E4-11210-☐	-12VS	-34VS	11.10 (282)	10.35 (263)
12.79 (325)	E4-11210-☐	-12VS	-34VS	11.61 (295)	10.87 (276)
13.27 (337)	E4-11210-☐	-12VS	-34VS	12.09 (307)	11.34 (288)
13.78 (350)	E4-11210-☐	-12VS	-34VS	12.60 (320)	11.85 (301)
14.25 (362)	E4-11210-☐	-12VS	-34VS	13.07 (332)	12.32 (313)
14.76 (375)	E4-11210-☐	-12VS	-34VS	13.58 (345)	12.83 (326)
15.24 (387)	E4-11210-☐	-12VS	-34VS	14.06 (357)	13.31 (338)
15.75 (400)	E4-11210-☐	-12VS	-34VS	14.57 (370)	13.82 (351)
16.22 (412)	E4-11210-☐	-12VS	-34VS	15.04 (382)	14.29 (363)
16.73 (425)	E4-11210-☐	-12VS	-34VS	15.55 (395)	14.80 (376)
17.20 (437)	E4-11210-☐	-12VS	-34VS	16.02 (407)	15.28 (388)
17.72 (450)	E4-11210-☐	-12VS	-34VS	16.54 (420)	15.79 (401)
18.19 (462)	E4-11210-☐	-12VS	-34VS	17.01 (432)	16.26 (413)
18.70 (475)	E4-11210-☐	-12VS	-34VS	17.52 (445)	16.77 (426)
19.17 (487)	E4-11210-☐	-12VS	-34VS	17.99 (457)	17.24 (438)
19.69 (500)	E4-11210-☐	-12VS	-34VS	18.50 (470)	17.76 (451)
20.16 (512)	E4-11210-☐	-12VS	-34VS	18.98 (482)	18.23 (463)
20.67 (525)	E4-11210-☐	-12VS	-34VS	19.49 (495)	18.74 (476)
21.14 (537)	E4-11210-☐	-12VS	-34VS	19.96 (507)	19.21 (488)
21.65 (550)	E4-11210-☐	-12VS	-34VS	20.47 (520)	19.72 (501)
23.62 (600)	E4-11210-☐	-12VS	-34VS	22.44 (570)	21.69 (551)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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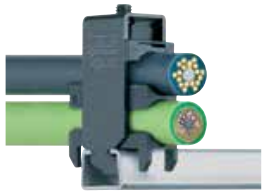
igus®

E-Chain System® E4-1
Series E4-112/H4-112/R4-112
Strain Relief

Chainfix clamps for the profile rail



For more information please refer to strain relief section of Chapter 10 in main catalog.

igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(6 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

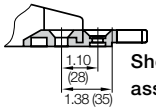
Chainfix Clip

Modular snap-on strain relief device

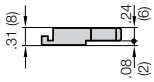
Chainfix clips are available for cable diameters ranging from .16" (4mm) to .94" (24 mm). They are for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10 in main catalog.**

Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(4-8)	CFC-08-M	CFC-08-C
.31-.47	(8-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

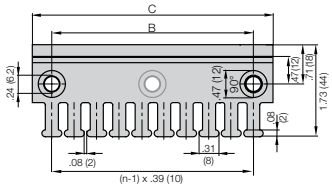


Single tiewrap plate

Option 1: Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10 in main catalog.

Option 2: Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10 in main catalog.

Option 3: Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
4550-ZS	5	1.89	(48)
4575-ZS	7	2.91	(74)

For more information please refer to strain relief section of Chapter 10

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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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E-Chain System® E4-1
Series E4-112/H4-112/R4-112
Guide Trough

Width of Crossbar
E4-112-**12**-300-0

	B_{Ri}	Installation Part No.
-05	4.21 (107)	**97-50-225**
-06	4.80 (122)	**97-50-225**
-07	5.20 (132)	**97-50-250**
-10	6.18 (157)	**97-50-275**
-11	6.65 (169)	**97-50-275**
-12	7.17 (182)	**97-50-300**
-13	76.38 (194)	**97-50-300**
-15	8.15 (207)	**97-50-325**
-16	8.62 (219)	**97-50-325**
-17	9.13 (232)	**97-50-350**
-18	9.61 (244)	**97-50-350**
-20	10.12 (257)	**97-50-375**
-21	10.59 (269)	**97-50-375**
-22	11.10 (282)	**97-50-400**
-23	11.57 (294)	**97-50-400**
-25	12.09 (307)	**97-50-425**
-26	12.56 (319)	**97-50-425**
-27	13.07 (332)	**97-50-450**
-28	13.54 (344)	**97-50-450**
-30	14.06 (357)	**97-50-475**
-31	14.53 (369)	**97-50-475**
-32	15.04 (382)	**97-50-500**
-33	15.51 (394)	**97-50-500**
-35	16.02 (407)	**97-50-525**
-36	16.50 (419)	**97-50-525**
-37	17.01 (432)	**97-50-550**
-38	17.48 (444)	**97-50-550**
-40	17.99 (457)	**97-50-575**
-41	18.46 (469)	**97-50-575**
-42	18.98 (482)	**97-50-600**
-43	19.45 (494)	**97-50-600**
-45	19.96 (507)	**97-50-625**
-46	20.43 (519)	**97-50-625**
-47	20.94 (532)	**97-50-650**
-48	21.42 (544)	**97-50-650**
-50	21.93 (557)	**97-50-675**
-51	22.40 (569)	**97-50-675**
-52	22.91 (582)	**97-50-700**
-53	23.39 (594)	**97-50-700**
-55	23.90 (607)	**97-50-725**
-60	25.87 (657)	**97-50-775**

Standard length profile rail

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 97-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 97-50-XX

-XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

Example:

Length of travel 164 ft (50 m)
Center-mounted

Required guide troughs:
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar

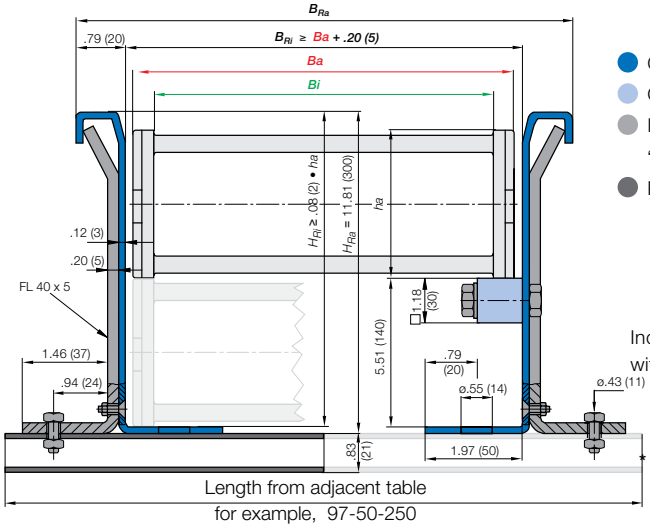
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 97-30

= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01

Required number of installation set:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **97-50-XXX**
Example:
97-50-400 for 15.75 (400 mm) long profile rail

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

Installation sets as section connectors



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600
601
R608

igus®

E-Chain System® E4/100
Series 600/601/R608

4.25” 4.25”

Price Index

Series 600 Series 601 Series R608

Special Features / Options

This E4 Series is a low-noise version

Clean-Room Cleanroom test upon request

EX ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 394 ft (120 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 19.69 ft (6 m)
Rotary requires further calculation

Usage Guidelines

- When quiet operation is required
- When very high speeds and/or accelerations are required
- For long travels
- For high fill weights

- When a simpler, low-cost solution is required
  ➤ **Series 1640**
- If an increased inner height is required
  ➤ **Series 640**

Features & Benefits

1. Hinged snap-open removable lids along the outer radius
2. Optimized glide pads with lateral wear allowance
3. Closed and open styles can be combined
4. Wide, rounded crossbars
5. Dirt-repellent exterior
6. Numerous interior separation possibilities
7. Stop dog with brake for noise reduction
8. Crossbars on E-Chains® are removable along both radii
9. E-Chains® also available with reverse bending radius “RBR”

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

19.69 ft (6 m) **600-30-300-0**	**E-Chain®**
With 2 separators **6011** assembled every 2nd link	**Interior Separation**
1 Set **6000-12**	**Mounting Bracket**

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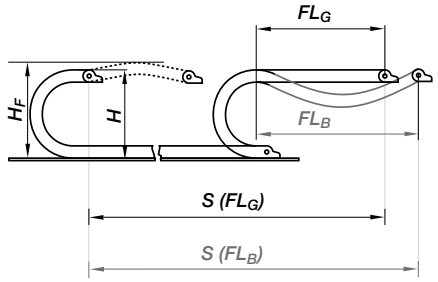
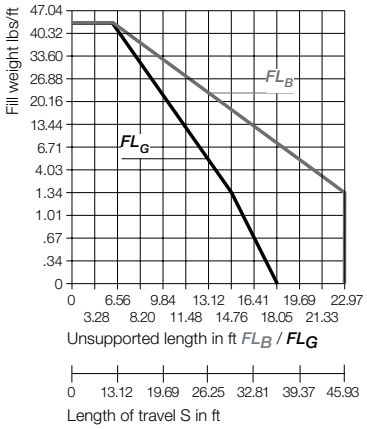
E-Chain System® E4/100
Series 600/601/R608
Installation Dimensions

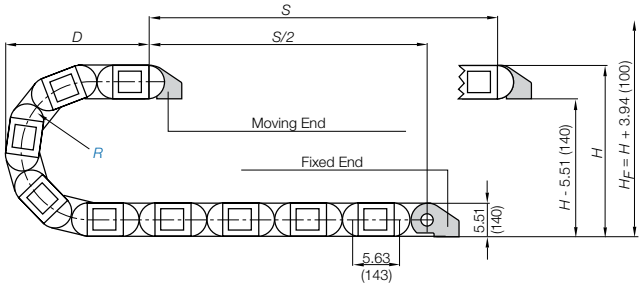
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 5.63" (143 mm)
Links per ft (m): = 2.13 (7)
For center mount applications:
Chain length = $_{-}^{S}/_{2} + K$

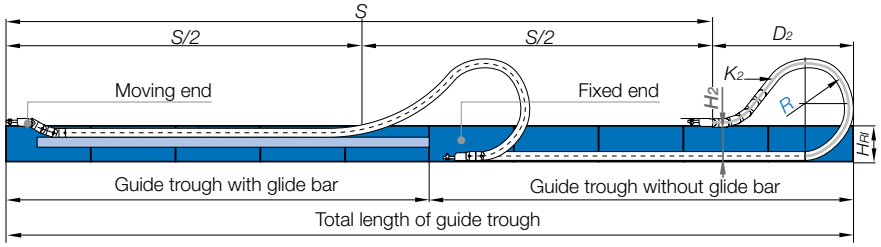
The required clearance height: $H_F = H$ **+ 3.94 in. (100 mm)** (with 3.36 lbs/ft (5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	21.65 (550)	23.62 (600)	29.53 (750)	39.37 (1000)
H	21.46 (545)	25.39 (645)	29.33 (745)	33.27 (845)	37.20 (945)	41.14 (1045)	45.08 (1145)	49.02 (1245)	52.95 (1345)	64.76 (1645)	84.45 (2145)
D	16.34 (415)	18.31 (465)	20.27 (515)	22.24 (565)	24.21 (615)	26.18 (665)	28.15 (715)	30.12 (765)	32.09 (815)	37.99 (965)	47.83 (1215)
K	36.22 (920)	42.52 (1080)	48.82 (1240)	55.12 (1400)	61.42 (1560)	67.72 (1720)	73.62 (1870)	79.53 (2020)	85.63 (2175)	104.72 (2660)	135.24 (3435)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 1,476 ft. (450 m)

For center mount applications:
Chain length: = $_{-}^{S}/_{2} + K_2$



R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	21.65 (550)	23.62 (600)	29.53 (750)	39.37 (1000)
H_2	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	-
D_{2+20}	35.43 (900)	39.37 (1000)	43.31 (1100)	49.21 (1250)	57.09 (1450)	62.99 (1600)	66.93 (1700)	74.80 (1900)	80.71 (2050)	112.20 (2850)	-
K_2	61.93 (1573)	67.56 (1716)	73.19 (1859)	90.08 (2288)	101.33 (2574)	112.60 (2860)	123.86 (3146)	135.12 (3432)	152.01 (3861)	197.05 (5005)	-

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R + safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ **Chapter 1**

600
601
R608

4.25"

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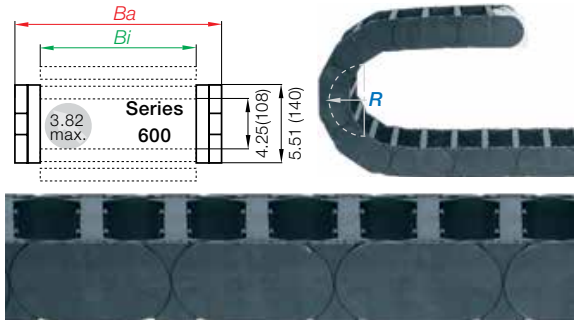
Series 600 - E-Chain® with crossbars every link



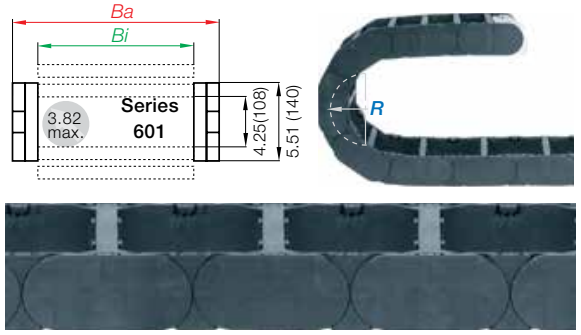
- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

600- 30- 300- 0

- 0: Color - Black
- 300-: Bending radius
- 30-: Width
- 600-: Series

Series 601 - E-Chain® with crossbars every other link



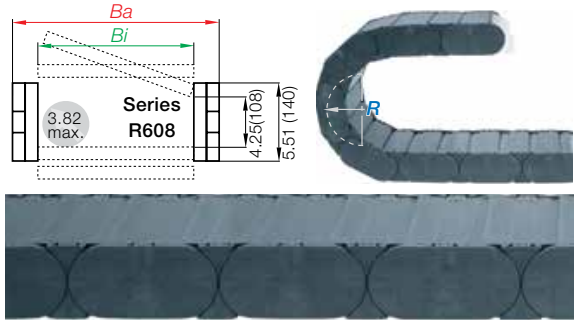
- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

601- 30- 300- 0

- 0: Color - Black
- 300-: Bending radius
- 30-: Width
- 601-: Series

Series R608 - fully enclosed E-Tube



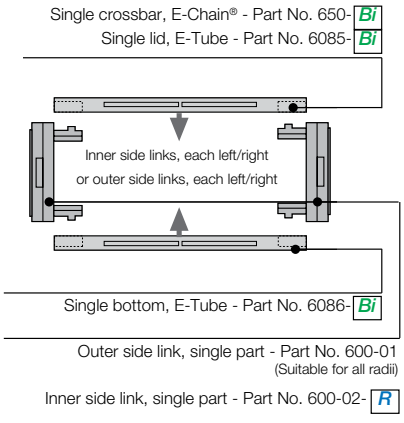
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

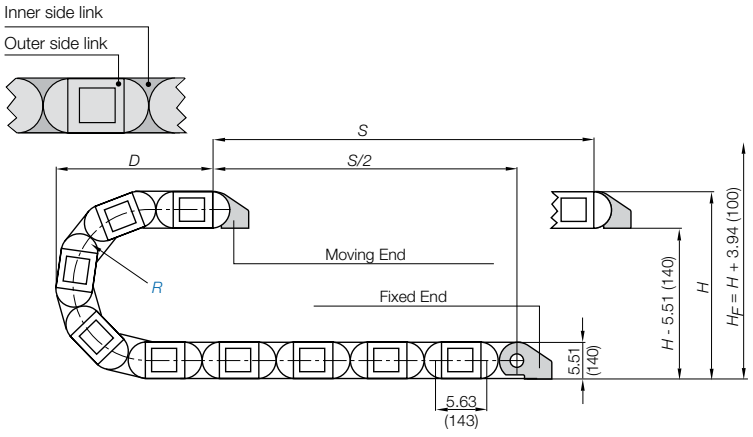
Part Number Structure

608- 30- 300- 0

- 0: Color - Black
- 300-: Bending radius
- 30-: Width
- 608-: Series

E-Chain® as separate parts, links and side plates





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E-Chain System® E4/100
Series 600/601/R608

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600
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R608

Supplement part number with required radius. Example: 600-30-300-0
Pitch: 5.63 in. (143 mm) per link links/ft(m) = 2.13 (7)

Part Number. Crossbars Every link	Crossbars Every other	Tube Version		*Bi* in. (mm)	*Ba* in. (mm)	600 lbs/ft (kg/m)	601 lbs/ft (kg/m)	R608 lbs/ft (kg/m)
600-20-	601-20-	608-20-	-0	7.87 (200)	9.92 (252)	≈ 3.00 (4.46)	≈ 2.63 (3.91)	*
600-25-	601-25-	608-25-	-0	9.84 (250)	11.89 (302)	≈ 3.26 (4.85)	≈ 2.76 (4.10)	*
600-30-	601-30-	608-30-	-0	11.81 (300)	13.86 (352)	≈ 3.55 (5.29)	≈ 2.90 (4.32)	*
600-32-	601-32-		-0	12.60 (320)	14.65 (372)	≈ 3.62 (5.38)	≈ 2.94 (4.37)	–
600-35-	601-35-	608-35-	-0	13.78 (350)	15.83 (402)	≈ 3.84 (5.71)	≈ 3.04 (4.53)	*
600-40-	601-40-	608-40-	-0	15.75 (400)	17.80 (452)	≈ 4.05 (6.02)	≈ 3.15 (4.69)	*
600-45-	601-45-		-0	17.72 (450)	19.76 (502)	≈ 4.34 (6.46)	≈ 3.30 (4.91)	–
600-50-	601-50-		-0	19.69 (500)	21.73 (552)	≈ 4.53 (6.74)	≈ 3.39 (5.05)	–
600-55-	601-55-		-0	21.65 (550)	23.70 (602)	≈ 5.01 (7.45)	≈ 3.63 (5.40)	–
600-60-	601-60-		-0	23.62 (600)	25.67 (652)	≈ 5.14 (7.65)	≈ 3.70 (5.50)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: 600-30-300-0

	200**	250	300	350	400	450	500	550	600	750	1000
R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	21.65 (550)	23.62 (600)	29.53 (750)	39.37 (1000)
H	21.46 (545)	25.39 (645)	29.33 (745)	33.27 (845)	37.20 (945)	41.14 (1045)	45.08 (1145)	49.02 (1245)	52.95 (1345)	64.76 (1645)	84.45 (2145)
D	16.34 (415)	18.31 (465)	20.27 (515)	22.24 (565)	24.21 (615)	26.18 (665)	28.15 (715)	30.12 (765)	32.09 (815)	37.99 (965)	47.83 (1215)
K	36.22 (920)	42.52 (1080)	48.82 (1240)	55.12 (1400)	61.42 (1560)	67.72 (1720)	73.62 (1870)	79.53 (2020)	85.63 (2175)	104.72 (2660)	135.24 (3435)

** This radius is not available for the R608 Series
*Upon request

0=Standard color black. For other colors see Chapter 1

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Specs/CAD/RFQ: www.igus.com/e-chains
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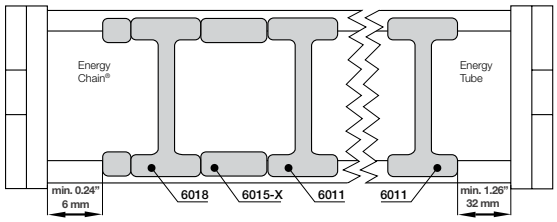
igus®

E-Chain System® E4/100
Series 600/601/R608
Interior Separation

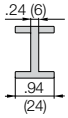
Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.
NOTE: Observe a lateral spacing of at least 1.26 in. (32mm) for E-Tubes and .63 in. (16mm) for E-Chain®.
There is no minimum spacing needed for side plates
Exception: Minimum spacing
Locking separator 6008 = .91" (23 mm)



Standard

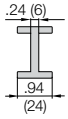
Vertical separator 6001



Vertical separator	
Unassembled	**Part No. 6001**
Assembled	**Part No. 6011**

- **Standard separator 6001 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

Locking separator 6008



Locking separator (chain only)	
Unassembled	**Part No. 6008**
Assembled	**Part No. 6018**

- **Locking separator 6008 for E-Chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.

Spacers 6005-XX

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
6005 -10	6015 -10	.39"	(10)
6005 -15	6015 -15	.59"	(15)
6005 -20	6015 -20	79"	(20)

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

igus® E-Chain System®
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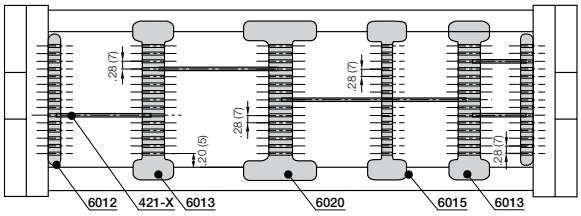
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E4/100
Series 600/601/R608
Interior Separation

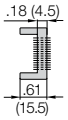
Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.



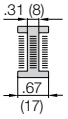
- **Side plates 6002**
  This component is used to form the basic pattern of a shelf system.



Side plate	
Unassembled	**Part No. 6002**
Assembled	**Part No. 6012**

Side plate 6002

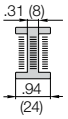
- **Vertical separator 6003**
  This component is used to form the basic pattern of a shelf system.



Vertical separator	
Unassembled	**Part No. 6003**
Assembled	**Part No. 6013**

Vertical separator 6003

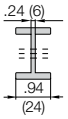
- **Locking vertical separator 6010**
  This separator is slotted and able to be combined with shelves



Locking vertical separator	
Unassembled	**Part No. 6010**
Assembled	**Part No. 6020**

Locking vertical separator 6010

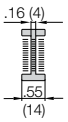
- **Slotted separators 6004**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.



Slotted separators, closed	
Unassembled	**Part No. 6004**
Assembled	**Part No. 6014**

Closed slotted separator 6004

- **Slotted separator 6005**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 11 middle slots



Slotted separators, open	
Unassembled	**Part No. 6005**
Assembled	**Part No. 6015**

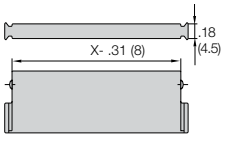
Open slotted separator 6005

Shelves 420-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

Width X in.	Width X (mm)	Usable Width in.	Usable Width (mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	.39	(10)	**420-18**	**421-18**
.91	(23)	.59	(15)	**420-23**	**421-23**
.98	(25)	.67	(17)	**420-25**	**421-25**
1.10	(28)	.79	(20)	**420-28**	**421-28**
1.30	(33)	.98	(25)	**420-33**	**421-33**
1.69	(43)	1.38	(35)	**420-43**	**421-43**
1.97	(50)	1.65	(42)	**420-50**	**421-50**
2.44	(62)	2.13	(54)	**420-62**	**421-62**

Width X in.	Width X (mm)	Usable Width in.	Usable Width (mm)	Part No. Unassembled	Part No. Assembled
2.95	(75)	2.64	(67)	**420-75**	**421-75**
3.46	(88)	3.15	(80)	**420-88**	**421-88**
3.94	(100)	3.62	(92)	**420-100**	**421-100**
4.92	(125)	4.61	(117)	**420-125**	**421-125**
5.91	(150)	5.59	(142)	**420-150**	**421-150**
6.89	(175)	6.57	(167)	**420-175**	**421-175**
7.36	(187)	7.05	(179)	**420-187**	**421-187**
7.87	(200)	7.56	(192)	**420-200**	**421-200**



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E4/100
Series 600/601/R608
Mounting Brackets - Steel
Strain Relief

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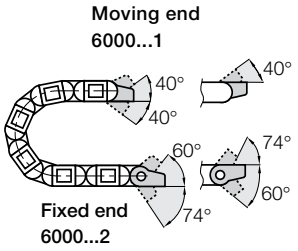
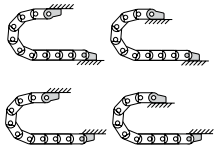
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive



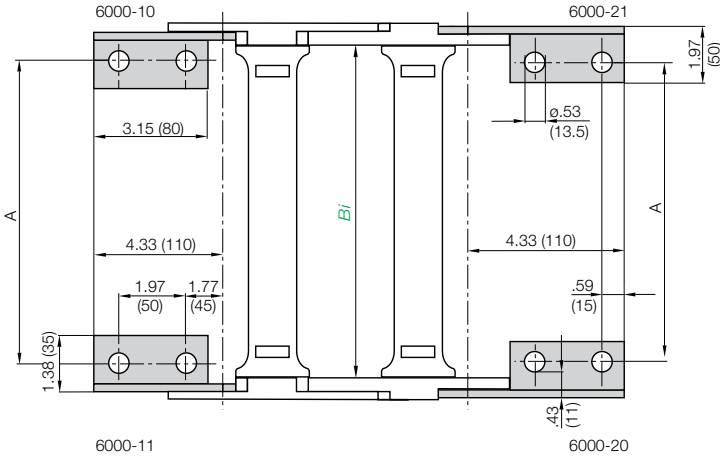


Possible installation configurations -

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 600/601/R608
6000-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right with bore
Series 600/601/R608
6000-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right with pin
Series 600/601/R608
6000-2



Bracket Mounting Dimensions

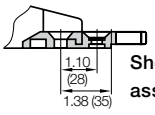
Width of Chain *Bi*	Part Number	Mounting Brackets* Full Set	Moving End Only	Fixed End Only	A in. (mm)
7.87 (200)	6000	-12	-1	-2	6.69 (170)
9.84 (250)	6000	-12	-1	-2	8.66 (220)
11.81 (300)	6000	-12	-1	-2	10.63 (270)
12.60 (320)	6000	-12	-1	-2	14.42 (290)
13.78 (350)	6000	-12	-1	-2	12.60 (320)
15.75 (400)	6000	-12	-1	-2	14.57 (370)
17.72 (450)	6000	-12	-1	-2	16.54 (420)
19.69 (500)	6000	-12	-1	-2	18.50 (470)
21.65 (550)	6000	-12	-1	-2	20.47 (520)
23.62 (600)	6000	-12	-1	-2	22.48 (570)

***Ordering information**

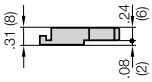
Due to the design of the E4/100 series chains, please note the following when ordering brackets:

Even number of links = full set, part number ending in **-12**
Odd number of links = 2 pieces, part number ending in **-2**

Strain Relief



Shown assembled

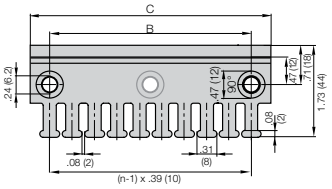


Single tiewrap plate

Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



For more information please refer to strain relief section of Chapter 10

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E-Chain System® E4/100
Series 600/601/R608
Guide Trough

600
601
R608

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 97-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 97-50-XX

-XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table below. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center-mounted

Required guide troughs:
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar

= 25 sections of 6.56 ft (2 m) guide trough
Part No. 97-30

= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01

Required number of installation set:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **97-50-XXX**
Example:
97-50-400 for 15.75 (400 mm) long profile rail

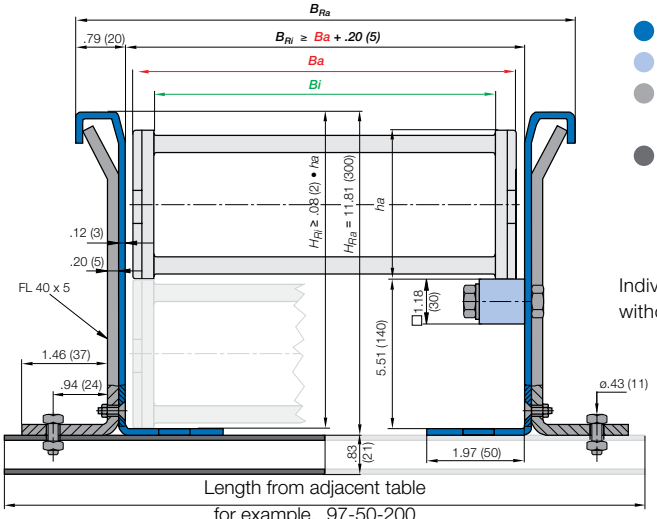
Left: Guide trough with glide bars
Right: Guide troughs without glide bars

Installation sets as section connectors

Width of Crossbar
600-**05**-200-0

	B_{Ri}	Installation Part No.
-20	10.12 (257)	**97-50-375**
-25	12.09 (307)	**97-50-425**
-30	14.06 (357)	**97-50-475**
-32	14.84 (377)	**97-50-500**
-35	16.02 (407)	**97-50-525**
-40	17.99 (457)	**97-50-575**
-45	19.96 (507)	**97-50-625**
-50	21.93 (557)	**97-50-675**
-55	23.90 (607)	**97-50-725**
-60	25.87 (657)	**97-50-775**

Standard length profile rail



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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800

E-Chain System® E4-1
Series 800

7.87”

Price Index

Series 800

Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Other Installation Methods

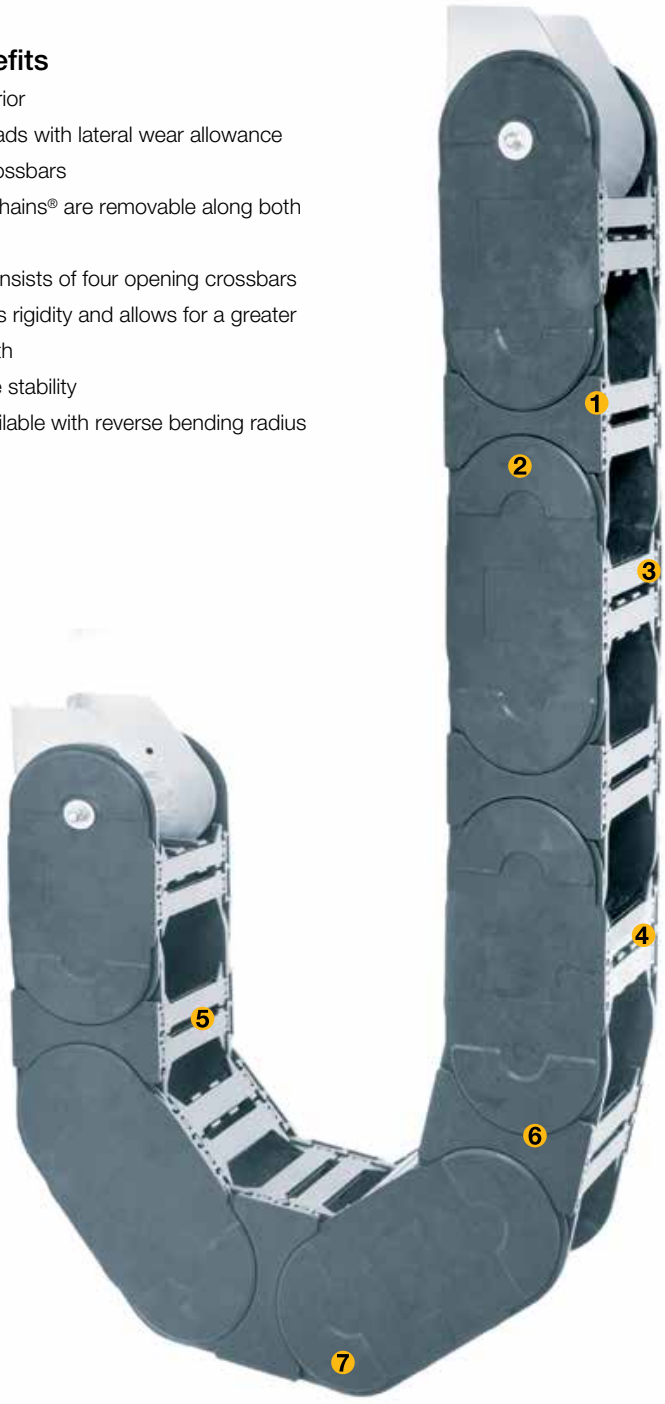
Vertical, hanging: consult igus®
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 19.69 ft (6 m)
Rotary requires further calculation

Usage Guidelines

- If a particularly large and rigid E-Chain® is required
- For very high speeds and/or accelerations
- For long travels
- For high additional loads

Features & Benefits

1. Dirt-repellent exterior
2. Optimized glide pads with lateral wear allowance
3. Wide, rounded crossbars
4. Crossbars on E-Chains® are removable along both radii
5. Each chain link consists of four opening crossbars which increases its rigidity and allows for a greater unsupported length
6. Undercut for more stability
7. E-Chains also available with reverse bending radius “RBR”



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

16.4 ft (5 m) **800-30-350-0**	**E-Chain®**
With 2 separators **8011** assembled every 2nd link	**Interior Separation**
1 Set **8000-12**	**Mounting Bracket**

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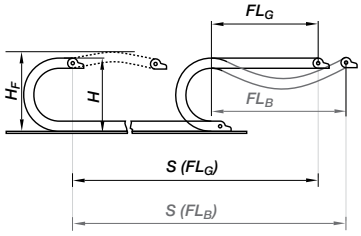
E-Chain System® E4-1
Series 800
Installation Dimensions

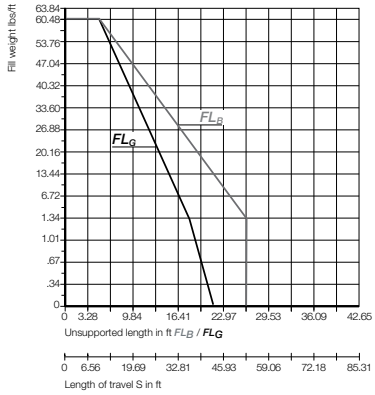
Short travel, unsupported length

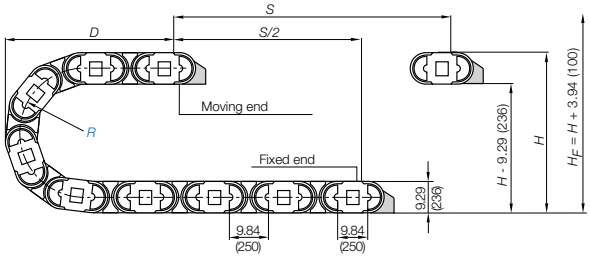
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 9.84" (250 mm)

Links per ft (m): = 1.22 (4)

For center mount applications:

Chain length = $\frac{S}{2} + K$

The required clearance height: H_F **= H + 3.94 in. (100 mm)** (with 3.36 lbs/ft (5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	12.80 (325)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	23.62 (600)	29.53 (750)	39.37 (1000)
H*	34.88 (886)	36.85 (936)	40.79 (1036)	44.72 (1136)	48.66 (1236)	56.53 (1436)	68.35 (1736)	88.03 (2236)
D	32.20 (818)	33.19 (843)	35.16 (893)	37.13 (943)	39.09 (993)	43.03 (1093)	48.94 (1243)	58.78 (1493)
K	60.04 (1525)	62.99 (1600)	69.29 (1760)	75.39 (1915)	81.69 (2075)	93.90 (2385)	112.60 (2860)	143.50 (3645)

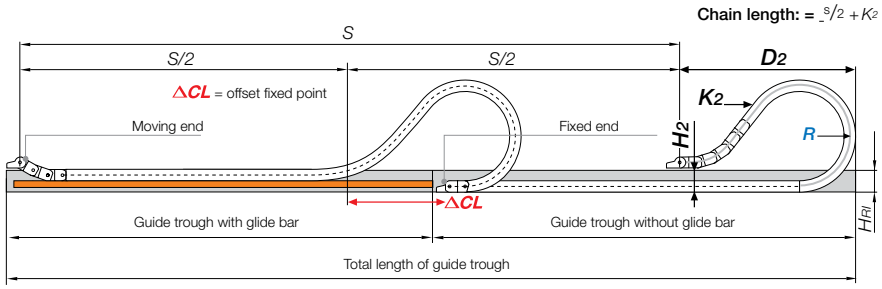
For long travels with lowered mounting height

Please consult igus® when choosing to use a lowered mounting height with this series

Long travel lengths from 49.2 ft. (15 m) to max. 1,476 ft. (450 m)

For center mount applications:

Chain length: $= \frac{S}{2} + K_2$



R	12.80 (325)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	23.62 (600)	29.53 (750)	39.37 (1000)
H2	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)
D2	40.55 (1030)	42.52 (1080)	54.33 (1380)	63.39 (1610)	78.74 (2000)	97.64 (2480)	*	*
K2	78.74 (2000)	78.74 (2000)	98.43 (2500)	118.11 (3000)	127.95 (3250)	157.48 (4000)	*	*
ΔCL	9.84 (250)	11.81 (300)	21.65 (550)	29.53 (750)	41.34 (1050)	55.12 (1400)	*	*

In case of travels between 39.4 and 32.8 ft (12 and 15 m) we recommend a longer unsupported length.
**200 radius is not available for the E-Tubes

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.

Design, Chapter 1

Technical Data

Details of material properties

➤ **Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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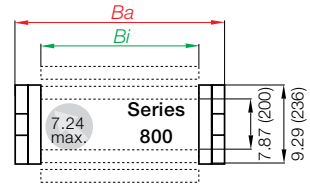
igus®

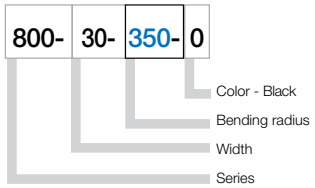
E-Chain System® E4-1
Series 800

Series 800 - E-Chain® with crossbars every link



- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure



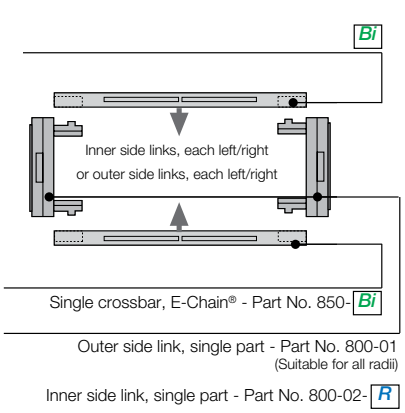
Supplement part number with required radius. Example: 800-30-350-0
Pitch: 9.84 in. (250 mm) per link links/ft(m) = 1.22 (4)

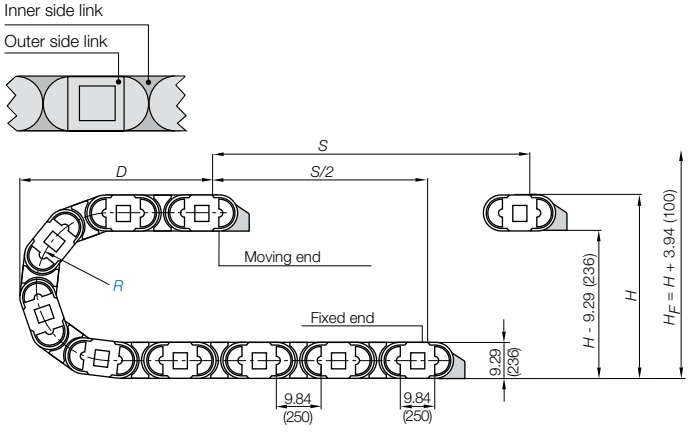
Part Number. Crossbars Every link			Bi in. (mm)	Ba in. (mm)	800 lbs/ft (kg/m)
800-20-		-0	7.87 (200)	10.24 (260)	≈ 10.14 (15.09)
800-25-		-0	9.84 (250)	12.20 (310)	≈ 10.42 (15.50)
800-30-		-0	11.81 (300)	14.17 (360)	≈ 10.68 (15.89)
800-32-		-0	12.80 (325)	15.16 (385)	≈ 10.79 (16.05)
800-35-		-0	13.78 (350)	16.14 (410)	≈ 10.90 (16.22)
800-40-		-0	15.75 (400)	18.11 (460)	≈ 11.25 (16.74)
800-45-		-0	17.72 (450)	20.08 (510)	≈ 11.34 (16.88)
800-50-		-0	19.69 (500)	22.04 (560)	≈ 11.58 (17.23)
800-55-		-0	21.65 (550)	24.02 (610)	≈ 11.85 (17.63)
800-60-		-0	23.62 (600)	25.98 (660)	≈ 12.22 (18.19)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 800-30-350-0

	325	350	400	450	500	600	750	1000
R	12.80 (325)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	23.62 (600)	29.53 (750)	39.37 (1000)
*H**	34.88 (886)	36.85 (936)	40.79 (1036)	44.72 (1136)	48.66 (1236)	56.53 (1436)	60.47 (1536)	88.03 (2236)
D	32.20 (818)	33.19 (843)	35.16 (893)	37.13 (943)	39.09 (993)	43.03 (1093)	48.94 (1243)	58.78 (1493)
K	60.04 (1525)	62.99 (1600)	69.29 (1760)	75.39 (1915)	81.69 (2075)	93.90 (2385)	112.60 (2860)	143.50 (3645)

E-Chain® as separate parts, links and side plates





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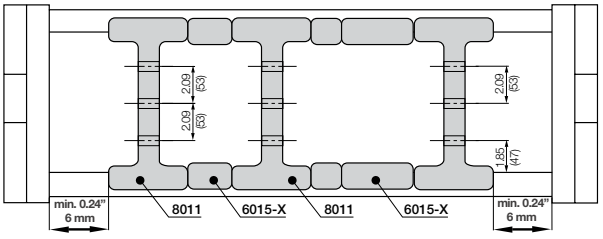
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

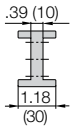
E-Chain System® E4-1
Series 800
Interior Separation

Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.
NOTE: Observe a lateral spacing of at least 1.26 in. (32mm) for E-Tubes and .63 in. (16mm) for E-Chain®.
There is no minimum spacing needed for side plates
Exception: Minimum spacing
Locking separator 6008 = .91" (23 mm)



Vertical separator 8001



Vertical separator

Unassembled	**Part No. 8001**
Assembled	**Part No. 8011**

Spacers 6005-XX

Spacer (chain only)

Unassembled	**Part No. 6005**
Assembled	**Part No. 6015**

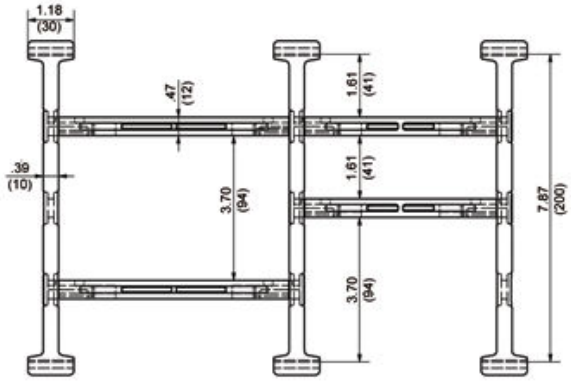
Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
6005 -10	**6015 -10**	.39"	(10)
6005 -15	**6015 -15**	.59"	(15)
6005 -20	**6015 -20**	79"	(20)

- **Standard separator 8001 for E-Chains®**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Modular E4 shelving system safeguards large cables - Series 800



- Easy assembly
- Robust, also for large cable diameters
- Modular
- Widths from 50 to 600 mm
- For use with **vertical separator 8001** and **crossbar 450-XX**

Modular Shelving
Single sided snap in tab

Unassembled	**Part No. 8001H1**
Assembled	**Part No. 8011H1**

Modular Shelving

Part No. 8001H2Part No. 8011H2

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E4-1
Series 800
Mounting Brackets - Steel

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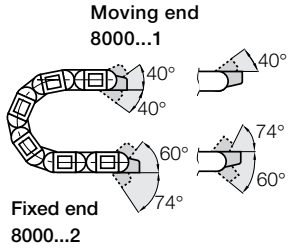
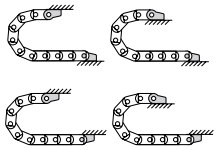
QuickSpec: http://www.igus.com/quickspec

Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive

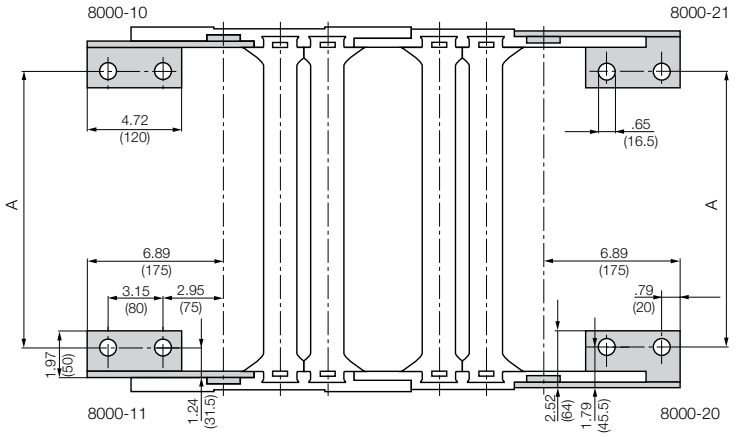




Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 800
8000-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right with bore
Series 800
8000-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right with pin
Series 800
8000-2



Bracket Mounting Dimensions

Width of Chain *Bi*	Mounting Brackets Part Number	Full Set	Moving End Only	Fixed End Only	A in. (mm)
7.87 (200)	8000	-12	-1	-2	5.91 (150)
9.84 (250)	8000	-12	-1	-2	7.87 (200)
11.81 (300)	8000	-12	-1	-2	9.84 (250)
12.80 (325)	8000	-12	-1	-2	10.83 (275)
13.78 (350)	8000	-12	-1	-2	11.81 (300)
15.75 (400)	8000	-12	-1	-2	13.78 (350)
17.72 (450)	8000	-12	-1	-2	15.75 (400)
19.69 (500)	8000	-12	-1	-2	17.72 (450)
21.65 (550)	8000	-12	-1	-2	19.69 (500)
23.62 (600)	8000	-12	-1	-2	21.65 (550)

Due to the design of the E4/100 series chains, please note the following when ordering brackets:

Even number of links = full set, part number ending in **-12**
Odd number of links = 2 pieces, part number ending in **-1**

E-Chain System® E4-1
Series 800
Guide Trough

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 90-30
- 1/2 travel length glide bars
  Part No. 90-31
- Installation sets as end connectors
  Part No. 90-50-XX

-XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the right. Standard length of the trough components and glide bars is 6.56 ft (2m).
The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50m)
Center mounted

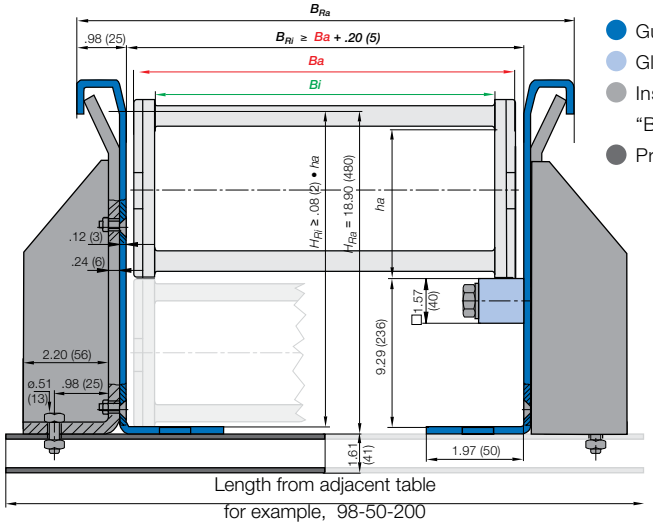
Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of (2 m) guide trough without glide bars **Part No. 90-30**
= 13 section of (2 m) guide troughs with glide bars **Part No. 90-31**
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
90-50-XXX
Example:
90-50-400 for (400 m) long profile rail

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

Installation sets as section connectors

Width of Crossbar
640-**12**-200-0

	B_{Ri}	Installation Part No.
-20	10.43 (265)	**90-50-450**
-25	12.40 (315)	**90-50-500**
-30	14.37 (365)	**90-50-550**
-32	15.35 (390)	**90-50-575**
-35	16.33 (415)	**90-50-600**
-40	18.31 (465)	**90-50-650**
-45	20.28 (515)	**90-50-700**
-50	22.24 (565)	**90-50-750**
-55	24.21 (615)	**90-50-800**
-60	26.18 (665)	**90-50-850**



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

Standard length profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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840

igus®

E-Chain System® E4-1
Series 840

Price Index

Series 840

Special Options Available

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Other Installation Methods

Vertical, hanging: consult igus®
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 19.69 ft (6 m)
Rotary requires further calculation

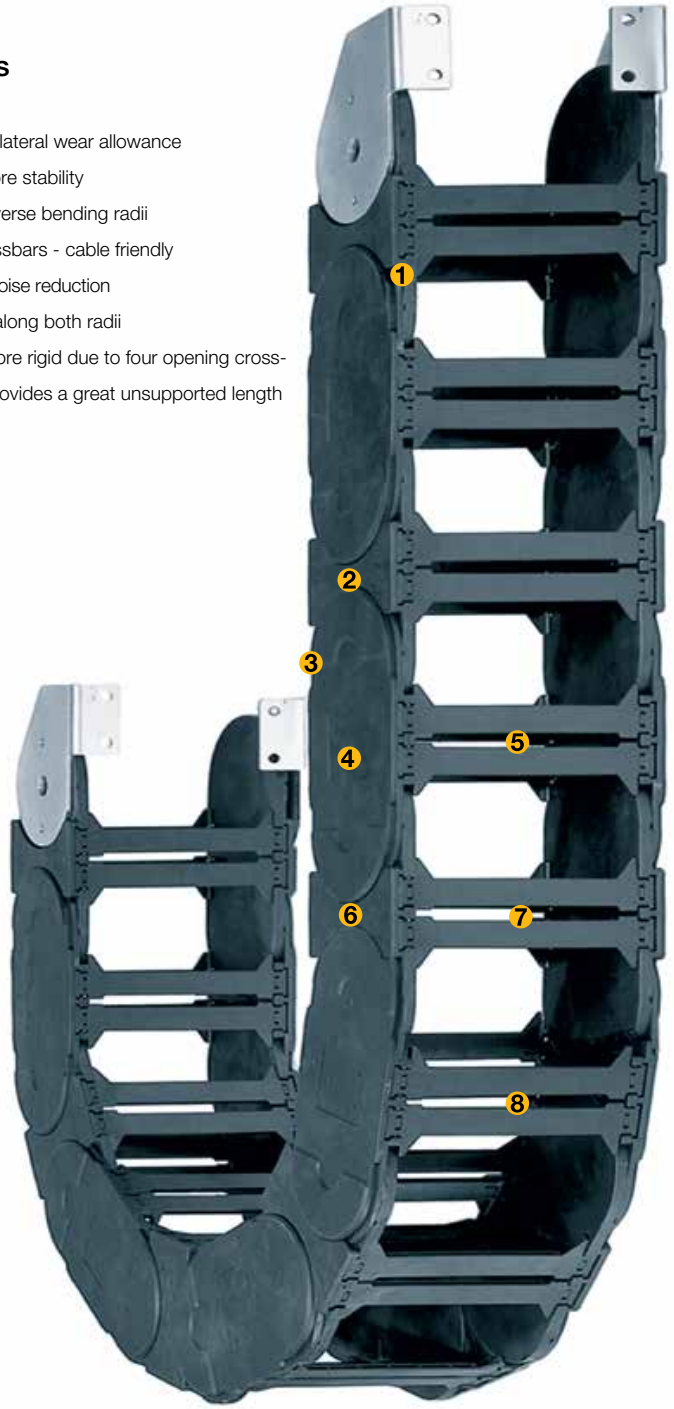
Usage Guidelines

- If a particularly big and stable E-Chain® is required
- At very high speeds and/or accelerations
- For long travels
- For high additional loads
- Large cable/hose diameters

- If a more stable E-Chain® with identical inner height is required
  ➤ **Series 800**

Features & Benefits

1. Dirt-repellent exterior
2. Optimized glide pads with lateral wear allowance
3. Tongue and groove for more stability
4. E-Chain® available with reverse bending radii
5. Wide, rounded plastic crossbars - cable friendly
6. Stop dog with “brake” for noise reduction
7. Crossbars are removable along both radii
8. Each chain link is made more rigid due to four opening cross-bars, and consequently provides a great unsupported length



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

23 ft (7 m) **840-30-350-0**	**E-Chain®**
With 2 separators **8411** assembled every 2nd link	**Interior Separation**
1 Set **8000-12**	**Mounting Bracket**

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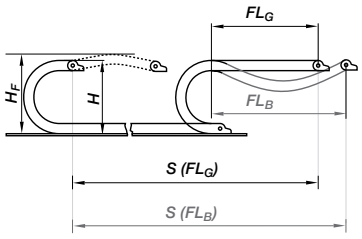
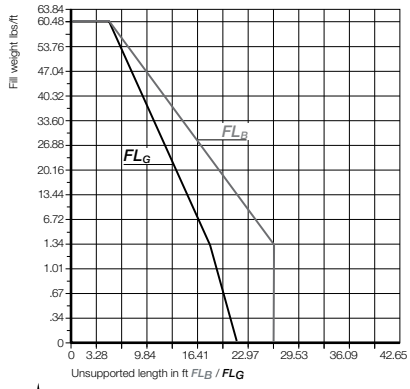
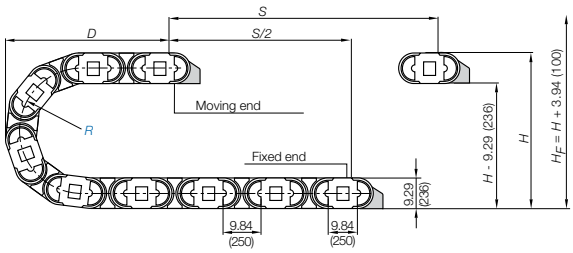
E-Chain System® E4-1
Series 840
Installation Dimensions

Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run
Further information ➤ Design, Chapter 1







Pitch per link: = 9.84" (250 mm)
Links per ft (m): = 1.22 (4)
For center mount applications:
Chain length = $S/2 + K$

The required clearance height: ***HF = H* + 3.94 in. (100 mm)** (with 3.36 lbs/ft (5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	12.80 (325)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	23.62 (600)	29.53 (750)	39.37 (1000)
*H**	34.88 (886)	36.85 (936)	40.79 (1036)	44.72 (1136)	48.66 (1236)	56.53 (1436)	68.35 (1736)	88.03 (2236)
D	32.20 (818)	33.19 (843)	35.16 (893)	37.13 (943)	39.09 (993)	43.03 (1093)	48.94 (1243)	58.78 (1493)
K	60.04 (1525)	62.99 (1600)	69.29 (1760)	75.39 (1915)	81.69 (2075)	93.90 (2385)	112.60 (2860)	143.50 (3645)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

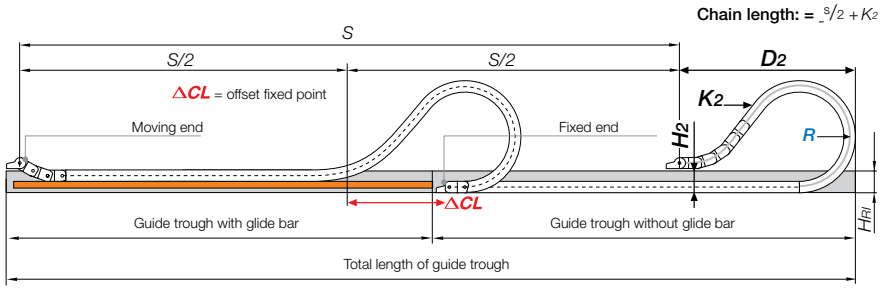
*If the mounting bracket location is set lower

For long travels with lowered mounting height

Please consult igus® when choosing to use a lowered mounting height with this series

Long travel lengths from 32.8 ft. (10 m) to max. 1,476 ft. (450 m)

For center mount applications:
Chain length: = $S/2 + K_2$



R	12.80 (325)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	23.62 (600)	29.53 (750)	39.37 (1000)
H_2	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)
D_2	40.55 (1030)	42.52 (1080)	54.33 (1380)	63.39 (1610)	78.74 (2000)	97.64 (2480)	*	*
K_2	78.74 (2000)	78.74 (2000)	98.43 (2500)	118.11 (3000)	127.95 (3250)	157.48 (4000)	*	*
ΔCL	9.84 (250)	11.81 (300)	21.65 (550)	29.53 (750)	41.34 (1050)	55.12 (1400)	*	*

In case of travels between 39.4 and 32.8 ft (12 and 15 m) we recommend a longer unsupported length.
****200 radius is not available for the E-Tubes**

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ **Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
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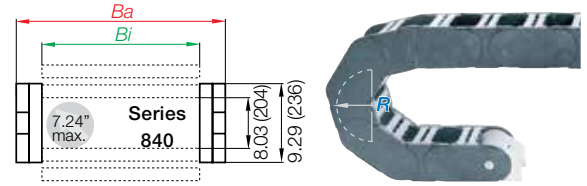
igus®

E-Chain System® E4-1
Series 840
Product Range

Series 840 - E-Chain® with crossbars every link

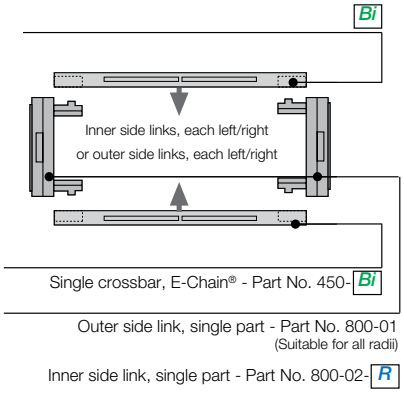


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

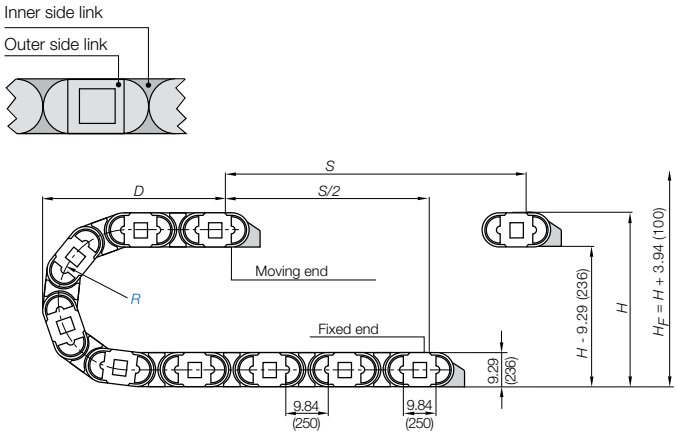
840-	30-	350-	0

E-Chain® as separate parts, links and side plates



Outer side link, single part - Part No. 800-01
(Suitable for all radii)

Inner side link, single part - Part No. 800-02-R



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E-Chain System® E4-1
Series 840
Product Range

350

Part Number. Crossbars Every link		Bi in. (mm)	Ba in. (mm)	840 lbs/ft (kg/m)
840-13-	-0	3.94 (100)	6.30 (160)	≈ 9.30 (13.84)
840-15-	-0	4.45 (113)	6.81 (173)	≈ 9.32 (13.87)
840-16-	-0	4.92 (125)	7.28 (185)	≈ 9.37 (13.95)
840-17-	-0	5.43 (138)	7.80 (198)	≈ 9.43 (14.04)
840-18-	-0	5.91 (150)	8.27 (210)	≈ 9.49 (14.13)
840-20-	-0	6.42 (163)	8.78 (223)	≈ 9.52 (14.17)
840-21-	-0	6.89 (175)	9.25 (235)	≈ 9.56 (14.22)
840-22-	-0	7.40 (188)	9.76 (248)	≈ 9.59 (14.27)
840-23-	-0	7.87 (200)	10.24 (260)	≈ 9.64 (14.35)
840-25-	-0	8.38 (213)	10.75 (273)	≈ 9.70 (14.43)
840-26-	-0	8.86 (225)	11.22 (285)	≈ 9.74 (14.49)
840-27-	-0	9.37 (238)	11.73 (298)	≈ 9.79 (14.57)
840-28-	-0	9.84 (250)	12.20 (310)	≈ 9.82 (14.61)
840-30-	-0	10.35 (263)	12.72 (323)	≈ 9.89 (14.72)
840-31-	-0	10.83 (275)	13.19 (335)	≈ 9.91 (14.75)
840-32-	-0	11.34 (288)	13.70 (348)	≈ 9.96 (14.82)
840-33-	-0	11.81 (300)	14.17 (360)	≈ 10.02 (14.91)
840-35-	-0	12.32 (313)	14.69 (373)	≈ 10.12 (15.06)
840-36-	-0	12.80 (325)	15.16 (385)	≈ 10.14 (15.09)
840-37-	-0	13.31 (338)	15.67 (398)	≈ 10.15 (15.11)
840-38-	-0	13.78 (350)	16.14 (410)	≈ 10.18 (15.15)
840-40-	-0	14.29 (363)	16.65 (423)	≈ 10.31 (15.34)
840-41-	-0	14.76 (375)	17.13 (435)	≈ 10.34 (15.39)
840-42-	-0	15.28 (388)	17.64 (448)	≈ 10.42 (15.50)
840-43-	-0	15.75 (400)	18.11 (460)	≈ 10.46 (15.57)
840-45-	-0	16.26 (413)	18.62 (473)	≈ 10.50 (15.63)
840-46-	-0	16.73 (425)	19.09 (485)	≈ 10.54 (15.69)
840-47-	-0	17.24 (438)	19.61 (498)	≈ 10.56 (15.72)
840-48-	-0	17.72 (450)	20.08 (510)	≈ 10.62 (15.80)
840-50-	-0	18.23 (463)	20.59 (523)	≈ 10.66 (15.87)
840-51-	-0	18.70 (475)	21.06 (535)	≈ 10.69 (15.91)
840-52-	-0	19.21 (488)	21.57 (548)	≈ 10.70 (15.93)
840-53-	-0	19.69 (500)	22.05 (560)	≈ 10.75 (16.00)
840-55-	-0	20.20 (513)	22.56 (573)	≈ 10.96 (16.31)
840-60-	-0	22.17 (563)	24.53 (623)	≈ (11.07 16.47)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 840-30-350-0

	325	350	400	450	500	600	750	1000
R	12.80 (325)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	23.62 (600)	29.53 (750)	39.37 (1000)
*H**	34.88 (886)	36.85 (936)	40.79 (1036)	44.72 (1136)	48.66 (1236)	56.53 (1436)	68.34 (1736)	88.03 (2236)
D	32.20 (818)	33.19 (843)	35.16 (893)	37.13 (943)	39.09 (993)	43.03 (1093)	48.94 (1243)	58.78 (1493)
K	60.04 (1525)	62.99 (1600)	69.29 (1760)	75.39 (1915)	81.69 (2075)	93.90 (2385)	112.60 (2860)	143.50 (3645)

0 = Standard color black. For other colors see Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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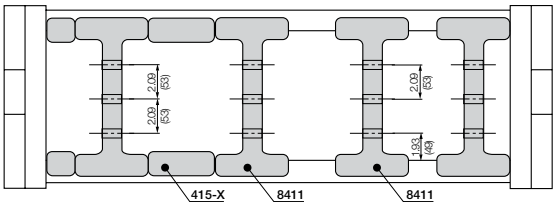
igus®

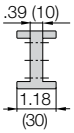
E-Chain System® E4-1
Series 840
Interior Separation

Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.



Vertical separator 8401



Vertical separator

Unassembled	**Part No. 8401**
Assembled	**Part No. 8411**

- **Standard separator 8401 for E-Chains®**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

Spacers 405-XX

Spacer (chain only)

Unassembled	**Part No. 405.XX**
Assembled	**Part No. 415.XX**

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	**415 -10**	.39"	(10)
405 -15	**415 -15**	.59"	(15)
405 -20	**415 -20**	79"	(20)
405 -30	**415 -30**	1.18"	(30)
405 -40	**415 -40**	1.57"	(40)

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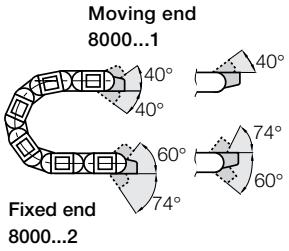
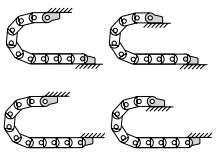
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E4-1
Series 840
Mounting Brackets

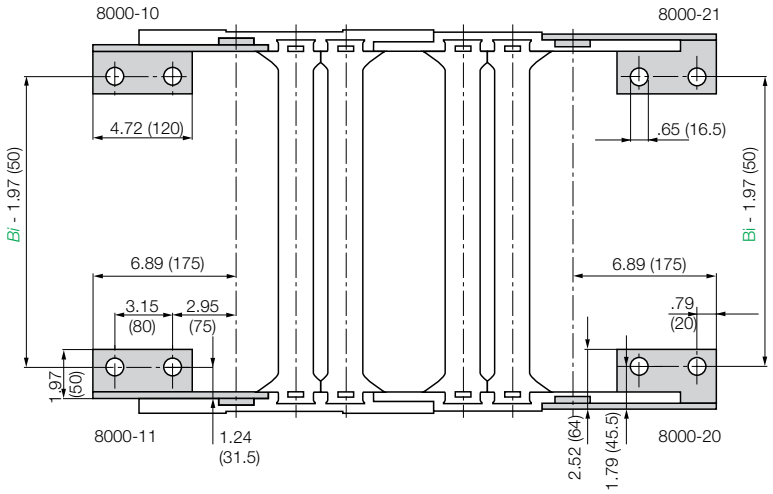
Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive





Possible installation configurations -



Part No.	Mounting bracket
8000-12	Full set
8000-1	moving end
8000-2	fixed end

Due to the design of the E4/100 series chains, please note the following when ordering brackets:

Even number of links = full set, part number ending in **-12**
Odd number of links = 2 pieces, part number ending in **-2**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E4-1
Series 840
Guide Trough

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QuickSpec: http://www.igus.com/quickspec

Width of Crossbar
840-**20**-200-0

	B_{Ri}	Installation Part No.
-13	6.49 (165)	**90-50-350**
-15	7.01 (178)	**90-50-350**
-16	7.48 (190)	**90-50-375**
-17	7.99 (203)	**90-50-375**
-18	8.46 (215)	**90-50-400**
-20	8.98 (228)	**90-50-400**
-21	9.45 (240)	**90-50-425**
-22	9.96 (253)	**90-50-425**
-23	10.43 (265)	**90-50-450**
-25	10.94 (278)	**90-50-450**
-26	11.42 (290)	**90-50-475**
-27	11.93 (303)	**90-50-475**
-28	12.40 (315)	**90-50-500**
-30	12.91 (328)	**90-50-500**
-31	13.39 (340)	**90-50-525**
-32	13.90 (353)	**90-50-525**
-33	14.37 (365)	**90-50-550**
-35	14.88 (378)	**90-50-550**
-36	15.35 (390)	**90-50-575**
-37	15.87 (403)	**90-50-575**
-38	16.34 (415)	**90-50-600**
-40	16.85 (428)	**90-50-600**
-41	17.32 (440)	**90-50-625**
-42	17.83 (453)	**90-50-625**
-43	18.31 (465)	**90-50-650**
-45	18.82 (478)	**90-50-650**
-46	19.29 (490)	**90-50-675**
-47	19.80 (503)	**90-50-675**
-48	20.20 (513)	**90-50-700**
-50	20.79 (528)	**90-50-700**
-51	21.26 (540)	**90-50-725**
-52	21.77 (553)	**90-50-725**
-53	22.24 (565)	**90-50-750**
-55	22.76 (578)	**90-50-750**
-60	26.18 (665)	**90-50-800**

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 90-30
- 1/2 travel length glide bars
  Part No. 90-31
- Installation sets as end connectors
  Part No. 90-50-XX

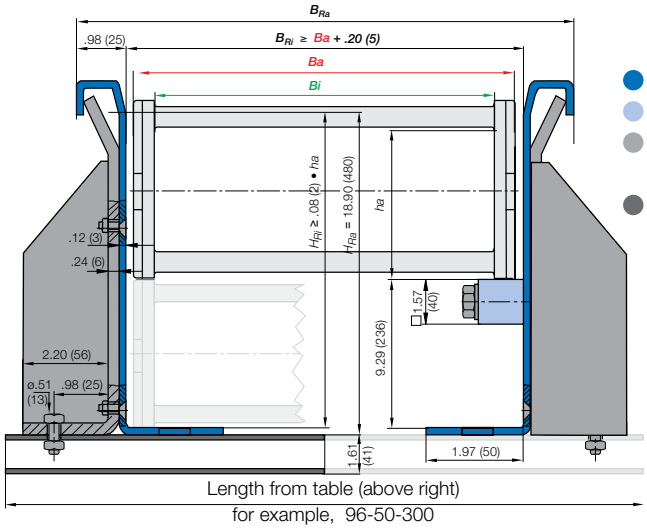
-XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the right. Standard length of the trough components and glide bars is 6.56 ft (2m).
The required overall length of the guide trough directly correlates to the length of travel.
Example:

Length of travel 164 ft (50m)
Center mounted

Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of (2 m) guide trough without glide bars **Part No. 90-30**
= 13 section of (2 m) guide troughs with glide bars **Part No. 90-31**
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
90-50-XXX
Example:
90-50-400 for (400 m) long profile rail

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

Installation sets as section connectors



Individual attachment without profile rail

* Specialized guide trough available upon request

Standard length profile rail

For further technical information on guide troughs
➤ Chapter 9

E-Chain System® E4-1

Telephone 1-800-521-2747
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E4-350

E-Chain System® E4-1
Series E4-350

350

Price Index

Series E4-350

Special Options Available

Very high fill weights possible > 100 kg/m

Very huge interior, inner height 13.78" (350 mm), inner width up to 39.37" (1000 mm)

Features & Benefits

1. Electrically insulating
2. The world's largest* all-plastic E-Chain® (*issue 10/2008, available from 2009)
3. Maintenance-free - no grease or oil needed to lubricate the joints
4. Designed to carry thick, heavy and stiff cables and hoses
5. Ideal for rough use on oil platforms, in steel plants, or in heavy duty machinery
6. Steel mounting brackets, also available in stainless steel upon request
7. Solid crossbars made from high-tech polymer
8. Tongue and groove design provides greater lateral stability
9. Modular design saves assembly time
10. Interior separation available
11. Highly resistant to wear, corrosion and sea water
12. Plastic material reduces noise

Usage Guidelines

- If a maintenance-free offshore E-Chain® is required
- If no use of oil and grease is needed
- If electrical insulation is necessary
- If resistance to corrosion and sea water is required
- If 100% plastics is the first choice for your application

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

16.4 ft (5 m) **E4-350-200-500-0**	**E-Chain®**
With 2 separators **351-1** assembled every 2nd link	**Interior Separation**
1 Set **E4-350100-1-12**	**Mounting Bracket**

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E-Chain System® E4-1
Series E4-350
Installation Dimensions

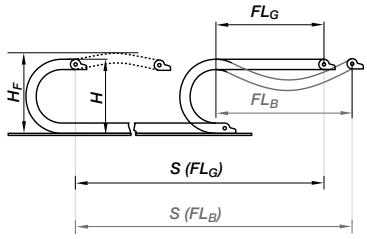
Short travel, unsupported length

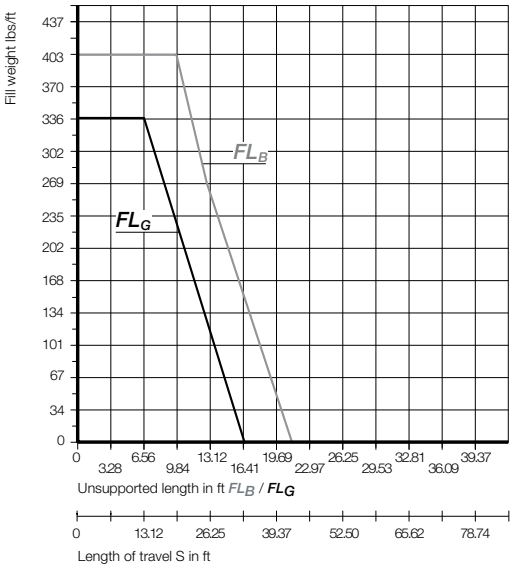
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information

➤ Design, Chapter 1



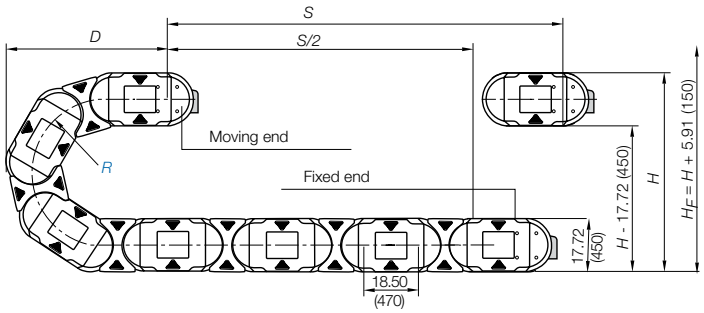


Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height



Pitch per link: = 18.50" (470 mm)
Links per ft (m): = .64 (2)
For center mount applications:
Chain length = $^{S}/_{2}$ + K

The required clearance height: $H_F = H + 5.91$ in. (150 mm)

R	19.69 (500)	29.53 (750)	39.37 (1000)
*H**	57.09 (1450)	76.77 (1950)	96.46 (2450)
D	56.30 (1430)	66.14 (1680)	75.98 (1930)
K	99.02 (2515)	129.92 (3300)	160.83 (4085)

Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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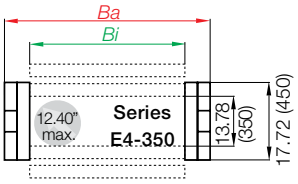
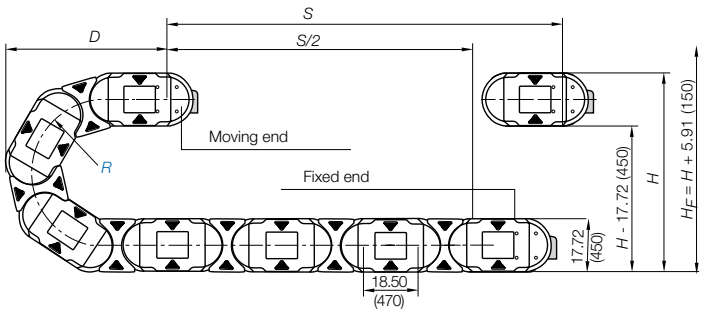
igus®

E-Chain System® E4-1
Series E4-350

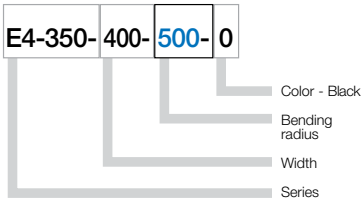
Series E4-350 - E-Chain® with crossbars every link



- Crossbars every link
- For rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides



Part Number Structure



Supplement part number with required radius. Example: E4-350-200-[500]-0
Pitch: 18.50 in. (470 mm) per link links/ft(m) = .64 (2)

Part Number. Crossbars Every link		Bi in. (mm)	Ba in. (mm)	E4-350(61.9) lbs/ft (kg/m)
E4-350-400 -	-0	15.75 (400)	21.26 (540)	41.59 (61.9)
E4-350-500 -	-0	19.69 (500)	25.20 (640)	44.15 (65.7)
E4-350-600-	-0	23.62 (600)	29.13 (740)	46.77 (69.6)
E4-350-700 -	-0	27.56 (700)	33.07 (840)	49.32 (73.4)
E4-350-800 -	-0	31.50 (800)	37.01 (940)	51.88 (77.2)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E4-350-400-[500]-0

	500	750	1000
R	19.69 (500)	29.53 (750)	39.37 (1000)
*H**	57.09 (1450)	76.77 (1950)	96.46 (2450)
D	56.30 (1430)	66.14 (1680)	75.98 (1930)
K	99.02 (2515)	129.92 (3300)	160.83 (4085)

0 = Standard color black. For other colors see Chapter 1

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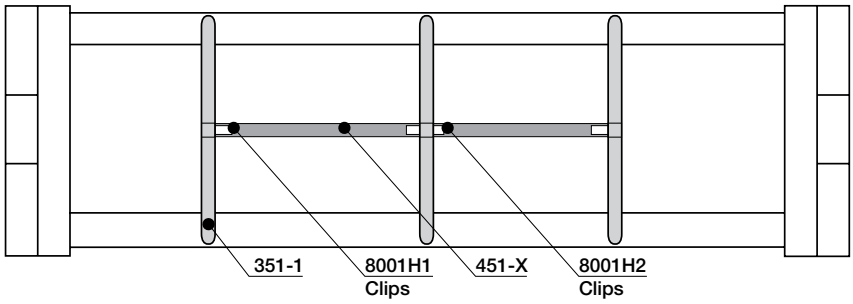
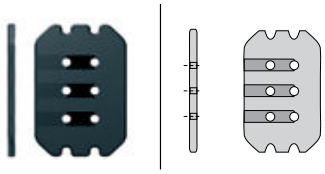
E-Chain System® E4-1
Series E4-350
Interior Separation



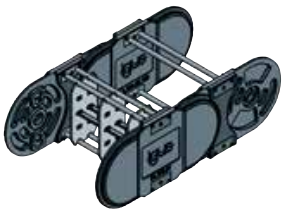


Separator for vertical subdivision
For a vertical subdivision in 3 positions

unassembled	350.1
assembled	351.1

Shelf for horizontal subdivision
For horizontal separation with clip separators for vertical subdivision. Horizontal shelves of various widths can be arranged at 3 different positions

unassembled	450-X
assembled	451-X



Heavy duty interior separation for cable-safe guidance

Width X in. (mm)	Part No. unassembled	Part No. assembled	Width X in. (mm)	Part No. unassembled	Part No. assembled
1.97 (50)	**450-50**	**451-50**	12.28 (312)	**450-312**	**451-312**
2.56 (65)	**450-65**	**451-65**	12.80 (325)	**450-325**	**451-325**
2.95 (75)	**450-75**	**451-75**	13.27 (337)	**450-337**	**451-337**
3.43 (87)	**450-87**	**451-87**	13.78 (350)	**450-350**	**451-350**
3.94 (100)	**450-100**	**451-100**	14.25 (362)	**450-362**	**451-362**
4.41 (112)	**450-112**	**451-112**	14.76 (375)	**450-375**	**451-375**
4.92 (125)	**450-125**	**451-125**	15.24 (387)	**450-387**	**451-387**
5.39 (137)	**450-137**	**451-137**	15.75 (400)	**450-400**	**451-400**
5.91 (150)	**450-150**	**451-150**	16.22 (412)	**450-412**	**451-412**
6.38 (162)	**450-162**	**451-162**	16.73 (425)	**450-425**	**451-425**
6.89 (175)	**450-175**	**451-175**	17.20 (437)	**450-437**	**451-437**
7.36 (187)	**450-187**	**451-187**	17.72 (450)	**450-450**	**451-450**
7.87 (200)	**450-200**	**451-200**	18.19 (462)	**450-462**	**451-462**
8.34 (212)	**450-212**	**451-212**	18.70 (475)	**450-475**	**451-475**
8.85 (225)	**450-225**	**451-225**	19.17 (487)	**450-487**	**451-487**
9.33 (237)	**450-237**	**451-237**	19.69 (500)	**450-500**	**451-500**
9.84 (250)	**450-250**	**451-250**	20.16 (512)	**450-512**	**451-512**
10.31 (262)	**450-262**	**451-262**	20.67 (525)	**450-525**	**451-525**
10.83 (275)	**450-275**	**451-275**	21.14 (537)	**450-537**	**451-537**
11.30 (287)	**450-287**	**451-287**	21.65 (550)	**450-550**	**451-550**
11.81 (300)	**450-300**	**451-300**	23.62 (600)	**450-600**	**451-600**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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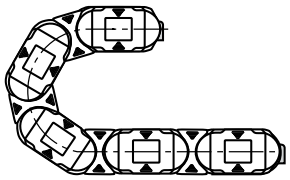
igus®

E-Chain System® E4-1
Series E4-350

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

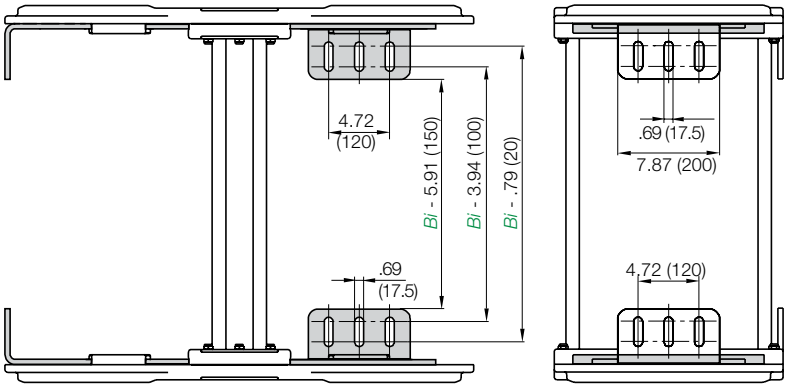
Moving end



Fixed end

E4-350100-1
Moving end

E4-350100-1
Fixed end

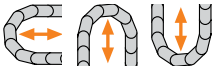


Steel mounting brackets

E4-350100-1-12-SS	Full set (both sides) for E-Chain®, ending with outer side link (4 pieces)
E4-350100-1-SS	Mounting bracket set (one side) for outer side link (2 pieces)

Stainless steel version available please add suffix **-SS**
(Material: stainless steel 1.4301)

Note: By ordering steel mounting brackets in combination with an E-Chain® / E-Tube, they will be delivered assembled!



- For pivoting connections
- Secure connection
- One part (two-piece) for all E-Chain® widths
- Electrically conductive

Robust steel mounting bracket for secure mounting and connection

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E-Chain System® E4-1
Series E4-350

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email: sales@igus.com
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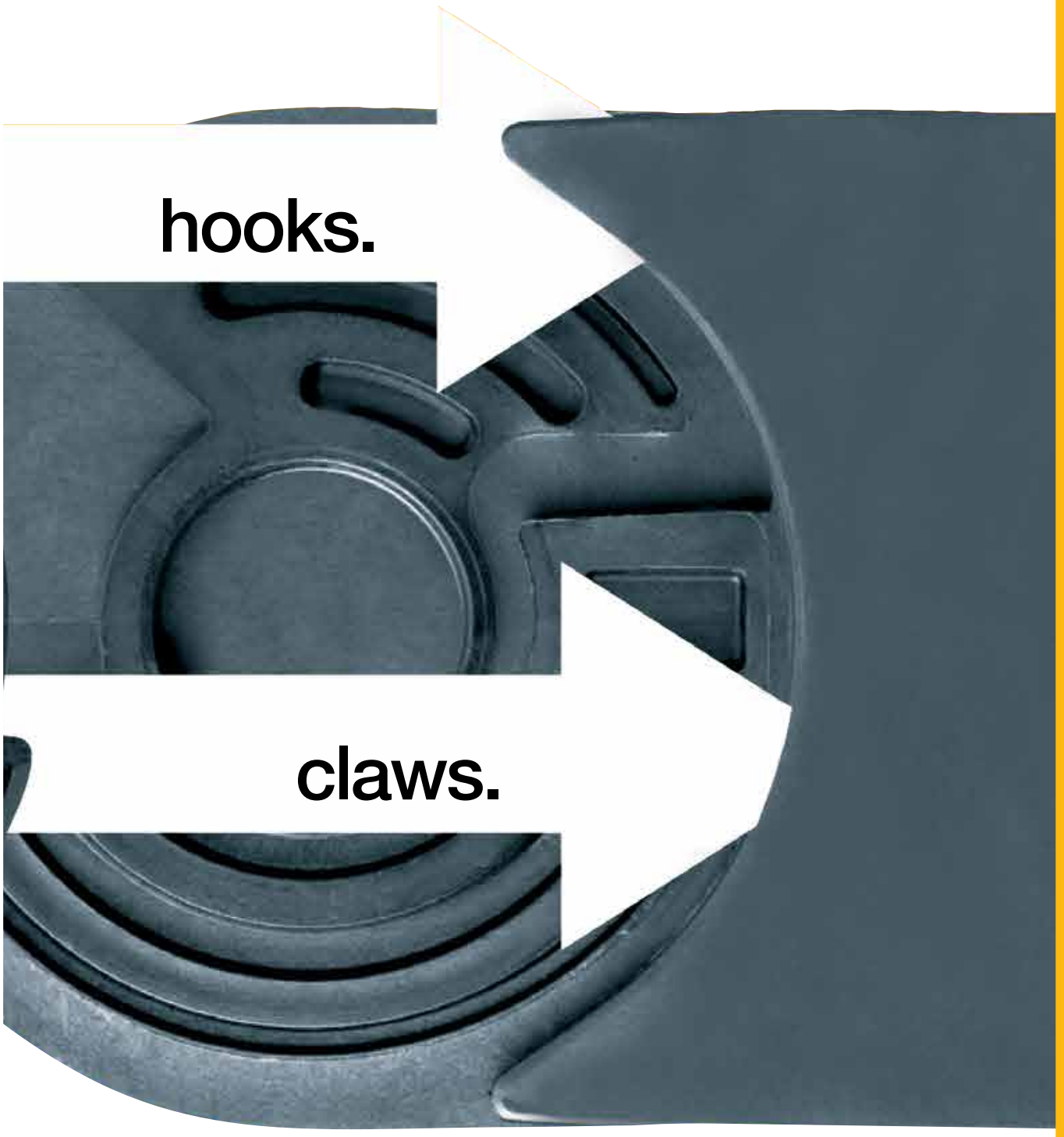

igus®
E4/Light

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E4/light - stable, lightweight and cost-effective

System E4/Light – E4 'light' features smaller side links (all sizes and styles) and thinner crossbars (specifically styles 14240 and 14340) when compared to igus®' standard E4 cable carriers. It's cost-effective, lightweight and still offers a large interior space for multiple cables and hoses. E4 light works especially for un-supported, short travel applications and is also ideal in hanging and short-standing designs.

Typical industries and applications

- Machine tools
- Material handling
- Stone cutting machines
- Woodworking machines
- General machinery
- Vehicles
- Construction machinery
- Limited long travel applications

ATEX/ESD: Excellent performance with the special material igumid ESD (upon request) "Rear grip" achieves long-term electrical conductivity

Side-mounted - unsupported

High torsional rigidity

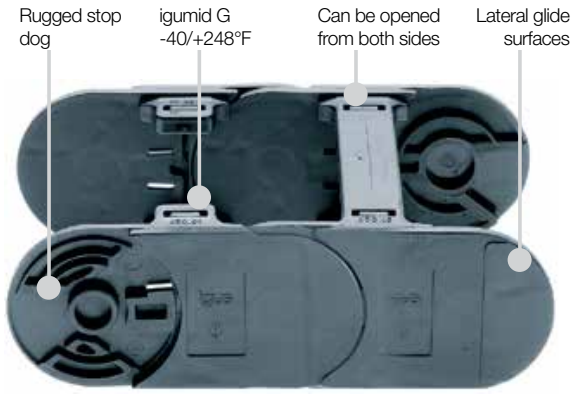
System E4/4 approved with long travels

E4/light E-Chains® and E-Tubes are ideal in Machine Tools

E4/light is popular for hanging applications

With the space-saving igus® E4 Polymer E-Chains® the overall dimension for the installation for this crane system was considerably reduced

E-Chain System® E4 Light Selection Guide



E4/light version with the approved E4/4 Series undercut design

- Lightweight
- Optimized ratio of interior and exterior dimension
- Cost-effective
- Numerous interior separation possibilities
- Wide range of modular accessories
- Narrow outer links
- Maximum stability in the igus® range
- Maximum travel: 492 - 820 ft (150 - 250 m)
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

Crossbars every link
for particularly demanding applications

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
14040	2.20	(56)	1.97-23.62	(50-600)	2.99-24.65	(76-626)	3.31	(84)	5.31-19.69	(135-500)
14240	2.44	(62)	1.97-15.75	(50-400)	2.99-16.77	(76-426)	3.31	(84)	5.31-19.69	(135-500)
14550	2.76	(70)	1.97-23.62	(50-600)	3.03-24.69	(77-627)	3.86	(98)	5.91-23.62	(150-600)
15050	3.15	(80)	1.97-23.62	(50-600)	3.15-24.80	(80-630)	4.25	(108)	5.91-19.69	(150-500)
15250	3.39	(86)	1.97-23.62	(50-400)	3.15-16.93	(80-430)	4.25	(108)	5.91-23.62	(150-600)
1640	4.41	(112)	1.97-23.62	(50-600)	3.31-24.96	(84-634)	5.51	(140)	7.87-23.62	(200-600)

Crossbars every 2nd link
for almost all applications

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
14140	2.20	(56)	1.97-23.62	(50-600)	2.99-24.65	(76-626)	3.31	(84)	5.31-19.69	(135-500)
14340	2.44	(62)	1.97-15.75	(50-400)	2.99-16.77	(76-426)	3.31	(84)	5.31-19.69	(135-500)
14650	2.76	(70)	1.97-23.62	(50-600)	3.03-24.69	(77-627)	3.86	(98)	5.91-23.62	(150-600)
15150	3.15	(80)	1.97-23.62	(50-600)	3.15-24.80	(80-630)	4.25	(108)	5.91-19.69	(150-500)
15350	3.39	(86)	1.97-23.62	(50-400)	3.15-16.93	(80-430)	4.25	(108)	5.91-23.62	(150-600)

E-Tubes
fully enclosed, excellent cable protection
Available for certain widths and radii

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
R18840	2.20	(56)	2.95-18.19	(75-462)	3.98-19.25	(101-489)	3.31	(84)	5.91-19.69	(150-500)
R19050	2.76	(70)	2.95-18.19	(75-462)	4.01-19.25	(102-489)	3.86	(98)	7.87-23.62	(200-600)
R19850	3.15	(80)	2.95-18.19	(75-462)	4.13-19.41	(105-493)	4.25	(108)	7.87-19.69	(200-500)
R1608	4.25	(108)	7.87-19.69	(200-500)	9.21-17.09	(234-434)	5.51	(140)	9.84-23.62	(250-600)

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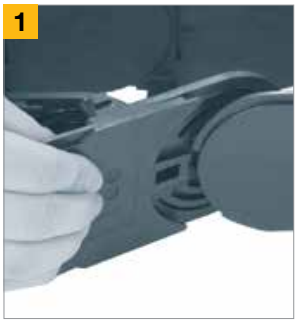
E-Chain System® E4 Light
Assembly instructions

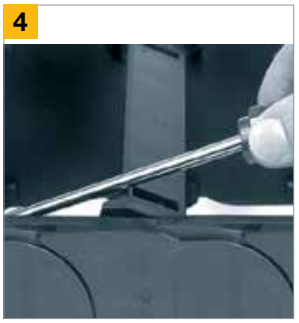
E-Chains® and E-Tubes - Assembling



Position at one side ...

... and snap in

Position opposite side.
Press together and snap in



Assemble crossbars - push down and snap in using a screwdriver

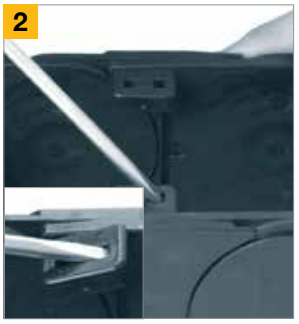
Assembling continued

Assemble clips (for E-Chains with crossbars every other link) - push down and snap in using a screwdriver

Assemble E-Tube lids and bottoms - Attach to the connector at an angle and snap in place

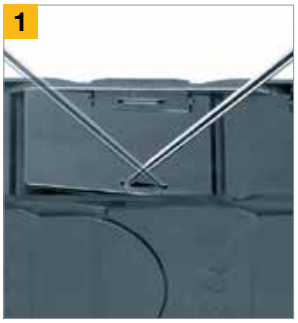
E-Chains® - Opening

Remove crossbars - Insert screwdriver into the slot, using a lever action, apply pressure to the screwdriver to remove the crossbar.

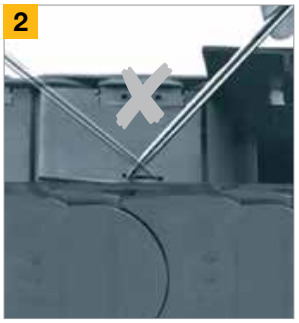


Remove clips - Insert screwdriver into the slot, using a lever action, apply pressure to the screwdriver to remove the clip

E-Tube - Opening



Remove lids/bottoms - Insert screwdriver into the slot, using a lever action apply pressure to the screwdriver to release



Release only **one side** to open the lid

E-Chains® and E-Tubes - Separating

Remove crossbars, clips, lids and bottoms at the outer links

Insert screwdriver into the slot between the side links. Using a lever action, release the side links

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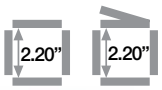
14040
14140
R18840

igus®

E-Chain System® E4 Light
Series 14040/14140/R18840



Price Index

Series 14040

Series 14140

Series R18840

Special Features / Options

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

Side-mounted - unsupported

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 262 ft (80 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

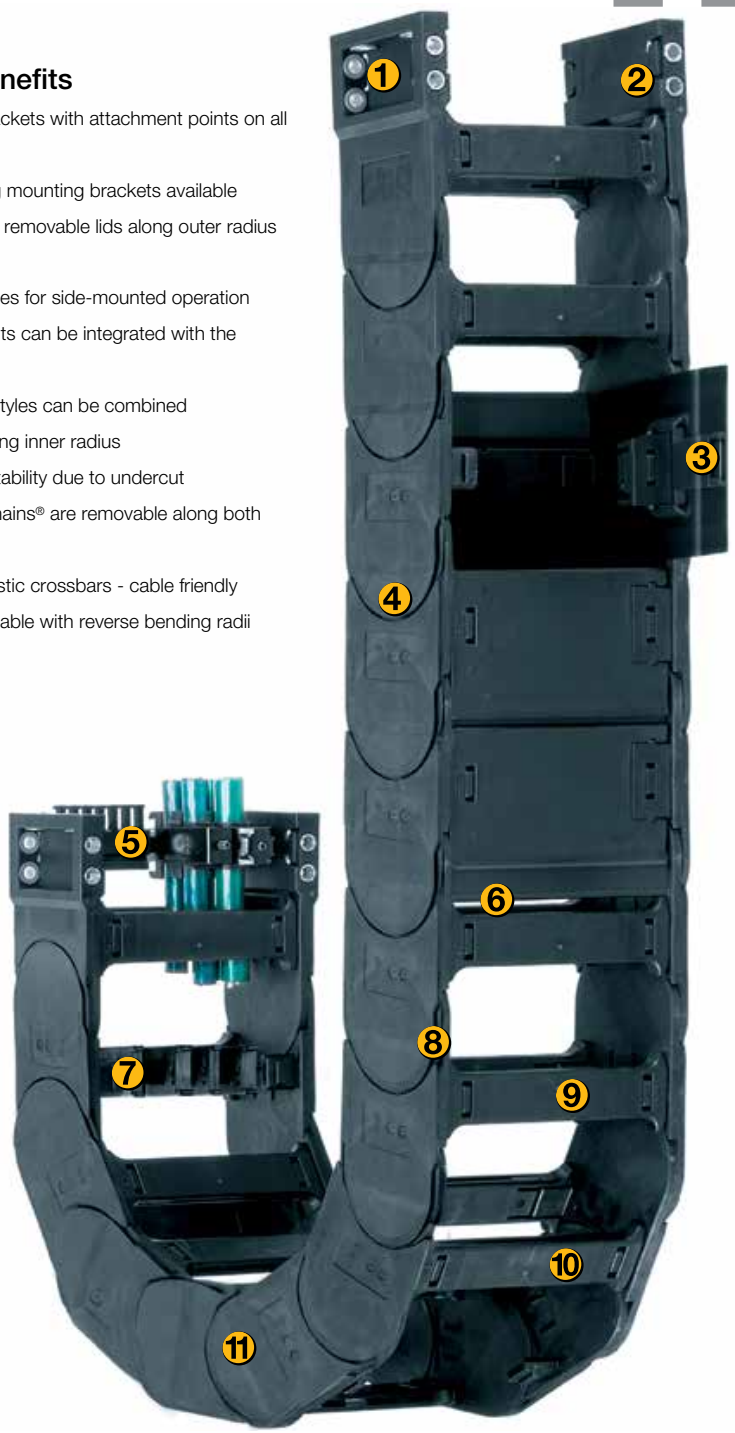
Usage Guidelines

- If a simpler low-cost solution is required
- For maximum inner width with minimal outer width
- If the Series 400 is too large

- If a quieter version is required
  ➤ **Series E6-52**
- If side-mounted chain/tube with a long unsupported travel is required
  ➤ **Series E4-56/H4-56/R4-56**
- If increased unsupported lengths and longer travels are required
  ➤ **Series E4-56/H4-56/R4-56**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Locking or pivoting mounting brackets available
3. Hinged snap-open removable lids along outer radius of E-Tube
4. Lateral glide surfaces for side-mounted operation
5. Strain relief elements can be integrated with the mounting bracket
6. Closed and open styles can be combined
7. Removable lids along inner radius
8. High side-mount stability due to undercut
9. Crossbars on E-Chains® are removable along both radii
10. Wide, rounded plastic crossbars - cable friendly
11. E-Chain® also available with reverse bending radii



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

16.4 ft (5 m) **14040-30-300-0**	**E-Chain®**
With 2 separators **411** assembled every 2nd link	**Interior Separation**
1 Set **141400-30-12P**	**Mounting Bracket**

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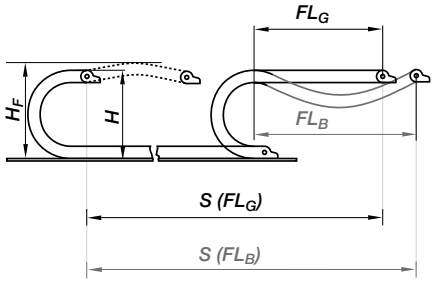
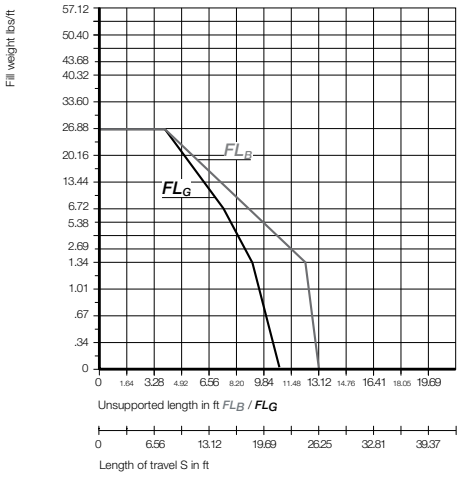
E-Chain System® E4 Light Series 14040/14140/R18840 Installation Dimensions

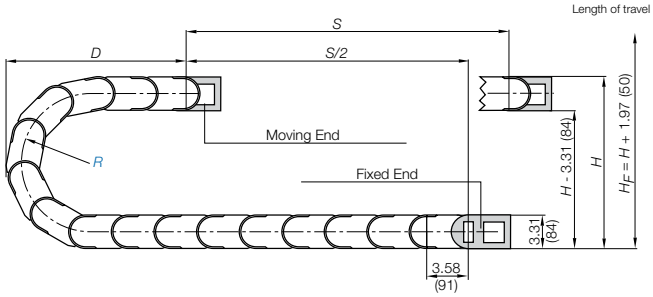
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $S/2 + K$

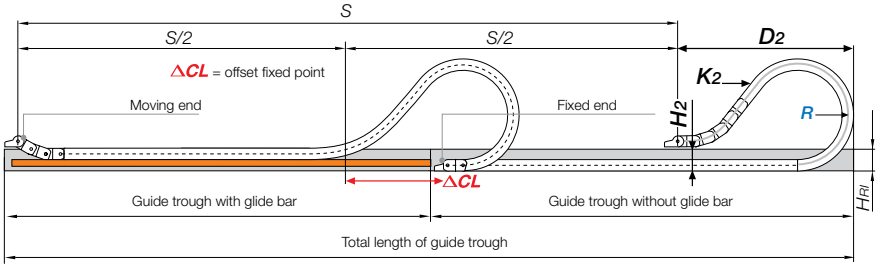
The required clearance height: $H_F = H + 1.97$ **in. (50 mm)** (with 1.34 lbs/ft (2 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)	19.68 (500)
H^{-3}_{+25}	14.17 (360)	15.16 (385)	17.13 (435)	19.09 (485)	23.03 (585)	26.97 (685)	34.84 (885)	42.72 (1085)
D	10.63 (270)	11.22 (285)	12.20 (310)	13.19 (335)	15.16 (385)	17.13 (435)	21.06 (535)	25.00 (635)
K	25.59 (650)	29.53 (750)	32.48 (825)	35.43 (900)	41.34 (1050)	48.23 (1225)	57.09 (1450)	69.88 (1775)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 492 ft. (150m)

For center mount applications:
Chain length: = $S/2 + K_2$



R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)	19.68 (500)
H_2	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)
D_2^{+25}	15.35 (390)	17.72 (450)	20.87 (530)	27.95 (710)	36.22 (920)	44.09 (1120)	60.24 (1530)	72.05 (1830)
K_2	28.66 (728)	32.24 (819)	39.41 (1001)	50.16 (1274)	64.49 (1638)	75.23 (1911)	100.31 (2548)	125.39 (3185)
ΔCL	4.88 (124)	6.26 (159)	8.22 (209)	14.13 (359)	20.04 (509)	25.94 (659)	37.76 (959)	45.63 (1159)

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height
HRI = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties ➤ **Chapter 1**

14040
14140
R18840

2.20"

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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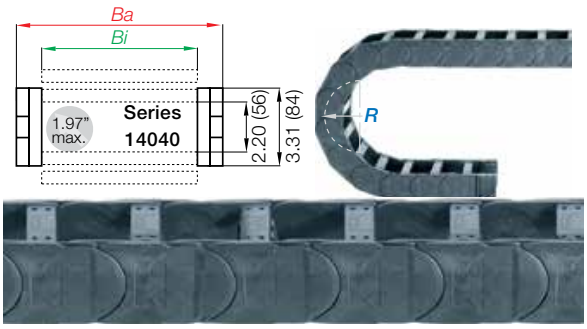
14040
14140
R18840

igus®

E-Chain System® E4 Light
Series 14040/14140/R18840

Series 14040 - E-Chain® with crossbars every link



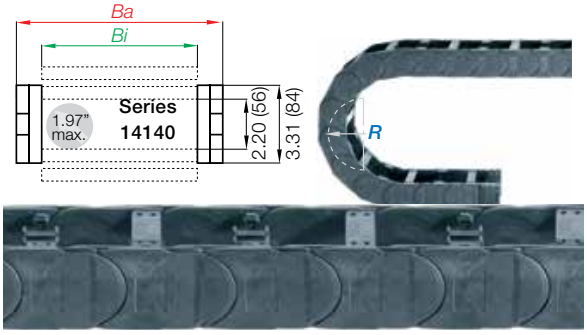
- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

14040- 30- 250- 0

- Color - Black
- Bending radius
- Width
- Series

Series 14140 - E-Chain® with crossbars every other link



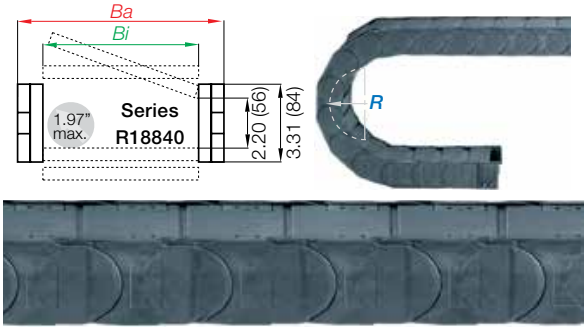
- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

14140- 30- 250- 0

- Color - Black
- Bending radius
- Width
- Series

Series R18840 - fully enclosed E-Tube



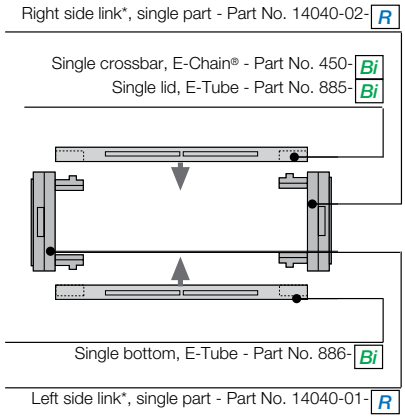
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

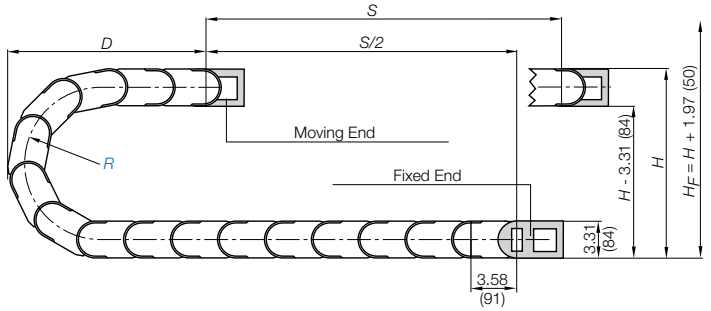
Part Number Structure

18840- 30- 250- 0

- Color - Black
- Bending radius
- Width
- Series

E-Chain® as separate parts, links and side plates





*View from the fixed point of the E-Chain®/E-Tube

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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

igus® E-Chain System®

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igus®

E-Chain System® E4 Light
Series 14040/14140/R18840

Supplement part number with required radius. Example: 14040-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

Part Number. Crossbars Every link	Crossbars Every other	Tube Version		*Bi* in. (mm)	*Ba* in. (mm)	14040 lbs/ft (kg/m)	14140 lbs/ft (kg/m)	R18840 lbs/ft (kg/m)
14040-05-	14140-05-		-0	1.97 (50)	2.99 (76)	≈ 1.79 (2.66)	≈ 1.67 (2.48)	–
14040-06-	14140-06-		-0	2.56 (65)	3.58 (91)	≈ 1.66 (2.47)	≈ 1.69 (2.51)	–
14040-07-	14140-07-	18840-07-	-0*	2.95 (75)	3.98 (101)	≈ 1.85 (2.75)	≈ 1.51 (2.25)	≈ 2.15 (3.20)
14040-08-	14140-08-		-0	3.43 (87)	4.45 (113)	≈ 1.91 (2.84)	≈ 1.61 (2.44)	–
14040-10-	14140-10-	18840-10-	-0	3.94 (100)	4.96 (126)	≈ 1.97 (2.93)	≈ 1.75 (2.61)	≈ 2.35 (3.49)
14040-11-	14140-11-		-0	4.41 (112)	5.47 (139)	≈ 2.06 (3.06)	≈ 1.79 (2.67)	–
14040-12-	14140-12-	18840-12-	-0	4.92 (125)	5.94 (151)	≈ 2.10 (3.12)	≈ 1.82 (2.71)	≈ 2.59 (3.85)
14040-13-	14140-13-		-0	5.39 (137)	6.46 (164)	≈ 2.19 (3.26)	≈ 1.86 (2.77)	–
14040-15-	14140-15-	18840-15-	-0	5.91 (150)	6.93 (176)	≈ 2.23 (3.32)	≈ 1.89 (2.81)	≈ 2.88 (4.28)
14040-16-	14140-16-		-0	6.38 (162)	7.44 (189)	≈ 2.30 (3.43)	≈ 1.92 (2.86)	–
14040-17-	14140-17-	18840-17-	-0	6.89 (175)	7.91 (201)	≈ 2.38 (3.54)	≈ 1.96 (2.92)	≈ 3.05 (4.54)
14040-18-	14140-18-		-0	7.36 (187)	8.43 (214)	≈ 2.45 (3.65)	≈ 2.00 (2.97)	–
14040-20-	14140-20-	18840-20-	-0	7.87 (200)	8.90 (226)	≈ 2.47 (3.67)	≈ 2.00 (2.98)	≈ 3.26 (4.85)
14040-21-	14140-21-		-0	8.35 (212)	9.41 (239)	≈ 2.54 (3.78)	≈ 2.04 (3.04)	–
14040-22-	14140-22-		-0	8.86 (225)	9.88 (251)	≈ 2.59 (3.85)	≈ 2.06 (3.07)	–
14040-23-	14140-23-		-0	9.33 (237)	10.39 (264)	≈ 2.67 (3.98)	≈ 2.11 (3.14)	–
14040-25-	14140-25-	18840-25-	-0	9.84 (250)	10.87 (276)	≈ 2.73 (4.07)	≈ 2.14 (3.18)	≈ 3.75 (5.58)
14040-26-	14140-26-		-0	10.31 (262)	11.38 (289)	≈ 2.80 (4.16)	≈ 2.16 (3.22)	–
14040-27-	14140-27-	18840-27-	-0	10.83 (275)	11.85 (301)	≈ 2.87 (4.27)	≈ 2.20 (3.28)	≈ 3.93 (5.85)
14040-28-	14140-28-		-0	11.30 (287)	12.36 (314)	≈ 2.88 (4.29)	≈ 2.21 (3.29)	–
14040-30-	14140-30-	18840-30-	-0	11.81 (300)	12.83 (326)	≈ 3.03 (4.51)	≈ 2.28 (3.40)	≈ 4.19 (6.24)
14040-31-	14140-31-		-0	12.28 (312)	13.35 (339)	≈ 3.07 (4.57)	≈ 2.30 (3.42)	–
14040-32-	14140-32-		-0	12.79 (325)	13.82 (351)	≈ 3.09 (4.60)	≈ 2.31 (3.44)	–
14040-33-	14140-33-		-0	13.27 (337)	14.33 (364)	≈ 3.21 (4.77)	≈ 2.37 (3.53)	–
14040-35-	14140-35-	18840-35-	-0	13.78 (350)	14.80 (376)	≈ 3.31 (4.93)	≈ 2.43 (3.61)	≈ 4.70 (6.99)
14040-36-	14140-36-		-0	14.25 (362)	15.31 (389)	≈ 3.32 (4.94)	≈ 2.43 (3.61)	–
14040-37-	14140-37-		-0	14.76 (375)	15.79 (401)	≈ 3.33 (4.95)	≈ 2.43 (3.62)	–
14040-38-	14140-38-		-0	15.24 (387)	16.30 (414)	≈ 3.39 (5.04)	≈ 2.46 (3.66)	–
14040-40-	14140-40-	18840-40-	-0	15.75 (400)	16.77 (426)	≈ 3.52 (5.24)	≈ 2.53 (3.76)	≈ 5.34 (7.94)
14040-41-	14140-41-		-0	16.22 (412)	17.28 (439)	≈ 3.62 (5.39)	≈ 2.58 (3.84)	–
14040-42-	14140-42-		-0	16.73 (425)	17.76 (451)	≈ 3.72 (5.54)	≈ 2.63 (3.92)	–
14040-43-	14140-43-		-0	17.20 (437)	18.27 (464)	≈ 3.77 (5.61)	≈ 2.65 (3.95)	–
14040-45-	14140-45-		-0	17.72 (450)	18.74 (476)	≈ 3.82 (5.68)	≈ 2.67 (3.98)	–
14040-46-	14140-46-	18840-46-	-0	18.19 (462)	19.25 (489)	≈ 3.83 (5.70)	≈ 2.68 (3.99)	≈ 5.64 (8.40)
14040-47-	14140-47-		-0	18.70 (475)	19.72 (501)	≈ 3.92 (5.83)	≈ 2.73 (4.06)	–
14040-48-	14140-48-		-0	19.17 (487)	20.24 (514)	≈ 3.94 (5.86)	≈ 2.74 (4.08)	–
14040-50-	14140-50-		-0	19.69 (500)	20.71 (526)	≈ 4.00 (5.96)	≈ 2.78 (4.13)	–
14040-51-	14140-51-		-0	20.16 (512)	21.22 (539)	≈ 4.02 (5.98)	≈ 2.78 (4.14)	–
14040-52-	14140-52-		-0	20.67 (525)	21.69 (551)	≈ 4.05 (6.03)	≈ 2.80 (4.16)	–
14040-53-	14140-53-		-0	21.14 (537)	22.20 (564)	≈ 4.15 (6.18)	≈ 2.85 (4.24)	–
14040-55-	14140-55-		-0	21.65 (550)	22.68 (576)	≈ 4.48 (6.67)	≈ 3.01 (4.48)	–
14040-60-	14140-60-		-0	23.62 (600)	24.65 (626)	≈ 4.69 (6.98)	≈ 3.08 (4.58)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: 14040-30-300-0

	135**	150	175	200	250	300	400	500
R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)	19.68 (500)
H^{0}_{+25}	14.17 (360)	15.16 (385)	17.13 (435)	19.09 (485)	23.03 (585)	26.97 (685)	34.84 (885)	42.72 (1085)
D	10.63 (270)	11.22 (285)	12.20 (310)	13.19 (335)	15.16 (385)	17.13 (435)	21.06 (535)	25.00 (635)
K	25.59 (650)	29.53 (750)	32.48 (825)	35.43 (900)	41.34 (1050)	48.23 (1225)	57.09 (1450)	69.88 (1775)

** This radius is not available for the R18840 Series
*Removable lid only, no hinged option

0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.124. For large diameter hoses see page 6.124

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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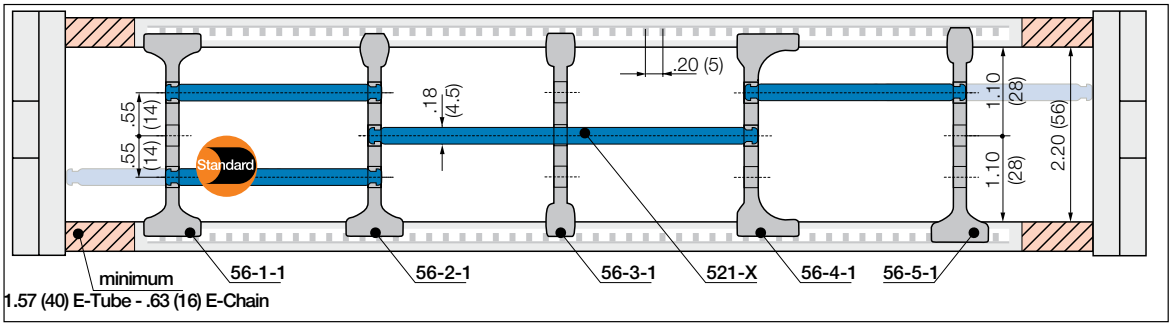
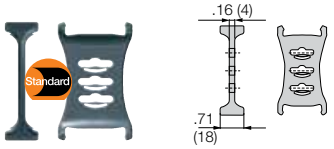
E-Chain System® E4 Light
Series 14040/14140/R18840
Interior Separation - New Generation



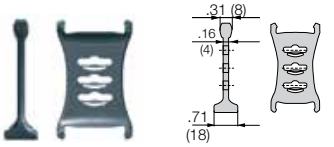
Note Please maintain a lateral spacing of 1.57" (40 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 56-1**
Assembled	**Part No. 56-1-1**

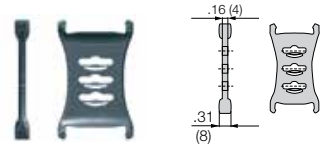
- **Standard separator 56-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator, narrow head

Unassembled	**Part No. 56-2**
Assembled	**Part No. 56-2-1**

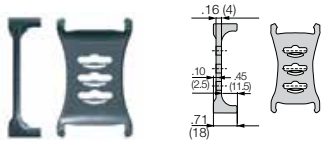
- **Separator 56-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 56-3**
Assembled	**Part No. 56-3-1**

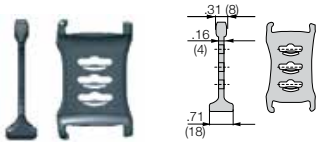
- **Separator 56-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, asymmetrical

Unassembled	**Part No. 56-4**
Assembled	**Part No. 56-4-1**

- **Separator 56-4**
  For side mounted applications
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

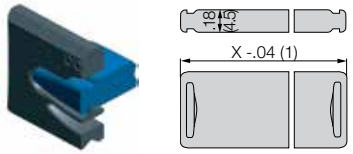


Separator, asymmetrical

Unassembled	**Part No. 56-5**
Assembled	**Part No. 56-5-1**

- **Separator 56-5**
  Locks safely in .30" (7.5 mm) increments
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 520-X**
Assembled	**Part No. 521-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**520-50**	**521-50**	5.91 (150)	**520-150**	**521-150**	11.81 (300)	**520-300**	**521-300**
2.56 (065)	**520-65**	**521-65**	6.89 (175)	**520-175**	**521-175**	13.78 (350)	**520-350**	**521-350**
2.95 (075)	**520-75**	**521-75**	7.87 (200)	**520-200**	**521-200**	14.76 (375)	**520-375**	**521-375**
3.94 (100)	**520-100**	**521-100**	8.86 (225)	**520-225**	**521-225**	15.24 (387)	**520-387**	**521-387**
4.92 (125)	**520-125**	**521-125**	9.84 (250)	**520-250**	**521-250**	17.72 (450)	**520-450**	**521-450**

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E-Chain System® E4 Light
Series 14040/14140/R18840
Interior Separation - Previous Generation

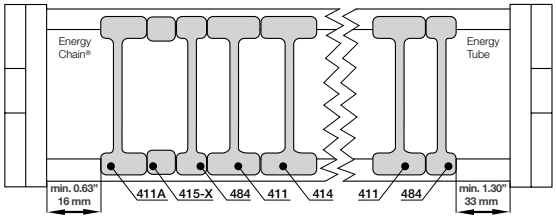
igus®

14040
14140
R18840

Option 1: Vertical separators and spacers

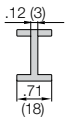
Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

NOTE: Observe a lateral spacing of at least 1.30 in. (33mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates



Standard

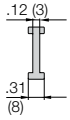
STANDARD Vertical separator 401



Vertical separator

Unassembled	**Part No. 401**
Assembled	**Part No. 411**

Vertical separator 483



Vertical separator

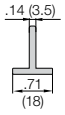
Unassembled	**Part No. 483**
Assembled	**Part No. 484**

Locking separator 404

Locking separator (chain only)

Unassembled	**Part No. 404**
Assembled	**Part No. 414**

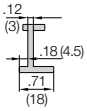
Locking separator 406



Locking separator (tube only)

Unassembled	**Part No. 406**
Assembled	**Part No. 416**

Asymmetric separator 401A



Asymmetrical separator (chain only)

Unassembled	**Part No. 401A**
Assembled	**Part No. 411A**

Spacers 405-XX

Spacer (chain only)

Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

XX = width of the spacer

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	415 -10	.39”	(10)
405 -15	415 -15	.59”	(15)
405 -20	415 -20	79”	(20)
405 -30	415 -30	1.18”	(30)
405 -40	415 -40	1.57”	(40)

- **Standard separator 401 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.
- **Vertical separator 483 for E-Chains® and E-Tubes**
  This separator offers a narrow base for applications where a large number of small cables need to be individually separated.
- **Locking separator 404 for E-Chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.
- **Locking separator 406 for E-Tubes**
  It features a single sided, secure fit, and can be placed on the lid or the bottom of the E-Tube. The single side locking design helps to eliminate difficulties in assembling the opposite cover or crossbar
- **Asymmetrical separator 401A for E-Chains®**
  This separator features an (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.
- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08” (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16” (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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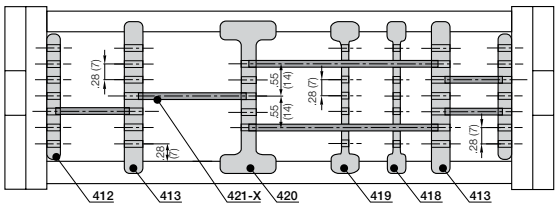
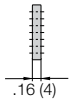
E-Chain System® E4 Light
Series 14040/14140/R18840
Interior Separation - Previous Generation

Shelves and separators

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.

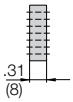




Side plate

Unassembled	**Part No. 402**
Assembled	**Part No. 412**

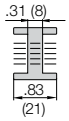
- **Side plates 402**
  This component is used to form the basic pattern of a shelf system.



Vertical separator

Unassembled	**Part No. 403**
Assembled	**Part No. 413**

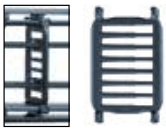
- **Vertical separator 403**
  This component is used to form the basic pattern of a shelf system.

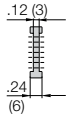


Locking vertical separator

Unassembled	**Part No. 410**
Assembled	**Part No. 420**

- **Locking vertical separator 410**
  This separator is slotted and able to be combined with shelves. For E-Chains® only

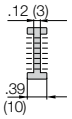




Slotted separators, closed

Unassembled	**Part No. 408**
Assembled	**Part No. 418**

- **Slotted separators 408**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.



Slotted separators, open

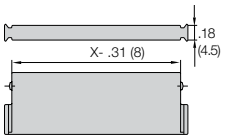
Unassembled	**Part No. 409**
Assembled	**Part No. 419**

- **Slotted separator 409**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 3 middle slots

Shelves 420-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled
.71 (18)	.39 (10)	**420-18**	**421-18**	2.95 (75)	2.64 (67)	**420-75**	**421-75**
.91 (23)	.59 (15)	**420-23**	**421-23**	3.46 (88)	3.15 (80)	**420-88**	**421-88**
.98 (25)	.67 (17)	**420-25**	**421-25**	3.94 (100)	3.62 (92)	**420-100**	**421-100**
1.10 (28)	.79 (20)	**420-28**	**421-28**	4.92 (125)	4.61(117)	**420-125**	**421-125**
1.30 (33)	.98 (25)	**420-33**	**421-33**	5.91 (150)	5.59(142)	**420-150**	**421-150**
1.69 (43)	1.38 (35)	**420-43**	**421-43**	6.89 (175)	6.57(167)	**420-175**	**421-175**
1.97 (50)	1.65 (42)	**420-50**	**421-50**	7.36 (187)	7.05(179)	**420-187**	**421-187**
2.44 (62)	2.13 (54)	**420-62**	**421-62**	7.87 (200)	7.56(192)	**420-200**	**421-200**



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E-Chain System® E4 Light
Series 14040/14140/R18840
Special Accessories

igus®

14040
14140
R18840

Part number example for E-Chain®

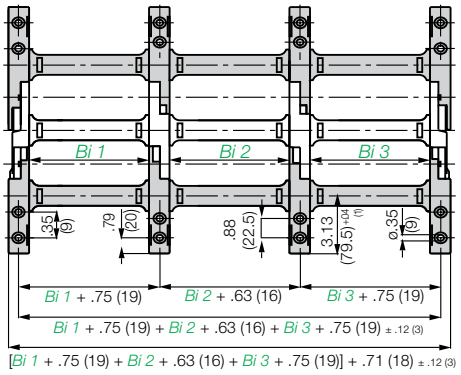
14040-10/20/10-[200]-0

14040-*Bi1*/*Bi2*/*Bi3*-[*R*]-0

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

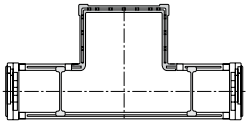
- For applications in which particularly high fill weights necessitate extremely wide E-Chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



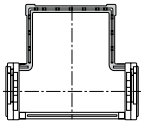
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

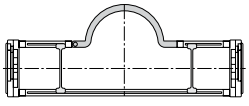
- Intended for cables and hoses with a maximum outer diameter of 9.64 in. (245 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



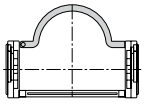
Square extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.



Round extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.

Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
450-15-RHD115	4.52 (115)	Round	No	Yes
450-17-RD115	4.52 (115)	Round	Yes	No
450-25-D150	5.91 (150)	Square	Yes	No
450-30-D200	7.09 (180)	Square	Yes	No
450-35-D250	7.68 (195)	Square	Yes	No
450-40-D300	9.65 (245)	Square	Yes	No
450-20-HD150	5.91 (150)	Square	No	Yes
450-25-HD200	7.09 (180)	Square	No	Yes
450-30-HD250	7.68 (195)	Square	No	Yes

E4 clip on cable binder

- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on E-Chains®
- The loops can be adjusted as needed
- Compatible with many E4 E-Chains®
- Economical
- One clip and one locking band are needed for each chain link

Part No.	Form
450-B12	Locking clip, comprised of a locking element
450-B12-200	Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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Series 14040/14140/R18840
Mounting Brackets

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Standard

Option 1: KMA pivoting

- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

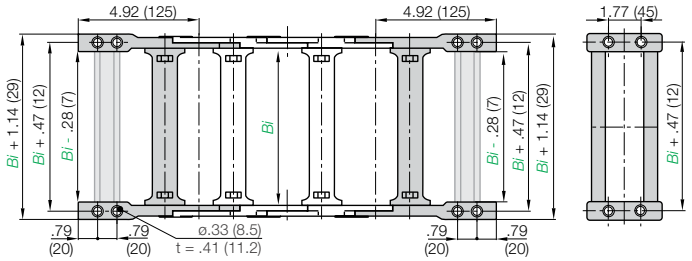
Option 2: KMA locking

- Profile rail option
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels

Part Number Structure

140400- | 07- | 12 | T | P

- 07- = Width
- 12 = Complete Set
- T = Tube version
- P = With Profile Rail
- 140400 = Locking
- 141400 = Pivoting



Full set, for both ends:
140400- 05- 12 Full set, **each part with pin/bore**

Single-part order:
140400- 05- 1 Mounting bracket **with bore**
140400- 05- 2 Mounting bracket **with pin**

Part number examples are shown for pivoting brackets. For locking brackets change part number to 140400

Width	Part No. Full Set (pivoting) Series 14040 or 14140: 141400-Width-12 Locking	Pivoting		Part No. Full Set (pivoting) with profile rail Series 14040 or 14140 141400-Width-12P Tube Option	With Profile Rail	Bi in. (mm)
-05	140400	141400	-05-12		P	1.97 (50)
-06	140400	141400	-06-12		P	2.56 (65)
-07	140400	141400	-07-12	T	P	2.95 (75)
-08	140400	141400	-08-12		P	3.43 (87)
-10	140400	141400	-10-12	T	P	3.94 (100)
-11	140400	141400	-11-12		P	4.41 (112)
-12	140400	141400	-12-12	T	P	4.92 (125)
-13	140400	141400	-13-12		P	5.39 (137)
-15	140400	141400	-15-12	T	P	5.91 (150)
-16	140400	141400	-16-12		P	6.38 (162)
-17	140400	141400	-17-12	T	P	6.89 (175)
-18	140400	141400	-18-12		P	7.36 (187)
-20	140400	141400	-20-12	T	P	7.87 (200)
-21	140400	141400	-21-12		P	8.35 (212)
-22	140400	141400	-22-12		P	8.86 (225)
-23	140400	141400	-23-12		P	9.33 (237)
-25	140400	141400	-25-12	T	P	9.84 (250)
-26	140400	141400	-26-12		P	10.31 (262)
-27	140400	141400	-27-12	T	P	10.83 (275)
-28	140400	141400	-28-12		P	11.30 (287)
-30	140400	141400	-30-12	T	P	11.81 (300)

Width	Part No. Full Set (pivoting) Tube Series R18840 141400-Width-12T Locking	Pivoting		Part No. Full Set (pivoting) with Profile Rail Tube Series R18840 141400-Width-12TP Tube Option	With Profile Rail	Bi in. (mm)
-31	140400	141400	-31-12		P	12.28 (312)
-32	140400	141400	-32-12		P	12.79 (325)
-33	140400	141400	-33-12		P	13.27 (337)
-35	140400	141400	-35-12	T	P	13.78 (350)
-36	140400	141400	-36-12		P	14.25 (362)
-37	140400	141400	-37-12		P	14.76 (375)
-38	140400	141400	-38-12		P	15.24 (387)
-40*	140400	141400	-40-12	T	P	15.75 (400)
-41	140400	141400	-41-12		P	16.22 (412)
-42	140400	141400	-42-12		P	16.73 (425)
-43	140400	141400	-43-12		P	17.20 (437)
-45	140400	141400	-45-12		P	17.72 (450)
-46	140400	141400	-46-12	T	P	18.19 (462)
-47	140400	141400	-47-12		P	18.70 (475)
-48	140400	141400	-48-12		P	19.17 (487)
-50	140400	141400	-50-12		P	19.69 (500)
-51	140400	141400	-51-12		P	20.16 (512)
-52	140400	141400	-52-12		P	20.67 (525)
-53	140400	141400	-53-12		P	21.14 (537)
-55	140400	141400	-55-12		P	21.65 (550)
-60	140400	141400	-60-12		P	23.62 (600)

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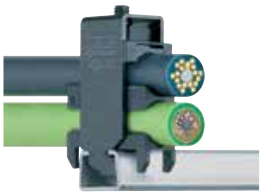
E-Chain System® E4 Light
Series 14040/14140/R18840
Strain Relief

igus®

14040
14140
R18840

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(6 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

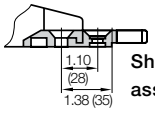
Chainfix Clip

Modular snap-on strain relief device

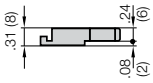
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(4-8)	CFC-08-M	CFC-08-C
.31-.47	(8-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

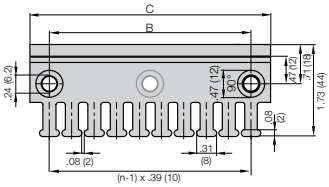


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10

Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
4550-ZS	5	1.89	(48)
4575-ZS	7	2.91	(74)

For more information please refer to strain relief section of Chapter 10

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Width of Crossbar
14040-**05**-200-0

	B_{Ri}	Installation Part No.
-05	3.19 (81)	*
-06	3.78 (96)	*
-07	4.17 (106)	**94-50-225**
-10	5.16 (131)	**94-50-250**
-11	5.63 (143)	**94-50-275**
-12	6.14 (156)	**94-50-275**
-13	6.61 (168)	**94-50-300**
-15	7.13 (181)	**94-50-300**
-16	7.60 (193)	**94-50-325**
-17	8.11 (206)	**94-50-325**
-18	8.58 (218)	**94-50-350**
-20	9.09 (231)	**94-50-350**
-21	9.57 (243)	**94-50-375**
-22	10.08 (256)	**94-50-375**
-23	10.55 (268)	**94-50-400**
-25	11.06 (281)	**94-50-400**
-26	11.54 (293)	**94-50-425**
-27	12.05 (306)	**94-50-425**
-28	12.52 (318)	**94-50-450**
-30	13.03 (331)	**94-50-450**
-31	13.50 (343)	**94-50-475**
-32	14.02 (356)	**94-50-475**
-33	14.49 (368)	**94-50-500**
-35	15.00 (381)	**94-50-500**
-36	15.47 (393)	**94-50-525**
-37	15.98 (406)	**94-50-525**
-38	16.46 (418)	**94-50-550**
-40	16.97 (431)	**94-50-550**
-41	17.44 (443)	**94-50-575**
-42	17.95 (456)	**94-50-575**
-43	18.43 (468)	**94-50-600**
-45	18.94 (481)	**94-50-600**
-46	19.41 (493)	**94-50-625**
-47	19.92 (506)	**94-50-625**
-48	20.59 (518)	**94-50-650**
-50	20.91 (531)	**94-50-650**
-51	21.38 (543)	**94-50-675**
-52	21.89 (556)	**94-50-675**
-53	22.36 (568)	**94-50-700**
-55	22.87 (581)	**94-50-700**
-60	24.84 (631)	**94-50-750**

Standard length profile rail

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 94-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 94-50-XX

.XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel.

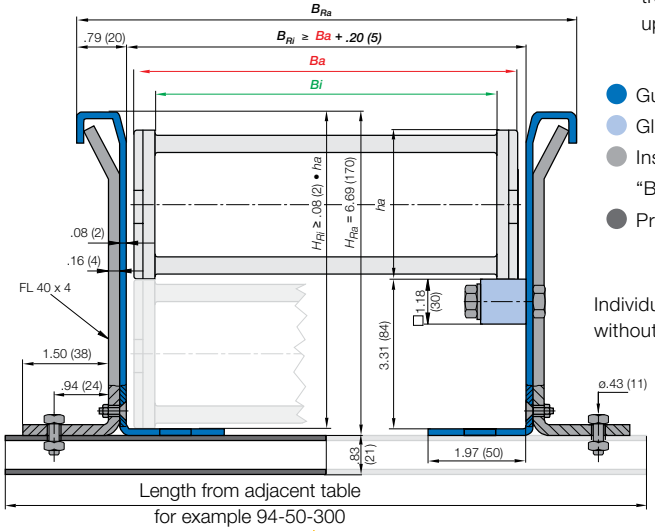
Example:
Length of travel 164 ft (50 m)
Center mounted

Required guide troughs
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 94-30
= 13 sections of 6.56 ft (2 m) glide bars
Part No. 93-01
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
94-50-XXX
Example:
94-50-400 for 15.75 (400 mm) long profile rail

Installation sets as section connectors

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

* Specialized guide trough available upon request



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

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E-Chain System® E4 Light
Series 14040/14140/R18840

igus®

14040
14140
R18840

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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14240
14340

igus®

E-Chain System® E4 Light
Series 14240/14340

2.44"

Price Index

Series 14240 Series 14340

Special Features / Options

- ESD classification: Electrically conductive ESD/ ATEX version upon request
- High torsional rigidity
- Side-mounted - unsupported

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Other Installation Methods

Vertical, hanging ≤ 262 ft (80 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

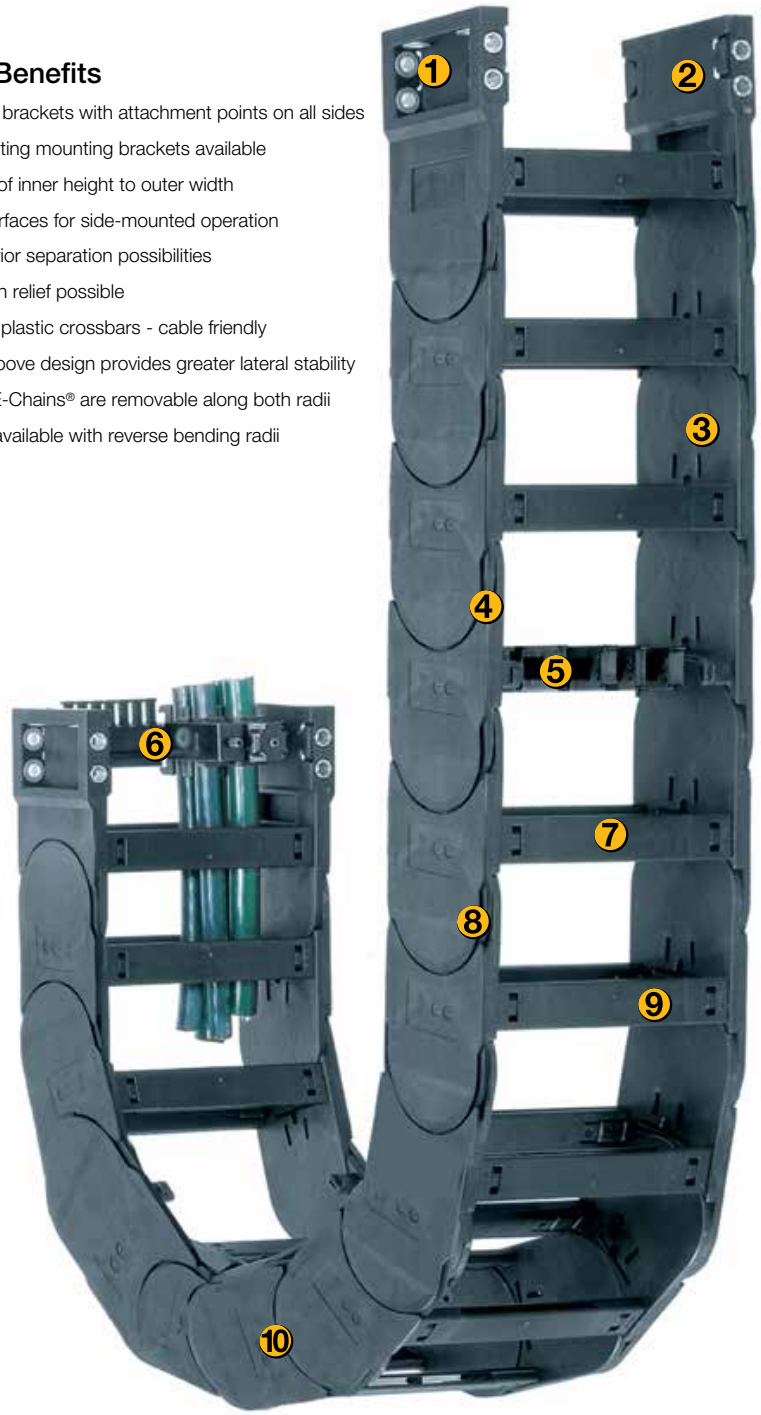
Usage Guidelines

- If a simpler low-cost solution is required
- If optimized interior space is required
- If the Series 400 is too large

- If a quieter version is required
  ➤ **Series E6-62**
- If side-mounted chain/tube with a long unsupported travel is required
  ➤ **Series E4-56/H4-56/R4-56**
- If increased unsupported lengths and longer travels are required
  ➤ **Series E4-56/H4-56/R4-56**
- If high fill weights and/or stiff cables and hoses are used
  ➤ **Series 14040**
- If chip protection is necessary
  ➤ **Series 18840**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Locking or pivoting mounting brackets available
3. Optimum ratio of inner height to outer width
4. Lateral glide surfaces for side-mounted operation
5. Numerous interior separation possibilities
6. Integrated strain relief possible
7. Wide, rounded plastic crossbars - cable friendly
8. Tongue and groove design provides greater lateral stability
9. Crossbars on E-Chains® are removable along both radii
10. E-Chain® also available with reverse bending radii



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

19.69 ft (6 m) **14240-30-300-0**	E-Chain®
With 2 separators **417** assembled every 2nd link	Interior Separation
1 Set **142400-30-12P**	Mounting Bracket

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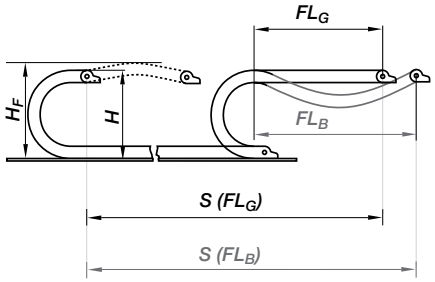
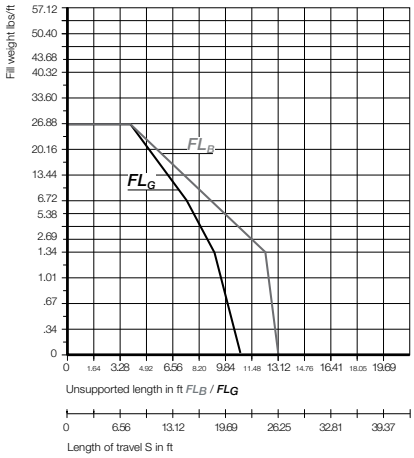
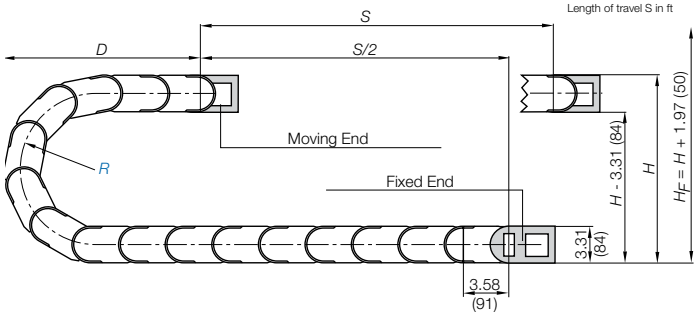
E-Chain System® E4 Light Series 14240/14340 Installation Dimensions

Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run
Further information ➤ Design, Chapter 1







Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $\frac{S}{2} + K$

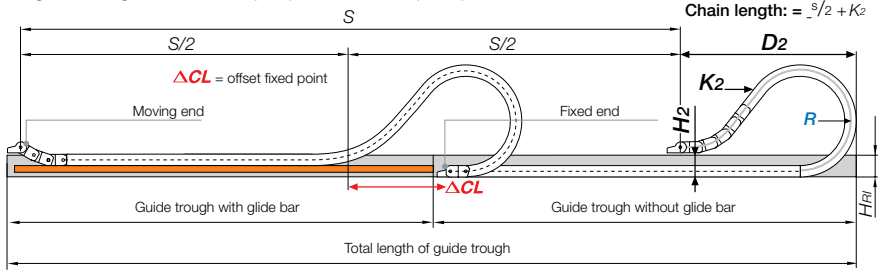
The required clearance height: $H_F = H + 1.97$ **in. (50 mm)** (with 1.34 lbs/ft (2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)	19.68 (500)
H^{-0}_{+25}	14.17 (360)	15.16 (385)	17.13 (435)	19.09 (485)	23.03 (585)	26.97 (685)	34.84 (885)	42.72 (1085)
D	10.63 (270)	11.22 (285)	12.20 (310)	13.19 (335)	15.16 (385)	17.13 (435)	21.06 (535)	25.00 (635)
K	25.59 (650)	29.53 (750)	32.48 (825)	35.43 (900)	41.34 (1050)	48.23 (1225)	57.09 (1450)	69.88 (1775)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 492 ft. (150m)

For center mount applications:
Chain length: = $\frac{S}{2} + K_2$



R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)	19.68 (500)
H_2	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)
D_2^{+25}	15.35 (390)	17.72 (450)	20.87 (530)	27.95 (710)	36.22 (920)	44.09 (1120)	60.24 (1530)	72.05 (1830)
K_2	28.66 (728)	32.24 (819)	39.41 (1001)	50.16 (1274)	64.49 (1638)	75.23 (1911)	100.31 (2548)	125.39 (3185)
ΔCL	4.88 (124)	6.26 (159)	8.22 (209)	14.13 (359)	20.04 (509)	25.94 (659)	37.76 (959)	45.63 (1159)

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ Chapter 1

14240
14340

2.44"

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
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igus®

E-Chain System® E4 Light
Series 14240/14340

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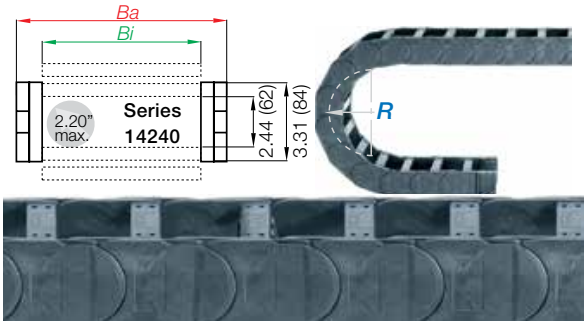
Fax 1-401-438-7270

Series 14240 - E-Chain® with crossbars every link

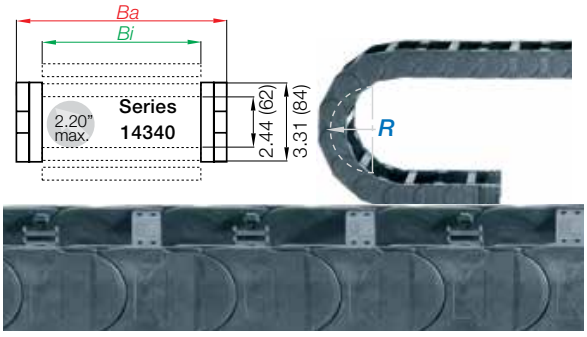


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

14240-	12-	250-	0
Series	Width	Bending radius	Color - Black

Series 14340 - E-Chain® with crossbars every other link

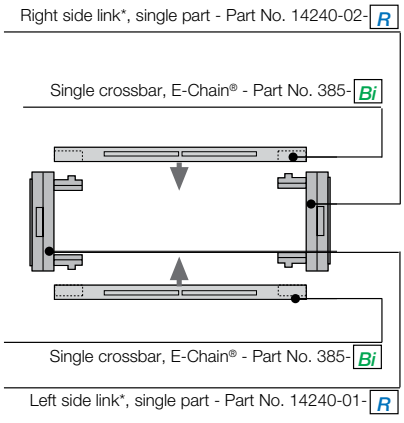


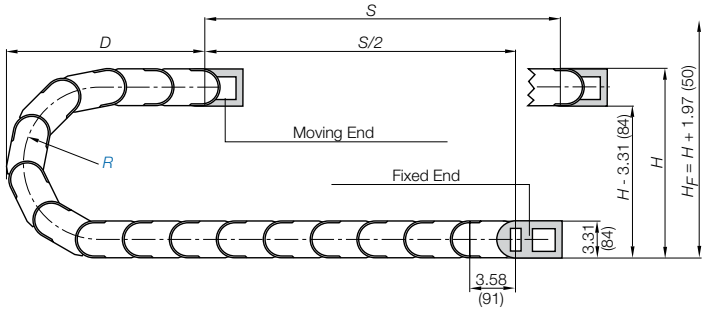
- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

14340-	12-	250-	0
Series	Width	Bending radius	Color - Black

E-Chain® as separate parts, links and side plates





*View from the fixed point of the E-Chain®/E-Tube

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igus®

14240
14340

E-Chain System® E4 Light
Series 14240/14340

Supplement part number with required radius. Example: 14040-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

Part Number. Crossbars Every link	Crossbars Every other			*Bi* in. (mm)	*Ba* in. (mm)	14240 lbs/ft (kg/m)	14340 lbs/ft (kg/m)
14240-05-	14340-05-		-0	1.97 (50)	2.99 (76)	≈1.59 (2.37)	≈ 1.56 (2.32)
14240-06-	14340-06-		-0	2.68 (68)	3.70 (94)	≈ 1.61 (2.40)	≈ 1.57 (2.33)
14240-07-	14340-07-		-0	2.95 (75)	3.98 (101)	≈ 1.63 (2.42)	≈ 1.57 (2.34)
14240-087-	14340-087-		-0	3.43 (87)	4.49 (114)	≈ 1.66 (2.47)	≈ 1.59 (2.36)
14240-10-	14340-10-		-0	3.94 (100)	4.96 (126)	≈ 1.69 (2.52)	≈ 1.61 (2.39)
14240-11-	14340-11-		-0	4.25 (108)	5.28 (134)	≈ 1.71 (2.55)	≈ 1.61 (2.40)
14240-112-	14340-112-		-0	4.41 (112)	5.47 (139)	≈ 1.71 (2.55)	≈ 1.62 (2.41)
14240-12-	14340-12-		-0	4.92 (125)	5.94 (151)	≈ 1.76 (2.62)	≈ 1.64 (2.44)
14240-137-	14340-137-		-0	5.39 (137)	6.46 (164)	≈ 1.79 (2.66)	≈ 1.65 (2.46)
14240-15-	14340-15-		-0	5.91 (150)	6.93 (176)	≈ 1.83 (2.72)	≈ 1.67 (2.49)
14240-162-	14340-162-		-0	6.38 (162)	7.44 (189)	≈ 1.83 (2.73)	≈ 1.67 (2.49)
14240-17-	14340-17-		-0	6.61 (168)	7.64 (194)	≈ 1.88 (2.79)	≈ 1.69 (2.52)
14240-18-	14340-18-		-0	6.89 (175)	7.91 (201)	≈ 1.90 (2.82)	≈ 1.70 (2.53)
14240-187-	14340-187-		-0	7.36 (187)	8.43 (214)	≈ 1.91 (2.84)	≈ 1.71 (2.55)
14240-20-	14340-20-		-0	7.87 (200)	8.90 (226)	≈ 1.94 (2.89)	≈ 1.73 (2.58)
14240-212-	14340-212-		-0	8.35 (212)	9.41 (239)	≈ 1.98 (2.95)	≈ 1.75 (2.60)
14240-23-	14340-23-		-0	8.86 (225)	9.88 (251)	≈ 2.02 (3.01)	≈ 1.77 (2.63)
14240-237-	14340-237-		-0	9.33 (237)	10.39 (264)	≈ 2.04 (3.04)	≈ 1.78 (2.65)
14240-25-	14340-25-		-0	9.84 (250)	10.87 (276)	≈ 2.08 (3.10)	≈ 1.80 (2.68)
14240-262-	14340-262-		-0	10.31 (262)	11.38 (289)	≈ 2.09 (3.11)	≈ 1.81 (2.69)
14240-28-	14340-28-		-0	10.83 (275)	11.85 (301)	≈ 2.14 (3.19)	≈ 1.83 (2.72)
14240-29-	14340-29-		-0	11.30 (287)	12.36 (314)	≈ 2.15 (3.20)	≈ 1.83 (2.73)
14240-30-	14340-30-		-0	11.81 (300)	12.83 (326)	≈ 2.22 (3.30)	≈ 1.87 (2.78)
14240-312-	14340-312-		-0	12.28 (312)	13.35 (339)	≈ 2.22 (3.31)	≈ 1.88 (2.79)
14240-325-	14340-325-		-0	12.79 (325)	13.82 (351)	≈ 2.26 (3.37)	≈ 1.89 (2.81)
14240-337-	14340-337-		-0	13.27 (337)	14.33 (364)	≈ 2.28 (3.40)	≈ 1.90 (2.83)
14240-350-	14340-350-		-0	13.78 (350)	14.80 (376)	≈ 2.39 (3.56)	≈ 1.96 (2.91)
14240-362-	14340-362-		-0	14.25 (362)	15.31 (389)	≈ 2.43 (3.61)	≈ 1.97 (2.93)
14240-375-	14340-375-		-0	14.76 (375)	15.79 (401)	≈ 2.45 (3.64)	≈ 1.98 (2.95)
14240-387-	14340-387-		-0	15.24 (387)	16.30 (414)	≈ 2.48 (3.69)	≈ 2.00 (2.97)
14240-400-	14340-400-		-0	15.75 (400)	16.77 (426)	≈ 2.51 (3.73)	≈ 2.00 (2.99)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 14240-30-300-0

	135	150	175	200	250	300	400	500
R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)	19.68 (500)
H $^{-0}_{+25}$	14.17 (360)	15.16 (385)	17.13 (435)	19.09 (485)	23.03 (585)	26.97 (685)	34.84 (885)	42.72 (1085)
D	10.63 (270)	11.22 (285)	12.20 (310)	13.19 (335)	15.16 (385)	17.13 (435)	21.06 (535)	25.00 (635)
K	25.59 (650)	29.53 (750)	32.48 (825)	35.43 (900)	41.34 (1050)	48.23 (1225)	57.09 (1450)	69.88 (1775)

*Removable lid only, no hinged option
0=Standard color black. For other colors see Chapter 1

For large diameter hoses see page 6.136

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Specs/CAD/RFQ: www.igus.com/e-chains
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igus®

E-Chain System® E4 Light
Series 14240/14340
Interior Separation - New Generation

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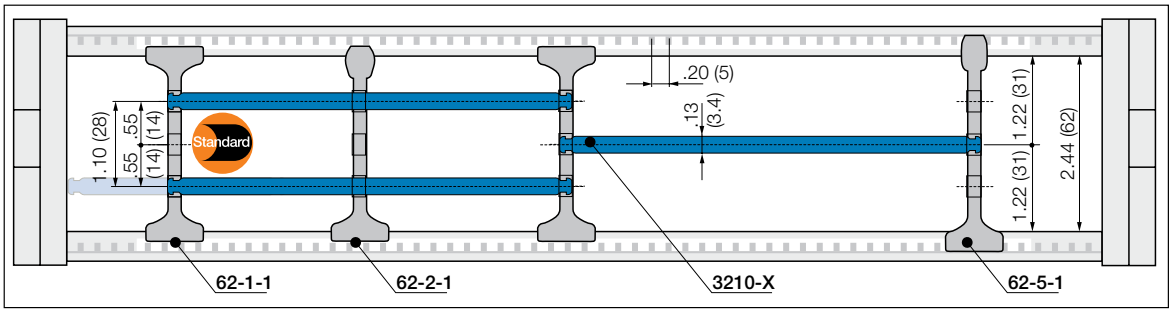
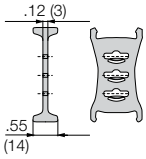
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



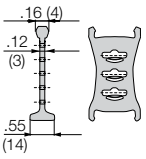
In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 62-1**
Assembled	**Part No. 62-1-1**

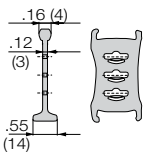
- **Standard separator 62-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator for QuickLock crossbar

Unassembled	**Part No. 62-2**
Assembled	**Part No. 62-2-1**

- **Separator 62-2**
  For even faster installation
  Separator for igus® QuickLock crossbar 385-X-Q. Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip)

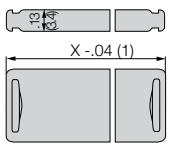


Notch separator for notch crossbar

Unassembled	**Part No. 62-5**
Assembled	**Part No. 62-5-1**

- **Separator 62-5**
  Locks safely in .20" (5 mm) increments
  Notch separator for exact positioning in E-Chains®. Recommended for side mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  Shelf locks into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	5.91 (150)	**3200-150**	**3210-150**
2.95 (075)	**3200-75**	**3210-75**	6.89 (175)	**3200-175**	**3210-175**
3.94 (100)	**3200-100**	**3210-100**	7.87 (200)	**3200-200**	**3210-200**
4.53 (115)	**3200-115**	**3210-115**	8.86 (225)	**3200-225**	**3210-225**
4.92 (125)	**3200-125**	**3210-125**	9.84 (250)	**3200-250**	**3210-250**

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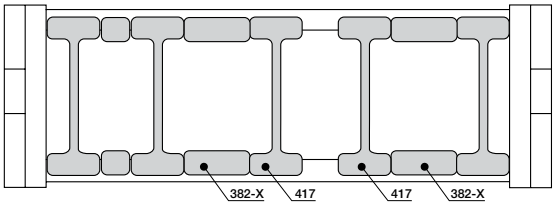
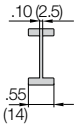
E-Chain System® E4 Light
Series 14240/14340
Interior Separation - Previous Generation

Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.
NOTE: Observe a lateral spacing of at least 1.30 in. (33mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates





Vertical separator

Unassembled	**Part No. 407**
Assembled	**Part No. 417**

Spacer (chain only)

Unassembled	**Part No. 381-XX**
Assembled	**Part No. 382-XX**

XX = width of the spacer

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
381-10	**382-10**	.39”	(10)
381-15	**382-15**	.59”	(15)
381-20	**382-20**	79”	(20)

- **Standard separator 407 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08” (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16” (4mm).
  To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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www.edfluidos.com

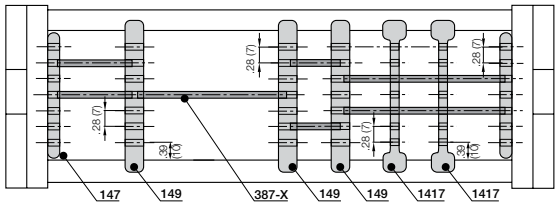
E-Chain System® E4 Light
Series 14240/14340
Interior Separation - Previous Generation

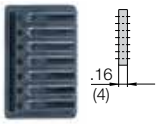
Telephone 1-800-521-2747
Fax 1-401-438-7270

Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.

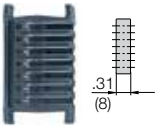




Side plate

Unassembled	**Part No. 146**
Assembled	**Part No. 147**

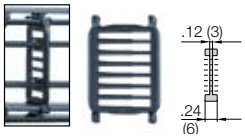
- **Side plates 146**
  This component is used to form the basic pattern of a shelf system.



Vertical separator

Unassembled	**Part No. 148**
Assembled	**Part No. 149**

- **Vertical separator 148**
  This component is used to form the basic pattern of a shelf system.



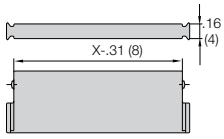
Slotted separators, closed

Unassembled	**Part No. 1407**
Assembled	**Part No. 1417**

- **Slotted separators 1407**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.

Shelves 420-XX

These components form the basic pattern of a shelf system.
Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments



Width X in.	Width X (mm)	Usable Width in.	Usable Width (mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	.39	(10)	**386-18**	**387-18**
.91	(23)	.59	(15)	**386-23**	**387-23**
.98	(25)	.67	(17)	**386-25**	**387-25**
1.10	(28)	.79	(20)	**386-28**	**387-28**
1.30	(33)	.98	(25)	**386-33**	**387-33**
1.69	(43)	1.38	(35)	**386-43**	**387-43**
1.97	(50)	1.65	(42)	**386-50**	**387-50**
2.13	(54)	1.81	(46)	**386-54**	**387-54**
2.44	(62)	2.13	(54)	**386-62**	**387-62**

Width X in.	Width X (mm)	Usable Width in.	Usable Width (mm)	Part No. Unassembled	Part No. Assembled
2.95	(75)	2.64	(67)	**386-75**	**387-75**
3.43	(87)	3.11	(79)	**386-87**	**387-87**
3.94	(100)	3.62	(92)	**386-100**	**387-100**
4.25	(108)	3.94	(100)	**386-108**	**387-108**
4.92	(125)	4.61	(117)	**386-125**	**387-125**
5.91	(150)	5.59	(142)	**386-150**	**387-150**
6.89	(175)	6.57	(167)	**386-175**	**387-175**
7.87	(200)	7.56	(192)	**386-200**	**387-200**
8.19	(208)	7.87	(200)	**386-208**	**387-208**

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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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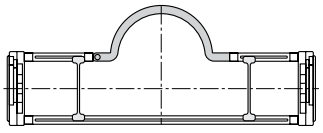
E-Chain System® E4 Light
Series 14240/14340
Special Accessories

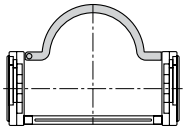
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

- Intended for cables and hoses with a maximum outer diameter of 4.53 in. (115 mm).
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



Round extender crossbar combined with standard snap-open crossbars.

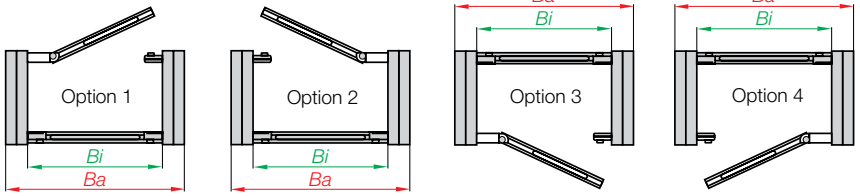


Attached directly to the side link.

Part No.	Max Ø Hose in. (mm)	Style	Installation Side Link	Combined with Snap-Open Crossbars
385-15-RHD115	4.53 (115)	Round	No	Yes
385-18-RD115	4.53 (115)	Round	Yes	No

Hinged crossbars

- Typically, E-Chain® crossbars are completely removable. In cases where it is preferable that the opening crossbars remain on the E-Chain®, a hinged design has been developed.
- Please consult igus® for design assistance



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Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E4 Light
Series 14240/14340
Mounting Brackets - KMA

Telephone 1-800-521-2747
Fax 1-401-438-7270

Standard

Option 1: KMA pivoting

- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

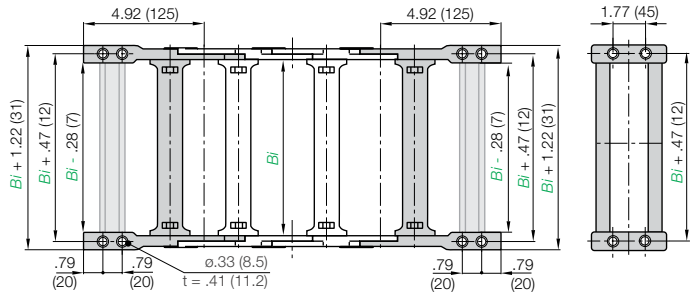
Option 2: KMA locking

- Profile rail option
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels

Part Number Structure

143400- 07- 12 P

- With Profile Rail
- Complete Set
- Width
- 143400 = Pivoting
  142400 = Locking



Full set, for both ends:

143400- 05- 12 Full set, **each part with pin/bore**

Single-part order:

143400- 05- 1 Mounting bracket **with bore**

143400- 05- 2 Mounting bracket **with pin**

Part number examples are shown for pivoting brackets. For locking brackets change part number to 142400

Part No. Full Set (pivoting)
Series 14240 or 14340:
143400-Width-12

Part No. Full Set (pivoting)
with profile rail
Series 14240 or 14340
143400-Width-12P

Width	Part No. Full Set Pivoting	Part No. Full Set Locking		With Profile Rail	*Bi* in. (mm)
-05	143400	142400	-05-12	P	1.97 (50)
-06	143400	142400	-06-12	P	2.68 (68)
-07	143400	142400	-07-12	P	2.95 (75)
-087	143400	142400	-087-12	P	3.43 (87)
-10	143400	142400	-10-12	P	3.94 (100)
-11	143400	142400	-11-12	P	4.25 (108)
-112	143400	142400	-112-12	P	4.41 (112)
-12	143400	142400	-12-12	P	4.92 (125)
-137	143400	142400	-137-12	P	5.39 (137)
-15	143400	142400	-15-12	P	5.91 (150)
-162	143400	142400	-162-12	P	6.38 (162)
-17	143400	142400	-17-12	P	6.61 (168)
-18	143400	142400	-18-12	P	6.89 (175)
-187	143400	142400	-187-12	P	7.36 (187)
-20	143400	142400	-20-12	P	7.87 (200)
-212	143400	142400	-212-12	P	8.35 (212)

Width	Part No. Full Set Pivoting	Part No. Full Set Locking		With Profile Rail	*Bi* in. (mm)
-23	143400	142400	-23-12	P	8.86 (225)
-237	143400	142400	-237-12	P	9.33 (237)
-25	143400	142400	-25-12	P	9.84 (250)
-262	143400	142400	-262-12	P	10.31 (262)
-28	143400	142400	-28-12	P	10.83 (275)
-29	143400	142400	-29-12	P	11.30 (287)
-30	143400	142400	-30-12	P	11.81 (300)
-312	143400	142400	-312-12	P	12.28 (312)
-325	143400	142400	-325-12	P	12.79 (325)
-337	143400	142400	-337-12	P	13.27 (337)
-350	143400	142400	-350-12	P	13.78 (350)
-362	143400	142400	-362-12	P	14.25 (362)
-375	143400	142400	-375-12	P	14.76 (375)
-387	143400	142400	-387-12	P	15.24 (387)
-400	143400	142400	-400-12	P	15.75 (400)

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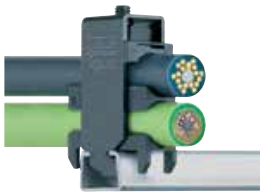
E-Chain System® E4 Light
Series 14240/14340
Strain Relief

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(6 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

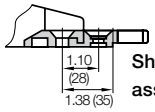
Chainfix Clip

Modular snap-on strain relief device

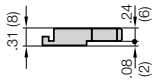
Chainfix clip is available for cable diameters ranging from .16" (4 mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(4-8)	CFC-08-M	CFC-08-C
.31-.47	(8-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

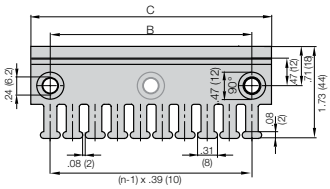


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10

Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3850-ZS	5	1.89	(48)

For more information please refer to strain relief section of Chapter 10

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E4 Light
Series 14240/14340
Guide Trough

Telephone 1-800-521-2747
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QuickSpec: http://www.igus.com/quickspec

Width of Crossbar
14240-**05**-200-0

	B_{Ri}	Installation Part No.
-05	3.19 (81)	*
-06	3.90 (99)	*
-07	4.17 (106)	**94-50-225**
-087	4.65 (118)	**94-50-250**
-10	5.16 (131)	**94-50-250**
-11	5.47 (139)	**94-50-250**
-112	5.63 (143)	**94-50-275**
-12	6.14 (156)	**94-50-275**
-137	6.61 (168)	**94-50-300**
-15	7.12 (181)	**94-50-300**
-162	7.60 (193)	**94-50-325**
-17	7.83 (199)	**94-50-325**
-18	8.11 (206)	**94-50-325**
-187	8.58 (218)	**94-50-350**
-20	9.09 (231)	**94-50-350**
-212	9.57 (243)	**94-50-375**
-23	10.08 (256)	**94-50-375**
-237	10.55 (268)	**94-50-400**
-25	11.06 (281)	**94-50-400**
-262	11.54 (293)	**94-50-425**
-28	12.05 (306)	**94-50-425**
-29	12.52 (318)	**94-50-450**
-30	13.03 (331)	**94-50-450**
-312	13.50 (343)	**94-50-475**
-325	14.02 (356)	**94-50-475**
-337	14.49 (368)	**94-50-500**
-350	15.00 (381)	**94-50-500**
-362	15.47 (393)	**94-50-525**
-375	15.98 (406)	**94-50-525**
-387	16.46 (418)	**94-50-550**
-400	16.97 (431)	**94-50-550**

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 94-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 94-50-XX

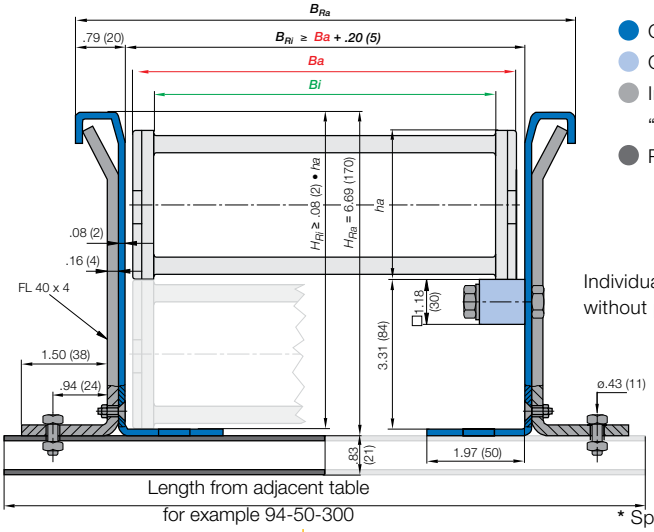
.XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center mounted

Required guide troughs
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 94-30
= 13 sections of 6.56 ft (2 m) glide bars
Part No. 93-01
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
94-50-XXX
Example:
94-50-400 for 15.75 (400 mm) long profile rail

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

Installation sets as section connectors



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

Standard length profile rail

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E-Chain System® E4 Light
Series 14240/14340

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14550
14650
R19050

igus®

E-Chain System® E4 Light
Series 14550/14650/R19050

2.76 2.76

Price Index

Series 14550 Series 14650

Series R18840

Special Features / Options

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

Side-mounted - unsupported

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 262 ft (80 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

Usage Guidelines

- If weight and price reduction is needed
- If an E-Chain®/E-Tube with an inner height of 2.76" (70 mm) is required

- If an extremely low-noise version is required
  ➤ **Series E6-80**
- If side-mounted chain/tube with a longer unsupported travel is required
  ➤ **Series E4-80, Series 15050**
- If increased unsupported lengths and longer travels are required
  ➤ **Series E4-80, Series 15050**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Noise dampening pads, optional = -10dB(A)
3. Hinged snap-open removable lids along outer radius of E-Tube
4. Lateral glide surfaces for side-mounted operation
5. 25% faster assembly with QuickLock Crossbar
6. High stability due to undercut design
7. Notch crossbar with visual scale
8. No camber: no rework due to special design

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

16.4 ft (5 m) **14550-30-300-0**	**E-Chain®**
With 2 separators **70-1-1** assembled every 2nd link	**Interior Separation**
1 Set **145500-30-12P**	**Mounting Bracket**

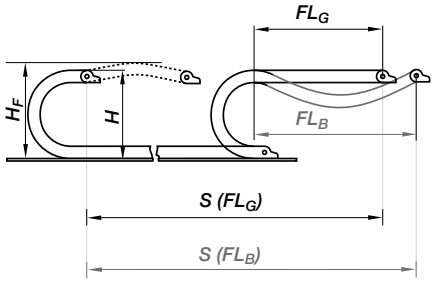
Estudio de Fluidos
Pol. Ind. de Guarnizo, Parcela 207
39611 GUARNIZO (Cantabria), España
942 25 27 50
edf@edfluidos.com
www.edfluidos.com

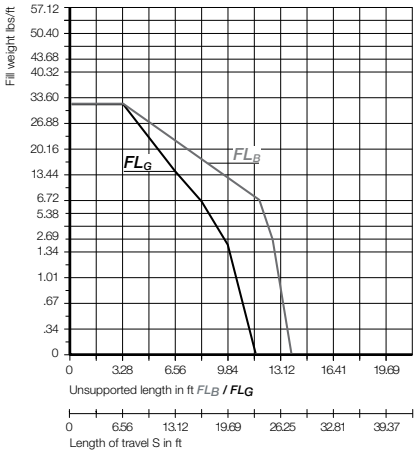
E-Chain System® E4 Light Series 14550/14650/R19050 Installation Dimensions

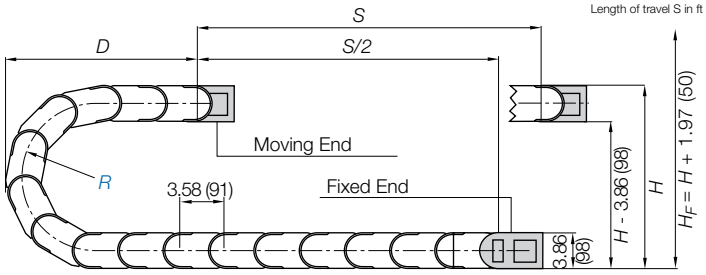
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $S/2 + K$

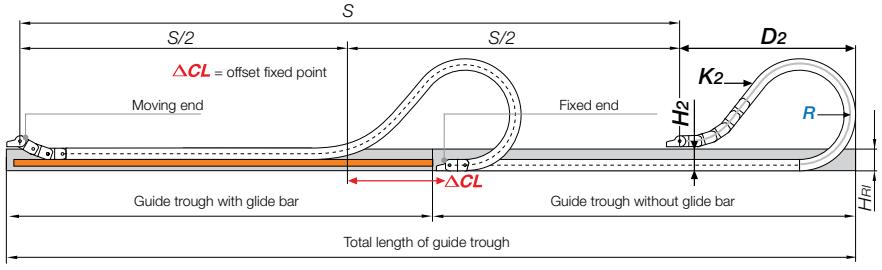
The required clearance height: $H_F = H$ **+ 1.97 in. (50 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	5.91 (150*)	6.89 (175*)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.68 (500)	23.62 (600)
H	15.67 (398)	17.64 (448)	19.61 (498)	23.54 (598)	27.48 (698)	31.42 (798)	35.35 (898)	39.29 (998)	43.23(1098)	51.10 (1298)
D	13.23 (336)	14.21 (361)	15.19 (386)	17.17 (436)	19.13 (486)	21.10 (536)	23.07 (586)	25.04 (636)	27.01 (686)	30.94 (786)
K	25.79 (655)	28.94 (735)	32.09 (815)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.29 (1440)	62.99 (1600)	69.09 (1755)	81.50 (2070)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 492 ft. (150m)

For center mount applications:
Chain length: = $S/2 + K_2$



R	5.91 (150*)	6.89 (175*)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.68 (500)	23.62 (600)
H2	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	2)
D2+25	17.72 (450)	20.87 (530)	27.95 (710)	36.22 (920)	44.09 (1120)	52.76 (1340)	60.24 (1530)	1)	72.05 (1830)	2)
K2	32.24 (819)	39.41 (1001)	50.16 (1274)	64.49 (1638)	75.24 (1911)	85.98 (2184)	100.31 (2548)	1)	125.39 (3185)	2)
ΔCL	4.88 (124)	6.26 (159)	8.22 (209)	14.13 (359)	20.04 (509)	25.94 (659)	32.64 (829)	37.76 (959)	45.63 (1159)	2)

*Radius not available for E-Tubes

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height
HRI = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties ➤ **Chapter 1**

igus®
14550
14650
R19050
2.76

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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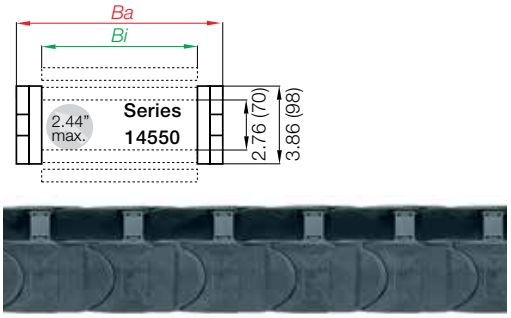
14550
14650
R19050

igus®

E-Chain System® E4 Light
Series 14550/14650/R19050

igus® E-Chain System®

Series 14550 - E-Chain® with crossbars every link



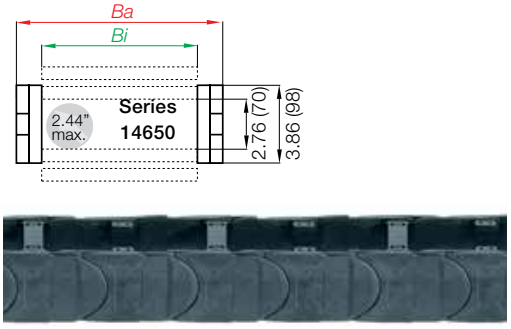
- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

14550- 30- 250- 0

- Color - Black
- Bending radius
- Width
- Series

Series 14650 - E-Chain® with crossbars every other link



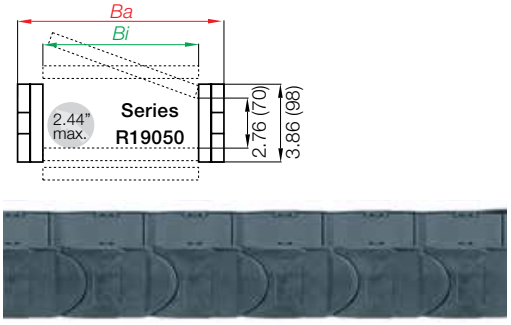
- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

14650- 30- 250- 0

- Color - Black
- Bending radius
- Width
- Series

Series R19050 - fully enclosed E-Tube



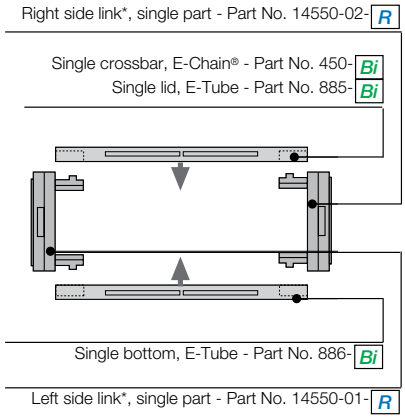
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

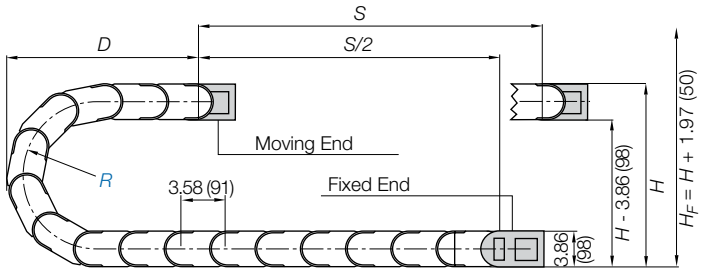
Part Number Structure

R19050- 30- 250- 0

- Color - Black
- Bending radius
- Width
- Series

E-Chain® as separate parts, links and side plates





*View from the fixed point of the E-Chain®/E-Tube

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Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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E-Chain System® E4 Light
Series 14550/14650/R19050

Supplement part number with required radius. Example: 14550-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

Part Number				*Bi*	*Ba*	14550	14650	R19050
Crossbars Every link	Crossbars Every other	Tube Version		in. (mm)	in. (mm)	lbs/ft (kg/m)	lbs/ft (kg/m)	lbs/ft (kg/m)
14550-05-	14650-05-		-0	1.97 (50)	3.03 (77)	≈ 2.41 (3.28)	≈ 2.49 (3.27)	–
14550-06-	14650-06-		-0	2.56 (65)	3.62 (92)	≈ 2.26 (3.37)	≈ 2.22 (3.31)	–
14550-07-	14650-07-	19050-07-	-0	2.95 (75)	4.02 (102)	≈ 2.31 (3.44)	≈ 2.25 (3.35)	≈ 2.69 (4.00)
14550-08-	14650-08-		-0	3.43 (87)	4.49 (114)	≈ 2.37 (3.52)	≈ 2.27 (3.38)	–
14550-10-	14650-10-	19050-10-	-0	3.94 (100)	5.00 (127)	≈ 2.43 (3.61)	≈ 2.30 (3.43)	≈ 2.91 (4.33)
14550-11-	14650-11-		-0	4.41 (112)	5.47 (139)	≈ 2.51 (3.73)	≈ 2.35 (3.49)	–
14550-12-	14650-12-	19050-12-	-0	4.92 (125)	5.98 (152)	≈ 2.56 (3.81)	≈ 2.37 (3.53)	≈ 3.16 (4.70)
14550-13-	14650-13-		-0	5.39 (137)	6.46 (164)	≈ 2.65 (3.94)	≈ 2.42 (3.60)	–
14550-15-	14650-15-	19050-15-	-0	5.91 (150)	6.97 (177)	≈ 2.67 (3.98)	≈ 2.43 (3.62)	≈ 3.39 (5.04)
14550-16-	14650-16-		-0	6.38 (162)	7.44 (189)	≈ 2.75 (4.09)	≈ 2.47 (3.67)	–
14550-17-	14650-17-	19050-17-	-0	6.89 (175)	7.95 (202)	≈ 2.84 (4.23)	≈ 2.51 (3.74)	≈ 3.64 (5.41)
14550-18-	14650-18-		-0	7.36 (187)	8.43 (214)	≈ 2.92 (4.34)	≈ 2.55 (3.80)	–
14550-20-	14650-20-	19050-20-	-0	7.87 (200)	8.94 (227)	≈ 2.95 (4.39)	≈ 2.57 (3.82)	≈ 3.79 (5.64)
14550-21-	14650-21-		-0	8.35 (212)	9.41 (239)	≈ 3.00 (4.46)	≈ 2.59 (3.86)	–
14550-22-	14650-22-		-0	8.86 (225)	9.92 (252)	≈ 3.04 (4.53)	≈ 2.61 (3.89)	–
14550-23-	14650-23-		-0	9.33 (237)	10.39 (264)	≈ 3.12 (4.64)	≈ 2.84 (3.95)	–
14550-25-	14650-25-	19050-25-	-0	9.84 (250)	10.91 (277)	≈ 3.20 (4.76)	≈ 2.69 (4.00)	≈ 4.25 (6.32)
14550-26-	14650-26-		-0	10.31 (262)	11.38 (289)	≈ 3.26 (4.85)	≈ 2.72 (4.05)	–
14550-27-	14650-27-	19050-27-	-0	10.83 (275)	11.89 (302)	≈ 3.33 (4.95)	≈ 2.76 (4.10)	≈ 4.47 (6.65)
14550-28-	14650-28-		-0	11.30 (287)	12.36 (314)	≈ 3.37 (5.01)	≈ 2.78 (4.13)	–
14550-30-	14650-30-	19050-30-	-0	11.81 (300)	12.87 (327)	≈ 3.47 (5.16)	≈ 2.83 (4.21)	≈ 4.70 (6.99)
14550-31-	14650-31-		-0	12.28 (312)	13.35 (339)	≈ 3.49 (5.20)	≈ 2.84 (4.23)	–
14550-32-	14650-32-		-0	12.79 (325)	13.86 (352)	≈ 3.56 (5.30)	≈ 2.88 (4.28)	–
14550-33-	14650-33-		-0	13.27 (337)	14.33 (364)	≈ 3.64 (5.42)	≈ 2.92 (4.34)	–
14550-35-	14650-35-	19050-35-	-0	13.78 (350)	14.84 (377)	≈ 3.78 (5.62)	≈ 2.98 (4.44)	≈ 5.16 (7.68)
14550-36-	14650-36-		-0	14.25 (362)	15.31 (389)	≈ 3.72 (5.53)	≈ 2.95 (4.39)	–
14550-37-	14650-37-		-0	14.76 (375)	15.83 (402)	≈ 3.78 (5.63)	≈ 2.98 (4.44)	–
14550-38-	14650-38-		-0	15.24 (387)	16.30 (414)	≈ 3.86 (5.74)	≈ 3.02 (4.50)	–
14550-40-	14650-40-	19050-40-	-0	15.75 (400)	16.81 (427)	≈ 4.04 (6.01)	≈ 3.11 (4.63)	≈ 5.62 (8.36)
14550-41-	14650-41-		-0	16.22 (412)	17.28 (439)	≈ 3.99 (5.94)	≈ 3.09 (4.60)	–
14550-42-	14650-42-		-0	16.73 (425)	17.79 (452)	≈ 4.19 (6.23)	≈ 3.19 (4.74)	–
14550-43-	14650-43-		-0	17.20 (437)	18.27 (464)	≈ 4.08 (6.07)	≈ 3.13 (4.66)	–
14550-45-	14650-45-		-0	17.72 (450)	18.78 (477)	≈ 4.30 (6.40)	≈ 3.25 (4.83)	–
14550-46-	14650-46-	19050-46-	-0	18.19 (462)	19.25 (489)	≈ 4.27 (6.35)	≈ 3.23 (4.80)	≈ 6.19 (9.21)
14550-47-	14650-47-		-0	18.70 (475)	19.76 (502)	≈ 4.29 (6.39)	≈ 3.24 (4.82)	–
14550-48-	14650-48-		-0	19.17 (487)	20.24 (514)	≈ 4.46 (6.64)	≈ 3.33 (4.95)	–
14550-50-	14650-50-		-0	19.69 (500)	20.75 (527)	≈ 4.53 (6.74)	≈ 3.36 (5.00)	–
14550-51-	14650-51-		-0	20.16 (512)	21.22 (539)	≈ 4.47 (6.65)	≈ 3.33 (4.95)	–
14550-52-	14650-52-		-0	20.67 (525)	21.73 (552)	≈ 4.58 (6.82)	≈ 3.39 (5.04)	–
14550-53-	14650-53-		-0	21.14 (537)	22.20 (564)	≈ 4.65 (6.92)	≈ 3.42 (5.09)	–
14550-55-	14650-55-		-0	21.65 (550)	22.72 (577)	≈ 4.93 (7.34)	≈ 3.56 (5.30)	–
14550-60-	14650-60-		-0	23.62 (600)	24.69 (627)	≈ 5.09 (7.57)	≈ 3.64 (5.41)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: 14550-30-300-0

	150*	175*	200	250	300	350	400	450	500	600
R	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.68 (500)	23.62 (600)
H	15.67 (398)	17.64 (448)	19.61 (498)	23.54 (598)	27.48 (698)	31.42 (798)	35.35 (898)	39.29 (998)	43.23(1098)	51.10 (1298)
D	13.23 (336)	14.21 (361)	15.19 (386)	17.17 (436)	19.13 (486)	21.10 (536)	23.07 (586)	25.04 (636)	27.01 (686)	30.94 (786)
K	25.79 (655)	28.94 (735)	32.09 (815)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.29 (1440)	62.99 (1600)	69.09 (1755)	81.50 (2070)

* This radius is not available for the Tube Series
[1] Values upon request
[2] Note: for using *R 600* for long travels (gliding) please consult igus® first.

0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.146. For large diameter hoses see page 6.146

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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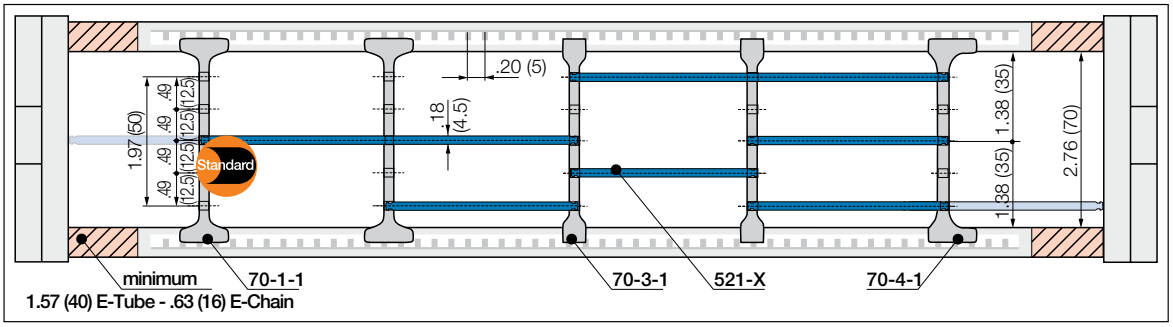
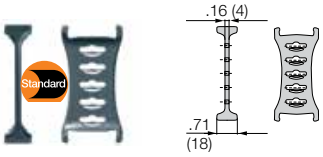
E-Chain System® E4 Light
Series 14550/14650/R19050
Interior Separation



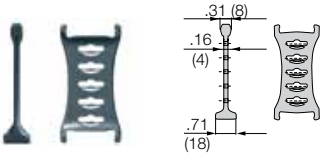
Note Please maintain a lateral spacing of 1.57" (40 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 70-1**
Assembled	**Part No. 70-1-1**

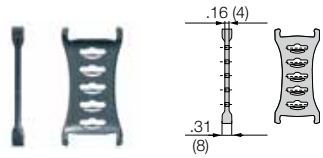
- **Standard separator 70-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator, narrow head

Unassembled	**Part No. 70-2**
Assembled	**Part No. 70-2-1**

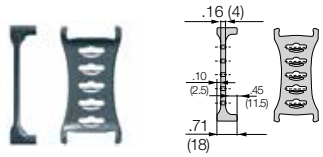
- **Separator 70-2**
  For even faster installation
  Separator for igus® QuickLock crossbar 385-X-Q. Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip)



Separator, narrow base

Unassembled	**Part No. 70-3**
Assembled	**Part No. 70-3-1**

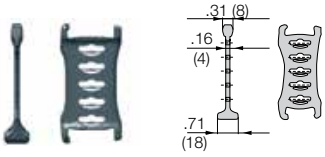
- **Separator 70-3**
  For many thin cables
  Separator with a narrow base for many thin cables side by side. Saves space in E-Chains® and E-Tubes.



Separator, asymmetrical

Unassembled	**Part No. 70-4**
Assembled	**Part No. 70-4-1**

- **Separator 70-4**
  For side mounted applications
  Asymmetrical separator, for defined distance. No additional spacers necessary for E-Chains® and E-Tubes.

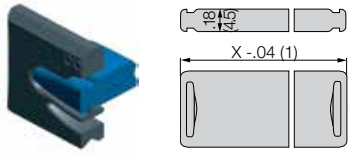


Separator, asymmetrical

Unassembled	**Part No. 70-5**
Assembled	**Part No. 70-5-1**

- **Separator 70-5**
  Locks safely in .20" (5 mm) increments
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 520-X**
Assembled	**Part No. 521-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 5 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**520-50**	**521-50**	5.91 (150)	**520-150**	**521-150**	11.81 (300)	**520-300**	**521-300**
2.56 (065)	**520-65**	**521-65**	6.89 (175)	**520-175**	**521-175**	13.78 (350)	**520-350**	**521-350**
2.95 (075)	**520-75**	**521-75**	7.87 (200)	**520-200**	**521-200**	14.76 (375)	**520-375**	**521-375**
3.94 (100)	**520-100**	**521-100**	8.86 (225)	**520-225**	**521-225**	15.24 (387)	**520-387**	**521-387**
4.92 (125)	**520-125**	**521-125**	9.84 (250)	**520-250**	**521-250**	17.723 (450)	**520-450**	**521-450**

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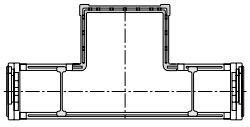
E-Chain System® E4 Light
Series 14550/14650/R19050
Special Accessories

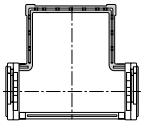
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

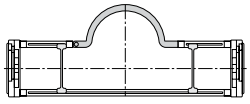
- Intended for cables and hoses with a maximum outer diameter of 9.64 in. (245 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



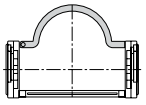
Square extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.



Round extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.

Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
450-15-RHD115	4.52 (115)	Round	No	Yes
450-17-RD115	4.52 (115)	Round	Yes	No
450-25-D150	5.91 (150)	Square	Yes	No
450-30-D200	7.09 (180)	Square	Yes	No
450-35-D250	7.68 (195)	Square	Yes	No
450-40-D300	9.65 (245)	Square	Yes	No
450-20-HD150	5.91 (150)	Square	No	Yes
450-25-HD200	7.09 (180)	Square	No	Yes
450-30-HD250	7.68 (195)	Square	No	Yes

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E4 Light
Series 14550/14650/R19050
Mounting Brackets

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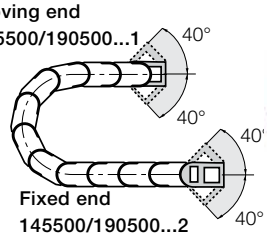
Standard

Option 1: KMA pivoting

- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

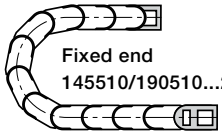
Moving end
145500/190500...1



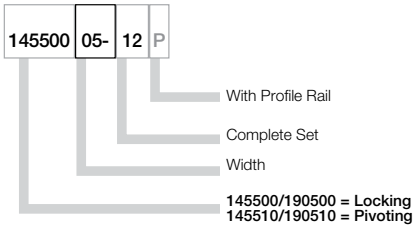
Option 2: KMA locking

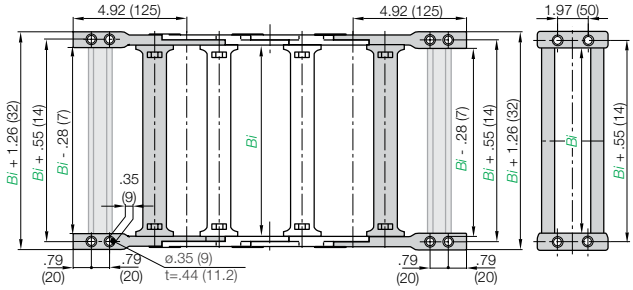
- Profile rail option
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels

Moving end
145510/190510...1



Part Number Structure





Full set, for both ends:
145500- 05- 12 Full set, **each part with pin/bore**

Single-part order:
145500- 05- 1 Mounting bracket **with bore**
145500- 05- 2 Mounting bracket **with pin**

Part number examples are shown for pivoting brackets. For locking brackets change part number to 145510

Part No. Full Set (pivoting for Chain)
Series 14550 or 14650:
145500-Width-12

Part No. Full Set (pivoting for Chain)
with profile rail
Series 14550 or 14650
145550-Width-12P

Part No. Full Set (pivoting for Tube)
Tube Series R19050
190500-Width-12

Part No. Full Set (pivoting for Tube)
with Profile Rail
Tube Series R19050
190510-Width-12P

Width	Part No. Full Set Pivoting Chain/Tube	Part No. Full Set Locking Chain/Tube		With Profile	*Bi* in. (mm)
-05	145500-	145510-	05-12	P	1.97 (50)
-06	145500-	145510-	06-12	P	2.56 (65)
-07	145500-/190500-	145510-/190510-	07-12	P	2.95 (75)
-08	145500-	145510-	08-12	P	3.43 (87)
-10	145500-/190500-	145510-/190510-	10-12	P	3.94 (100)
-11	145500-	145510-	11-12	P	4.41 (112)
-12	145500-/190500-	145510-/190510-	12-12	P	4.92 (125)
-13	145500-	145510-	13-12	P	5.39 (137)
-15	145500-/190500-	145510-/190510-	15-12	P	5.91 (150)
-16	145500-	145510-	16-12	P	6.38 (162)
-17	145500-/190500-	145510-/190510-	17-12	P	6.89 (175)
-18	145500-	145510-	18-12	P	7.36 (187)
-20	145500-/190500-	145510-/190510-	20-12	P	7.87 (200)
-21	145500-	145510-	21-12	P	8.35 (212)
-22	145500-	145510-	22-12	P	8.86 (225)
-23	145500-	145510-	23-12	P	9.33 (237)
-25	145500-/190500-	145510-/190510-	25-12	P	9.84 (250)
-26	145500-	145510-	26-12	P	10.31 (262)
-27	145500-/190500-	145510-/190510-	27-12	P	10.83 (275)
-28	145500-	145510-	28-12	P	11.30 (287)
-30	145500-/190500-	145510-/190510-	30-12	P	11.81 (300)

Width	Part No. Full Set Pivoting Chain/Tube	Part No. Full Set Locking Chain/Tube		With Profile	*Bi* in. (mm)
-31	145500-	145510-	31-12	P	12.28 (312)
-32	145500-	145510-	32-12	P	12.79 (325)
-33	145500-	145510-	33-12	P	13.27 (337)
-35	145500-/190500-	145510-/190510-	35-12	P	13.78 (350)
-36	145500-	145510-	36-12	P	14.25 (362)
-37	145500-	145510-	37-12	P	14.76 (375)
-38	145500-	145510-	38-12	P	15.24 (387)
-40	145500-/190500-	145510-/190510-	40-12	P	15.75 (400)
-41	145500-	145510-	41-12	P	16.22 (412)
-42	145500-	145510-	42-12	P	16.73 (425)
-43	145500-	145510-	43-12	P	17.20 (437)
-45	145500-	145510-	45-12	P	17.72 (450)
-46	145500-/190500-	145510-/190510-	46-12	P	18.19 (462)
-47	145500-	145510-	47-12	P	18.70 (475)
-48	145500-	145510-	48-12	P	19.17 (487)
-50	145500-	145510-	50-12	P	19.69 (500)
-51	145500-	145510-	51-12	P	20.16 (512)
-52	145500-	145510-	52-12	P	20.67 (525)
-53	145500-	145510-	53-12	P	21.14 (537)
-55	145500-	145510-	55-12	P	21.65 (550)
-60	145500-	145510-	60-12	P	23.62 (600)

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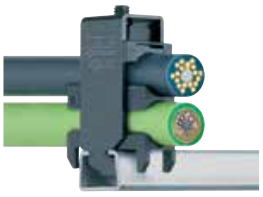
E-Chain System® E4 Light
Series 14550/14650/R19050
Strain Relief

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(6 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

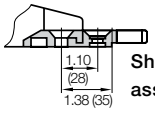
Chainfix Clip

Modular snap-on strain relief device

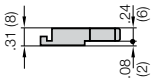
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(4-8)	CFC-08-M	CFC-08-C
.31-.47	(8-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

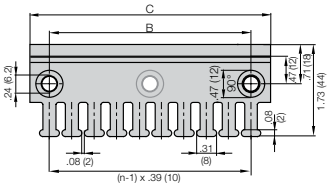


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10

Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
4550-ZS	5	1.89	(48)
4575-ZS	7	2.91	(74)

For more information please refer to strain relief section of Chapter 10

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Specs/CAD/RFQ: www.igus.com/e-chains
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QuickSpec: http://www.igus.com/quickspec

Width of Crossbar
14550-**10**-200-0

	B_{Ri}	Installation Part No.
-05	3.23 (82)	*
-06	3.82 (97)	*
-07	4.21 (107)	**94-50-225**
-08	4.69 (119)	**94-50-250**
-10	5.20 (132)	**94-50-250**
-11	5.67 (144)	**94-50-275**
-12	6.18 (157)	**94-50-275**
-13	6.65 (169)	**94-50-300**
-15	7.17 (182)	**94-50-300**
-16	7.64 (194)	**94-50-325**
-17	8.15 (207)	**94-50-325**
-18	8.62 (219)	**94-50-350**
-20	9.13 (232)	**94-50-350**
-21	9.61 (244)	**94-50-375**
-22	10.12 (257)	**94-50-375**
-23	10.59 (269)	**94-50-400**
-25	11.10 (282)	**94-50-400**
-26	11.57 (294)	**94-50-425**
-27	12.09 (307)	**94-50-425**
-28	12.56 (319)	**94-50-450**
-30	13.07 (332)	**94-50-450**
-31	13.54 (344)	**94-50-475**
-32	14.06 (357)	**94-50-475**
-33	14.53 (369)	**94-50-500**
-35	15.04 (382)	**94-50-500**
-36	15.51 (394)	**94-50-525**
-37	16.02 (407)	**94-50-525**
-38	16.50 (419)	**94-50-550**
-40	17.01 (432)	**94-50-550**
-41	17.48 (444)	**94-50-575**
-42	17.99 (457)	**94-50-575**
-43	18.46 (469)	**94-50-600**
-45	18.98 (482)	**94-50-600**
-46	19.45 (494)	**94-50-625**
-47	19.96 (507)	**94-50-625**
-48	20.43 (519)	**94-50-650**
-50	20.94 (532)	**94-50-650**
-51	21.42 (544)	**94-50-675**
-52	21.93 (557)	**94-50-675**
-53	22.40 (569)	**94-50-700**
-55	22.91 (582)	**94-50-700**
-60	24.88 (632)	**94-50-750**

Standard length profile rail

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 94-14550-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 94-50-XX

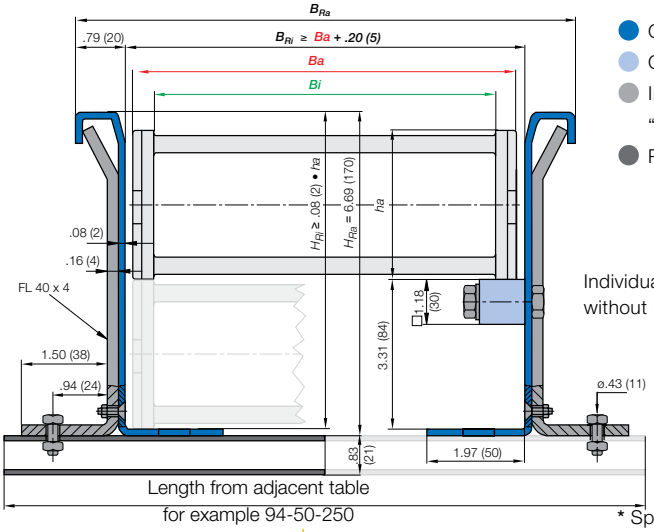
.XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center mounted

Required guide troughs
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 94-30
= 13 sections of 6.56 ft (2 m) glide bars
Part No. 93-01
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
94-50-XXX
Example:
94-50-400 for 15.75 (400 mm) long profile rail

Left: Guide trough with glide bars Right: Guide troughs without glide bars

Installation sets as section connectors



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

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R19050

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Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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15050
15150
R19850

igus®

E-Chain System® E4 Light
Series 15050/15150/R19850

3.15" 3.15"

Price Index

Series 15050 Series 15150

Series R19850

Special Features / Options

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

Side-mounted - unsupported

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 328 ft (100 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

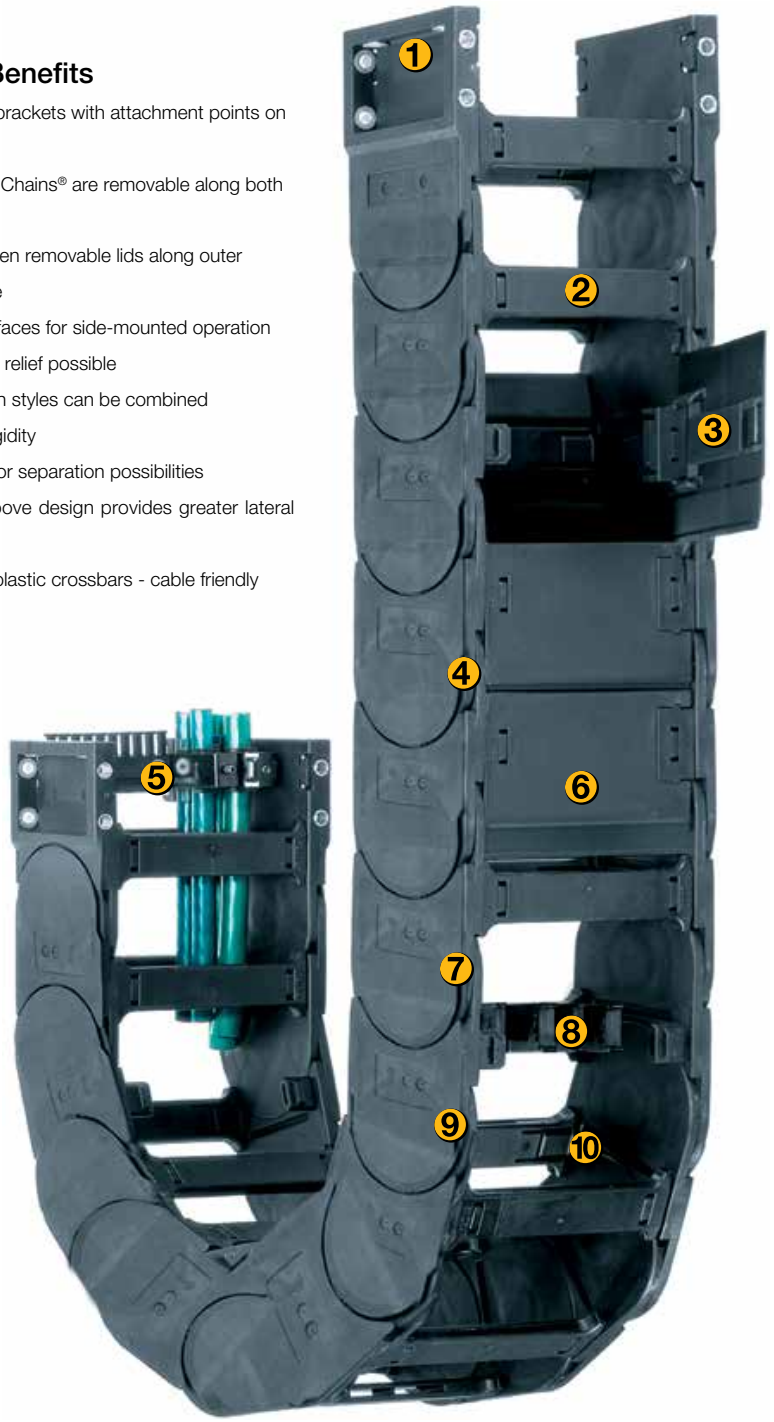
Usage Guidelines

- If a simpler low-cost solution is required
- For maximum inner width with minimal outer width
- If the Series 5050 is too large

- If side-mounted chain/tube with a long unsupported travel is required
  ➤ **Series E4-80/H4-80/R4-80**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Crossbars on E-Chains® are removable along both radii
3. Hinged snap-open removable lids along outer radius of E-Tube
4. Lateral glide surfaces for side-mounted operation
5. Integrated strain relief possible
6. Closed and open styles can be combined
7. High torsional rigidity
8. Numerous interior separation possibilities
9. Tongue and groove design provides greater lateral stability
10. Wide, rounded plastic crossbars - cable friendly



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

16.4 ft (5 m) **15050-30-300-0**	**E-Chain®**
With 2 separators **511** assembled every 2nd link	**Interior Separation**
1 Set **150500-30-12P**	**Mounting Bracket**

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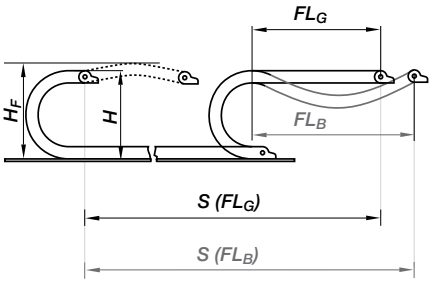
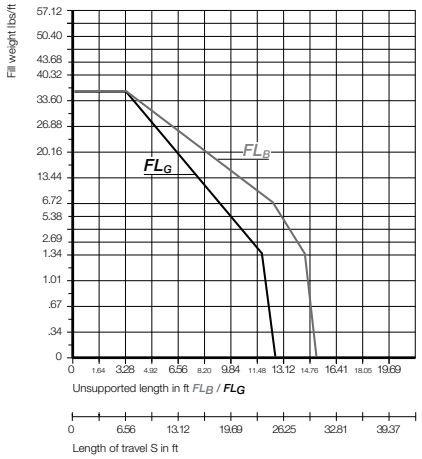
E-Chain System® E4 Light Series 15050/15150/R19850 Installation Dimensions

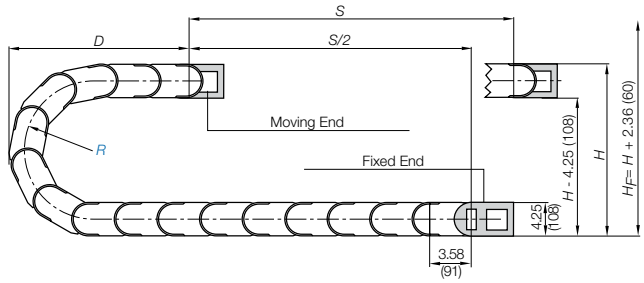
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $S/2 + K$

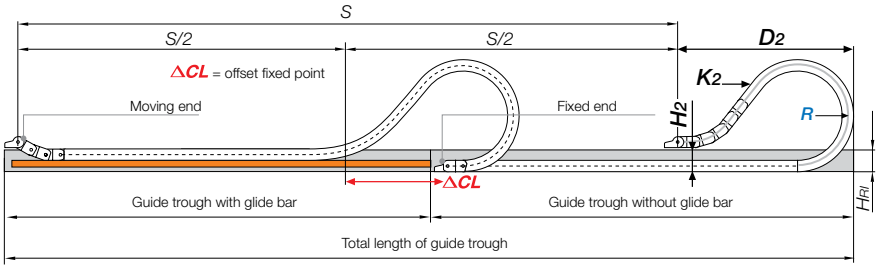
The required clearance height: H_F **= H + 2.36 in. (60 mm)** (with 2.02 lbs/ft (3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)	23.62 (600)
H^{-0}_{+25}	16.06 (408)	20.00 (508)	23.94 (608)	27.87 (708)	31.81 (808)	35.75 (908)	43.62 (1108)	51.50 (1308)
D	13.43 (341)	15.39 (391)	17.36 (441)	19.33 (491)	21.30 (541)	23.27 (591)	27.20 (691)	31.14 (791)
K	25.79 (655)	32.09 (815)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.69 (1440)	69.09 (1755)	81.50 (2070)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 820 ft. (250m)

For center mount applications:
Chain length: $= S/2 + K_2$



R	5.91 (150*)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)	23.62 (600[1])
H_2	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	*
D_2 +25	21.65 (550)	31.50 (800)	37.40 (950)	47.24 (1200)	61.02 (1550)	66.93 (1700)	85.63 (2175)	*
K_2	35.83 (910)	50.16 (1274)	64.49 (1638)	78.82 (2002)	96.73 (2457)	107.48 (2730)	136.14 (3458)	*
ΔCL	8.23 (209)	16.10 (409)	20.04 (509)	27.91 (709)	39.72 (1009)	43.66 (1109)	58.42 (1484)	*

[1] *R 600* not suitable for long travel applications.
Please consult igus®

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

- S = Length of travel
- R = Bending radius
- H = Nominal clearance height
- D = Overlength E-Chain® radius in final position
- K = π • R + *safety buffer*
- H_F = Required clearance height
- H_{RI} = Trough inner height
- H_2 = *Mounting height
- D_2 = Overlength - long travels, gliding
- K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties ➤ **Chapter 1**

15050
15150
R19850

3.15"

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Series 15050/15150/R19850

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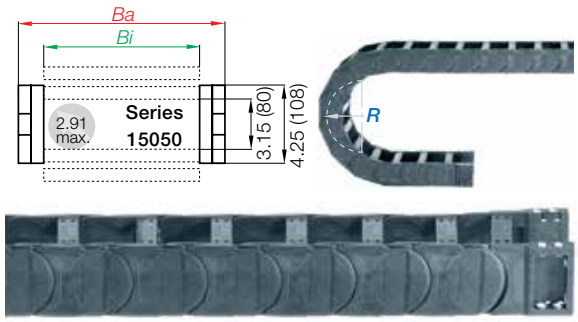
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Series 15050 - E-Chain® with crossbars every link



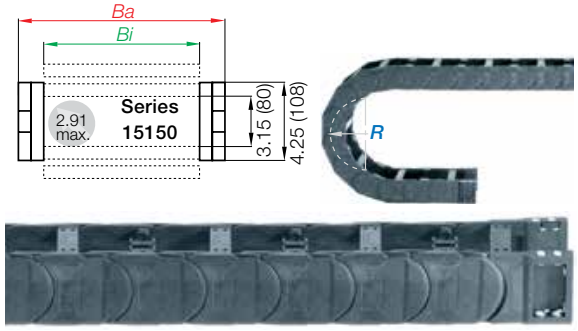
- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

15050- 30- 300- 0

- 300- Color - Black
- 30- Bending radius
- 15050- Width
- 0 Series

Series 15150 - E-Chain® with crossbars every other link



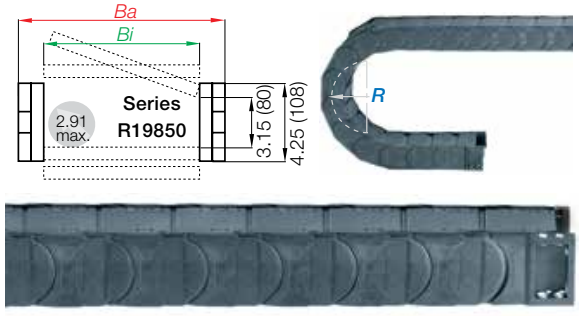
- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

15150- 30- 300- 0

- 300- Color - Black
- 30- Bending radius
- 15150- Width
- 0 Series

Series R19850 - fully enclosed E-Tube



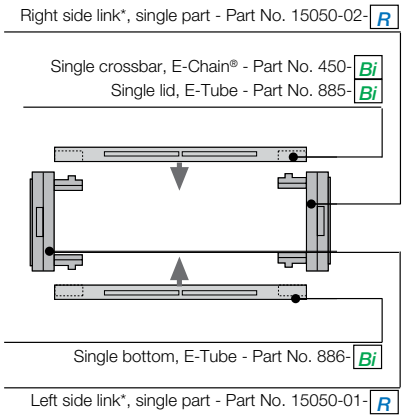
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

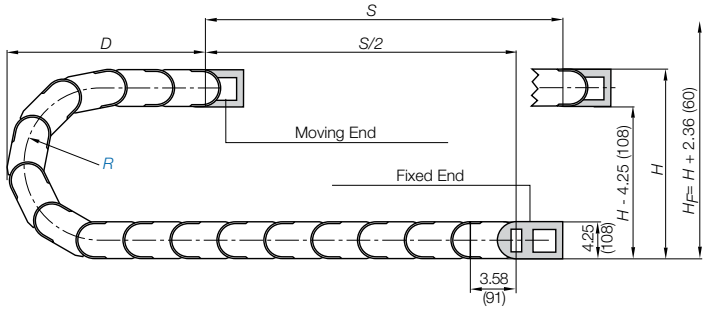
Part Number Structure

19850- 30- 300- 0

- 300- Color - Black
- 30- Bending radius
- 19850- Width
- 0 Series

E-Chain® as separate parts, links and side plates





*View from the fixed point of the E-Chain®/E-Tube

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E-Chain System® E4 Light
Series 15050/15150/R19850

Supplement part number with required radius. Example: 15050-30-[300]-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

Part Number. Crossbars Every link	Crossbars Every other	Tube Version		Bi in. (mm)	Ba in. (mm)	15050 lbs/ft (kg/m)	15150 lbs/ft (kg/m)	R19850 lbs/ft (kg/m)
15050-05-	15150-05-		[ ]-0	1.97 (50)	3.15 (80)	≈2.59 (3.85)	≈ 2.58 (3.84)	–
15050-06-	15150-06-		[ ]-0	2.56 (65)	3.74 (95)	≈2.65 (3.95)	≈ 2.61 (3.88)	–
15050-07-	15150-07-	19850-07-	[ ]-0*	2.95 (75)	4.13 (105)	≈2.69 (4.00)	≈ 2.63 (3.92)	≈ 3.00 (4.46)
15050-08-	15150-08-		[ ]-0	3.43 (87)	4.61 (117)	≈ 2.72 (4.05)	≈ 2.66 (3.96)	–
15050-10-	15150-10-	19850-10-	[ ]-0	3.94 (100)	5.12 (130)	≈ 2.81 (4.18)	≈ 2.69 (4.00)	≈ 3.18 (4.74)
15050-11-	15150-11-		[ ]-0	4.41 (112)	5.63 (143)	≈ 2.90 (4.31)	≈ 2.73 (4.07)	–
15050-12-	15150-12-	19850-12-	[ ]-0	4.92 (125)	6.10 (155)	≈ 2.94 (4.38)	≈ 2.76 (4.10)	≈ 3.43 (5.10)
15050-13-	15150-13-		[ ]-0	5.39 (137)	6.61 (168)	≈ 3.03 (4.51)	≈ 2.80 (4.17)	–
15050-15-	15150-15-	19850-15-	[ ]-0	5.91 (150)	7.09 (180)	≈ 3.08 (4.58)	≈ 2.82 (4.20)	≈ 3.72 (5.53)
15050-16-	15150-16-		[ ]-0	6.38 (162)	7.60 (193)	≈ 3.15 (4.69)	≈ 2.86 (4.26)	–
15050-17-	15150-17-	19850-17-	[ ]-0	6.89 (175)	8.07 (205)	≈ 3.23 (4.80)	≈ 2.90 (4.31)	≈ 3.95 (5.80)
15050-18-	15150-18-		[ ]-0	7.36 (187)	8.58 (218)	≈ 3.30 (4.91)	≈ 2.94 (4.37)	–
15050-20-	15150-20-	19850-20-	[ ]-0	7.87 (200)	9.06 (230)	≈ 3.31 (4.93)	≈ 2.94 (4.38)	≈ 4.11 (6.11)
15050-21-	15150-21-		[ ]-0	8.35 (212)	9.57 (243)	≈ 3.39 (5.04)	≈ 2.98 (4.43)	–
15050-22-	15150-22-		[ ]-0	8.86 (225)	10.04 (255)	≈ 3.43 (5.10)	≈ 3.00 (4.47)	–
15050-23-	15150-23-		[ ]-0	9.33 (237)	10.55 (268)	≈ 3.52 (5.24)	≈ 3.04 (4.53)	–
15050-25-	15150-25-	19850-25-	[ ]-0	9.84 (250)	11.02 (280)	≈ 3.57 (5.32)	≈ 3.08 (4.58)	≈ 4.59 (6.83)
15050-26-	15150-26-		[ ]-0	10.31 (262)	11.54 (293)	≈ 3.64 (5.41)	≈ 3.10 (4.62)	–
15050-27-	15150-27-	19850-27-	[ ]-0	10.83 (275)	12.01 (305)	≈ 3.71 (5.52)	≈ 3.14 (4.68)	≈ 4.87 (7.26)
15050-28-	15150-28-		[ ]-0	11.30 (287)	12.52 (318)	≈ 3.72 (5.54)	≈ 3.15 (4.69)	–
15050-30-	15150-30-	19850-30-	[ ]-0	11.81 (300)	12.99 (330)	≈ 3.87 (5.76)	≈ 3.23 (4.80)	≈ 5.03 (7.49)
15050-31-	15150-31-		[ ]-0	12.28 (312)	13.50 (343)	≈ 3.90 (5.80)	≈ 3.24 (4.82)	–
15050-32-	15150-32-		[ ]-0	12.79 (325)	13.98 (355)	≈ 3.93 (5.85)	≈ 3.25 (4.84)	–
15050-33-	15150-33-		[ ]-0	13.27 (337)	14.49 (368)	≈ 4.05 (6.03)	≈ 3.31 (4.93)	–
15050-35-	15150-35-	19850-35-	[ ]-0	13.78 (350)	14.96 (380)	≈ 4.15 (6.18)	≈ 3.37 (5.01)	≈ 5.54 (8.24)
15050-36-	15150-36-		[ ]-0	14.25 (362)	15.47 (393)	≈ 4.16 (6.19)	≈ 3.37 (5.02)	–
15050-37-	15150-37-		[ ]-0	14.76 (375)	15.94 (405)	≈ 4.17 (6.20)	≈ 3.37 (5.02)	–
15050-38-	15150-38-		[ ]-0	15.24 (387)	16.46 (418)	≈ 4.23 (6.29)	≈ 3.40 (5.06)	–
15050-40-	15150-40-	19850-40-	[ ]-0	15.75 (400)	16.93 (430)	≈ 4.36 (6.49)	≈ 3.47 (5.16)	≈ 6.18 (9.20)
15050-41-	15150-41-		[ ]-0	16.22 (412)	17.44 (443)	≈ 4.46 (6.64)	≈ 3.52 (5.24)	–
15050-42-	15150-42-		[ ]-0	16.73 (425)	17.91 (455)	≈ 4.57 (6.80)	≈ 3.57 (5.31)	–
15050-43-	15150-43-		[ ]-0	17.20 (437)	18.43 (468)	≈ 4.61 (6.86)	≈ 3.60 (5.35)	–
15050-45-	15150-45-		[ ]-0	17.72 (450)	18.90 (480)	≈ 4.66 (6.93)	≈ 3.62 (5.38)	–
15050-46-	15150-46-	19850-46-	[ ]-0	18.19 (462)	19.41 (493)	≈ 4.67 (6.95)	≈ 3.62 (5.39)	≈ 6.49 (9.66)
15050-47-	15150-47-		[ ]-0	18.70 (475)	19.88 (505)	≈ 4.76 (7.08)	≈ 3.67 (5.46)	–
15050-48-	15150-48-		[ ]-0	19.17 (487)	20.39 (518)	≈ 4.81 (7.16)	≈ 3.69 (5.49)	–
15050-50-	15150-50-		[ ]-0	19.69 (500)	20.87 (530)	≈ 4.85 (7.22)	≈ 3.71 (5.52)	–
15050-51-	15150-51-		[ ]-0	20.16 (512)	21.38 (543)	≈ 4.87 (7.24)	≈ 3.72 (5.53)	–
15050-52-	15150-52-		[ ]-0	20.67 (525)	21.85 (555)	≈ 4.89 (7.28)	≈ 3.74 (5.56)	–
15050-53-	15150-53-		[ ]-0	21.14 (537)	22.36 (568)	≈ 5.00 (7.44)	≈ 3.78 (5.63)	–
15050-55-	15150-55-		[ ]-0	21.65 (550)	22.83 (580)	≈ 5.32 (7.92)	≈ 3.94 (5.87)	–
15050-60-	15150-60-		[ ]-0	23.62 (600)	24.80 (630)	≈ 5.46 (8.12)	≈ 4.01 (5.97)	–

Choose from the radii below for all of the above sizes
Radius (mm)Example: 15050-30-[300]-0

	[150**]	[200]	[250]	[300]	[350]	[400]	[500]
R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)
H $^{0}_{+25}$	16.14 (410)	20.08 (510)	24.02 (610)	27.95 (710)	31.89 (810)	35.83 (910)	43.70 (1110)
D	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	21.65 (550)	25.59 (650)
K	29.53 (750)	35.43 (900)	41.34 (1050)	48.23 (1225)	54.13 (1375)	57.09 (1450)	65.94 (1675)

** This radius is not available for the R19850 Series
* Removable lid only, no hinged option

0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.158. For large diameter hoses see page 6.158

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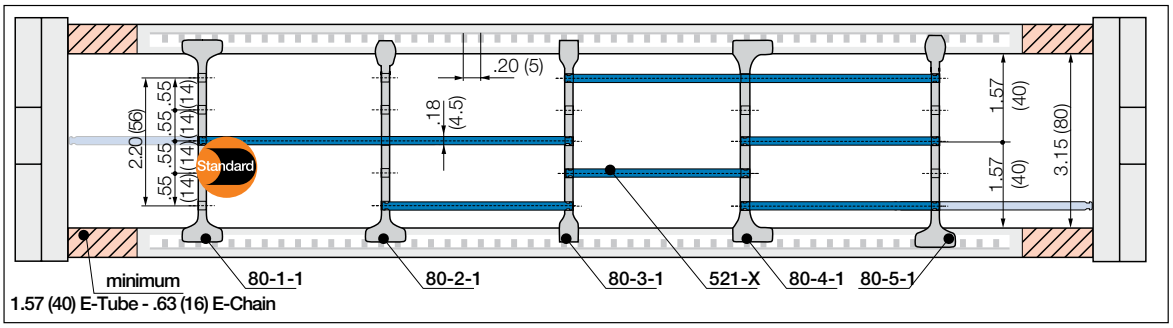
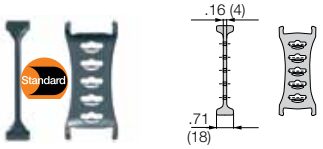
E-Chain System® E4 Light
Series 15050/15150/R19850
Interior Separation - New Generation



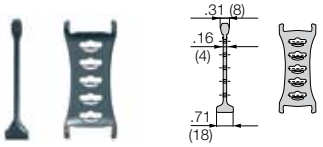
Note Please maintain a lateral spacing of 1.57" (40 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 80-1**
Assembled	**Part No. 80-1-1**

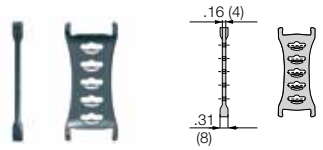
- **Standard separator 80-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator, narrow head

Unassembled	**Part No. 80-2**
Assembled	**Part No. 80-2-1**

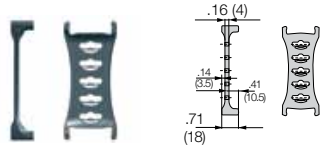
- **Separator 80-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 80-3**
Assembled	**Part No. 80-3-1**

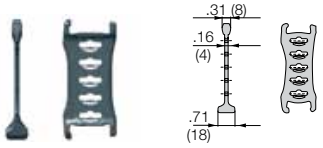
- **Separator 80-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, asymmetrical

Unassembled	**Part No. 80-4**
Assembled	**Part No. 80-4-1**

- **Separator 80-4**
  For side mounted applications
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

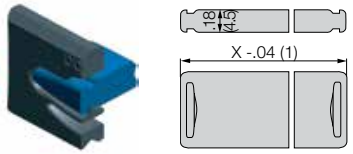


Separator, asymmetrical

Unassembled	**Part No. 80-5**
Assembled	**Part No. 80-5-1**

- **Separator 80-5**
  Locks safely in .30" (7.5 mm) increments
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 520-X**
Assembled	**Part No. 521-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 5 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**520-50**	**521-50**	5.91 (150)	**520-150**	**521-150**	11.81 (300)	**520-300**	**521-300**
2.56 (065)	**520-65**	**521-65**	6.89 (175)	**520-175**	**521-175**	13.78 (350)	**520-350**	**521-350**
2.95 (075)	**520-75**	**521-75**	7.87 (200)	**520-200**	**521-200**	14.76 (375)	**520-375**	**521-375**
3.94 (100)	**520-100**	**521-100**	8.86 (225)	**520-225**	**521-225**	15.24 (387)	**520-387**	**521-387**
4.92 (125)	**520-125**	**521-125**	9.84 (250)	**520-250**	**521-250**	17.723 (450)	**520-450**	**521-450**

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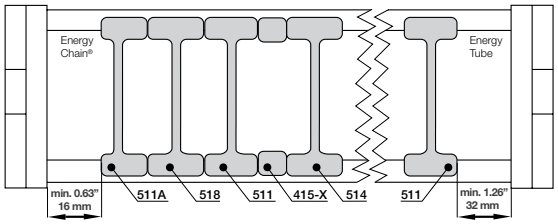
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

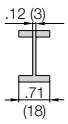
E-Chain System® E4 Light
Series 15050/15150/R19850
Interior Separation - Previous Generation

Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.
NOTE: Observe a lateral spacing of at least 1.30 in. (33mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates



STANDARD
Vertical separator
501

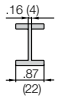


Vertical separator

Unassembled	**Part No. 501**
Assembled	**Part No. 511**

- **Standard separator 501 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

Locking separator
504

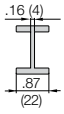


Locking separator (chain only)

Unassembled	**Part No. 504**
Assembled	**Part No. 514**

- **Locking separator 504 for E-Chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. If locking separators are used, the E-Chain® is more difficult to open.

Locking separator
508

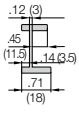


Locking separator (chain only)

Unassembled	**Part No. 508**
Assembled	**Part No. 518**

- **Locking separator 508 for E-Chains®**
  This separator is used for applications that are exposed to extremely high humidity. The clamp at the side serves to uniformly align the separators. In order to avoid destroying the separators when opening the E-Chain®, make sure all separators are identically aligned.

Asymmetric separator
501A



Asymmetrical separator (chain only)

Unassembled	**Part No. 501A**
Assembled	**Part No. 511A**

- **Asymmetrical separator 501A for E-Chains®**
  This separator features an (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

Spacers
405-XX

Spacer (chain only)

Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	**415 -10**	.39"	(10)
405 -15	**415 -15**	.59"	(15)
405 -20	**415 -20**	79"	(20)
405 -30	**415 -30**	1.18"	(30)
405 -40	**415 -40**	1.57"	(40)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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15050
15150
R19850

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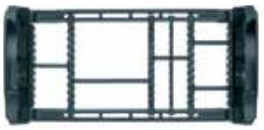
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

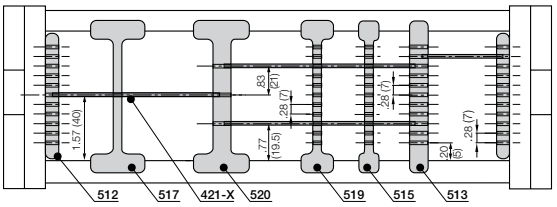
E-Chain System® E4 Light
Series 15050/15150/R19850
Interior Separation - Previous Generation



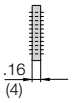
Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.



- **Side plates 502**
  This component is used to form the basic pattern of a shelf system.

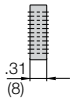


Side plate

Unassembled	**Part No. 502**
Assembled	**Part No. 512**

Side plate 502

- **Vertical separator 503**
  This component is used to form the basic pattern of a shelf system.

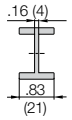


Vertical separator

Unassembled	**Part No. 503**
Assembled	**Part No. 513**

Vertical separator 503

- **Locking vertical separator 507**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.

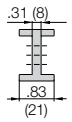


Locking vertical separator

Unassembled	**Part No. 507**
Assembled	**Part No. 517**

Locking vertical separator 507

- **Locking vertical separator 510**
  This separator is slotted and able to be combined with shelves. For E-Chains® only.

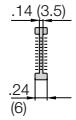


Locking vertical separator

Unassembled	**Part No. 510**
Assembled	**Part No. 520**

Locking vertical separator 510

- **Slotted separators 505**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.

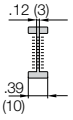


Slotted separators, closed

Unassembled	**Part No. 505**
Assembled	**Part No. 515**

Closed slotted separator 505

- **Slotted separator 509**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 7 middle slots



Slotted separators, open

Unassembled	**Part No. 509**
Assembled	**Part No. 519**

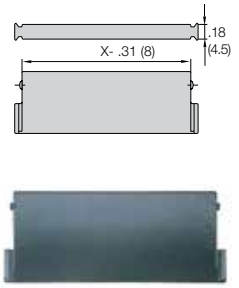
Open slotted separator 509

Shelves 420-XX

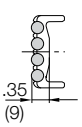
These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

Width X in.	(mm)	Usable Width in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	.39	(10)	**420-18**	**421-18**
.91	(23)	.59	(15)	**420-23**	**421-23**
.98	(25)	.67	(17)	**420-25**	**421-25**
1.10	(28)	.79	(20)	**420-28**	**421-28**
1.30	(33)	.98	(25)	**420-33**	**421-33**
1.69	(43)	1.38	(35)	**420-43**	**421-43**
1.97	(50)	1.65	(42)	**420-50**	**421-50**
2.44	(62)	2.13	(54)	**420-62**	**421-62**

Width X in.	(mm)	Usable Width in.	(mm)	Part No. Unassembled	Part No. Assembled
2.95	(75)	2.64	(67)	**420-75**	**421-75**
3.46	(88)	3.15	(80)	**420-88**	**421-88**
3.94	(100)	3.62	(92)	**420-100**	**421-100**
4.92	(125)	4.61	(117)	**420-125**	**421-125**
5.91	(150)	5.59	(142)	**420-150**	**421-150**
6.89	(175)	6.57	(167)	**420-175**	**421-175**
7.36	(187)	7.05	(179)	**420-187**	**421-187**
7.87	(200)	7.56	(192)	**420-200**	**421-200**



Rollclip - minimizes abrasion of particularly sensitive hoses or cables in an E-Chain®. The integrated rollers compensate for relative movement between the chain and the hose or cable. This reduces the abrasion of the hoses or cables



Rollclip

Unassembled	**Part No. 489-27**
Assembled	**Part No. 490-27**

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E-Chain System® E4 Light
Series 15050/15150/R19850
Special Accessories

Part number example for E-Chain®

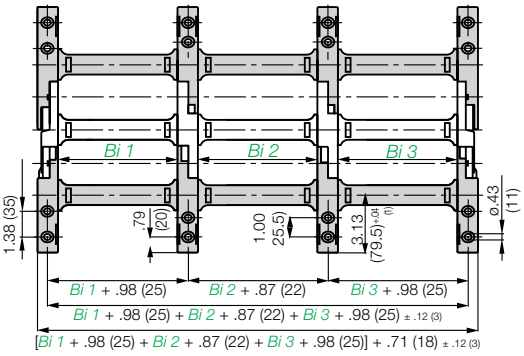
15050-10/20/10-[200]-0

15050-*Bi1*/*Bi2*/*Bi3*-[*R*]-0

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

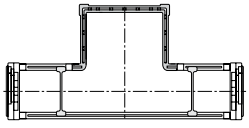
- For applications in which particularly high fill weights necessitate extremely wide E-Chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



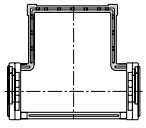
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

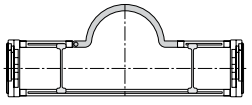
- Intended for cables and hoses with a maximum outer diameter of 10.63 in. (270 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



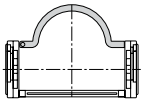
Square extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.



Round extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.

Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
450-15-RHD115	4.52 (115)	Round	No	Yes
450-17-RD115	4.52 (115)	Round	Yes	No
450-25-D150	5.91 (150)	Square	Yes	No
450-30-D200	7.09 (180)	Square	Yes	No
450-35-D250	7.68 (195)	Square	Yes	No
450-40-D300	9.65 (245)	Square	Yes	No
450-20-HD150	5.91 (150)	Square	No	Yes
450-25-HD200	7.09 (180)	Square	No	Yes
450-30-HD250	7.68 (195)	Square	No	Yes

E4 clip on cable binder

- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on E-Chains®
- The loops can be adjusted as needed
- Compatible with many E4 E-Chains®
- Economical
- One clip and one locking band are needed for each chain link

Part No.	Form
450-B12	Locking clip, comprised of a locking element
450-B12-200	Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E4 Light
Series 15050/15150/R19850
Mounting Brackets - KMA

Standard

Option 1: KMA pivoting

- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

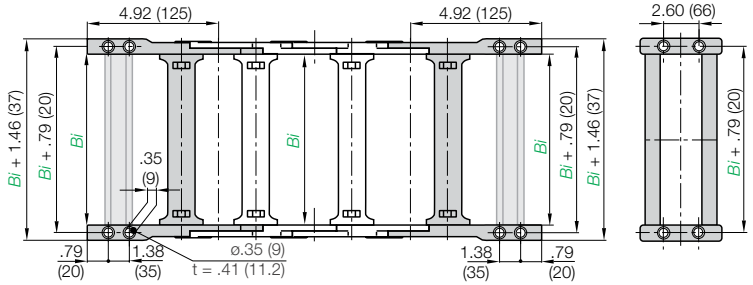
Option 2: KMA locking

- Profile rail option
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels

Part Number Structure

150500- | 07- | 12 | T | P

- With Profile Rail
- Tube version
- Complete Set
- Width
- 150500 = Pivoting, 151500 = Locking



Full set, for both ends:
150500- | 05- | 12 Full set, **each part with pin/bore**

Single-part order:
150500 - 05- 1 Mounting bracket **with bore**
150500 - 05- 2 Mounting bracket **with pin**

Part number examples are shown for pivoting brackets. For locking brackets change part number to 151500

Part No. Full Set (pivoting)
Series 15050 or 15150:
150500-Width-12

Part No. Full Set (pivoting)
with profile rail
Series 15050 or 15150
150500-Width-12P

Part No. Full Set (pivoting)
Tube Series R19850
150500-Width-12T

Part No. Full Set (pivoting)
with Profile Rail
Tube Series R19850
150500-Width-12TP

Width	Part No. Full Set Pivoting	Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-05	150500	151500	-05-12		P	1.97 (50)
-06	150500	151500	-06-12		P	2.56 (65)
-07	150500	151500	-07-12	T	P	2.95 (75)
-10	150500	151500	-10-12	T	P	3.94 (100)
-11	150500	151500	-11-12		P	4.41 (112)
-12	150500	151500	-12-12	T	P	4.92 (125)
-13	150500	151500	-13-12		P	5.39 (137)
-15	150500	151500	-15-12	T	P	5.91 (150)
-16	150500	151500	-16-12		P	6.38 (162)
-17	150500	151500	-17-12	T	P	6.89 (175)
-18	150500	151500	-18-12		P	7.36 (187)
-20	150500	151500	-20-12	T	P	7.87 (200)
-21	150500	151500	-21-12		P	8.35 (212)
-22	150500	151500	-22-12		P	8.86 (225)
-23	150500	151500	-23-12		P	9.33 (237)
-25	150500	151500	-25-12	T	P	9.84 (250)
-26	150500	151500	-26-12		P	10.31 (262)
-27	150500	151500	-27-12	T	P	10.83 (275)
-28	150500	151500	-28-12		P	11.30 (287)
-30	150500	151500	-30-12	T	P	11.81 (300)

Width	Part No. Full Set Pivoting	Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-31	150500	151500	-31-12		P	12.28 (312)
-32	150500	151500	-32-12		P	12.79 (325)
-33	150500	151500	-33-12		P	13.27 (337)
-35	150500	151500	-35-12	T	P	13.78 (350)
-36	150500	151500	-36-12		P	14.25 (362)
-37	150500	151500	-37-12		P	14.76 (375)
-38	150500	151500	-38-12		P	15.24 (387)
-40	150500	151500	-40-12	T	P	15.75 (400)
-41	150500	151500	-41-12		P	16.22 (412)
-42	150500	151500	-42-12		P	16.73 (425)
-43	150500	151500	-43-12		P	17.20 (437)
-45	150500	151500	-45-12		P	17.72 (450)
-46	150500	151500	-46-12	T	P	18.19 (462)
-47	150500	151500	-47-12		P	18.70 (475)
-48	150500	151500	-48-12		P	19.17 (487)
-50	150500	151500	-50-12		P	19.69 (500)
-51	150500	151500	-51-12		P	20.16 (512)
-52	150500	151500	-52-12		P	20.67 (525)
-53	150500	151500	-53-12		P	21.14 (537)
-55	150500	151500	-55-12		P	21.65 (550)
-60	150500	151500	-60-12		P	23.62 (600)

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Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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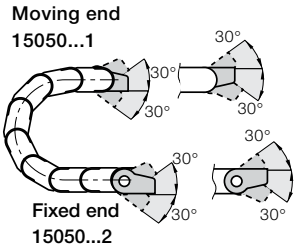
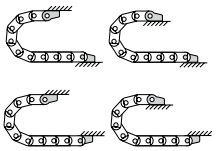
E-Chain System® E4 Light
Series 15050/15150/R19850
Mounting Brackets - Steel

Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive



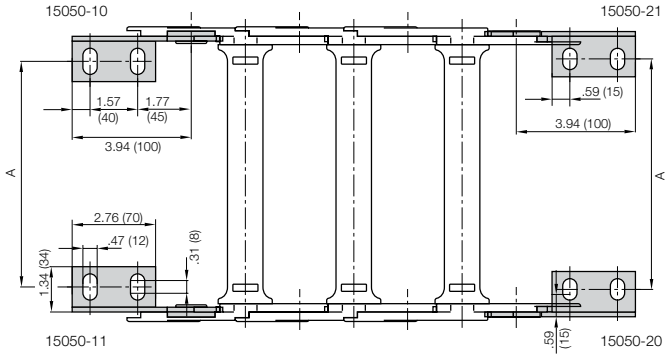


Possible installation configurations -

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 15050, 15150 or R19850:
15050-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right with bore
Series 15050, 15150 or R19850:
15050-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right with pin
Series 15050, 15150 or R19850:
15050-2



Bracket Mounting Dimensions

Width of Chain *Bi*	Mounting Brackets Part Number	Full Set	Moving End Only	Fixed End Only	Mounting Dimension A in. (mm)
1.97 (50)	15050	-12	-1	-2	1.02 (26)
2.56 (65)	15050	-12	-1	-2	1.61 (41)
2.95 (75)	15050	-12	-1	-2	2.01 (51)
3.94 (100)	15050	-12	-1	-2	2.99 (76)
4.41 (112)	15050	-12	-1	-2	3.46 (88)
4.92 (125)	15050	-12	-1	-2	3.98 (101)
5.39 (137)	15050	-12	-1	-2	4.45 (113)
5.91 (150)	15050	-12	-1	-2	4.96 (126)
6.38 (162)	15050	-12	-1	-2	5.43 (138)
6.89 (175)	15050	-12	-1	-2	5.94 (151)
7.36 (187)	15050	-12	-1	-2	6.42 (163)
7.87 (200)	15050	-12	-1	-2	6.93 (176)
8.35 (212)	15050	-12	-1	-2	7.40 (188)
8.86 (225)	15050	-12	-1	-2	7.91 (201)
9.33 (237)	15050	-12	-1	-2	8.39 (213)
9.84 (250)	15050	-12	-1	-2	8.90 (226)
10.31 (262)	15050	-12	-1	-2	9.37 (238)
10.83 (275)	15050	-12	-1	-2	9.88 (251)
11.30 (287)	15050	-12	-1	-2	10.35 (263)
11.81 (300)	15050	-12	-1	-2	10.87 (276)
12.28 (312)	15050	-12	-1	-2	11.34 (288)

Width of Chain *Bi*	Mounting Brackets Part Number	Full Set	Moving End Only	Fixed End Only	Mounting Dimension A in. (mm)
12.79 (325)	15050	-12	-1	-2	11.85 (301)
13.27 (337)	15050	-12	-1	-2	12.32 (313)
13.78 (350)	15050	-12	-1	-2	12.83 (326)
14.25 (362)	15050	-12	-1	-2	15.28 (388)
14.76 (375)	15050	-12	-1	-2	13.82 (351)
15.24 (387)	15050	-12	-1	-2	14.29 (363)
15.75 (400)	15050	-12	-1	-2	14.80 (376)
16.22 (412)	15050	-12	-1	-2	15.28 (388)
16.73 (425)	15050	-12	-1	-2	15.79 (401)
17.20 (437)	15050	-12	-1	-2	16.26 (413)
17.72 (450)	15050	-12	-1	-2	16.77 (426)
18.19 (462)	15050	-12	-1	-2	17.24 (438)
18.70 (475)	15050	-12	-1	-2	17.76 (451)
19.17 (487)	15050	-12	-1	-2	18.23 (463)
19.69 (500)	15050	-12	-1	-2	18.74 (476)
20.16 (512)	15050	-12	-1	-2	19.21 (488)
20.67 (525)	15050	-12	-1	-2	19.72 (501)
21.14 (537)	15050	-12	-1	-2	20.20 (513)
21.65 (550)	15050	-12	-1	-2	20.71 (526)
23.62 (600)	15050	-12	-1	-2	22.68 (576)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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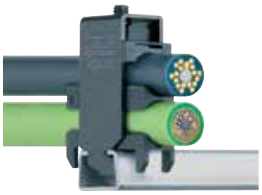
E-Chain System® E4 Light
Series 15050/15150/R19850
Strain Relief

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(6 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

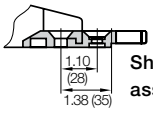
Chainfix Clip

Modular snap-on strain relief device

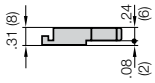
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(4-8)	CFC-08-M	CFC-08-C
.31-.47	(8-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

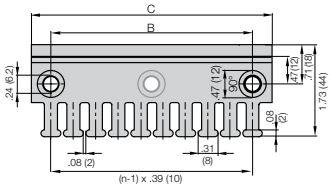


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10

Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
4550-ZS	5	1.89	(48)
4575-ZS	7	2.91	(74)

For more information please refer to strain relief section of Chapter 10

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E-Chain System® E4 Light
Series 15050/15150/R19850
Guide Trough

15050
15150
R19850

Width of Crossbar
15050-**05**-200-0

	B_{Ri}	Installation Part No.
-05	3.35 (85)	*
-07	4.33 (110)	**96-50-225**
-10	5.31 (135)	**96-50-250**
-11	5.83 (148)	**96-50-275**
-12	6.30 (160)	**96-50-275**
-13	6.81 (173)	**96-50-300**
-15	7.28 (185)	**96-50-300**
-16	7.80 (198)	**96-50-325**
-17	8.27 (210)	**96-50-325**
-18	8.78 (223)	**96-50-350**
-20	9.25 (235)	**96-50-350**
-21	9.76 (248)	**96-50-375**
-22	10.24 (260)	**96-50-375**
-23	10.75 (273)	**96-50-400**
-25	11.22 (285)	**96-50-400**
-26	11.73 (298)	**96-50-425**
-27	12.20 (310)	**96-50-425**
-28	12.72 (323)	**96-50-450**
-30	13.19 (335)	**96-50-450**
-31	13.70 (348)	**96-50-475**
-32	14.17 (360)	**96-50-475**
-33	14.69 (373)	**96-50-500**
-35	15.16 (385)	**96-50-500**
-36	15.67 (398)	**96-50-525**
-37	16.14 (410)	**96-50-525**
-38	16.65 (423)	**96-50-550**
-40	17.13 (435)	**96-50-550**
-41	17.63 (448)	**96-50-575**
-42	18.11 (460)	**96-50-575**
-43	18.62 (473)	**96-50-600**
-45	19.09 (485)	**96-50-600**
-46	19.61 (498)	**96-50-625**
-47	20.08 (510)	**96-50-625**
-48	20.59 (523)	**96-50-650**
-50	21.06 (535)	**96-50-650**
-51	21.57 (548)	**96-50-675**
-52	22.04 (560)	**96-50-675**
-53	22.56 (573)	**96-50-700**
-55	23.03 (585)	**96-50-700**
-60	25.00 (635)	**96-50-750**

Standard length profile rail

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 99-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 96-50-XX

-XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center-mounted

Required guide troughs:
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar

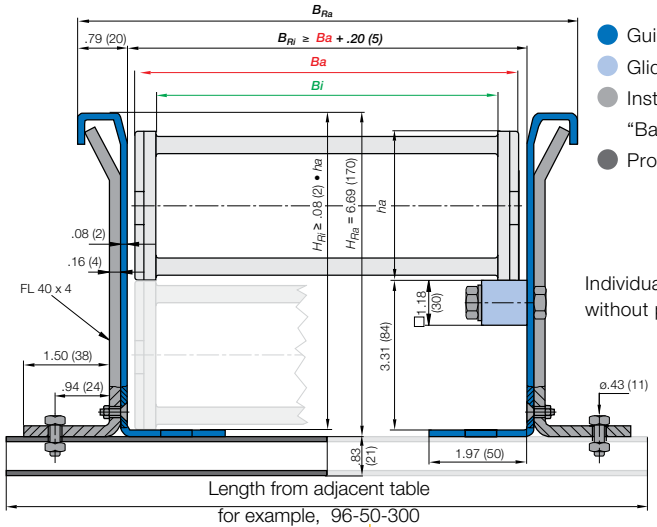
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 99-30

= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01

Required number of installation set:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **96-50-XXX**
Example:
96-50-400 for 15.75 (400 mm) long profile rail

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

Installation sets as section connectors



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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15050
15150
R19850

igus®

E-Chain System® E4 Light
Series 15050/15150/R19850
Application Example

Spray-painting robot with System E4 E-Chain® used in an ATEX version made of igumid ESD. High accelerations of up to 19.69 f/s² (6 m/s²) and high braking rates with a weight of the robot of approximately one ton

EX

igus® E-Chain System®

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Fax 1-401-438-7270

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E-Chain System® E4 Light
Series 15050/15150/R19850

igus®

15050
15150
R19850

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Specs/CAD/RFQ: www.igus.com/e-chains
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15250
15350

igus®

E-Chain System® E4 Light
Series 15250/15350

3.39

Price Index

Series 15250 Series 15350

Special Features / Options

- ESD classification: Electrically conductive ESD/ ATEX version upon request
- High torsional rigidity
- Side-mounted - unsupported

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 262 ft (80 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

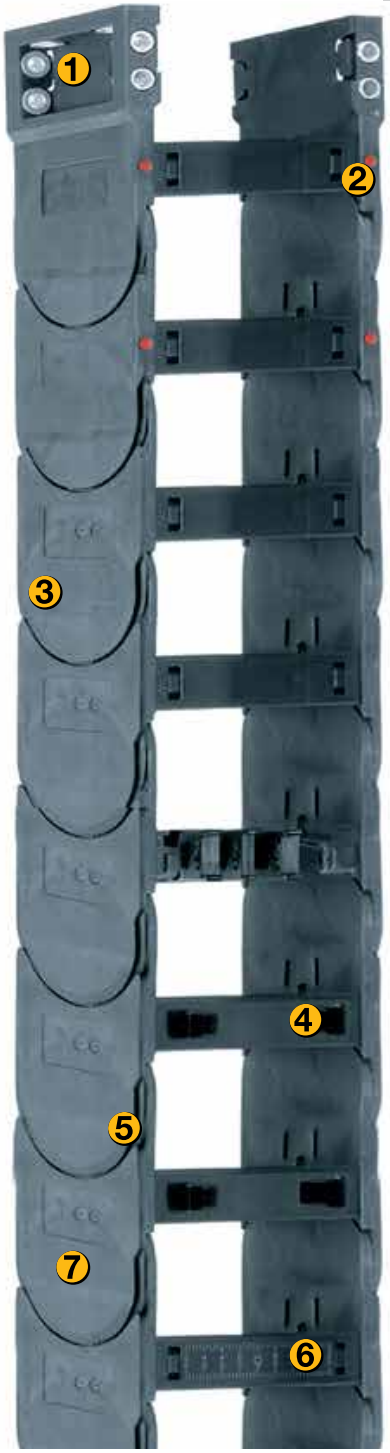
Usage Guidelines

- If weight and price reduction is needed
- If an E-Chain®/E-Tube with an inner height of 3.39" (86 mm) is required

- If an extremely low-noise and low-vibration version is required
  ➤ **Series E6-80**
- If side-mounted chain with a longer unsupported travel is required
  ➤ **Series E4-80, Series 15050**
- If increased unsupported lengths and longer travels are required
  ➤ **Series E4-80, Series 15050**
- If high fill weights and/or stiff cables and hoses are used
  ➤ **Series 15050**
- If chip protection is necessary
  ➤ **Series 19850**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Noise dampening pads, optional = -10dB(A)
3. Lateral glide surfaces for side-mounted operation
4. 25% faster assembly with QuickLock Crossbar
5. High stability due to undercut design
6. Notch crossbar with visual scale
7. No camber: no rework due to special design



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

16.4 ft (5 m) **15250-12-250-0**	**E-Chain®**
With 2 separators **86-1-1** assembled every 2nd link	**Interior Separation**
1 Set **152500-12-12P**	**Mounting Bracket**

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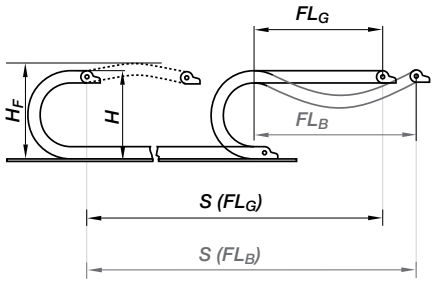
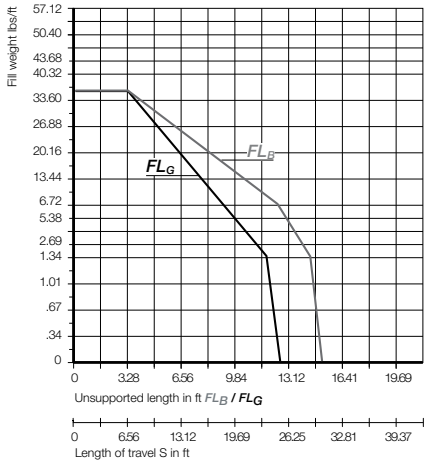
E-Chain System® E4 Light Series 15250/15350 Installation Dimensions

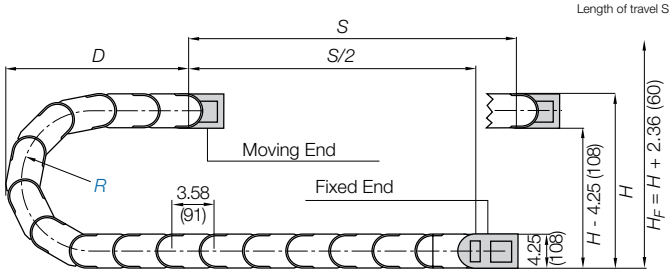
Short travel, unsupported length

- ● FL_B = unsupported with permitted sag
- ● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $^{S}/_{2} + K$

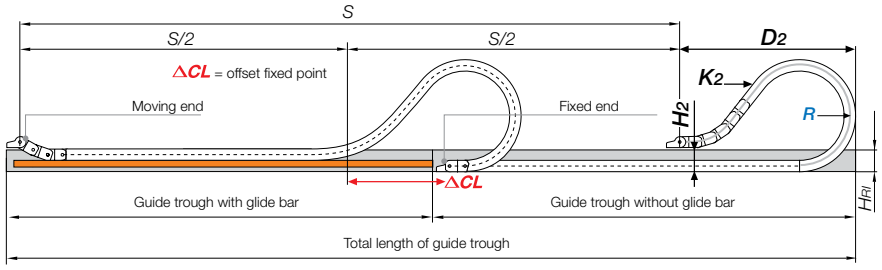
The required clearance height: $H_F = H + 2.36$ in. (60 mm) (with 2.02 lbs/ft (3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)	23.62 (600)
H^{-0}_{+25}	16.06 (408)	20.00 (508)	23.94 (608)	27.87 (708)	31.81 (808)	35.75 (908)	43.62 (1108)	51.50 (1308)
D	13.43 (341)	15.39 (391)	17.36 (441)	19.33 (491)	21.30 (541)	23.27 (591)	27.20 (691)	31.14 (791)
K	25.79 (655)	32.09 (815)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.69 (1440)	69.09 (1755)	81.50 (2070)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 820 ft. (250m)

For center mount applications:
Chain length: = $^{S}/_{2} + K_2$



R	5.91 (150*)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)	23.62 (600¹)
H2	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	*
D_2^{+25}	21.65 (550)	31.50 (800)	37.40 (950)	47.24 (1200)	61.02 (1550)	66.93 (1700)	85.63 (2175)	*
K2	35.83 (910)	50.16 (1274)	64.49 (1638)	78.82 (2002)	96.73 (2457)	107.48 (2730)	136.14 (3458)	*
ΔCL	8.23 (209)	16.10 (409)	20.04 (509)	27.91 (709)	39.72 (1009)	43.66 (1109)	58.42 (1484)	*

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

- S = Length of travel
- R = Bending radius
- H = Nominal clearance height
- D = Overlength E-Chain® radius in final position
- K = π • R + *safety buffer*
- H_F = Required clearance height
- H_{RI} = Trough inner height
- H_2 = *Mounting height
- D_2 = Overlength - long travels, gliding
- K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties ➤ **Chapter 1**

15050
15150
R19850

3.39

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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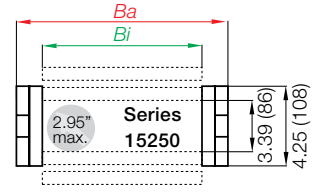
15250
15350

igus®

E-Chain System® E4 Light
Series 15250/15350

Series 15250 - E-Chain® with crossbars every link

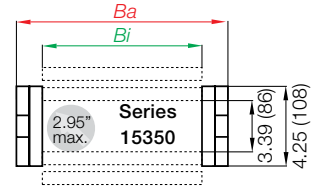


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

15250-	12-	250-	0
Series	Width	Bending radius	Color - Black

Series 15350 - E-Chain® with crossbars every other link

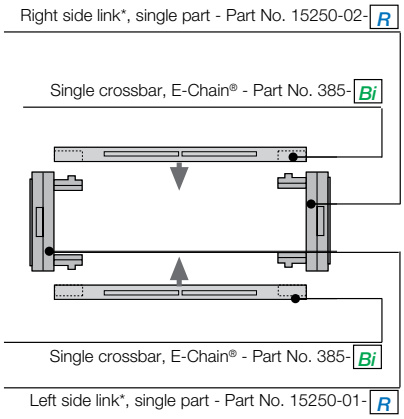


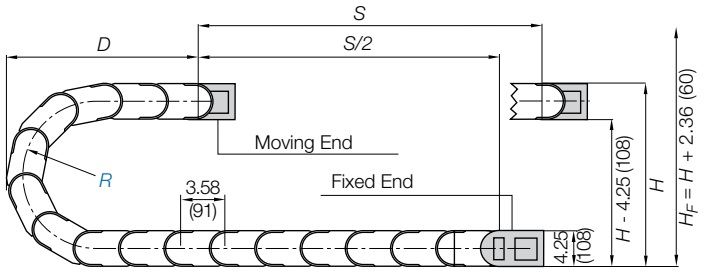
- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

15350-	12-	250-	0
Series	Width	Bending radius	Color - Black

E-Chain® as separate parts, links and side plates





*View from the fixed point of the E-Chain®/E-Tube

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Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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igus®

15250
15350

E-Chain System® E4 Light
Series 15250/15350

Supplement part number with required radius. Example: 15250-30-[300]-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

Part Number. Crossbars Every link	Crossbars Every other			*Bi* in. (mm)	*Ba* in. (mm)	15250 lbs/ft (kg/m)	15350 lbs/ft (kg/m)
15250-05-	15350-05-	[ ]	-0	1.97 (50)	3.15 (80)	≈ 2.45 (3.64)	≈ 2.39 (3.56)
15250-06-	15350-06-	[ ]	-0	2.68 (68)	3.86 (98)	≈ 2.50 (3.72)	≈ 2.42 (3.60)
15250-07-	15350-07-	[ ]	-0	2.95 (75)	4.13 (105)	≈ 2.51 (3.74)	≈ 2.43 (3.61)
15250-087-	15350-087-	[ ]	-0	3.43 (87)	4.61 (117)	≈ 2.55 (3.79)	≈ 2.44 (3.63)
15250-097-	15350-097-	[ ]	-0	3.82 (97)	5.00 (127)	≈ 2.57 (3.83)	≈ 2.45 (3.65)
15250-10-	15350-10-	[ ]	-0	3.94 (100)	5.12 (130)	≈ 2.59 (3.85)	≈ 2.46 (3.66)
15250-11-	15350-11-	[ ]	-0	4.25 (108)	5.43 (138)	≈ 2.60 (3.87)	≈ 2.47 (3.67)
15250-112-	15350-112-	[ ]	-0	4.41 (112)	5.63 (143)	≈ 2.61 (3.88)	≈ 2.47 (3.68)
15250-12-	15350-12-	[ ]	-0	4.92 (125)	6.10 (155)	≈ 2.65 (3.95)	≈ 2.49 (3.71)
15250-137-	15350-137-	[ ]	-0	5.39 (137)	6.57 (167)	≈ 2.67 (3.98)	≈ 2.51 (3.73)
15250-15-	15350-15-	[ ]	-0	5.91 (150)	7.09 (180)	≈ 2.71 (4.04)	≈ 2.52 (3.75)
15250-162-	15350-162-	[ ]	-0	6.38 (162)	7.60 (193)	≈ 2.73 (4.06)	≈ 2.53 (3.76)
15250-17-	15350-17-	[ ]	-0	6.61 (168)	7.80 (198)	≈ 2.76 (4.11)	≈ 2.55 (3.79)
15250-18-	15350-18-	[ ]	-0	6.89 (175)	8.07 (205)	≈ 2.77 (4.12)	≈ 2.55 (3.80)
15250-187-	15350-187-	[ ]	-0	7.36 (187)	8.58 (218)	≈ 2.79 (4.15)	≈ 2.56 (3.81)
15250-20-	15350-20-	[ ]	-0	7.87 (200)	9.05 (230)	≈ 2.84 (4.23)	≈ 2.59 (3.85)
15250-212-	15350-212-	[ ]	-0	8.35 (212)	9.56 (243)	≈ 2.86 (4.26)	≈ 2.59 (3.86)
15250-23-	15350-23-	[ ]	-0	8.86 (225)	10.04 (255)	≈ 2.90 (4.32)	≈ 2.61 (3.89)
15250-237-	15350-237-	[ ]	-0	9.33 (237)	10.55 (268)	≈ 2.92 (4.34)	≈ 2.62 (3.90)
15250-25-	15350-25-	[ ]	-0	9.84 (250)	11.02 (280)	≈ 2.97 (4.42)	≈ 2.65 (3.94)
15250-262-	15350-262-	[ ]	-0	10.31 (262)	11.54 (293)	≈ 3.00 (4.47)	≈ 2.67 (3.97)
15250-28-	15350-28-	[ ]	-0	10.83 (275)	12.01 (305)	≈ 3.03 (4.51)	≈ 2.68 (3.99)
15250-29-	15350-29-	[ ]	-0	11.30 (287)	12.52 (318)	≈ 3.04 (4.53)	≈ 2.69 (4.00)
15250-30-	15350-30-	[ ]	-0	11.81 (300)	12.99 (330)	≈ 3.10 (4.61)	≈ 2.71 (4.04)
15250-312-	15350-312-	[ ]	-0	12.28 (312)	13.50 (343)	≈ 3.11 (4.63)	≈ 2.72 (4.05)
15250-325-	15350-325-	[ ]	-0	12.79 (325)	13.98 (355)	≈ 3.15 (4.69)	≈ 2.73 (4.06)
15250-337-	15350-337-	[ ]	-0	13.27 (337)	14.49 (368)	≈ 3.18 (4.73)	≈ 2.76 (4.10)
15250-350-	15350-350-	[ ]	-0	13.78 (350)	14.96 (380)	≈ 3.27 (4.87)	≈ 2.80 (4.17)
15250-362-	15350-362-	[ ]	-0	14.25 (362)	15.47 (393)	≈ 3.31 (4.92)	≈ 2.82 (4.20)
15250-375-	15350-375-	[ ]	-0	14.76 (375)	15.94 (405)	≈ 3.34 (4.97)	≈ 2.84 (4.22)
15250-387-	15350-387-	[ ]	-0	15.24 (387)	16.46 (418)	≈ 3.37 (5.01)	≈ 2.85 (4.24)
15250-400-	15350-400-	[ ]	-0	15.75 (400)	16.93 (430)	≈ 3.39 (5.05)	≈ 2.86 (4.26)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 15250-30-[300]-0

	150	200	250	300	350	400	500	600
R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)	23.62 (600)
H^{-0}_{+25}	16.06 (408)	20.00 (508)	23.94 (608)	27.87 (708)	31.81 (808)	35.75 (908)	43.62 (1108)	51.50 (1308)
D	13.43 (341)	15.39 (391)	17.36 (441)	19.33 (491)	21.30 (541)	23.27 (591)	27.20 (691)	31.14 (791)
K	25.79 (655)	32.09 (815)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.69 (1440)	69.09 (1755)	81.50 (2070)

0=Standard color black. For other colors see Chapter 1
For large diameter hoses see page 6.170

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Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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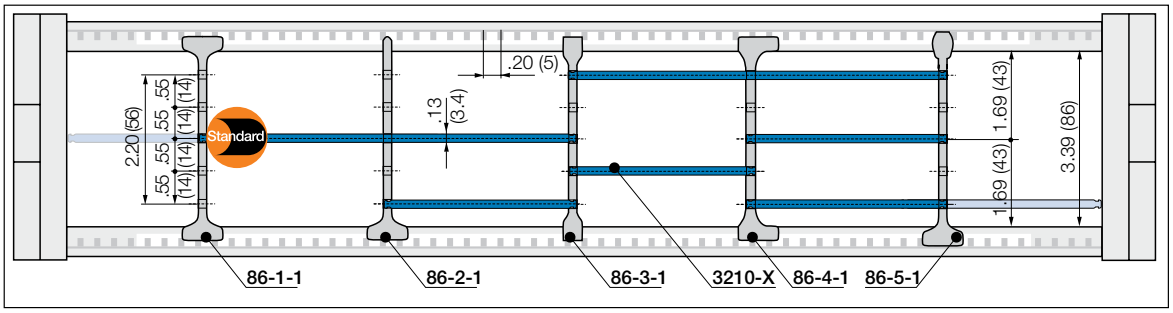
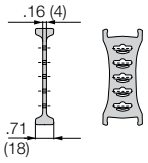
E-Chain System® E4 Light
Series 15250/15350
Special Accessories



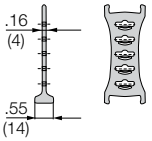
In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 86-1**
Assembled	**Part No. 86-1-1**

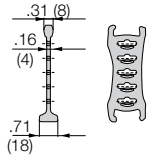
- **Standard separator 86-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator for QuickLock crossbar

Unassembled	**Part No. 86-2**
Assembled	**Part No. 86-2-1**

- **Separator 86-2**
  For even faster installation
  Separator for igus® QuickLock crossbar 385-X-Q. Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip)

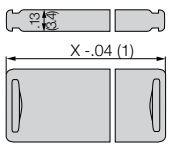


Notch separator for notch crossbar

Unassembled	**Part No. 86-5**
Assembled	**Part No. 86-5-1**

- **Separator 86-5**
  Locks safely in .20" (5 mm) increments
  Notch separator for exact positioning in E-Chains®. Recommended for side mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  Shelf locks into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	5.91 (150)	**3200-150**	**3210-150**
2.95 (075)	**3200-75**	**3210-75**	6.89 (175)	**3200-175**	**3210-175**
3.94 (100)	**3200-100**	**3210-100**	7.87 (200)	**3200-200**	**3210-200**
4.53 (115)	**3200-115**	**3210-115**	8.86 (225)	**3200-225**	**3210-225**
4.92 (125)	**3200-125**	**3210-125**	9.84 (250)	**3200-250**	**3210-250**

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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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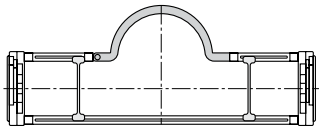
E-Chain System® E4 Light
Series 15250/15350
Mounting Brackets - KMA

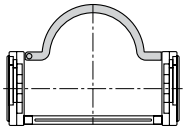
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

- Intended for cables and hoses with a maximum outer diameter of 4.53 in. (115 mm).
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



Round extender crossbar combined with standard snap-open crossbars.

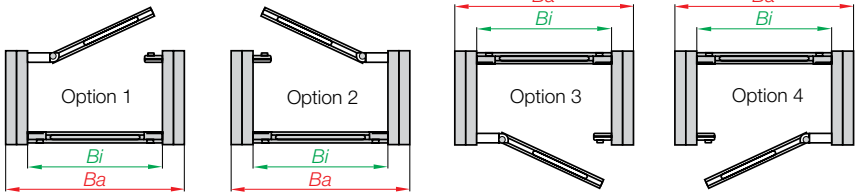


Attached directly to the side link.

Part No.	Max Ø Hose in. (mm)	Style	Installation Side Link	Combined with Snap-Open Crossbars
385-15-RHD115	4.53 (115)	Round	No	Yes
385-18-RD115	4.53 (115)	Round	Yes	No

Hinged crossbars

- Typically, E-Chain® crossbars are completely removable. In cases where it is preferable that the opening crossbars remain on the E-Chain®, a hinged design has been developed.
- Please consult igus® for design assistance



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Specs/CAD/RFQ: www.igus.com/e-chains
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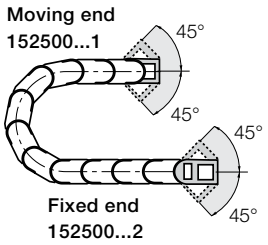
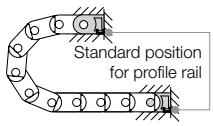
E-Chain System® E4 Light
Series 15250/15350
Mounting Brackets - KMA

Standard

Option 1: KMA pivoting

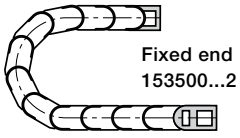
- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

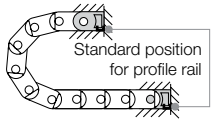




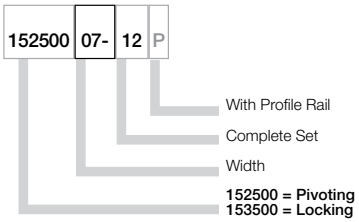
Option 2: KMA locking

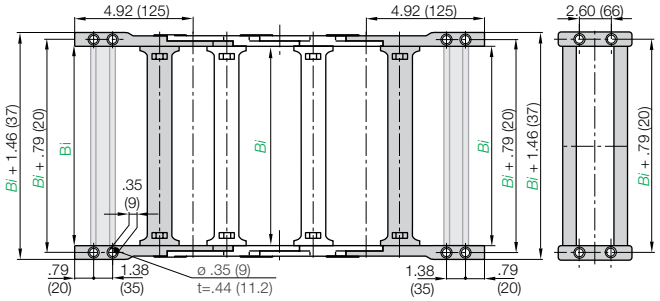
- Profile rail option
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels





Part Number Structure





Full set, for both ends:

152500- 05- 12 Full set, **each part with pin/bore**

Single-part order:

152500- 05- 1 Mounting bracket **with bore**

152500- 05- 2 Mounting bracket **with pin**

Bracket Mounting Dimensions

Width	Part No. Full Set Pivoting	Locking		With Profile Rail	*Bi* in. (mm)	Width	Part No. Full Set Pivoting	Locking		With Profile Rail	*Bi* in. (mm)
-05	152500	153500	-05-12	P	1.97 (50)	-212	152500	153500	-212-12	P	8.35 (212)
-06	152500	153500	-06-12	P	2.56 (65)	-23	152500	153500	-23-12	P	8.86 (225)
-07	152500	153500	-07-12	P	2.95 (75)	-237	152500	153500	-237-12	P	9.33 (237)
-087	152500	153500	-087-12	P	3.43 (87)	-25	152500	153500	-25-12	P	9.84 (250)
-09	152500	153500	-09-12	P	3.82 (97)	-262	152500	153500	-262-12	P	10.31 (262)
-10	152500	153500	-10-12	P	3.94 (100)	-28	152500	153500	-28-12	P	10.83 (275)
-11	152500	153500	-11-12	P	4.25 (108)	-29	152500	153500	-29-12	P	11.30 (287)
-112	152500	153500	-112-12	P	4.41 (112)	-30	152500	153500	-30-12	P	11.81 (300)
-12	152500	153500	-12-12	P	4.92 (125)	-312	152500	153500	-312-12	P	12.28 (312)
-137	152500	153500	-137-12	P	5.39 (137)	-325	152500	153500	-325-12	P	12.79 (325)
-15	152500	153500	-15-12	P	5.91 (150)	-337	152500	153500	-337-12	P	13.27 (337)
-162	152500	153500	-162-12	P	6.38 (162)	-350	152500	153500	-350-12	P	13.78 (350)
-17	152500	153500	-17-12	P	6.61 (168)	-362	152500	153500	-362-12	P	14.25 (362)
-18	152500	153500	-18-12	P	6.89 (175)	-375	152500	153500	-375-12	P	14.76 (375)
-187	152500	153500	-187-12	P	7.36 (187)	-387	152500	153500	-387-12	P	15.24 (387)
-20	152500	153500	-20-12	P	7.87 (200)	-400	152500	153500	-400-12	P	15.75 (400)

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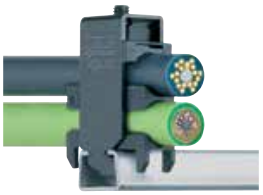
E-Chain System® E4 Light
Series 15250/15350
Strain Relief

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(6 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

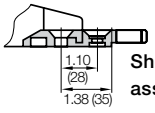
Chainfix Clip

Modular snap-on strain relief device

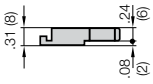
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

Cable ø		Part No. Clamp	Part No. Bottom
in.	(mm)		
.16-.31	(4-8)	CFC-08-M	CFC-08-C
.31-.47	(8-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

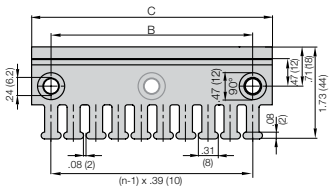


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10

Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3850-ZS	5	1.89	(48)

For more information please refer to strain relief section of Chapter 10

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E4 Light
Series 15250/15350
Guide Trough

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Width of Crossbar
15250-**20**-300-0

B_{Ri}

Installation Part No.

-05	3.35 (85)	*
-06	4.06 (103)	**96-50-225**
-07	4.33 (110)	**96-50-225**
-087	4.80 (122)	**96-50-250**
-09	5.20 (132)	**96-50-250**
-10	5.31 (135)	**96-50-250**
-11	5.63 (143)	**96-50-275**
-112	5.83 (148)	**96-50-275**
-12	6.30 (160)	**96-50-275**
-13	6.77 (172)	**96-50-300**
-15	7.28 (185)	**96-50-300**
-16	7.80 (198)	**96-50-325**
-17	7.99 (203)	**96-50-325**
-17	8.27 (210)	**96-50-325**
-18	8.78 (223)	**96-50-350**
-20	9.25 (235)	**96-50-350**
-21	9.76 (248)	**96-50-375**
-22	10.24 (260)	**96-50-375**
-23	10.75 (273)	**96-50-400**
-25	11.22 (285)	**96-50-400**
-26	11.73 (298)	**96-50-425**
-27	12.20 (310)	**96-50-425**
-28	12.72 (323)	**96-50-450**
-30	13.19 (335)	**96-50-450**
-31	13.70 (348)	**96-50-475**
-32	14.17 (360)	**96-50-475**
-33	14.69 (373)	**96-50-500**
-35	15.16 (385)	**96-50-500**
-36	15.67 (398)	**96-50-525**
-37	16.14 (410)	**96-50-525**
-38	16.65 (423)	**96-50-550**
-40	17.13 (435)	**96-50-550**

* Specialized guide trough available upon request

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 99-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 96-50-XX

-XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center-mounted

Required guide troughs:
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar

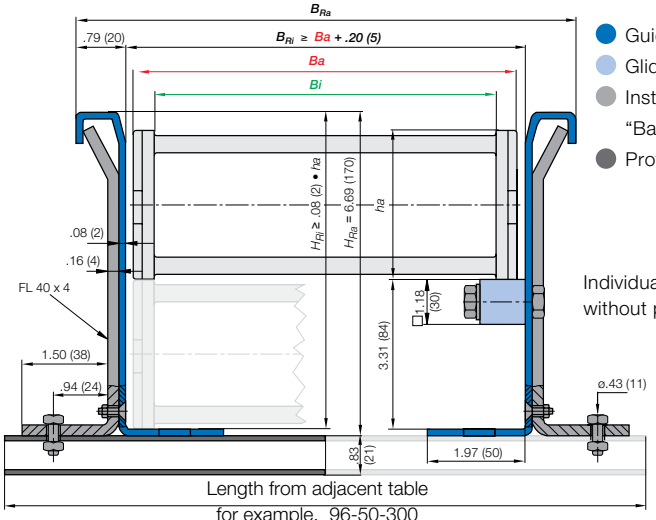
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 99-30

= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01

Required number of installation set:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **96-50-XXX**
Example:
96-50-400 for 15.75 (400 mm) long profile rail

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

Installation sets as section connectors



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E-Chain System® E4 Light
Series 15250/15350
Application Example

System E4 E-Chain® - can be filled with cables with diameters up to 3.94“ (100 mm)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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1640
R1608

igus®

E-Chain System® E4 Light
Series 1640/R1608

4.41” 4.41”

Price Index

Series 1640 ●●●

Series R1608 ●●●

Special Features / Options

- ESD classification: Electrically conductive ESD/ ATEX version upon request
- High torsional rigidity
- Side-mounted - unsupported

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ consult igus®
Vertical, standing ≤ 16.4 ft (5 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

Usage Guidelines

- If a simpler, low-cost solution is required
- If optimized interior space is required
- If the Series 400 is too large

- If maximum stability is required
  ➤ **Series 600/R608**

Features & Benefits

1. Numerous interior separation possibilities
2. Hinged snap-open removable lids along outer radius of E-Tube
3. Lateral glide surfaces for side-mounted operation
4. Closed and open styles can be combined
5. Removable lids along inner radius
6. Wide, rounded plastic crossbars - cable friendly
7. Dirt repellant exterior
8. E-Chain® also available with reverse bending radii

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

6.56 ft (2 m) **1640-30-300-0**	**E-Chain®**
With 2 separators **6411** assembled every 2nd link	**Interior Separation**
1 Set **16000-12**	**Mounting Bracket**

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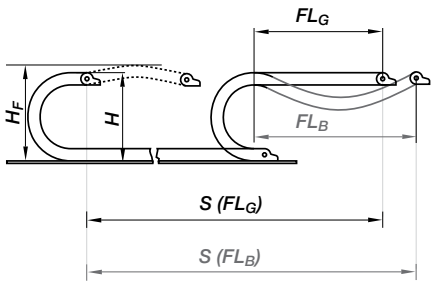
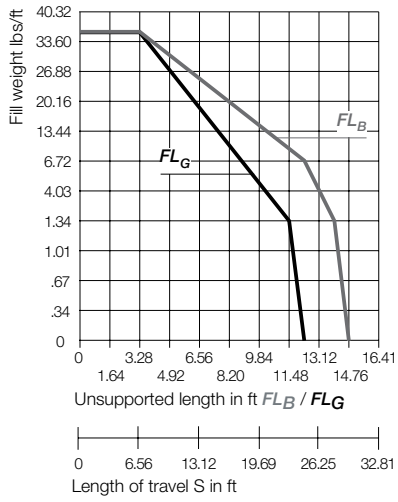
E-Chain System® E4 Light Series 1640/R1608 Installation Dimensions

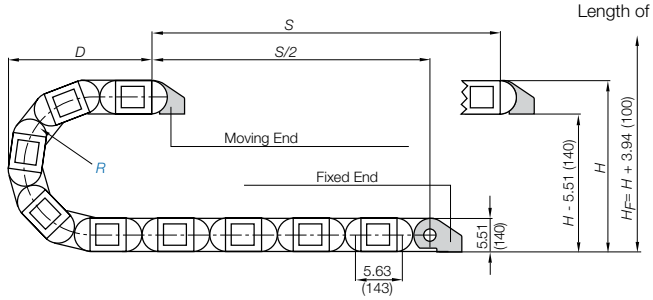
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 5.63" (143 mm)
Links per ft (m): = 2.13 (7)
For center mount applications:
Chain length = $\frac{S}{2} + K$

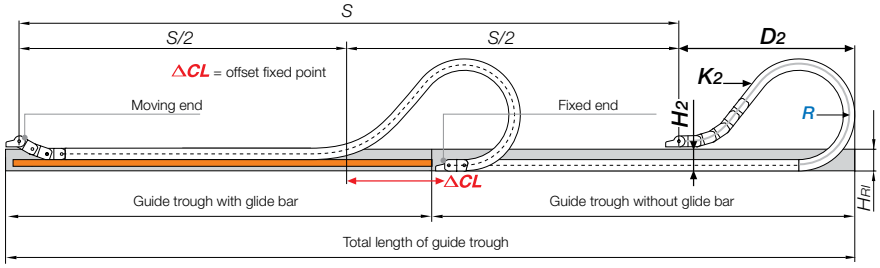
The required clearance height: H_F **= H + 3.94 in. (100 mm)** with 3.36 lbs/ft (5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	21.65 (550)	23.62 (600)
H	21.46 (545)	25.39 (645)	29.41 (747)	33.27 (845)	37.20 (945)	41.14 (1045)	45.08 (1145)	49.02 (1245)	52.95 (1345)
D	16.34 (415)	18.31 (465)	20.27 (515)	22.24 (565)	24.21 (615)	26.18 (665)	28.15 (715)	30.12 (765)	32.09 (815)
K	36.22 (920)	42.52 (1080)	48.82 (1240)	55.12 (1400)	61.42 (1560)	67.72 (1720)	73.62 (1870)	79.53 (2020)	85.63 (2175)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 1,312 ft. (400 m)

For center mount applications:
Chain length: = $\frac{S}{2} + K_2$



R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	21.65 (550)	23.62 (600)
H2	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)
D2 +25	35.43 (900)	39.37 (1000)	43.31 (1100)	49.21 (1200)	57.09 (1450)	62.99 (1600)	66.93 (1700)	74.80 (1900)	80.71 (2050)
K2	61.93 (1573)	67.56 (1716)	73.19 (1859)	90.08 (2288)	101.33 (2574)	112.60 (2860)	123.86 (3146)	135.12 (3432)	152.01 (3861)
ΔCL	17.72 (450)	19.69 (500)	21.65 (550)	25.59 (650)	31.50 (800)	35.43 (900)	37.40 (950)	43.31 (1100)	47.24 (1200)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ Chapter 1

1640
R1608

4.41"

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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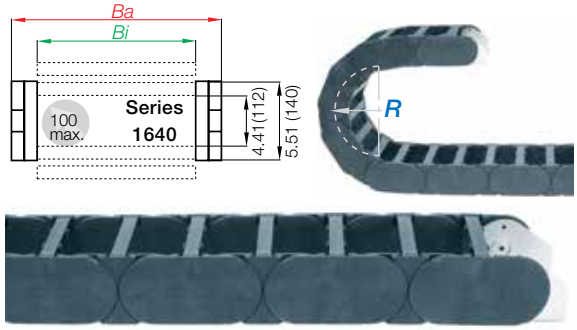
igus®

E-Chain System® E4 Light
Series 1640/R1608

Telephone 1-800-521-2747
Fax 1-401-438-7270

Series 1640 - E-Chain® with crossbars every link

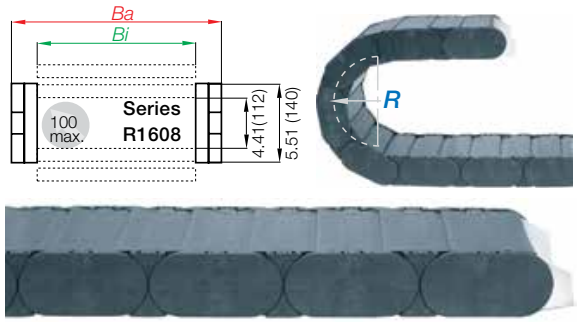


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

1640-	30-	300-	0
Series	Width	Bending radius	Color - Black

Series R1608 - fully enclosed E-Tube

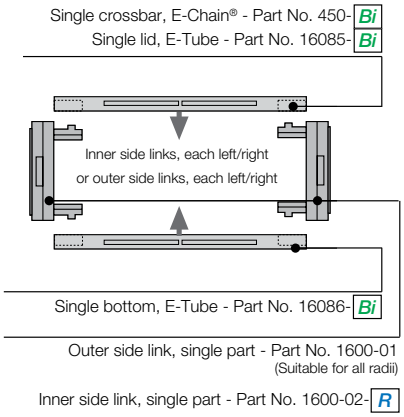


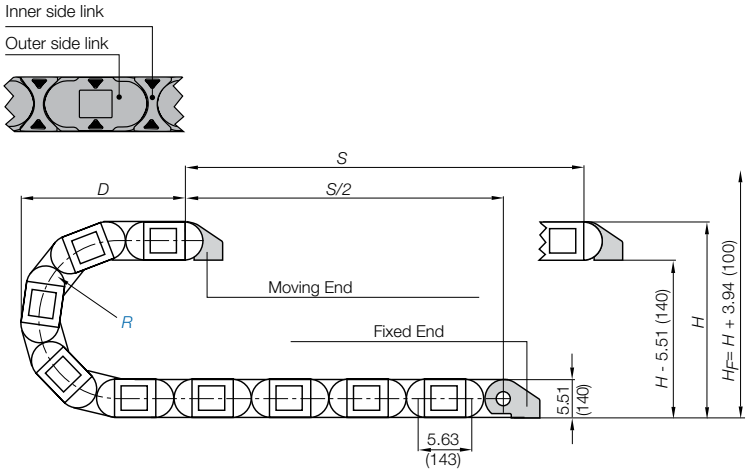
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

Part Number Structure

1608-	30-	300-	0
Series	Width	Bending radius	Color - Black

E-Chain® as separate parts, links and side plates





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E-Chain System® E4 Light
Series 1640/R1608

Supplement part number with required radius. Example: 1640-30-300-0
Pitch: 5.63 in. (143mm) per link links/ft (m) = 2.13 (7)

Part Number. Crossbars Every link	Tube Version			Bi in. (mm)	Ba in. (mm)	1640 lbs/ft (kg/m)	R1608 lbs/ft (kg/m)
1640-05-			-0	1.97 (50)	3.31 (84)	≈ 3.43 (5.10)	–
1640-06-			-0	2.56 (65)	3.90 (99)	≈ 3.48 (5.18)	–
1640-07-			-0	2.95 (75)	4.29 (109)	≈ 3.54 (5.27)	–
1640-08-			-0	3.43 (87)	4.76 (121)	≈ 3.57 (5.31)	–
1640-10-			-0	3.94 (100)	5.28 (134)	≈ 3.60 (5.36)	–
1640-11-			-0	4.41 (112)	5.75 (146)	≈ 3.66 (5.45)	–
1640-12-			-0	4.92 (125)	6.26 (159)	≈ 3.72 (5.54)	–
1640-13-			-0	5.39 (137)	6.73 (171)	≈ 3.78 (5.63)	–
1640-15-			-0	5.91 (150)	7.24 (184)	≈ 3.81 (5.67)	–
1640-16-			-0	6.38 (162)	7.72 (196)	≈ 3.86 (5.74)	–
1640-17-			-0	6.89 (175)	8.23 (209)	≈ 3.90 (5.81)	–
1640-18-			-0	7.36 (187)	8.70 (221)	≈ 3.95 (5.88)	–
1640-20-	1608-20-		-0	7.87 (200)	9.21 (234)	≈ 3.96 (5.89)	≈ 5.17 (7.69)
1640-21-			-0	8.35 (212)	9.69 (246)	≈ 4.00 (5.96)	–
1640-22-			-0	8.86 (225)	10.20 (259)	≈ 4.04 (6.01)	–
1640-23-			-0	9.33 (237)	10.67 (271)	≈ 4.09 (6.09)	–
1640-25-	1608-25-		-0	9.84 (250)	11.18 (284)	≈ 4.13 (6.15)	≈ 5.64 (8.39)
1640-26-			-0	10.31 (262)	11.65 (296)	≈ 4.17 (6.20)	–
1640-27-			-0	10.83 (275)	12.17 (309)	≈ 4.21 (6.27)	–
1640-28-			-0	11.30 (287)	12.64 (321)	≈ 4.23 (6.29)	–
1640-30-	1608-30-		-0	11.81 (300)	13.15 (334)	≈ 4.26 (6.34)	≈ 6.11 (9.09)
1640-31-			-0	12.28 (312)	13.62 (346)	≈ 4.31 (6.41)	–
1640-32-			-0	12.79 (325)	14.13 (359)	≈ 4.35 (6.48)	–
1640-33-			-0	13.27 (337)	14.61 (371)	≈ 4.43 (6.59)	–
1640-35-	1608-35-		-0	13.78 (350)	15.12 (384)	≈ 4.44 (6.61)	≈ 6.58 (9.79)
1640-36-			-0	14.25 (362)	15.59 (396)	≈ 4.48 (6.67)	–
1640-37-			-0	14.76 (375)	16.10 (409)	≈ 4.51 (6.71)	–
1640-38-			-0	15.24 (387)	16.57 (421)	≈ 4.54 (6.76)	–
1640-40-	1608-40-		-0	15.75 (400)	17.09 (434)	≈ 4.63 (6.89)	≈ 7.05 (10.49)
1640-41-			-0	16.22 (412)	17.56 (446)	≈ 4.70 (6.99)	–
1640-42-			-0	16.73 (425)	18.07 (459)	≈ 4.76 (7.08)	–
1640-43-			-0	17.20 (437)	18.54 (471)	≈ 4.79 (7.13)	–
1640-45-			-0	17.72 (450)	19.06 (484)	≈ 4.82 (7.17)	–
1640-46-			-0	18.19 (462)	19.53 (496)	≈ 4.82 (7.18)	-
1640-47-			-0	18.70 (475)	20.04 (509)	≈ 4.85 (7.22)	–
1640-48-			-0	19.17 (487)	20.51 (521)	≈ 4.89 (7.27)	–
1640-50-			-0	19.69 (500)	21.02 (534)	≈ 4.94 (7.35)	–
1640-51-			-0	20.16 (512)	21.50 (546)	≈ 4.95 (7.36)	–
1640-52-			-0	20.67 (525)	22.01 (559)	≈ 4.97 (7.39)	–
1640-53-			-0	21.14 (537)	22.48 (571)	≈ 5.03 (7.49)	–
1640-55-			-0	21.65 (550)	22.99 (584)	≈ 5.24 (7.80)	–
1640-60-			-0	23.62 (600)	24.96 (634)	≈ 5.32 (7.92)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: 1640-30-300-0

	200**	250	300	350	400	450	500	550	600
R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	9.84 (450)	19.68 (500)	21.65 (550)	23.62 (600)
H	21.46 (545)	25.39 (645)	29.41 (747)	33.27 (845)	37.20 (945)	41.14 (1045)	45.08 (1145)	49.02 (1245)	52.95 (1345)
D	16.34 (415)	18.31 (465)	20.27 (515)	22.24 (565)	24.21 (615)	26.18 (665)	28.15 (715)	30.12 (765)	32.09 (815)
K	36.22 (920)	42.52 (1080)	48.82 (1240)	55.12 (1400)	61.42 (1560)	67.72 (1720)	73.62 (1870)	79.53 (2020)	85.63 (2175)

0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.181. For large diameter hoses see page 6.181

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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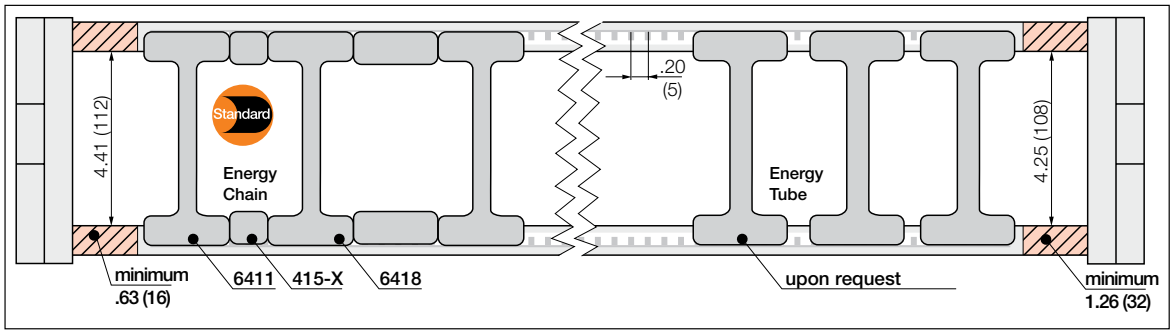
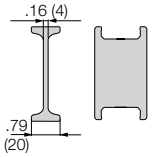
igus®

E-Chain System® E4 Light
Series 1640/R1608
Interior Separation



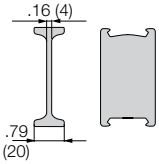
Note Please maintain a lateral spacing of 1.26" (32 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator (chain only)

Unassembled	**Part No. 6401**
Assembled	**Part No. 6411**

- **Standard separator 6401 for E-Chains®**
  For a vertical subdivision. Offers safe stability due to its wide base design, also when used with thick cables or hoses (Separator for E-Tubes 1608 upon request)



Separator, locking (chain only)

Unassembled	**Part No. 6408**
Assembled	**Part No. 6418**

- **Separator 6408 for E-Chains®**
  For applications exposed to very high humidity (>85%). Locks with extra retention force.
  Tip: one locking separator per E-Chain® link for better mounting.

Spacer (chain only)

Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

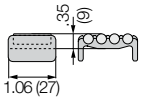
XX = width of the spacer

- **NOTE ON SPACERS for E-Chains®**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	Width in.	(mm)
405 -10	415 -10	.39"	(10)
405 -15	415 -15	.59"	(15)
405 -20	415 -20	.79"	(20)
405 -30	415 -30	1.18"	(30)
405 -40	415 -40	1.57"	(40)

Additional elements - interior separation



Rollclip

Unassembled	**Part No. 489-27**
Assembled	**Part No. 490-27**

Rollclip - minimizes abrasion of particularly sensitive hoses or cables in an E-Chain®. The integrated rollers compensate for relative movement between the chain and the hose or cable. This reduces the abrasion of the hoses or cables

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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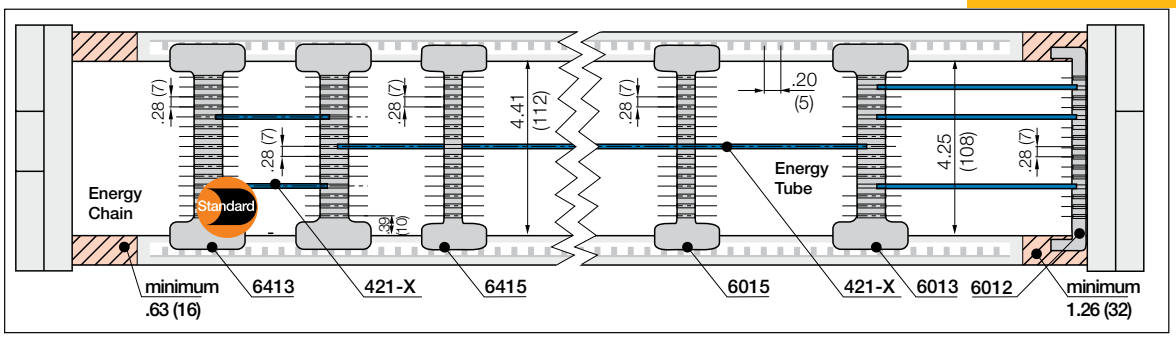
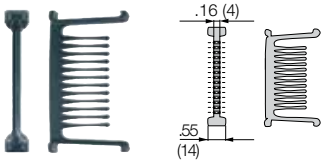
E-Chain System® E4 Light
Series 1640/R1608
Interior Separation



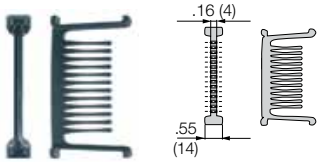
Note Please maintain a lateral spacing of 1.26" (32 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 6405**
Assembled	**Part No. 6415**

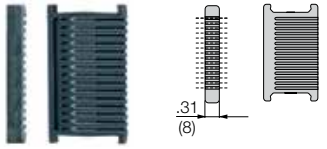
- **Open, slotted separator 6405**
  For E-Chains® (unilateral open)
  This separator can be retrofitted into an existing interior separation system without removing the shelves. The top and bottom botches cannot be occupied by shelves



Separator, narrow head

Unassembled	**Part No. 6005**
Assembled	**Part No. 6015**

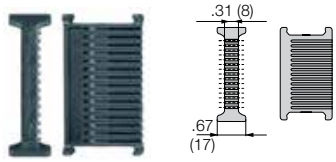
- **Open, slotted separator 6005**
  For E-Tubes (unilateral open)
  This separator can be retrofitted into an existing interior separation system without removing the shelves. The top and bottom botches cannot be occupied by shelves



Separator, narrow base

Unassembled	**Part No. 6403**
Assembled	**Part No. 6413**

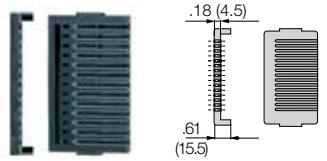
- **Vertical separator 6403**
  For E-Chains®
  This component is used to form the basic pattern of a shelf system. The shelf 420-X can be installed at 15 different heights in .28" (7 mm) increments



Separator, narrow base

Unassembled	**Part No. 6003**
Assembled	**Part No. 6013**

- **Locking vertical separator 6003**
  For E-Tubes
  This component is used to form the basic pattern of a shelf system.

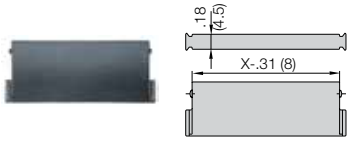


Separator, asymmetrical

Unassembled	**Part No. 6002**
Assembled	**Part No. 6012**

- **Side plate 6002**
  For E-Chains® / Tubes
  This component is used to form the basic pattern of a shelf system. Allows modular shelving close to the side links.

Full-width shelves - for the standard interior separation



Full width shelf

Unassembled	**Part No. 420-X**
Assembled	**Part No. 421-X**

- **Full width shelf 420-X**
  These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
.71(18)	**420-18**	**421-18**	1.97 (50)	**420-50**	**421-50**	5.91 (150)	**420-150**	**421-150**
.91(23)	**420-23**	**421-23**	2.44 (62)	**420-62**	**421-62**	6.89 (175)	**420-175**	**421-175**
.98 (25)	**420-25**	**421-25**	2.95 (75)	**420-75**	**421-75**	7.36 (187)	**420-187**	**421-187**
1.10 (28)	**420-28**	**421-28**	3.46 (88)	**420-88**	**421-88**	7.87 (200)	**420-200**	**421-200**
1.30 (33)	**420-33**	**421-33**	3.94 (100)	**420-100**	**421-100**			
1.69 (43	**420-43**	**421-43**	4.92 (125)	**420-125**	**421-125**			

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

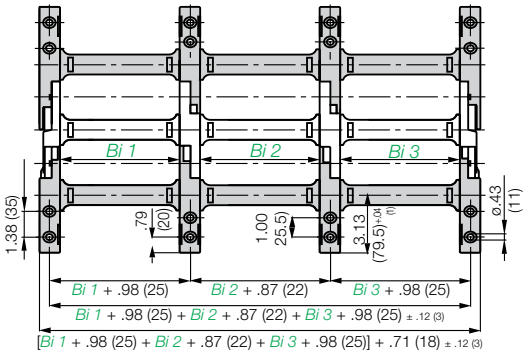
E-Chain System® E4 Light
Series 1640/R1608
Special Accessories

Part number example for E-Chain®
1640-10/20/10-200-0
1640-*Bi1*/*Bi2*/*Bi3*-R-0

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

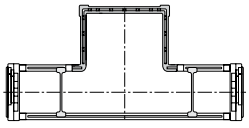
- For applications in which particularly high fill weights necessitate extremely wide E-Chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



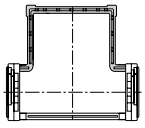
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

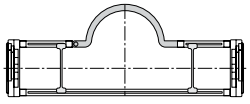
- Intended for cables and hoses with a maximum outer diameter of 11.81 in. (300 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



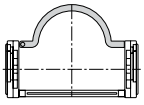
Square extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.



Round extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.

Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
450-15-RHD115	4.52 (115)	Round	No	Yes
450-17-RD115	4.52 (115)	Round	Yes	No
450-25-D150	5.91 (150)	Square	Yes	No
450-30-D200	7.09 (180)	Square	Yes	No
450-35-D250	7.68 (195)	Square	Yes	No
450-40-D300	9.65 (245)	Square	Yes	No
450-20-HD150	5.91 (150)	Square	No	Yes
450-25-HD200	7.09 (180)	Square	No	Yes
450-30-HD250	7.68 (195)	Square	No	Yes

E4 clip on cable binder

- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on E-Chains®
- The loops can be adjusted as needed
- Compatible with many E4 E-Chains®
- Economical
- One clip and one locking band are needed for each chain link

Part No.	Form
450-B12	Locking clip, comprised of a locking element
450-B12-200	Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm

igus® E-Chain System®
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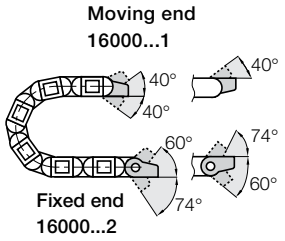
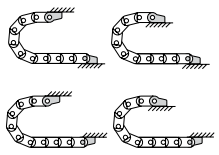
E-Chain System® E4 Light
Series 1640/R1608
Mounting Brackets - Steel

Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive





Possible installation configurations -

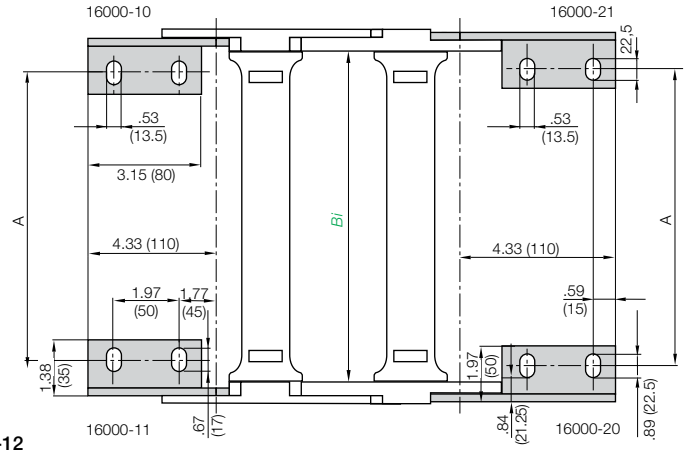
Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 1640 or R1608
16000-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right with bore
Series 1640 or R1608
16000-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right with pin
Series 1640 or R1608
16000-2

Due to the design of the E4/100 series chains, please note the following when ordering brackets:

Even number of links = full set, part number ending in **-12**
Odd number of links = 2 pieces, part number ending in **-1**



Bracket Mounting dimensions

Width of Chain *Bi*	Part Number	Mounting Brackets: Full Set	Moving End Only	Fixed End Only	A in. (mm)
1.97 (50)	16000	-12	-1	-2	.79 (20)
2.56 (65)	16000	-12	-1	-2	1.38 (35)
2.95 (75)	16000	-12	-1	-2	1.77 (45)
3.43 (87)	16000	-12	-1	-2	2.24 (57)
3.94 (100)	16000	-12	-1	-2	2.76 (70)
4.41 (112)	16000	-12	-1	-2	3.23 (82)
4.92 (125)	16000	-12	-1	-2	3.74 (95)
5.39 (137)	16000	-12	-1	-2	4.21 (107)
5.91 (150)	16000	-12	-1	-2	4.72 (120)
6.38 (162)	16000	-12	-1	-2	5.20 (132)
6.89 (175)	16000	-12	-1	-2	5.71 (145)
7.36 (187)	16000	-12	-1	-2	6.18 (157)
7.87 (200)	16000	-12	-1	-2	6.69 (170)
8.35 (212)	16000	-12	-1	-2	7.16 (182)
8.86 (225)	16000	-12	-1	-2	7.68 (195)
9.33 (237)	16000	-12	-1	-2	8.15 (207)
9.84 (250)	16000	-12	-1	-2	8.66 (220)
10.31 (262)	16000	-12	-1	-2	9.13 (232)
10.83 (275)	16000	-12	-1	-2	9.65 (245)
11.30 (287)	16000	-12	-1	-2	10.12 (257)
11.81 (300)	16000	-12	-1	-2	10.63 (270)

Width of Chain *Bi*	Part Number	Mounting Brackets: Full Set	Moving End Only	Fixed End Only	A in. (mm)
12.28 (312)	16000	-12	-1	-2	11.10 (282)
12.79 (325)	16000	-12	-1	-2	11.61 (295)
13.27 (337)	16000	-12	-1	-2	12.09 (307)
13.78 (350)	16000	-12	-1	-2	12.60 (320)
14.25 (362)	16000	-12	-1	-2	13.07 (332)
14.76 (375)	16000	-12	-1	-2	13.58 (345)
15.24 (387)	16000	-12	-1	-2	14.06 (357)
15.75 (400)	16000	-12	-1	-2	14.57 (370)
16.22 (412)	16000	-12	-1	-2	15.04 (382)
16.73 (425)	16000	-12	-1	-2	15.55 (395)
17.20 (437)	16000	-12	-1	-2	16.02 (407)
17.72 (450)	16000	-12	-1	-2	16.54 (420)
18.19 (462)	16000	-12	-1	-2	17.01 (432)
18.70 (475)	16000	-12	-1	-2	17.52 (445)
19.17 (487)	16000	-12	-1	-2	17.99 (457)
19.69 (500)	16000	-12	-1	-2	18.50 (470)
20.16 (512)	16000	-12	-1	-2	18.98 (482)
20.67 (525)	16000	-12	-1	-2	19.49 (495)
21.14 (537)	16000	-12	-1	-2	19.96 (507)
21.65 (550)	16000	-12	-1	-2	20.47 (520)
23.62 (600)	16000	-12	-1	-2	22.44 (570)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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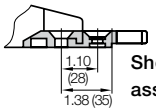
E-Chain System® E4 Light
Series 1640/R1608
Strain Relief

Telephone 1-800-521-2747
Fax 1-401-438-7270

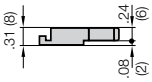
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Tiewrap plates as an individual part

Available as an individual component, can be mounted externally in a profile rail.

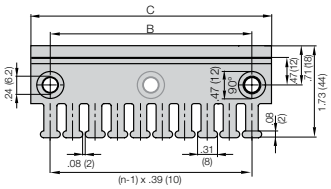


Shown assembled



Single tiewrap plate

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



For more information please refer to strain relief section of Chapter 10

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E-Chain System® E4 Light
Series 1640/R1608
Guide Trough

Width of Crossbar
1640-**12**-250-0

	B_{Ri}	Installation Part No.
-05	3.50 (89)	*
-06	4.09 (104)	**97-50-225**
-07	4.49 (114)	**97-50-250**
-10	5.47 (139)	**97-50-275**
-11	5.94 (151)	**97-50-275**
-12	6.46 (164)	**97-50-300**
-13	6.93 (176)	**97-50-300**
-15	7.44 (189)	**97-50-325**
-16	7.91 (201)	**97-50-325**
-17	8.43 (214)	**97-50-350**
-18	8.90 (226)	**97-50-350**
-20	9.41 (239)	**97-50-375**
-21	9.88 (251)	**97-50-375**
-22	10.39 (264)	**97-50-400**
-23	10.87 (276)	**97-50-400**
-25	11.38 (289)	**97-50-425**
-26	11.85 (301)	**97-50-425**
-27	12.36 (314)	**97-50-450**
-28	12.83 (326)	**97-50-450**
-30	13.35 (339)	**97-50-475**
-31	13.82 (351)	**97-50-475**
-32	14.33 (364)	**97-50-500**
-33	14.80 (376)	**97-50-500**
-35	15.31 (389)	**97-50-525**
-36	15.79 (401)	**97-50-525**
-37	16.30 (414)	**97-50-550**
-38	16.77 (426)	**97-50-550**
-40	17.28 (439)	**97-50-575**
-41	17.76 (451)	**97-50-575**
-42	18.27 (464)	**97-50-600**
-43	18.74 (476)	**97-50-600**
-45	19.25 (489)	**97-50-625**
-46	19.72 (501)	**97-50-625**
-47	20.24 (514)	**97-50-650**
-48	20.71 (526)	**97-50-650**
-50	21.22 (539)	**97-50-675**
-51	21.69 (551)	**97-50-675**
-52	22.20 (564)	**97-50-700**
-53	22.68 (576)	**97-50-700**
-55	23.19 (589)	**97-50-725**
-60	25.16 (639)	**97-50-775**

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 97-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 97-50-XX

-XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

Example:

Length of travel 164 ft (50 m)
Center-mounted

Required guide troughs:
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar

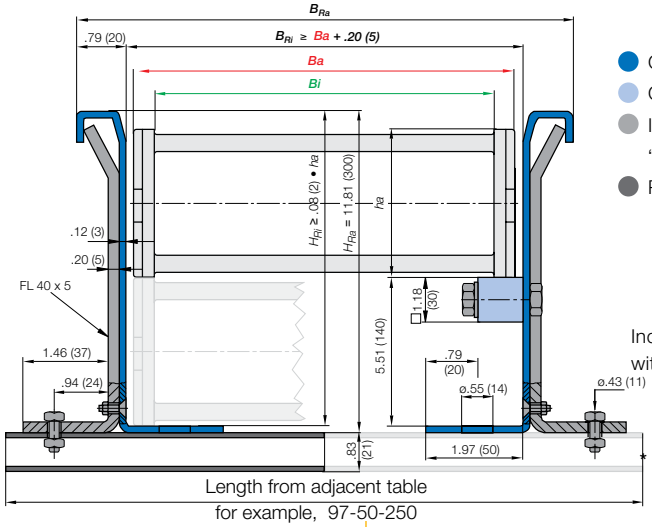
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 97-30

= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01

Required number of installation set:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **97-50-XXX**
Example:
97-50-400 for 15.75 (400 mm) long profile rail

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

Installation sets as section connectors



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®
E4-1 Light

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E4-1 Light High dynamics, light and cost-effective

All around E-Chains® and E-Tubes for high dynamics. The E4-1 Light series was developed to combine the advantages of the E2/000 and the E4-1 series. The stability of the E4-1 system and the ease of accessibility of the E2/000. The stability and price of the E4-1 Light falls between these systems and makes it the perfect alternative for your application.

- Weight reduction and high stability at the same time
- 30% lighter and lower-priced than E4-1
- Crossbars, lid and shelves pivotable on either side
- Very tightly fitting lids and bottoms, virtually no gaps and openings
- Snap-open along the inner and outer radfius
- Ideal ratio of internal and external dimensions due to thinner outer links and optimized crossbar design
- Inner diameter completely accessible for easy filling

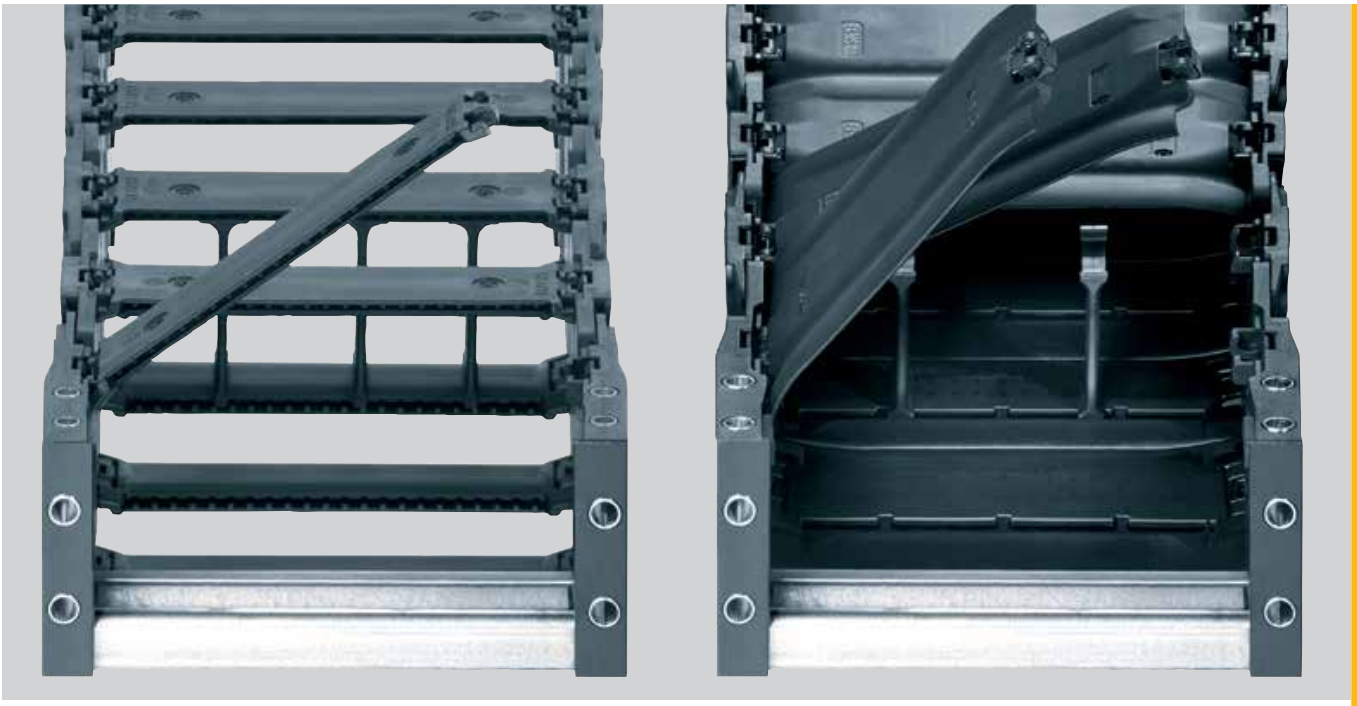
Typical industries and applications

- Machine tools
- General mechanical engineering

Low noise operation due to integrated “brakes”

ESD classification: Electrically conductive
ESD/ATEX version upon request

High torsional rigidity



New snap-open machanism, Series E4-1 and R4-1 Light, choice of snap-open on left or right

Denseness test at the igus® lab: High chip protection in the test. Stop-dogs completely free of xhips

Lightweight, stable E4-1 Light E-Chains® now available as a closed E-Tube. Very tight closing, rounded lids

E-Chain System® E4-1 Light Selection Guide

Crossbars every link

Crossbars on both sides pivotable, snap-open along the inner and outer radius

Series	Inner height *hi* in.	(mm)	Inner width *Bi* in.	(mm)	Outer width *Ba* in.	(mm)	Outer height *ha* in.	(mm)	Bending radius *R* in.	(mm)
E4-38L	1.50	(38)	1.97-6.89	(50-175)	2.59-7.52	(66-191)	2.13	(54)	2.48-11.81	(63-300)
E4-48L	1.89	(48)	1.97-6.89	(50-175)	2.76-7.68	(70-195)	2.52	(64)	2.95-13.78	(75-350)

E-Tubes

Fully enclosed, lids on both sides pivotable, snap-open along the inner and outer radius

Series	Inner height *hi* in.	(mm)	Inner width *Bi* in.	(mm)	Outer width *Ba* in.	(mm)	Outer height *ha* in.	(mm)	Bending radius *R* in.	(mm)
R4-38L	1.50	(38)	3.94	(100)	4.57	(116)	2.13	(54)	4.92-11.81	(125-300)
R4-48L	1.89	(48)	2.95-6.89	(75-175)	3.74-7.68	(95-195)	2.52	(64)	4.92-13.78	(125-350)

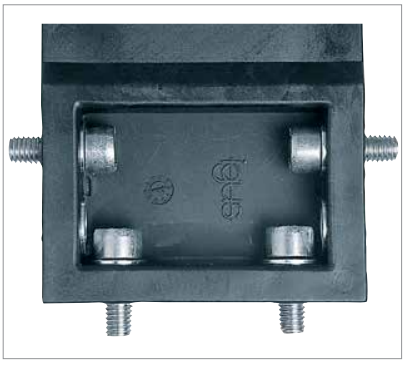
E4-1 Light E-Chains® - options and accessories

pivoting and locking KMA connection elements possible

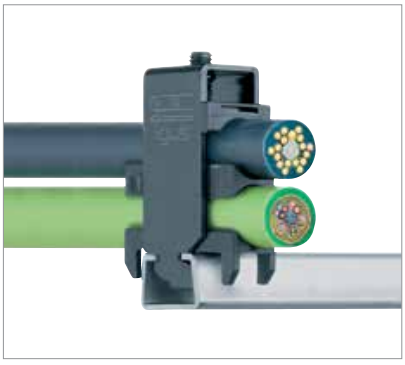
Extender crossbars increase the inner height by 1.91" (48.5 mm)

Guide troughs available in steel or aluminum versions

New, particularly cable-friendly interior separation program available



KMA mounting brackets with attachment options on all sides



Wide variety of strain relief options available

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E-Chain System® E4-1 Light
Assembly instructions

E4-1 Light E-Chains® - Assembly

1

Line up the two inner side links, side by side

2

Attach and outer side link between and push side links together

E4-1 Light E-Chains® - Assembly

3

Snap the crossbars into place

E4-1 Light E-Chains® - Opening

4

To open, place screwdriver on the inside of the fastening mechanism and pry to the outside.

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E4-38L
R4-38L

igus®

E-Chain System® E4-1 Light
Series E4-38L/R4-38L

1.50 1.50

Price Index

Series E4-38L Series R4-38L

Special Options Available

Low noise version available with special rubber pads

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 164 ft (50 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.28 ft (1 m)
Rotary requires further calculation

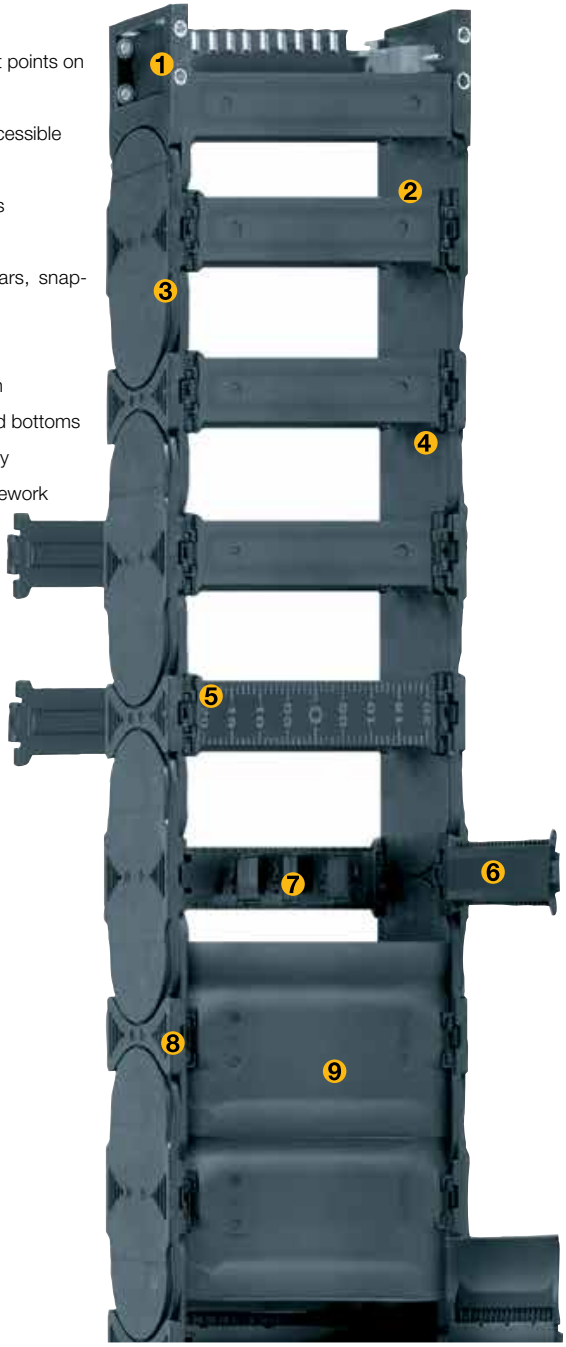
Usage Guidelines

- If a lightweight, cost-effective E-Chain® for high dynamics is required
- If very tight fitting lids and bottoms are required
- If short assembly times are required
- If optimized interior-exterior dimensions ratio is needed

- When an extremely low-noise, low-vibration E-Chain® is required
  ➤ **Series E6-35**
- If higher stability is required
  ➤ **Series E4-32**
- For long travels with gliding applications
  ➤ **Series E4-32**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Easy filling: inner diameter completely accessible
3. High stability due to undercut design
4. Efficient: less weight, enhanced dynamics
5. Notch crossbar with visual scale
6. Short assembly time: pivotable crossbars, snap-open along the inner and outer radius
7. Numerous interior separation possibilities
8. Straight run due to inner/outer link design
9. Chip protection: very tightly fitting lids and bottoms
10. Version NCST “without camber” simply by turning outer links without unnecessary rework



Also available without camber. Add NCST to the end of the part number.
Ex: E4-38L-100-200NCST

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

13.12 ft (4 m) **E4-38L-100-200-0**	**E-Chain®**
With 2 separators **38-1-1** assembled every 2nd link	**Interior Separation**
1 Set **E4-380-100-12P**	**Mounting Bracket**

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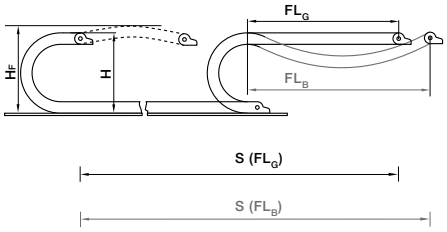
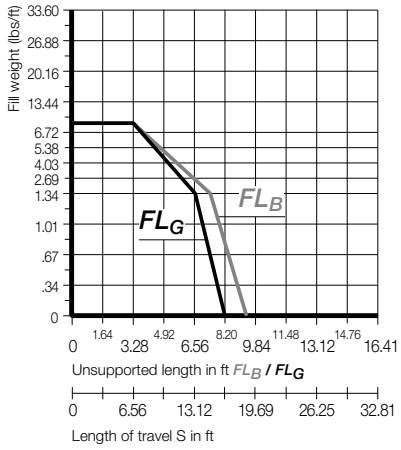
E-Chain System® E4-1 Light Series E4-38L/R4-38L Installation Dimensions

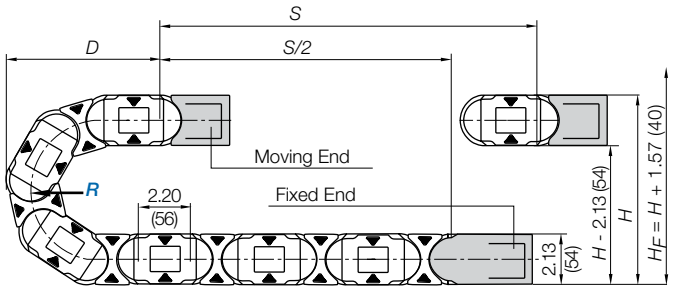
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.49 (18)
For center mount applications:
Chain length = $S/2 + K$

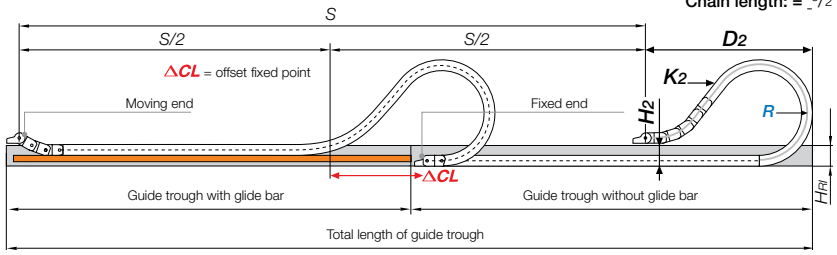
The required clearance height: $H_F = H$ **+ 1.57 in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.48 (063**)	2.95 (075**)	3.94 (100**)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)
H	7.09 (180)	8.03 (204)	10.00 (254)	11.97 (304)	13.94 (354)	15.91 (404)	17.87 (454)	21.81 (554)	25.75 (654)
D	6.85 (174)	7.32 (186)	8.31 (211)	9.29 (236)	10.28 (261)	11.26 (286)	12.24 (311)	14.21 (361)	16.18 (411)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.88 (505)	23.03 (585)	26.18 (665)	29.33 (745)	35.43 (900)	41.54 (1055)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 262 ft. (80m)

For center mount applications:
Chain length: = $S/2 + K_2$



R	2.48 (063**)	2.95 (075**)	3.94 (100**)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250[2])	11.81 (300[2])
H2	–	–	3.78 (96)	3.78 (96)	3.78 (96)	3.78 (96)	3.78 (96)	3.78 (96)	–	–
D2	–	–	14.57 (370)	18.50 (470)	19.69 (500)	25.79 (655)	30.31 (770)	35.43 (900)	–	–
K2	–	–	24.25 (616)	30.87 (784)	35.27 (896)	44.10 (1120)	50.71 (1288)	57.32 (1456)	–	–
ΔCL	–	–	6.30 (160)	8.27 (210)	9.45 (240)	14.57 (370)	18.11 (460)	21.26 (540)	–	–

In case of travels between 16.4 and 32.8 ft (5 and 10 m) we recommend a longer unsupported length.
****Radius not available for E-Tubes 2) Radius not suitable for long travel applications. Please consult igus®**

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 16.4 ft/s (5 m/s) / max. 82 ft/s² (25 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ **Chapter 1**

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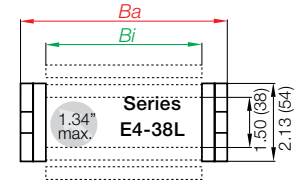
igus®

E-Chain System® E4-1 Light
Series E4-38L/R4-38L
Product Range

Series E4-38L - E-Chain® with crossbars every link



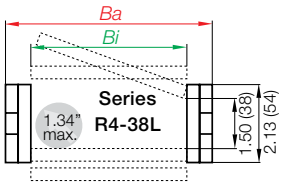
- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

E4-38L | 100- | 200- | 0

- Color - Black
- Bending radius
- Width
- Series

Series R4-38L - fully enclosed E-Tube



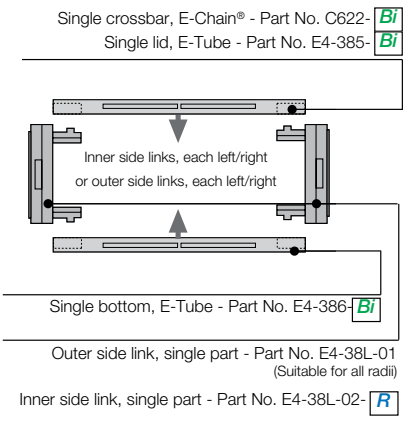
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

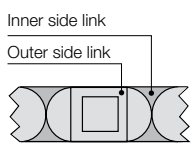
Part Number Structure

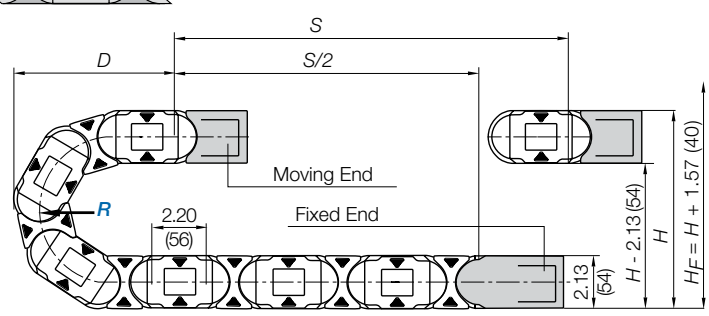
R4-38L- | 100- | 200- | 0

- Color - Black
- Bending radius
- Width
- Series

E-Chain® as separate parts, links and side plates







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E-Chain System® E4-1 Light
Series E4-38L/R4-38L
Product Range

Supplement part number with required radius. Example: E4-38L-100-[200]-0
Pitch: 2.20 in. (56 mm) per link links/ft (m) = 5.49 (18)

Part Number				Bi	Ba	Weight	
Crossbars Every link	Tube Version			in. (mm)	in. (mm)	E4-38L lbs/ft (kg/m)	R4-38L lbs/ft (kg/m)
E4-38L-050-	R4-38L-050		-0	1.97 (50)	2.60 (66)	≈ 0.76 (1.13)	≈ 0.81(1.20)
E4-38L-062-			-0	2.46 (62.5)	3.09 (78.5)	≈ 0.80 (1.19)	–
E4-38L-075-	R4-38L-075-		-0	2.95 (75)	3.58 (91)	≈ 0.85 (1.26)	≈ 0.93 (1.38)
E4-38L-087-			-0	3.44 (87.5)	4.07 (103.5)	≈ 0.87 (1.30)	–
E4-38L-100-	R4-38L-100-		-0	3.94 (100)	4.57 (116)	≈ 0.92 (1.37)	≈ 1.08 (1.60)
E4-38L-105-			-0	4.13 (105)	4.92 (125)	≈ 0.93 (1.39)	–
E4-38L-112-			-0	4.43 (112.5)	5.06 (128.5)	≈ 0.97 (1.44)	–
E4-38L-125-	R4-38L-125-		-0	4.92 (125)	5.55 (141)	≈ 1.01 (1.50)	≈ 1.18 (1.75)
E4-38L-137-			-0	5.41 (137.5)	6.04 (153.5)	≈ 1.04 (1.55)	–
E4-38L-150-	R4-38L-150		-0	5.91 (150)	6.54 (166)	≈ 1.11 (1.65)	≈ 1.29 (1.92)
E4-38L-162-			-0	6.40 (162.5)	7.03 (178.5)	≈ 1.14 (1.69)	–
E4-38L-175-			-0	6.89 (175)	7.52 (191)	≈ 1.17 (1.74)	–
E4-38L-200-			-0	7.87 (200)	8.50 (216)	≈ 1.25 (1.86)	–
E4-38L-250-			-0	9.84 (250)	10.47 (266)	≈ 1.42 (2.11)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: E4-38L-100-[200]-0

	[063**]	[075**]	[100**]	[125]	[150]	[175]	[200]	[250]	[300]
R	2.48 (063*)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)
H	7.09 (180)	8.03 (204)	10.00 (254)	11.97 (304)	13.94 (354)	15.91 (404)	17.87 (454)	21.81 (554)	25.75 (654)
D	6.85 (174)	7.32 (186)	8.31 (211)	9.29 (236)	10.28 (261)	11.26 (286)	12.24 (311)	14.21 (361)	16.18 (411)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.88 (505)	23.03 (585)	26.18 (665)	29.33 (745)	35.43 (900)	41.54 (1055)

** This radius is not available for the R4-32 Series
*Removable lid only, no hinged option
0 = Standard color black.
For other colors see Chapter 1

For large diameter hoses see page 6.196

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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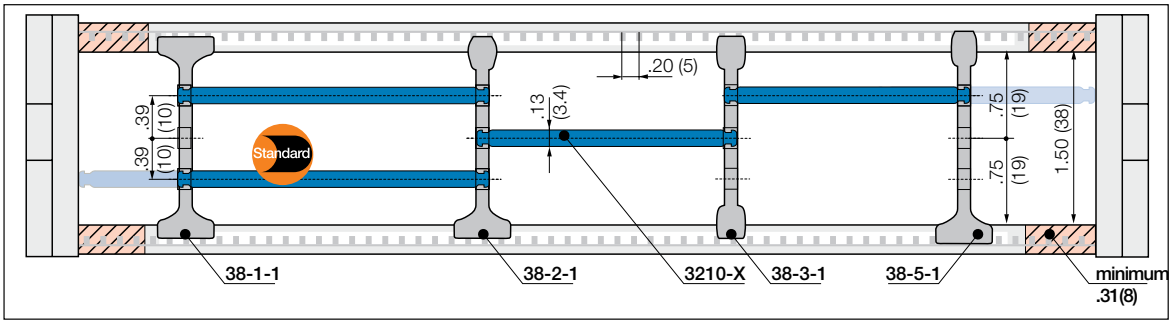
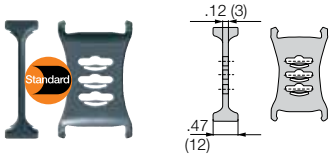
E-Chain System® E4-1 Light
Series E4-38L/R4-38L
Interior Separation



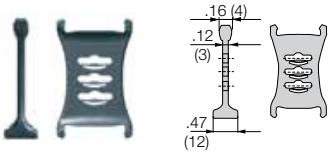
Note E-Tube: Please maintain a lateral spacing of .31" (8 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 38-1**
Assembled	**Part No. 38-1-1**

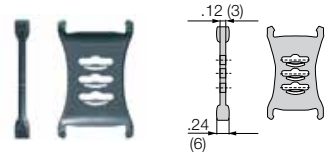
- **Standard separator 38-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains® and E-Tubes.



Separator, narrow head

Unassembled	**Part No. 38-2**
Assembled	**Part No. 38-2-1**

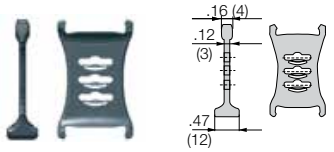
- **Separator 38-2**
  For even faster installation
  Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip).



Separator, narrow base

Unassembled	**Part No. 38-3**
Assembled	**Part No. 38-3-1**

- **Separator 38-3**
  For many thin cables
  Separator with a narrow base for a large number of thin cables side by side. Saves space in E-Chains®.

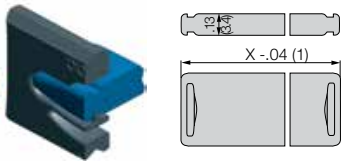


Notch separator for notch crossbar

Unassembled	**Part No. 38-5**
Assembled	**Part No. 38-5-1**

- **Separator 38-5**
  Locks safely in .20" (5 mm) increments
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be used at 3 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	4.92 (125)	**3200-125**	**3210-125**	8.86 (225)	**3200-225**	**3210-225**
2.95 (075)	**3200-75**	**3210-75**	5.91 (150)	**3200-150**	**3210-150**	9.84 (250)	**3200-250**	**3210-250**
3.94 (100)	**3200-100**	**3210-100**	6.89 (175)	**3200-175**	**3210-175**			
4.53 (115)	**3200-115**	**3210-115**	7.87 (200)	**3200-200**	**3210-200**			

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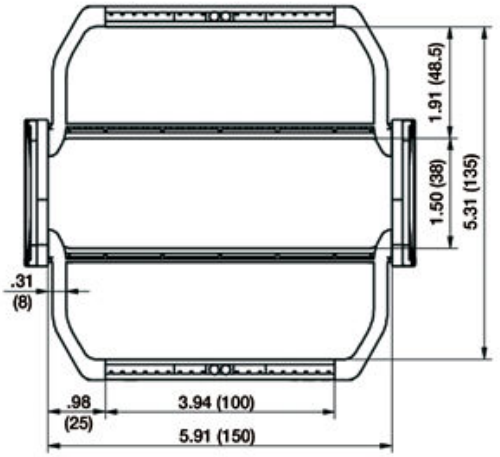
E-Chain System® E4-1 Light
Series E4-38L
Special Accessories



Extender crossbars - Enormous of the interior for the smooth guiding of larger hoses

- An extender crossbar increases the inner height by 1.91 in. (48.5 mm).
- Extender crossbars can be assembled in various ways:
  One-sided, on both sides, alternating with normal crossbars and combinations out of these possibilities
- Optionally openable along the inner and outer radius, swivelling
- Cable friendly design of extender crossbar
- High holding force of the extender crossbar

Extender crossbar possibilities	Part No. Extender crossbar
Extender crossbar in inner and outer radius	E4-38L-XXXB48-*R*-0
Extender crossbar in inner and outer radius - every other link	H4-38L-XXXB48-*R*-0
Extender crossbar in inner radius	E4-38L-XXXBZ48-*R*-0
Extender crossbar in innder radius - every other link	H4-38L-XXXBZ48-*R*-0
Extender crossbar in outer radius	E4-38L-XXXBE48-*R*-0
Extender crossbar in iuter radius - every other link	H4-38L-XXXBE48-*R*-0
Extender crossbar and crossbars alternating	E4-38L-XXXHB48-*R*-0
Extender crossbar and crossbars alternating in inner radius	E4-38L-XXXHBZ48-*R*-0
Extender crossbar and crossbars alternating in outer radius	E4-38L-XXXHBE48-*R*-0

Supplement Part No. with the required width index XXX = *Bi* and *R* = radius.

Example: **E4-38L-100B48-200-0**

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Specs/CAD/RFQ: www.igus.com/e-chains
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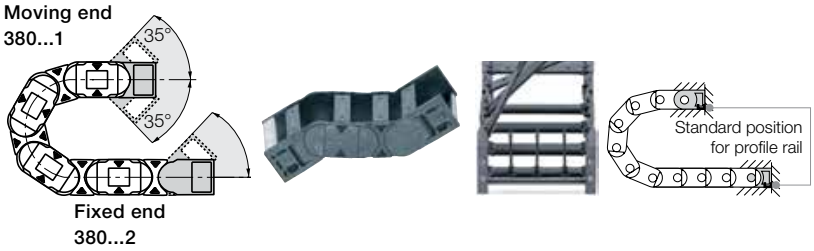
E-Chain System® E4-1 Light
Series E4-38L/R4-38L
Mounting Brackets - KMA

Standard

Option 1: pivoting

- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant



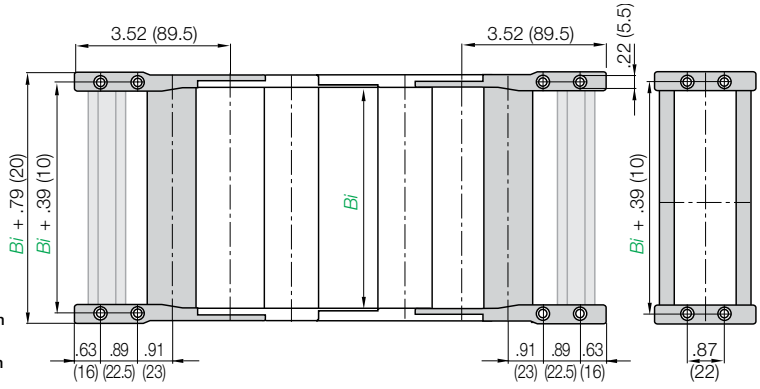
Option 2: locking

- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations

Part Number Structure

E4-380- 07- 12 P

- With Profile Rail
- Complete Set
- Width
- E4-380 = Pivoting for chain
  R4-380 = Pivoting for tube
- E4-381 = Locking for chain
  R4-381 = Locking for tube



Due to the design of the E4-38L series chains, please note the following when ordering brackets:
Even number of links = full set, part number ending in **-12**; **Odd number of links =** 2 pieces, part number ending in **-1**

Part number examples are shown for pivoting brackets for E-Chain.
For locking brackets change part number to 381

Part No. Full Set (pivoting)
Series E4-38L
E4-380-Width-12

Part No. Full Set (pivoting)
with profile rail
Series E4-38L
E4-380-Width-12P

Part No. Full Set (pivoting)
Tube Series R4-38L
R4-380-Width-12

Part No. Full Set (pivoting)
with Profile Rail
Tube Series R4-38L
R4-380-Width-12P

Width	Part No. Full Set chain/tube Pivoting	Locking	With Profile Rail	*Bi* in. (mm)	Width	Part No. Full Set chain/tube Pivoting	Locking	With Profile Rail	*Bi* in. (mm)
-050	E4-380	E4-381	-050-12 P	1.97 (50)	-125	E4-380/R4-380	E4-381/R4-381	-125-12 P	4.92 (125)
-062	E4-380	E4-381	-062-12 P	2.68 (62.5)	-137	E4-380	E4-381	-137-12 P	5.39 (137.5)
-075	E4-380/R4-380	E4-381/R4-381	-075-12 P	2.95 (75)	-150	E4-380	E4-381	-150-12 P	5.91 (150)
-087	E4-380	E4-381	-087-12 P	3.43 (87.5)	-162	E4-380	E4-381	-162-12 P	6.38 (162.5)
-100	E4-380/R4-380	E4-381/R4-381	-100-12 P	3.94 (100)	-175	E4-380	E4-381	-175-12 P	6.61 (175)
-105	E4-380	E4-381	-105-12 P	4.25 (105)	-200	E4-380/	E4-381	-200-12 P	7.87 (200)
-112	E4-380	E4-381	-112-12 P	4.41 (112.5)	-250	E4-380	E4-381	-250-12 P	9.84 (250)

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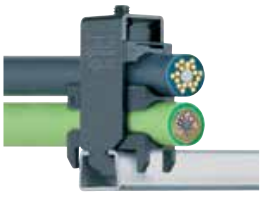
E-Chain System® E4-1 Light
Series E4-38L/R4-38L
Strain Relief

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

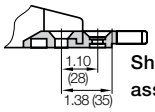
Chainfix Clip

Modular snap-on strain relief device

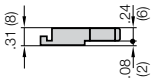
Chainfix clips are available for cable diameters ranging from .16" (4mm) to .94" (24 mm). They are for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(04-08)	CFC-08-M	CFC-08-C
.31-.47	(08-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

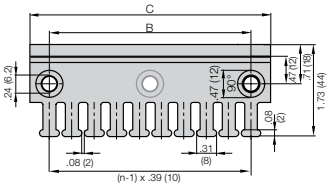


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10

Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
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E-Chain System® E4-1 Light Series E4-38L/R4-38L Guide Trough

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part Number 98-30
- 1/2 travel length of glide bars
  Part number 92-01
- Installation sets as end connectors
  Part Number 93-50-XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

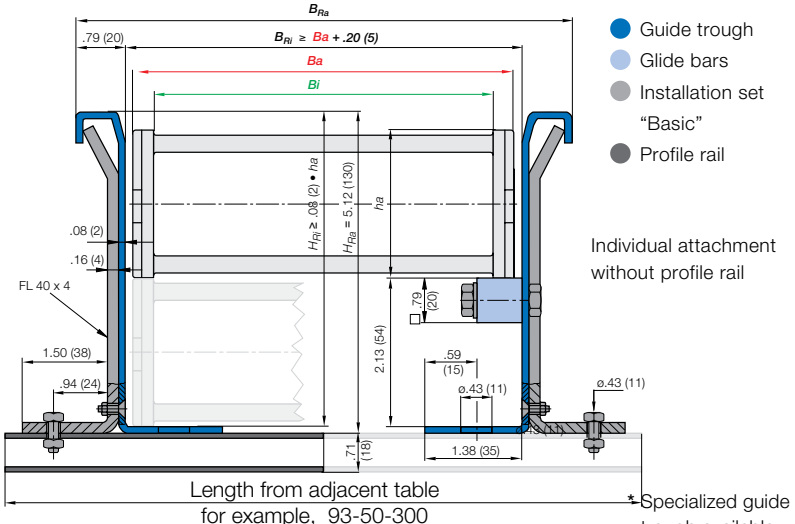
Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 98-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 92-01
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
93-50-XXX
Example: 93-50-400 for 15.75" (400 mm) long profile rail.

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

Installation sets as section connectors

Width of Crossbar
E4-32-**05**-200-0

	B_{Ri}	Installation Part No.
-050	2.80 (71)	**93-50-200**
-062	3.27 (83)	**93-50-200**
-075	3.78 (96)	**93-50-225**
-087	4.25 (108)	**93-50-225**
-100	4.76 (121)	**93-50-250**
-105	5.12 (130)	**93-50-250**
-112	5.24 (133)	**93-50-250**
-125	5.75 (146)	**93-50-275**
-137	6.22 (158)	**93-50-275**
-150	6.73 (171)	**93-50-300**
-162	7.20 (183)	**93-50-300**
-175	7.72 (196)	**93-50-325**
-200	8.70 (221)	**93-50-350**
-250	10.67 (271)	**93-50-400**



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E-Chain System® E4-1 Light
Series E4-38L/R4-38L

igus®

E4-32
H4-32
R4-32

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E4-48L
R4-48L

igus®

E-Chain System® E4-1 Light
Series E4-48L/R4-48L

1.50 1.50

Price Index

Series E4-48L Series R4-48L

Special Options Available

Low noise version available with special rubber pads

Clean-Room Cleanroom test upon request

EX ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 262 ft (80 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.94 ft (1.2 m)
Rotary requires further calculation

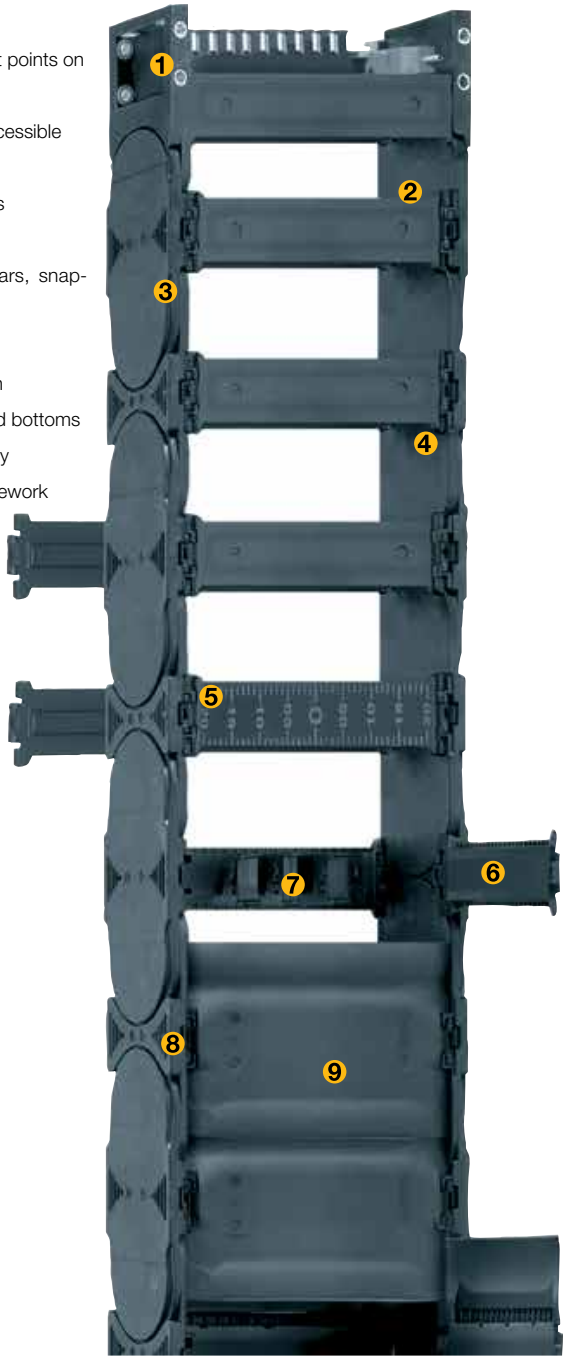
Usage Guidelines

- If a lightweight, cost-effective E-Chain® for high dynamics is required
- If very tight fitting lids and bottoms are required
- If short assembly times are required
- If optimized interior-exterior dimensions ratio is needed

- When an extremely low-noise, low-vibration E-Chain® is required
  ➤ **Series E6-40**
- If higher stability is required
  ➤ **Series E4-42**
- For long travels with gliding applications
  ➤ **Series E4-42**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Easy filling: inner diameter completely accessible
3. High stability due to undercut design
4. Efficient: less weight, enhanced dynamics
5. Notch crossbar with visual scale
6. Short assembly time: pivotable crossbars, snap-open along the inner and outer radius
7. Numerous interior separation possibilities
8. Straight run due to inner/outer link design
9. Chip protection: very tightly fitting lids and bottoms
10. Version NCST "without camber" simply by turning outer links without unnecessary rework



Also available without camber. Add NCST to the end of the part number.
Ex: E4-38L-100-300NCST

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

13.12 ft (4 m) **E4-48L-100-200-0**	**E-Chain®**
With 2 separators **48-1-1** assembled every 2nd link	**Interior Separation**
1 Set **E4-480-100-12P**	**Mounting Bracket**

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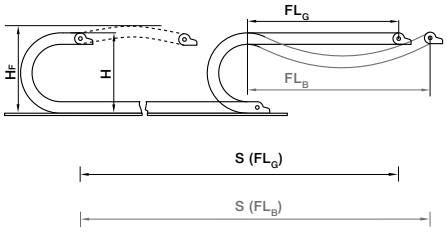
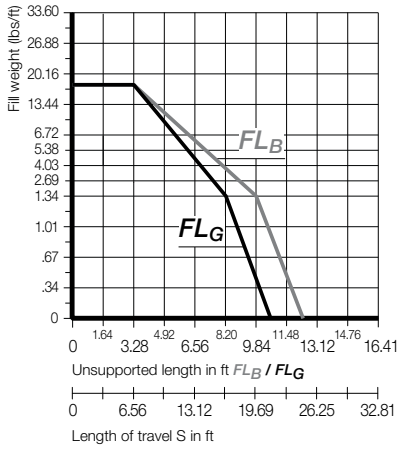
E-Chain System® E4-1 Light Series E4-48L/R4-48L Installation Dimensions

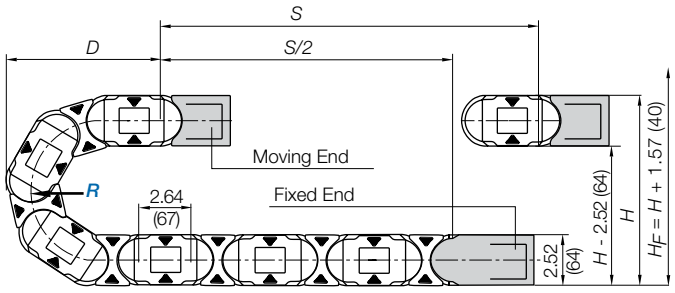
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.64" (67 mm)
Links per ft (m): = 4.54 (15)
For center mount applications:
Chain length = $S/2 + K$

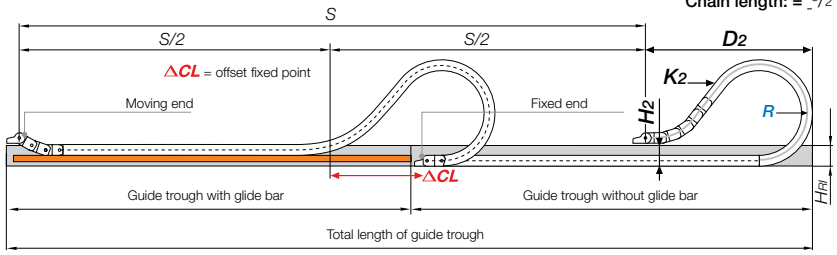
The required clearance height: $H_F = H$ **+ 1.57 in. (40 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.95 (075*)	3.94 (100*)	4.92 (125)	5.91 (150)	6.69 (175)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H	8.43 (214)	10.39 (264)	12.36 (314)	14.33 (364)	16.30 (414)	18.27 (464)	22.20 (564)	26.14 (664)	30.08 (764)
D	8.19 (208)	9.17 (233)	10.16 (258)	11.14 (283)	12.13 (308)	13.11 (333)	15.08 (383)	17.05 (433)	19.02 (483)
K	14.57 (370)	17.72 (450)	20.87 (530)	24.02 (610)	26.97 (685)	30.12 (765)	36.22 (920)	42.52 (1080)	48.62 (1235)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 262 ft. (80m)

For center mount applications:
Chain length: = $S/2 + K_2$



R	2.95 (075**)	3.94 (100**)	4.92 (125)	5.91 (150)	6.69 (175)	7.87 (200)	9.84 (250)	11.81 (300²)	13.78 (350²)
H_2	–	–	4.17 (106)	4.17 (106)	4.17 (106)	4.17 (106)	4.17 (106)	–	–
D_2	–	–	18.70 (475)	22.44 (570)	26.38 (670)	30.71 (780)	40.55 (1030)	–	–
K_2	–	–	31.65 (804)	36.93 (938)	44.84 (1139)	52.76 (1340)	65.94 (1675)	–	–
ΔCL	–	–	9.06 (230)	11.81 (300)	14.96 (380)	18.11 (460)	25.98 (660)	–	–

In case of travels between 16.4 and 32.8 ft (5 and 10 m) we recommend a longer unsupported length.
Radius not available for E-Tubes 2) Radius not suitable for long travel applications. Please consult igus®

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 16.4 ft/s (5 m/s) / max. 82 ft/s² (25 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ **Chapter 1**

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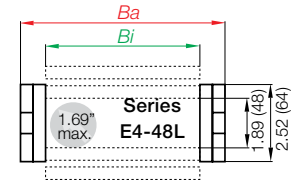
E4-48L
R4-48L

igus®

E-Chain System® E4-1 Light
Series E4-48L/R4-48L
Product Range

Series E4-48L - E-Chain® with crossbars every link



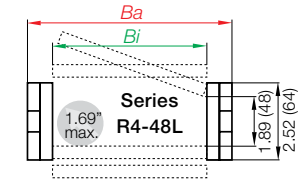
- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

E4-48L 100- 200- 0

- Color - Black
- Bending radius
- Width
- Series

Series R4-48L - fully enclosed E-Tube



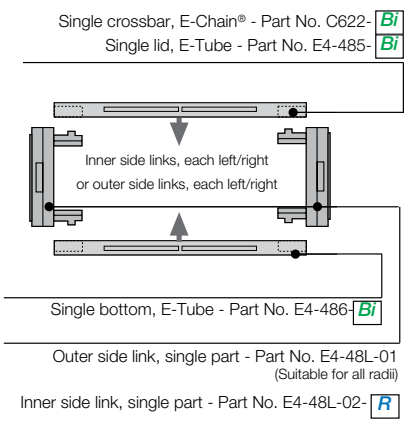
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

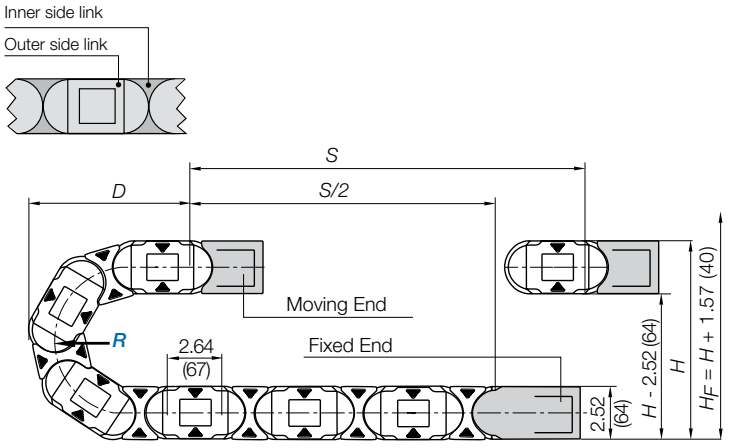
Part Number Structure

R4-48L- 100- 200- 0

- Color - Black
- Bending radius
- Width
- Series

E-Chain® as separate parts, links and side plates





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E-Chain System® E4-1 Light Series E4-48L/R4-48L Product Range

Supplement part number with required radius. Example: E4-48L-100-200-0
Pitch: 2.64 in. (67 mm) per link links/ft (m) = 4.54 (15)

Part Number				Bi	Ba	Weight	
Crossbars Every link	Tube Version			in. (mm)	in. (mm)	E4-48L lbs/ft (kg/m)	R4-48L lbs/ft (kg/m)
E4-48L-050-			-0	1.97 (50)	2.76 (70)	≈ 1.02 (1.53)	–
E4-48L-062-	R4-48L-062-		-0	2.46 (62.5)	3.25 (82.5)	≈ 1.06 (1.58)	≈ 1.16 (1.73)
E4-48L-075-	R4-48L-075-		-0	2.95 (75)	3.74 (95)	≈ 1.10 (1.64)	≈ 1.22 (1.82)
E4-48L-087-			-0	3.44 (87.5)	4.23 (107.5)	≈ 1.20 (1.67)	–
E4-48L-100-	R4-48L-100-		-0	3.94 (100)	4.72 (120)	≈ 1.16 (1.73)	≈ 1.35 (2.01)
E4-48L-105-			-0	4.13 (105)	4.92 (125)	≈ 1.17 (1.74)	–
E4-48L-125-	R4-48L-125-		-0	4.92 (125)	5.71 (145)	≈ 1.24 (1.84)	≈ 1.46 (2.18)
E4-48L-150-			-0	5.91 (150)	6.69 (170)	≈ 1.32 (1.97)	–
E4-48L-175-	R4-48L-175-		-0	6.89 (175)	7.68 (195)	≈ 1.37 (2.04)	≈ 1.73 (2.58)
E4-48L-200-	R4-48L-200-		-0	7.87 (200)	8.66 (220)	≈ 1.44 (2.14)	≈ 1.81 (2.70)
E4-48L-250-	R4-48L-250-		-0	9.84 (250)	10.63 (270)	≈ 1.58 (2.35)	≈ 2.07 (3.08)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E4-48L-100-200-0

	075**	100**	125	150	175	200	250	300	350
R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H	8.43 (214)	10.39 (264)	12.36 (314)	14.33 (364)	16.30 (414)	18.27 (464)	22.20 (564)	26.14 (664)	30.08 (764)
D	8.19 (208)	9.17 (233)	10.16 (258)	11.14 (283)	12.13 (308)	13.11 (333)	15.08 (383)	17.05 (433)	19.02 (483)
K	14.57 (370)	17.72 (450)	20.87 (530)	24.02 (610)	26.97 (685)	30.12 (765)	36.22 (920)	42.52 (1080)	48.62 (1235)

** This radius is not available for the R4-32 Series
*Removable lid only, no hinged option
0 = Standard color black.
For other colors see Chapter 1

For large diameter hoses see page 6.206

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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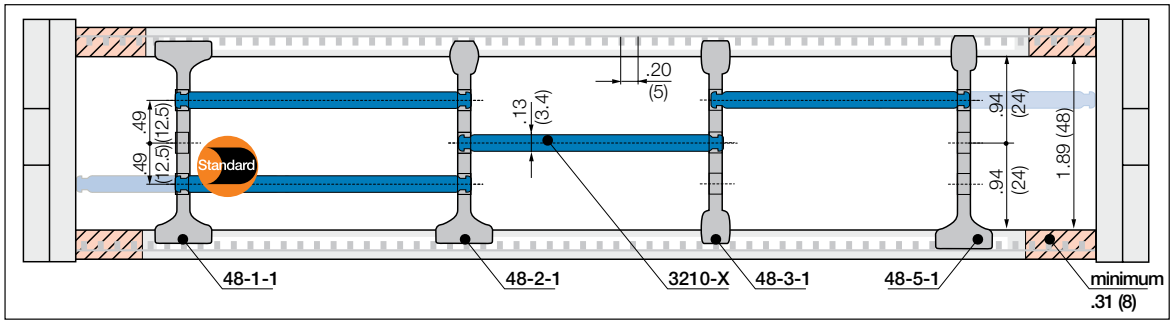
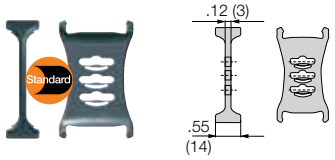
E-Chain System® E4-1 Light
Series E4-48L/R4-48L
Interior Separation



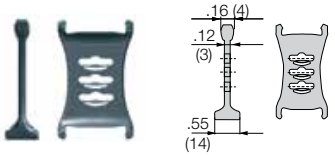
Note E-Tube: Please maintain a lateral spacing of .31" (8 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 48-1**
Assembled	**Part No. 48-1-1**

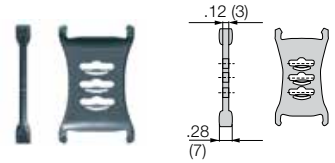
- **Standard separator 48-1**
  for all applications
  Separator with wide base for maximum locking strength and safe standing in E-Chains® and E-Tubes.



Separator, narrow head

Unassembled	**Part No. 48-2**
Assembled	**Part No. 48-2-1**

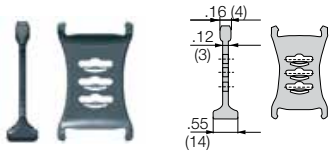
- **Separator 48-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 48-3**
Assembled	**Part No. 42-3-1**

- **Separator 48-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

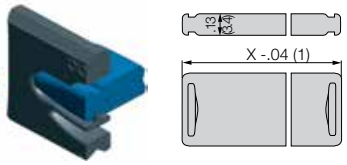


Separator, asymmetrical

Unassembled	**Part No. 48-5**
Assembled	**Part No. 48-5-1**

- **Separator 48-5**
  Locks safely in .30" (7.5 mm) increments
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be used at 3 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	4.92 (125)	**3200-125**	**3210-125**	8.86 (225)	**3200-225**	**3210-225**
2.95 (075)	**3200-75**	**3210-75**	5.91 (150)	**3200-150**	**3210-150**	9.84 (250)	**3200-250**	**3210-250**
3.94 (100)	**3200-100**	**3210-100**	6.89 (175)	**3200-175**	**3210-175**			
4.53 (115)	**3200-115**	**3210-115**	7.87 (200)	**3200-200**	**3210-200**			

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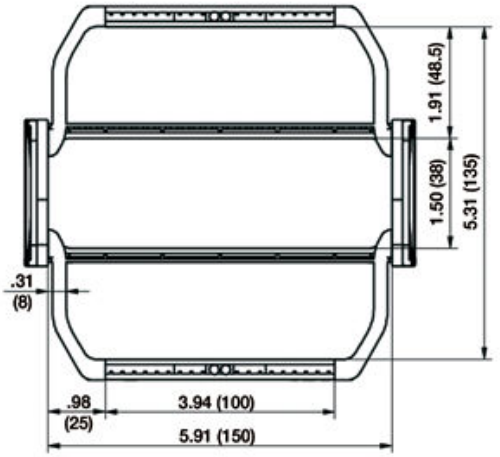
E-Chain System® E4-1 Light
Series E4-48L/R4-48L
Special Accessories



Extender crossbars - Enormous of the interior for the smooth guiding of larger hoses

- An extender crossbar increases the inner height by 1.91 in. (48.5 mm).
- Extender crossbars can be assembled in various ways:
  One-sided, on both sides, alternating with normal crossbars and combinations out of these possibilities
- Optionally openable along the inner and outer radius, swivelling
- Cable friendly design of extender crossbar
- High holding force of the extender crossbar

Extender crossbar possibilities	Part No. Extender crossbar
Extender crossbar in inner and outer radius	E4-48L-XXXB48-*R*-0
Extender crossbar in inner and outer radius - every other link	H4-48L-XXXB48-*R*-0
Extender crossbar in inner radius	E4-48L-XXXBZ48-*R*-0
Extender crossbar in innder radius - every other link	H4-48L-XXXBZ48-*R*-0
Extender crossbar in outer radius	E4-48L-XXXBE48-*R*-0
Extender crossbar in iuter radius - every other link	H4-48L-XXXBE48-*R*-0
Extender crossbar and crossbars alternating	E4-48L-XXXHB48-*R*-0
Extender crossbar and crossbars alternating in inner radius	E4-48L-XXXHBZ48-*R*-0
Extender crossbar and crossbars alternating in outer radius	E4-48L-XXXHBE48-*R*-0

Supplement Part No. with the required width index XXX = *Bi* and *R* = radius.
Example: **E4-48L-100B48-200-0**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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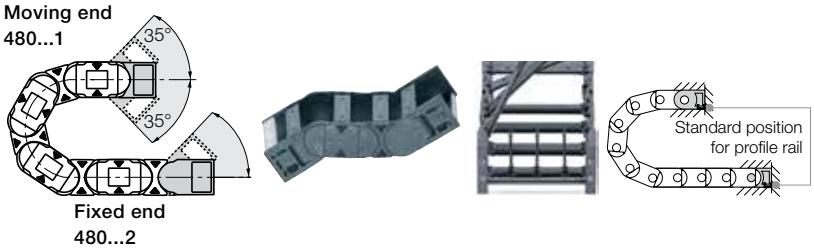
igus®

E-Chain System® E4-1 Light
Series E4-48L/R4-48L
Mounting Brackets - KMA

Standard

Option 1: pivoting

- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant



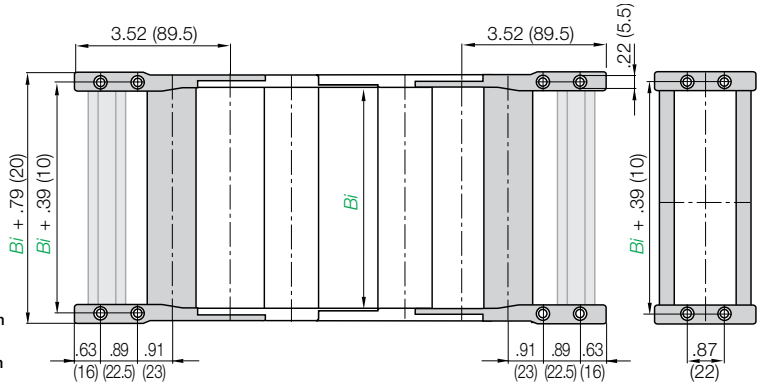
Option 2: locking

- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations

Part Number Structure

E4-480- | 07- | 12 | P

- With Profile Rail
- Complete Set
- Width
- E4-480 = Pivoting for chain / R4-480 = Pivoting for tube
- E4-481 = Locking for chain / R4-481 = Locking for tube



Due to the design of the E4-48L series chains, please note the following when ordering brackets:
Even number of links = full set, part number ending in **-12**; **Odd number of links =** 2 pieces, part number ending in **-1**

Part number examples are shown for pivoting brackets for E-Chain.
For locking brackets change part number to 481

Part No. Full Set (pivoting)
Series E4-48L
E4-480-Width-12

Part No. Full Set (pivoting)
with profile rail
Series E4-48L
E4-480-Width-12P

Part No. Full Set (pivoting)
Tube Series R4-48L
R4-480-Width-12

Part No. Full Set (pivoting)
with Profile Rail
Tube Series R4-48L
R4-480-Width-12P

Width	Part No. Full Set chain/tube Pivoting	Locking		With Profile Rail	*Bi* in. (mm)
-050	E4-480	E4-481	-050-12	P	1.97 (50)
-062	E4-480/R4-480	E4-481/R4-481	-062-12	P	2.68 (62.5)
-075	E4-480/R4-480	E4-481/R4-481	-075-12	P	2.95 (75)
-087	E4-480	E4-481	-087-12	P	3.43 (87.5)
-100	E4-480/R4-480	E4-481/R4-481	-100-12	P	3.94 (100)
-105	E4-480	E4-481	-105-12	P	4.25 (105)

Width	Part No. Full Set chain/tube Pivoting	Locking		With Profile Rail	*Bi* in. (mm)
-125	E4-480/R4-480	E4-481/R4-481	-125-12	P	4.92 (125)
-150	E4-480	E4-481	-150-12	P	5.91 (150)
-175	E4-480/R4-480	E4-481/R4-481	-175-12	P	6.61 (175)
-200	E4-480/R4-480	E4-481/R4-481	-200-12	P	7.87 (200)
-250	E4-480/R4-480	E4-481/R4-481	-250-12	P	9.84 (250)

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Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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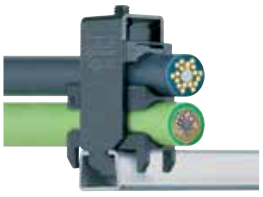
E-Chain System® E4-1 Light
Series E4-48L/R4-48L
Strain Relief

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

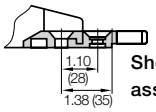
For more information please refer to strain relief section of Chapter 10

Chainfix Clip

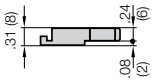
Chainfix clips are available for cable diameters ranging from .16" (4mm) to .94" (24 mm). They are for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools.

Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(04-08)	CFC-08-M	CFC-08-C
.31-.47	(08-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

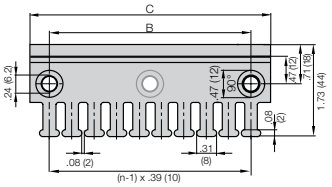


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.

For more information please refer to strain relief section of Chapter 10

Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E4-1 Light
Series E4-48L/R4-48L
Strain Relief

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Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 93-30
- 1/2 travel length of glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 93-50-XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table below. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel

Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough,
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 93-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01

Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **93-50-XXX**
Example: 93-50-400 for 15.75 (400 mm) long profile rail

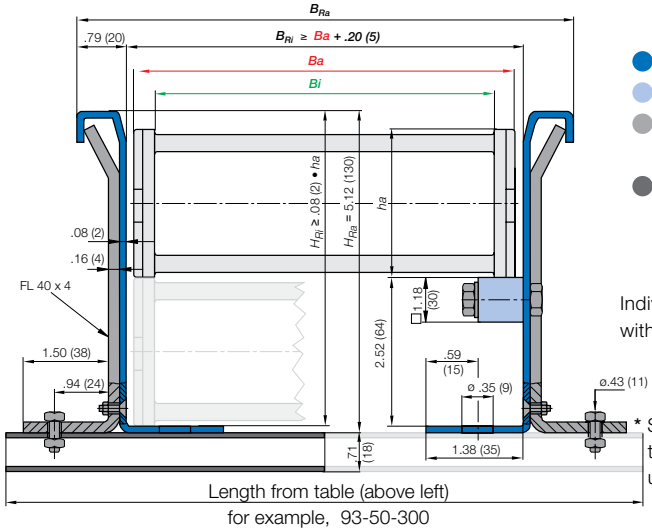
Width of Crossbar
E4-48L-**100**-200-0

B_{Ri}

		Installation Part No.
-050	2.95 (75)	**93-50-200**
-062	3.43 (87)	**93-50-200**
-075	3.94 (100)	**93-50-225**
-087	4.41 (112)	**93-50-225**
-100	4.92 (125)	**93-50-250**
-105	5.12 (130)	**93-50-250**
-125	5.91 (150)	**93-50-275**
-150	6.89 (175)	**93-50-300**
-175	7.87 (200)	**93-50-325**
-200	8.86 (225)	**93-50-350**
-250	10.83 (275)	**93-50-400**

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

Installation sets as section connectors



Standard length profile rail

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E-Chain System® E4-1 Light
Series E4-48L/R4-48L

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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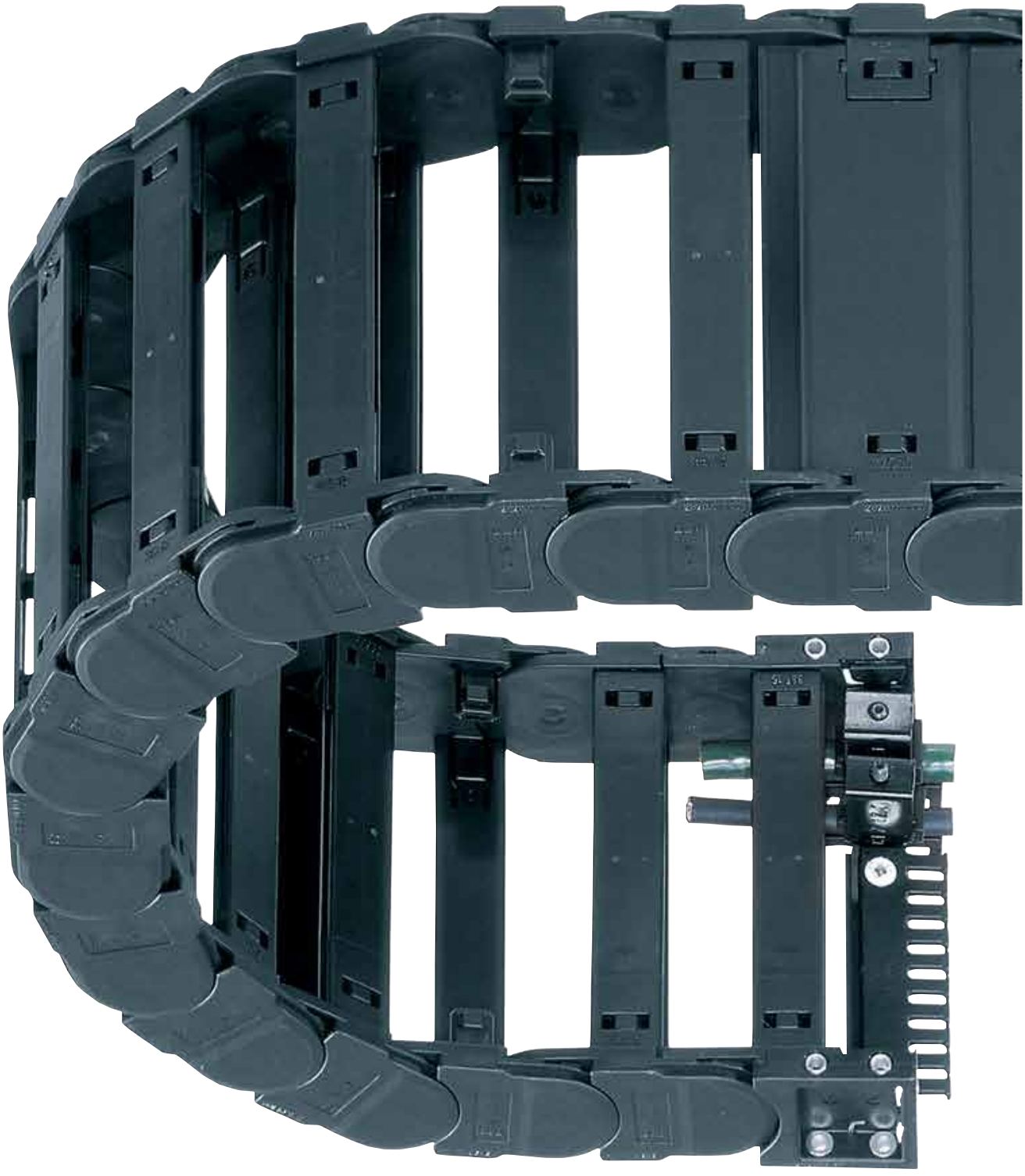

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igus®

System E4/4

For new applications we recommend System E4-1

For new applications we recommend
System E4-1

E4/4 - for long travels and side-mounted applications

System E4/4 is ideal for extremely long travel lengths and also works especially well in free-hanging, side-mounted applications. The E-Chain®'s special 'roller' links are the key to enabling longer travels. The side links are designed to create an overlapping multipurpose grip, which increases stability for heavier side loads. E4/4 can also withstand 50 percent greater push-pull forces than the next comparable E-Chain design and is resistant to dirt and debris. E4/4 is also available in a special conductive plastic called igumid ESD for use in ESD / ATEX applications.

Typical industries and applications

- Unsupported, side mounted applications
- Cranes: RTG, Quay cranes, many more
- Compost plants
- Construction machines
- Gypsum plants, concrete plants, chemical plants
- Agricultural plants
- ESD applications
- Heavy machinery
- Steel plants
- Shipyards
- General machinery

ATEX/ESD: Excellent performance with the special material igumid ESD (upon request) "Rear grip" achieves long-term electrical conductivity

Side-mounted - unsupported

High torsional rigidity

System E4/4 approved with long travels

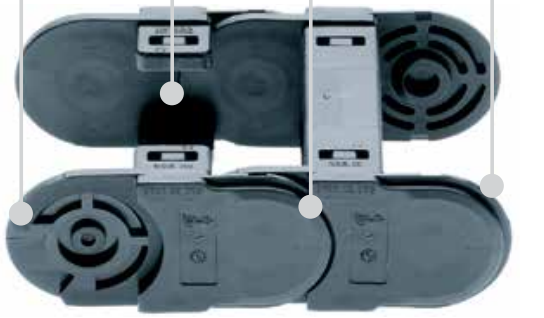
System E4 - 4-piece E-Chain® links

Many successful RoI E-Chain® applications, i.e. one of the igus® longest travels at the moment on 2 ship unloaders in Malaysia, both equipped with a RoI E-Chain® at (441.3 m) travel length

Special case: Side-mounted, unsupported - undercut design offers stability

656 ft. (200 m) travels and more possible

E-Chain System® E4/4 Selection Guide



- Best unsupported lengths "side-mounted"
- Rol E-Chain® links available
- For very long travels up to 492-820 ft. (150 - 250 m)
- High torsional rigidity
- Good for tough environments with dirt and debris
- ESD version available
- Interior separation tool box available
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

Crossbars every link
for particularly demanding applications

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
2828	1.25	(32)	1.97-15.75	(50-400)	2.91-16.69	(74-424)	2.13	(54)	2.48-11.81	(63-300)
3838	1.65	(42)	1.97-15.75	(50-400)	3.03-16.81	(77-427)	2.52	(64)	2.95-13.78	(75-350)
4040	2.20	(56)	1.97-23.62	(50-600)	3.39-25.04	(86-636)	3.31	(84)	5.31-19.69	(135-500)
5050	3.15	(80)	1.97-23.62	(50-600)	3.94-25.59	(100-650)	4.25	(108)	5.91-39.37	(150-1000

Crossbars every 2nd link
for almost all applications

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
2828	1.25	(32)	1.97-15.75	(50-400)	2.91-16.69	(74-424)	2.13	(54)	2.48-11.81	(63-300)
3838	1.65	(42)	1.97-15.75	(50-400)	3.03-16.81	(77-427)	2.52	(64)	2.95-13.78	(75-350)
4140	2.20	(56)	1.97-23.62	(50-600)	3.39-25.04	(86-636)	3.31	(84)	5.31-19.69	(135-500)
5050	3.15	(80)	1.97-23.62	(50-600)	3.94-25.59	(100-650)	4.25	(108)	5.91-39.37	(150-1000)

E-Tubes
fully enclosed, excellent cable protection for hot chips

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
R7728	1.25	(32)	1.97-11.81	(50-300)	2.91-12.76	(74-324)	2.13	(54)	4.92-11.81	(125-300)
R7838	1.65	(42)	1.97-11.81	(50-300)	3.03-12.87	(77-327)	2.52	(64)	4.92-13.78	(125-350)
R8840	2.20	(56)	2.95-18.19	(75-462)	4.37-19.65	(111-499)	3.31	(84)	5.91-19.69	(150-500)
R9850	3.15	(80)	2.95-18.19	(75-462)	4.92-20.20	(125-513)	4.25	(108)	7.87-39.37	(200-1000)

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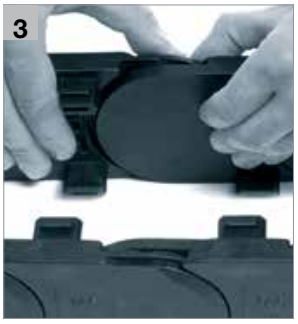
E-Chain System® E4/4
Assembly Instructions

E-Chains® and E-Tubes - Assembling

Remove crossbars at connection point. Slide side links into each other - Press together

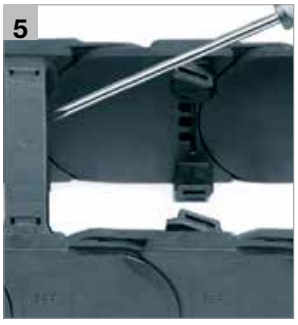
Join the side links - join the second side link by pressing from the top



Join the side links together on the opposite side by applying pressure to the outer link

Assemble crossbars - Push down and snap in by using a screwdriver

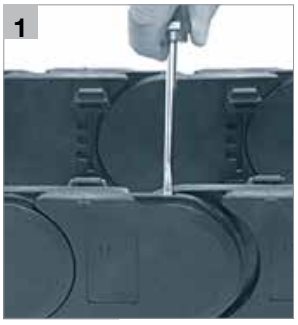
Assembling continued



Assemble clips (E-Chains® with crossbars every other link) - Push down and snap in

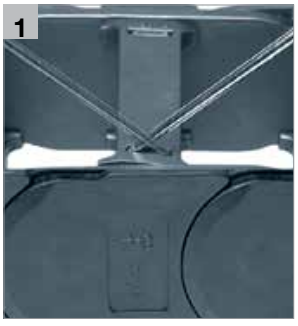
Assemble E-Tube lids/bottoms - Attach to the connector at an angle - Snap in

E-Chains® and E-Tubes - Separating



Remove crossbars, clips, and lids on two adjacent chain links. Guide the screwdriver into the slot between side links and release it by levering it and separate the E-Chain®

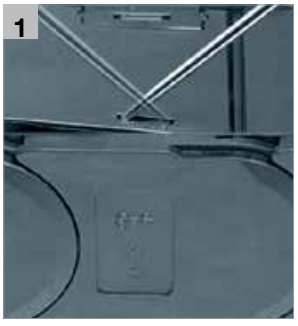
E-Chains® - Opening



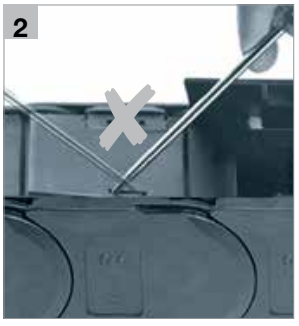
Remove crossbars - Insert screwdriver into the slot, using a lever action, apply pressure to the screwdriver to remove the crossbar.

Remove clips - Insert screwdriver into the slot, using a lever action, apply pressure to the screwdriver to remove the clip

E-Tube - Opening



Remove lids/bottoms - Insert screwdriver into the slot, using a lever action apply pressure to the screwdriver to release



Release only **one side** to open the lid

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2828
2928
R7728

igus®

E-Chain System® E4/4
Series 2828/2928/R7728

1.26" 1.26"

For new applications use Series E4-32

Price Index

Series 2828 Series 2928

Series R7728

Special Features / Options

Side-mounted - unsupported

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 230 ft (70 m)
Vertical, standing ≤ 16.4 ft (5 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

Usage Guidelines

- If subject to high torsional or shearing forces
- If a side-mounted chain/tube with long unsupported lengths is required
- If subject to very damp environments consistently

- If a quieter version is required
  ➤ **Series 280/290/R770**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Crossbars on E-Chains® are removable along both radii
3. Hinged snap-open removable lids along outer radius of E-Tube
4. Lateral glide surfaces for side-mounted operation
5. High side-mount stability due to undercut
6. Locking or pivoting mounting brackets available
7. Closed and open styles can be combined
8. High torsional rigidity
9. Removable lids along inner radius
10. Wide, rounded plastic crossbars - cable friendly
11. E-Chain® also available with reverse bending radii

RoI E-Chain® Series 2828R/7728R available upon request

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

9.84 ft (3 m) **2828-30-300-0**	**E-Chain®**
With 2 separators **281** assembled every 2nd link	**Interior Separation**
1 Set **282800-30-12P**	**Mounting Bracket**

Estudio de Fluidos
Pol. Ind. de Guarnizo, Parcela 207
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942 25 27 50
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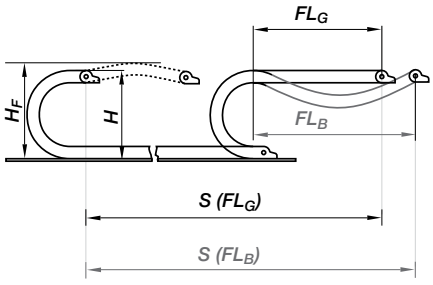
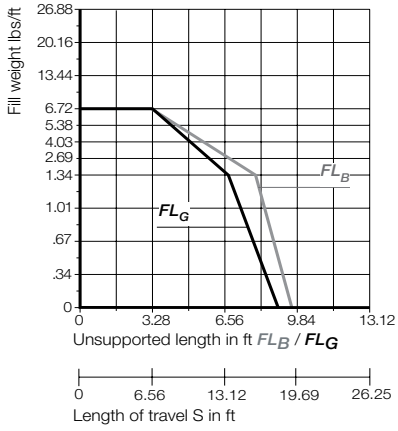
E-Chain System® E4/4
Series 2828/2928/R7728
Installation Dimensions

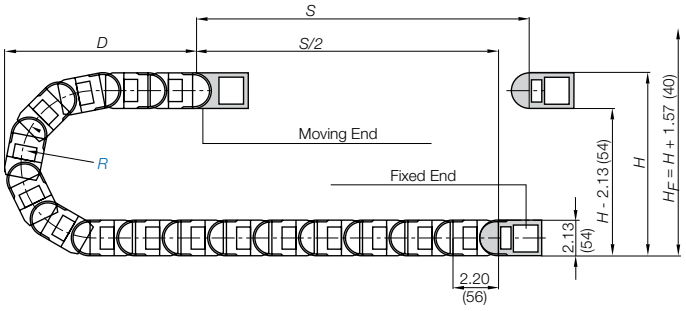
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.48 (18)
For center mount applications:
Chain length = $^{S}/_{2} + K$

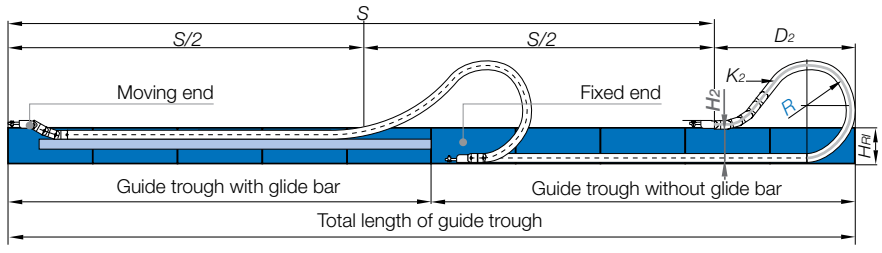
The required clearance height: $H_F = H + 1.57$ in. (40 mm) (with 1.34 lbs/ft (2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
$H_{-0 \atop +20}$	7.09 (180)	8.07 (205)	10.04 (255)	12.01 (305)	13.98 (355)	15.94 (405)	17.91 (455)	19.49 (495)	21.85 (555)	25.79 (655)
D	5.12 (130)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)	10.83 (275)	11.61 (295)	12.80 (325)	14.76 (375)
K	13.39 (340)	14.96 (380)	18.31(465)	21.65 (550)	24.41 (620)	27.56 (700)	30.70 (780)	33.46 (850)	37.01 (940)	43.70 (1110)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 656 ft. (200m)

For center mount applications:
Chain length = $^{S}/_{2} + K_2$



R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
H_2	-	-	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
$D_{2\ +20}$	-	-	14.57 (370)	17.52 (445)	24.61 (625)	25.79 (655)	30.31 (770)	34.25 (870)	36.61 (930)	48.82 (1240)
K_2	-	-	24.25 (616)	30.87 (784)	39.68 (1008)	41.89 (1064)	50.71 (1288)	57.32 (1456)	61.73 (1568)	77.17 (1960)

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ Chapter 1

2828
2928
R7728

1.26"

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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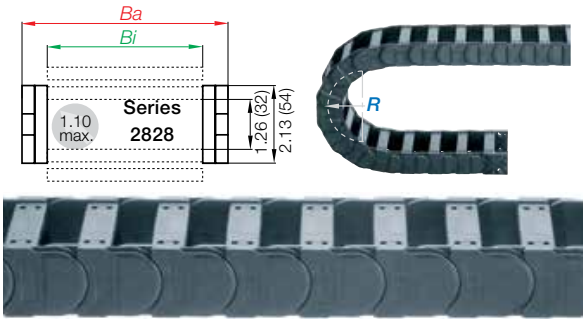
igus®

E-Chain System® E4/4
Series 2828/2928/R7728

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Series 2828 - E-Chain® with crossbars every link

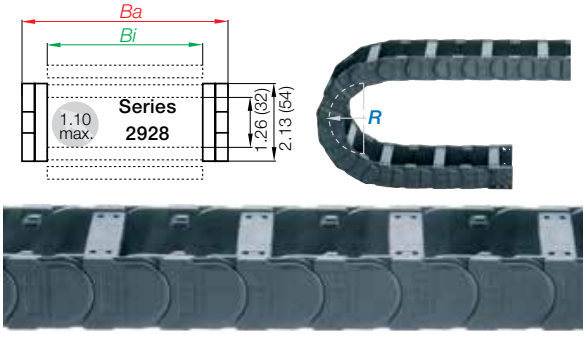


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

2828- 30- 300- 0
- Color - Black
- Bending radius
- Width
- Series

Series 2928 - E-Chain® with crossbars every other link

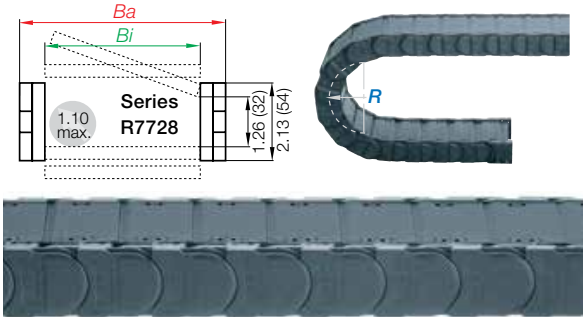


- Crossbars every other link Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

2928- 30- 300- 0
- Color - Black
- Bending radius
- Width
- Series

Series R7728 - fully enclosed E-Tube

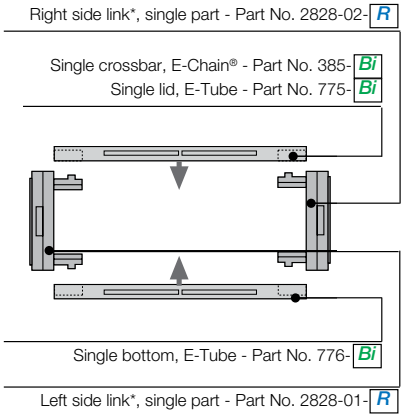


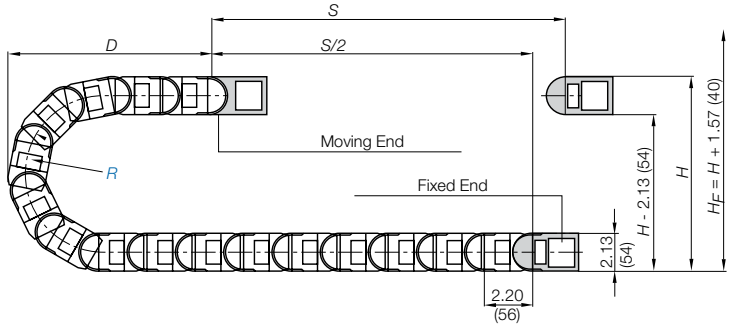
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely re-movable

Part Number Structure

7728- 30- 300- 0
- Color - Black
- Bending radius
- Width
- Series

E-Chain® as separate parts, links and side plates





*View from the fixed point of the E-Chain®/E-Tube

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E-Chain System® E4/4
Series 2828/2928/R7728

Supplement part number with required radius. Example: 2828-30-300-0
Pitch: 2.20 in. (56mm) per link links/ft(m) = 5.49 (18)

Part Number				Bi	Ba	Weight		
Crossbars Every Link	Crossbars Every Other	Tube Version		in. (mm)	in. (mm)	2828 lbs/ft (kg/m)	2928 lbs/ft (kg/m)	R7728 lbs/ft (kg/m)
2828-05-	2928-05	*7728-05-	-0	1.97 (50)	2.91 (74)	≈ 1.16 (1.73)	≈ 1.10 (1.64)	≈ 1.76 (2.63)
2828-06-	2928-06-		-0	2.68 (68)	3.62 (92)	≈ 1.20 (1.79)	≈ 1.12 (1.67)	–
2828-07-	2928-07	7728-07-	-0	2.95 (75)	3.90 (99)	≈ 1.24 (1.84)	≈ 1.14 (1.69)	≈ 1.84 (2.75)
2828-087-	2928-087-		-0	3.43 (87)	4.37 (111)	≈ 1.30 (1.93)	≈ 1.16 (1.73)	–
2828-10-	2928-10-	7728-10-	-0	3.94 (100)	4.88 (124)	≈ 1.36 (2.02)	≈ 1.20 (1.78)	≈ 1.90 (2.83)
2828-11-	2928-11-	7728-11-	-0	4.25 (108)	5.20 (132)	≈ 1.40 (2.08)	≈ 1.22 (1.81)	≈ 1.98 (2.94)
2828-112-	2928-112-		-0	4.41(112)	5.39 (137)	≈ 1.44 (2.15)	≈ 1.24 (1.84)	–
2828-12-	2928-12-	7728-12-	-0	4.92 (125)	5.87 (149)	≈ 1.48 (2.20)	≈ 1.26 (1.87)	≈ 2.04 (3.03)
2828-137-	2928-137-		-0	5.39 (137)	6.38 (162)	≈ 1.54 (2.29)	≈ 1.28 (1.91)	–
2828-15-	2928-15-	7728-15-	-0	5.91 (150)	6.85 (174)	≈ 1.60 (2.38)	≈ 1.32 (1.96)	≈ 2.14 (3.19)
2828-162-	2928-162-		-0	6.38 (162)	7.36 (187)	≈ 1.64 (2.44)	≈ 1.34 (1.99)	–
2828-17-	2928-17-	7728-17-	-0	6.61 (168)	7.56 (192)	≈ 1.69 (2.51)	≈ 1.36 (2.02)	≈ 2.28 (3.39)
2828-18-	2928-18-		-0	6.89 (175)	7.83 (199)	≈ 1.72 (2.56)	≈ 1.38 (2.05)	–
2828-187-	2928-187-		-0	7.36 (187)	8.35 (212)	≈ 1.78 (2.65)	≈ 1.40 (2.09)	–
2828-20-	2928-20-	7728-20-	-0	7.87 (200)	8.82 (224)	≈ 1.84 (2.74)	≈ 1.44 (2.14)	≈ 2.41 (3.59)
2828-212-	2928-212-		-0	8.35 (212)	9.33 (237)	≈ 1.93 (2.87)	≈ 1.48 (2.20)	–
2828-23-	2928-23-		-0	8.86 (225)	9.80 (249)	≈ 1.96 (2.92)	≈ 1.49 (2.22)	–
2828-237-	2928-237-		-0	9.33 (237)	10.31 (262)	≈ 2.05 (3.05)	≈ 1.54 (2.29)	–
2828-25-	2928-25-	7728-25-	-0	9.84 (250)	10.79 (274)	≈ 2.08 (3.10)	≈ 1.56 (2.32)	≈ 2.72 (4.04)
2828-262-	2928-262-		-0	10.31 (262)	11.26 (286)	≈ 2.14 (3.19)	≈ 1.59 (2.36)	–
2828-28	2928-28-		-0	10.83 (275)	11.77 (299)	≈ 2.20 (3.28)	≈ 1.62 (2.41)	–
2828-29-	2928-29-		-0	11.30 (287)	12.28 (312)	≈ 2.26 (3.37)	≈ 1.65 (2.45)	–
2828-30-	2928-30-	7728-30-	-0	11.81 (300)	12.76 (324)	≈ 2.33 (3.46)	≈ 1.68 (2.50)	≈ 2.98 (4.43)
2828-312-	2928-312-		-0	12.28 (312)	13.27 (337)	≈ 2.41 (3.59)	≈ 1.72 (2.56)	–
2828-325-	2928-325-		-0	12.79 (325)	13.74 (349)	≈ 2.47 (3.68)	≈ 1.75 (2.60)	–
2828-337-	2928-337-		-0	13.27 (337)	14.25 (362)	≈ 2.53 (3.77)	≈ 1.78 (2.65)	–
2828-350-	2928-350-		-0	13.78 (350)	14.72 (374)	≈ 2.59 (3.86)	≈ 1.81 (2.69)	–
2828-362-	2928-362-		-0	14.25 (362)	15.24 (387)	≈ 2.65 (3.95)	≈ 1.84 (2.74)	–
2828-375-	2928-375-		-0	14.76 (375)	15.71 (399)	≈ 2.72 (4.04)	≈ 1.88 (2.79)	–
2828-387-	2928-387-		-0	15.24 (387)	16.22 (412)	≈ 2.76 (4.11)	≈ 1.90 (2.82)	–
2828-400	2928-400-		-0	15.75 (400)	16.69 (424)	≈ 2.81 (4.18)	≈ 1.92 (2.86)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: 2828-30-300-0

	063**	075**	100**	125	150	175	200	220	250	300
R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
H* $^{-0}_{+20}$	7.09 (180)	8.07 (205)	10.04 (255)	12.01 (305)	13.98 (355)	15.94 (405)	17.91 (455)	19.49 (495)	21.85 (555)	25.79 (655)
D	5.12 (130)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)	10.83 (275)	11.61 (295)	12.80 (325)	14.76 (375)
K	13.39 (340)	14.96 (380)	18.31(465)	21.65 (550)	24.41 (620)	27.56 (700)	30.70 (780)	33.46 (850)	37.01 (940)	43.70 (1110)

** This radius is not available for the R7728 Series
*Removable lid only, no hinged option

0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.223. For large diameter hoses see page 6.223

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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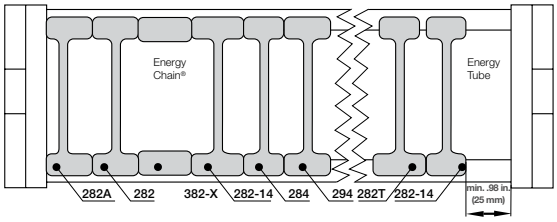
igus®

E-Chain System® E4/4
Series 2828/2928/R7728
Interior Separation

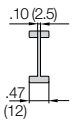
Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

NOTE: Observe a lateral spacing of at least .98 in. (25mm) for E-Tubes



STANDARD
Vertical separator 280

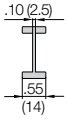


Separator (chain only)

Unassembled	**Part No. 280**
Assembled	**Part No. 281**

- **Standard separator 280 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

Vertical separator 280 -14



Separator (chain/tube)

Unassembled	**Part No. 280-14**
Assembled	**Part No. 281-14**

- **Vertical separator 280-14 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its broad base design when used with thick cables or hoses.

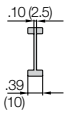
Vertical separator 283

Separator (chain only)

Unassembled	**Part No. 283**
Assembled	**Part No. 284**

- **Vertical separator 283 for E-Chains®**
  This separator features a narrow base for use in applications where a large number of small cables need to be individually separated.

Locking separator 293

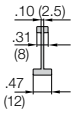


Locking Separator (chain only)

Unassembled	**Part No. 293**
Assembled	**Part No. 294**

- **Locking separator 293 for E-Chains®**
  This separator is used in applications with very high relative humidity It features increased retention force which is produced by asymmetrical retention “clamps” attached to the chain’s cross-bar. Please ensure that they are properly aligned.

Vertical separator 281T

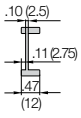


Vertical Separator (tubes only)

Unassembled	**Part No. 280T**
Assembled	**Part No. 281T**

- **Vertical separator 281T for E-Tubes**
  It clamps to the fixed radius and remains free along the other radius to facilitate lid removal.

Asymmetric separator 281A



Asymmetric separator (chain only)

Unassembled	**Part No. 280A**
Assembled	**Part No. 281A**

- **Asymmetrical separator 281A for E-Chains®**
  This separator features a (12mm) base. It can be used in combination with spacers of different widths and vertical separators in side mounted applications.

Spacers 381-XX

Spacer (chain only)

Unassembled	**Part No. 381-XX**
Assembled	**Part No. 382-XX**

XX = width of the spacer

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
381 -10	**382 -10**	.39”	(10)
381 -15	**382 -15**	.59”	(15)
381 -20	**382 -20**	79”	(20)

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08” (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16” (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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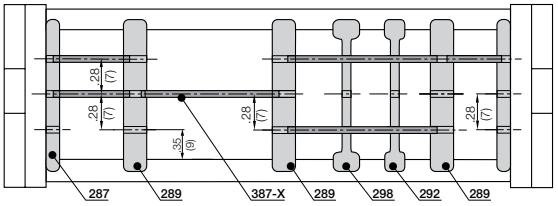
E-Chain System® E4/4
Series 2828/2928/R7728
Interior Separation

Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements. ➤ **Design, Chapter 1** for layout recommendations.



- **Side plates 286**
  This component is used to form the basic pattern of a shelf system.

Side Plate	
Unassembled	Part No. 286
Assembled	Part No. 287

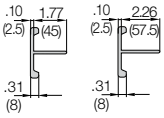
Side plate 286

- **Vertical separator 288**
  This component is used to form the basic pattern of a shelf system.

Vertical Separator	
Unassembled	Part No. 288
Assembled	Part No. 289

Vertical separator 288

- **Locking vertical separator 281-S**
  Vertical separator with injection molded shelf



Separators w/Integrated Shelf	
Unassembled	Part No. 281-S-45
Assembled	Part No. 282-S-45
Unassembled	Part No. 281-S-57
Assembled	Part No. 282-S-57

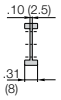
Separator with integrated shelf 281-S

- **Closed Slotted separators 291**
  These are used for complex subdivisions. However, they cannot be retrofitted into an existing interior separation system without removing the shelves first.

Slotted Separators (chain only)	
Unassembled	Part No. 291
Assembled	Part No. 292

Closed slotted separator 291

- **Open slotted separator 297**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into the middle slot only.

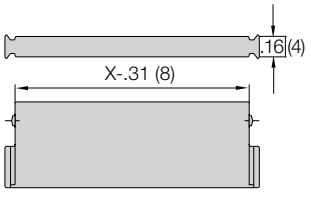


Slotted Separators, Open	
Unassembled	Part No. 297
Assembled	Part No. 298

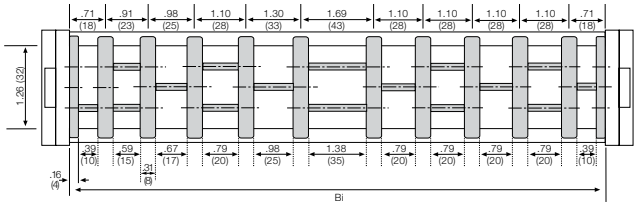
Open slotted separator 297

Width X		Usable Width		Part No.	Part No.
in.	(mm)	in.	(mm)	Unassembled	Assembled
.71	(18)	.39	(10)	386-18	387-18
.91	(23)	.59	(15)	386-23	387-23
.98	(25)	.67	(17)	386-25	387-25
1.10	(28)	.79	(20)	386-28	387-28
1.30	(33)	.98	(25)	386-33	387-33
1.69	(43)	1.38	(35)	386-43	387-43
1.97	(50)	1.65	(42)	386-50	387-50
2.13	(54)	1.81	(46)	386-54	387-54
2.44	(62)	2.13	(54)	386-62	387-62
2.95	(75)	2.64	(67)	386-75	387-75
3.43	(87)	3.12	(87)	386-87	387-87
3.94	(100)	3.62	(92)	386-100	387-100
4.25	(108)	3.94	(100)	386-108	387-108
4.92	(125)	4.61	(117)	386-125	387-125
5.91	(150)	5.59	(142)	386-150	387-150
6.89	(175)	6.57	(167)	386-175	387-175
7.87	(200)	7.56	(192)	386-200	387-200
8.19	(208)	7.87	(200)	386-208	387-208
8.86	(225)	8.54	(2.17)	386-225	387-225

Shelves 386-XX
These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 3 different heights in .28" (7mm) increments



The diagram below is for reference purposes only. Multiple configurations are possible. To create your E-Chain shelving cross section please see our online E-Chain configurator. Call 1-800-521-2747 for assistance and/or go to igus.com click on the ***Products*** drop down menu, choose ***E-Chain Cable Carriers*** and on the next drop down menu simply click on ***E-Chain Configurator***.



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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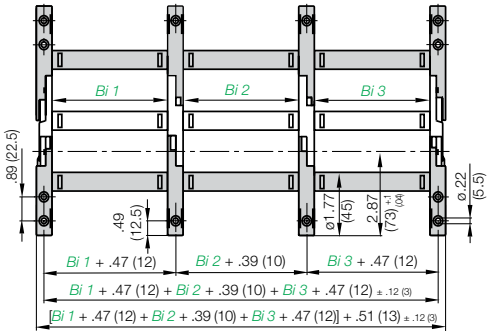
E-Chain System® E4/4
Series 2828/2928/R7728
Special Accessories

Part number example for E-Chain®
2828-10/20/10-[200]-0
2828-*Bi1*/*Bi2*/*Bi3*-[R]-0

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

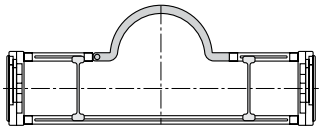
- For applications in which particularly high fill weights necessitate extremely wide E-Chains® (up to 118" (3000 mm)
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



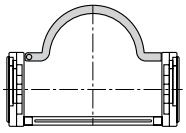
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

- Intended for cables and hoses with a maximum outer diameter of 4.13 in. (105 mm).
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



Round extender crossbar combined with standard snap-open crossbars.

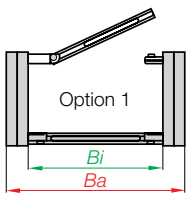


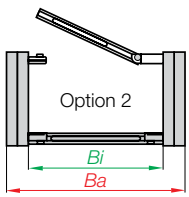
Attached directly to the side link.

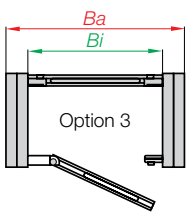
Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
385-15-RHD115	By request	Round	No	Yes
385-18-RD115	By request	Round	Yes	No

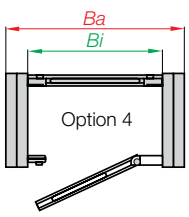
Hinged crossbars

- Typically, E-Chain® crossbars are completely removable. In cases where it is preferable that the opening crossbars remain on the E-Chain®, a hinged design has been developed.
- Please consult igus® for design assistance









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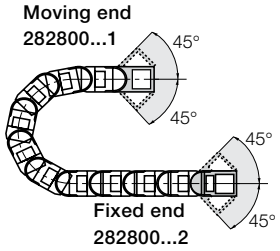
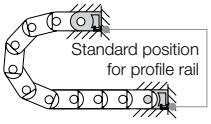
E-Chain System® E4/4
Series 2828/2928/R7728
Mounting Brackets - KMA

Standard

Option 1: pivoting

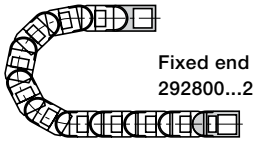
- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

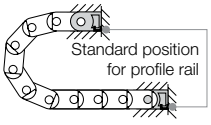




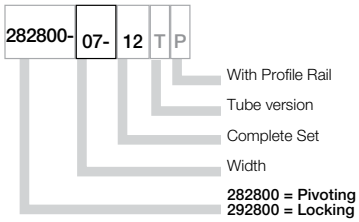
Option 2: locking

- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations



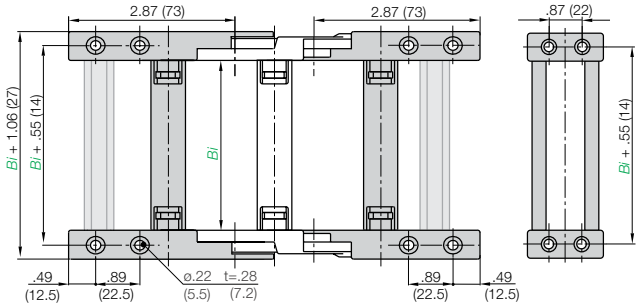


Part Number Structure



Full set, for both ends:
282800- 07- 12 Full set, **each part with pin/bore**

Single-part order:
282800- 07- 1 Mounting bracket **with bore**
282800- 07- 2 Mounting bracket **with pin**



Part number examples are shown for pivoting brackets. For locking brackets change part number to 292800

Part No. Full Set (pivoting)
Series 2828 or 2928:
282800-Width-12

Part No. Full Set (pivoting)
with profile rail
Series 2828 or 2928
282800-Width-12P

Part No. Full Set (pivoting)
Tube Series R7728
282800-Width-12T

Part No. Full Set (pivoting)
with Profile Rail
Tube Series R7728
282800-Width-12TP

Width	Part No. Full Set Pivoting	Part No. Full Set Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-05*	282800	292800	-05-12	T	P	1.97 (50)
-06	282800	292800	-06-12		P	2.68 (68)
-07	282800	292800	-07-12	T	P	2.95 (75)
-087	282800	292800	-087-12		P	3.43 (87)
-10	282800	292800	-10-12	T	P	3.94 (100)
-11	282800	292800	-11-12	T	P	4.25 (108)
-112	282800	292800	-112-12		P	4.41 (112)
-12	282800	292800	-12-12	T	P	4.92 (125)
-137	282800	292800	-137-12		P	5.39 (137)
-15	282800	292800	-15-12	T	P	5.91 (150)
-162	282800	292800	-162-12		P	6.38 (162)
-17	282800	292800	-17-12	T	P	6.61 (168)
-18	282800	292800	-18-12		P	6.89 (175)
-187	282800	292800	-187-12		P	7.36 (187)
-20	282800	292800	-20-12	T	P	7.87 (200)
-212	282800	292800	-212-12		P	8.35 (212)

Width	Part No. Full Set Pivoting	Part No. Full Set Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-23	282800	292800	-23-12		P	8.86 (225)
-237	282800	292800	-237-12		P	9.33 (237)
-25	282800	292800	-25-12	T	P	9.84 (250)
-262	282800	292800	-262-12		P	10.31 (262)
-28	282800	292800	-28-12		P	10.83 (275)
-29	282800	292800	-29-12		P	11.30 (287)
-30	282800	292800	-30-12	T	P	11.81 (300)
-312	282800	292800	-312-12		P	12.28 (312)
-325	282800	292800	-325-12		P	12.79 (325)
-337	282800	292800	-337-12		P	13.27 (337)
-350	282800	292800	-350-12		P	13.78 (350)
-362	282800	292800	-362-12		P	14.25 (362)
-375	282800	292800	-375-12		P	14.76 (375)
-387	282800	292800	-387-12		P	15.24 (387)
-400	282800	292800	-400-12		P	15.75 (400)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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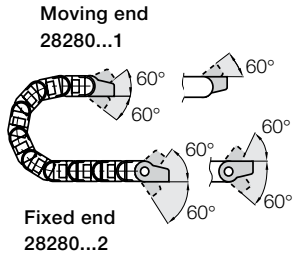
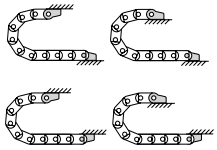
igus®

E-Chain System® E4/4
Series 2828/2928/R7728
Mounting Brackets - Steel

Option 1: pivoting

- For pivoting connections
- One part (two-piece) for all chain widths
- Electrically conductive



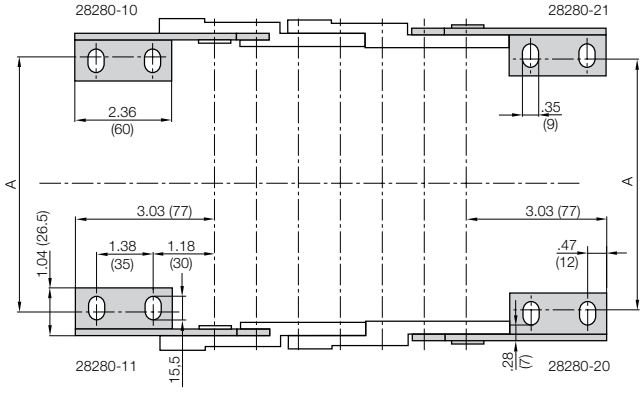


Possible installation configurations -

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 2828, 2928 or R7728:
28280-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right with bore
Series 2828, 2928 or R7728:
28280-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right with pin
Series 2828, 2928 or R7728:
28280-2



Width of Chain *Bi*	Mounting Brackets Part Number	Full Set	Moving End Only	Fixed End Only	Mounting Dimension A in. (mm)	Width of Chain *Bi*	Mounting Brackets Part Number	Full Set	Moving End Only	Fixed End Only	Mounting Dimension A in. (mm)
1.97 (50)	28280	-12	-1	-2	1.18 (30)	8.86 (225)	28280	-12	-1	-2	8.07 (205)
2.68 (68)	28280	-12	-1	-2	1.77 (45)	9.33 (237)	28280	-12	-1	-2	8.54 (217)
2.95 (75)	28280	-12	-1	-2	2.16 (55)	9.84 (250)	28280	-12	-1	-2	9.05 (230)
3.43 (87)	28280	-12	-1	-2	3.15 (80)	10.31 (262)	28280	-12	-1	-2	9.53 (242)
3.94 (100)	28280	-12	-1	-2	3.15 (80)	10.83 (275)	28280	-12	-1	-2	10.04 (255)
4.25 (108)	28280	-12	-1	-2	3.62 (92)	11.30 (287)	28280	-12	-1	-2	10.51 (267)
4.41 (112)	28280	-12	-1	-2	3.15 (80)	11.81 (300)	28280	-12	-1	-2	11.02 (280)
4.92 (125)	28280	-12	-1	-2	4.13 (105)	12.28 (312)	28280	-12	-1	-2	11.49 (292)
5.39 (137)	28280	-12	-1	-2	4.61 (117)	12.79 (325)	28280	-12	-1	-2	12.00 (305)
5.91 (150)	28280	-12	-1	-2	5.12 (130)	13.27 (337)	28280	-12	-1	-2	12.48 (317)
6.38 (162)	28280	-12	-1	-2	5.59 (142)	13.78 (350)	28280	-12	-1	-2	12.99 (330)
6.61 (168)	28280	-12	-1	-2	6.10 (155)	14.25 (362)	28280	-12	-1	-2	13.46 (342)
6.89 (175)	28280	-12	-1	-2	6.57 (167)	14.76 (375)	28280	-12	-1	-2	13.97 (355)
7.36 (187)	28280	-12	-1	-2	6.57 (167)	15.24 (387)	28280	-12	-1	-2	14.45 (367)
7.87 (200)	28280	-12	-1	-2	7.09 (180)	15.75 (400)	28280	-12	-1	-2	14.96 (380)
8.35 (212)	28280	-12	-1	-2	7.56 (192)						

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Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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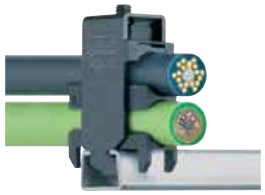
E-Chain System® E4/4
Series 2828/2928/R7728
Strain Relief

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1M	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1M	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1M	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1M	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1M	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1M	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1M	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1M	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1M	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1M	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1M	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

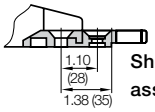
Chainfix Clip

Modular snap-on strain relief device

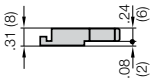
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(04-08)	CFC-08-M	CFC-08-C
.31-.47	(08-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

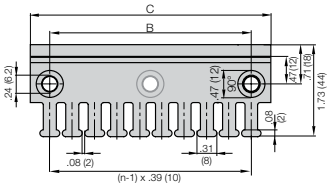


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10

Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3850-ZS	5	1.89	(48)

For more information please refer to strain relief section of Chapter 10

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E4/4
Series 2828/2928/R7728
Guide Troughs

Telephone 1-800-521-2747
Fax 1-401-438-7270

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part Number 98-30
- 1/2 travel length of glide bars
  Part number 92-01
- Installation sets as end connectors
  Part Number 93-50-XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

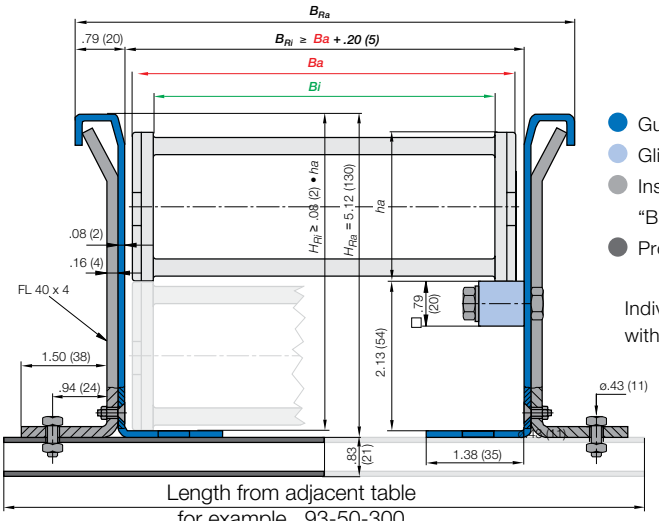
Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 98-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 92-01
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
93-50-XXX
Example: 93-50-400 for 15.75 (400 mm) long profile rail.

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

Installation sets as section connectors

Width of Crossbar
280-**05**-200-0

	B_{Ri}	Installation Part No.
-05	3.11 (79)	**93-50-200**
-06	3.82 (97)	**93-50-225**
-07	4.09 (104)	**93-50-225**
-087	4.57 (116)	**93-50-225**
-10	5.08 (129)	**93-50-250**
-11	5.39 (137)	**93-50-250**
-112	5.59 (142)	**93-50-250**
-12	6.06 (154)	**93-50-275**
-137	6.57 (167)	**93-50-275**
-15	7.05 (179)	**93-50-300**
-162	7.56 (192)	**93-50-300**
-17	7.76 (197)	**93-50-325**
-18	8.03 (204)	**93-50-325**
-187	8.54 (217)	**93-50-325**
-20	9.02 (229)	**93-50-350**
-212	9.53 (242)	**93-50-350**
-23	10.00 (254)	**93-50-375**
-237	10.51 (267)	**93-50-375**
-25	10.98 (279)	**93-50-400**
-262	11.50 (292)	**93-50-400**
-28	11.97 (304)	**93-50-425**
-29	12.48 (317)	**93-50-425**
-30	12.95 (329)	**93-50-450**
-312	13.46 (342)	**93-50-450**
-325	13.94 (354)	**93-50-475**
-337	14.45 (367)	**93-50-475**
-350	14.92 (379)	**93-50-500**
-362	15.43 (392)	**93-50-500**
-375	15.91 (404)	**93-50-525**
-387	16.42 (417)	**93-50-525**
-400	16.89 (429)	**93-50-550**



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

Standard length profile rail

For further technical information on guide troughs
➤ Chapter 9

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E-Chain System® E4/4
Series 2828/2928/R7728
Application Examples

High unsupported lengths and perfect suitability for circular movements (RBR-versions) are some features for the E4/4-System

Roll instead of gliding: Rol E-Chain®

Special solution for long travels. 75% less drive power (gliding application) with igus® Rol E-Chain®.
Series 2828R - Order example 2828R-30-220-0
Further information: Call igus at 800-521-2747

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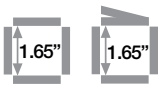
3838
3938
R7838

igus®

E-Chain System® E4/4
Series 3838/3938/R7838

For new applications use Series E4-42



Price Index

Series 3838

Series 3938

Series R7838

Special Features / Options

Side-mounted - unsupported

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 328 ft (100 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 8.20 ft (2.5 m)
Rotary requires further calculation

Usage Guidelines

- If subject to high torsional or shearing forces
- For side mounted applications involving long unsupported lengths
- For long-term operation in very moist environments

- If a quieter version is required
  ➤ **Series 380/390/R780**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Crossbars on E-Chains® are removable along both radii
3. Hinged snap-open removable lids along outer radius of E-Tube
4. Lateral glide surfaces for side-mounted operation
5. High side-mount stability due to undercut
6. Locking or pivoting mounting brackets available
7. Closed and open styles can be combined
8. High torsional rigidity
9. Lids and crossbars are removable along both radii
10. Wide, rounded plastic crossbars - cable friendly
11. E-Chain® also available with reverse bending radii

RoI E-Chain® Series 3838R/7838R available upon request

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

13.12 ft (4 m) **3838-30-300-0**	**E-Chain®**
With 2 separators **381** assembled every 2nd link	**Interior Separation**
1 Set **383800-30-12P**	**Mounting Bracket**

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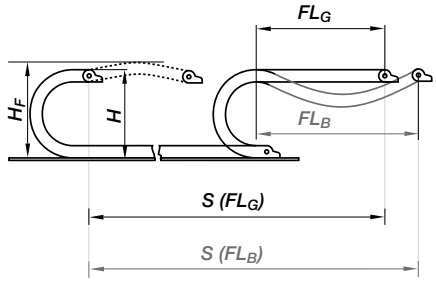
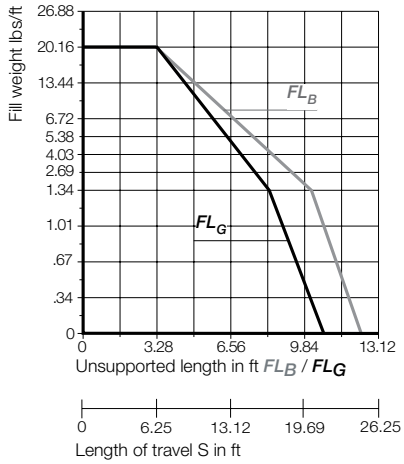
E-Chain System® E4/4
Series 3838/3938/R7838
Installation Dimensions

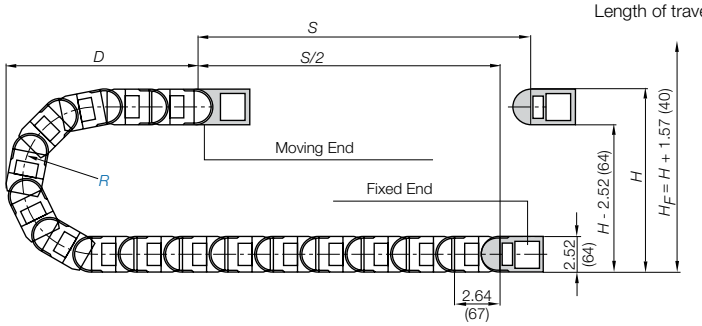
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.64" (67 mm)
Links per ft (m): = 4.57 (15)
For center mount applications:
Chain length = $S/2 + K$

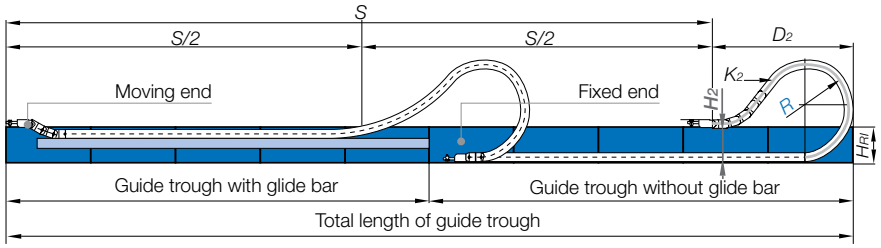
The required clearance height: H_F **= H + 1.57 in. (40 mm)** (with 1.34 lbs/ft (2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.95 (075)	3.94 (100)	4.53 (115)	4.92 (125)	5.91 (150)	6.69 (170)	7.87 (200)	8.46 (215)	9.84 (250)	11.81 (300)	13.78 (350)
H $^{-0}_{+20}$	8.46 (215)	10.43 (265)	11.61 (295)	12.40 (315)	14.37 (365)	15.94 (405)	18.31 (465)	19.49 (495)	22.24 (565)	26.18 (665)	30.12 (765)
D	6.85 (174)	7.83 (199)	8.43 (214)	8.82 (224)	9.80 (249)	10.59 (269)	11.77 (299)	12.36 (314)	13.74 (349)	15.71 (399)	17.68 (449)
K	14.57 (370)	17.72 (450)	19.69 (500)	20.87 (530)	24.02 (610)	26.38 (670)	30.12 (765)	31.89 (810)	36.22 (920)	42.52 (1080)	48.62 (1235)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 919 ft. (280 m)

For center mount applications:
Chain length: = $S/2 + K_2$



R	2.95 (075)	3.94 (100)	4.53 (115)	4.92 (125)	5.91 (150)	6.69 (170)	7.87 (200)	8.46 (215)	9.84 (250)	11.81 (300)	13.78 (350)
H_2	-	-	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)
D_2 $^{}_{+25}$	-	-	17.12 (435)	18.70 (475)	22.44 (570)	27.17 (690)	30.71 (780)	34.06 (865)	39.76 (1010)	45.28 (1150)	59.06 (1500)
K_2	-	-	29.02 (737)	31.65 (804)	39.57 (1005)	44.84 (1139)	52.76 (1340)	55.39 (1407)	65.94 (1675)	76.50 (1943)	94.96 (2412)

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

- S = Length of travel
- R = Bending radius
- H = Nominal clearance height
- D = Overlength E-Chain® radius in final position
- K = π • R + *safety buffer*
- H_F = Required clearance height
- H_{RI} = Trough inner height
- H_2 = *Mounting height
- D_2 = Overlength - long travels, gliding
- K_2 = *Further add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ **Chapter 1**

3838
3938
R7838

1.65"

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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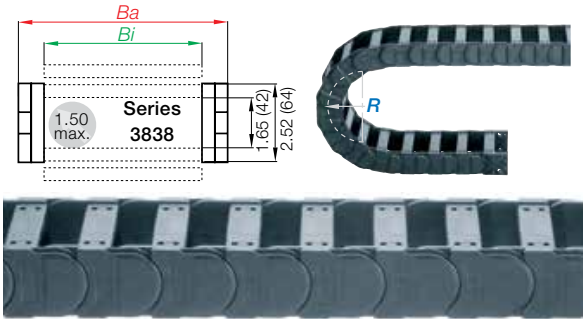
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Series 3838 - E-Chain® with crossbars every link

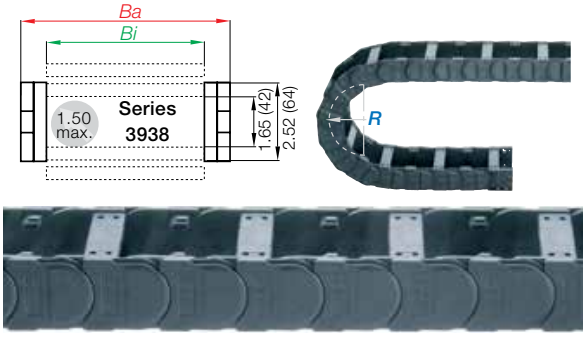


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

3838- 400- 300- 0
- Color - Black
- Bending radius
- Width
- Series

Series 3938 - E-Chain® with crossbars every other link

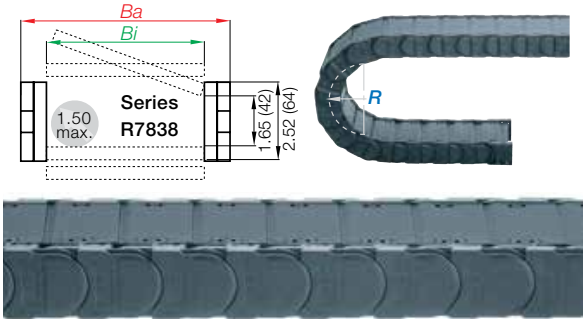


- Crossbars every other link Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

3938- 400- 300- 0
- Color - Black
- Bending radius
- Width
- Series

Series R7838 - fully enclosed E-Tube

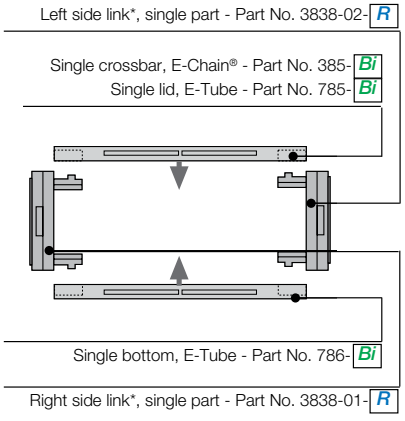


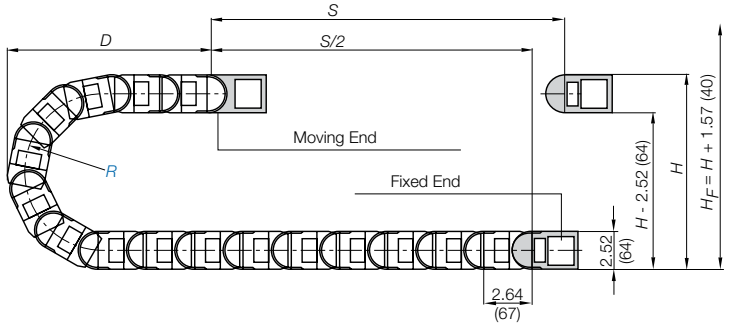
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

Part Number Structure

7838- 25- 300- 0
- Color - Black
- Bending radius
- Width
- Series

E-Chain® as separate parts, links and side plates





*View from the moving point of the E-Chain®/E-Tube

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E-Chain System® E4/4
Series 3838/3938/R7838

Supplement part number with required radius. Example: 3838-30-[300]-0
Pitch: 2.64 in. (67mm) per link, links/ft(m) = 4.57 (15)

Part Number				Bi	Ba	Weight		
Crossbars Every Link	Crossbars Every Other	Tube Version		in. (mm)	in. (mm)	3838 lbs/ft (kg/m)	3938 lbs/ft (kg/m)	R7838 lbs/ft (kg/m)
3838-05-	3938-05	*7838-05-	[ ]-0	1.97 (50)	3.03 (77)	≈ 1.38 (2.06)	≈ 1.33 (1.98)	≈ 1.51 (2.25)
3838-06-	3938-06-		[ ]-0	2.68 (68)	3.74 (95)	≈ 1.40 (2.09)	≈ 1.34 (1.99)	–
3838-07-	3938-07	7838-07-	[ ]-0	2.95 (75)	4.02 (102)	≈ 1.42 (2.12)	≈ 1.35 (2.01)	≈ 1.60 (2.38)
3838-087-	3938-087-		[ ]-0	3.43 (87)	4.53 (115)	≈ 1.47 (2.18)	≈ 1.37 (2.04)	–
3838-10-	3938-10-	7838-10-	[ ]-0	3.94 (100)	5.00 (127)	≈ 1.51 (2.25)	≈ 1.40 (2.08)	≈ 1.75 (2.60)
3838-11-	3938-11-	7838-11-	[ ]-0	4.25 (108)	5.31 (135)	≈ 1.55 (2.30)	≈ 1.41 (2.10)	≈ 1.78 (2.65)
3838-112-	3938-112-		[ ]-0	4.41(112)	5.51 (140)	≈ 1.55 (2.30)	≈ 1.41 (2.10)	–
3838-12-	3938-12-	7838-12-	[ ]-0	4.92 (125)	5.98 (152)	≈ 1.61 (2.40)	≈ 1.44 (2.15)	≈ 1.89 (2.81)
3838-137-	3938-137-		[ ]-0	5.39 (137)	6.50 (165)	≈ 1.64 (2.44)	≈ 1.46 (2.17)	–
3838-15-	3938-15-	7838-15-	[ ]-0	5.91 (150)	6.97 (177)	≈ 1.70 (2.53)	≈ 1.49 (2.21)	≈ 2.06 (3.07)
3838-162-	3938-162-		[ ]-0	6.38 (162)	7.48 (190)	≈ 1.71 (2.55)	≈ 1.49 (2.22)	–
3838-17-	3938-17-	7838-17-	[ ]-0	6.61 (168)	7.68 (195)	≈ 1.76 (2.62)	≈ 1.52 (2.26)	≈ 2.18 (3.24)
3838-18-	3938-18-		[ ]-0	6.89 (175)	7.95 (202)	≈ 1.76 (2.62)	≈ 1.52 (2.26)	–
3838-187-	3938-187-		[ ]-0	7.36 (187)	8.46 (215)	≈ 1.81 (2.69)	≈ 1.55 (2.30)	–
3838-20-	3938-20-	7838-20-	[ ]-0	7.87 (200)	8.94 (227)	≈ 1.86 (2.77)	≈ 1.57 (2.33)	≈ 2.37 (3.53)
3838-212-	3938-212-		[ ]-0	8.35 (212)	9.45 (240)	≈ 1.91 (2.84)	≈ 1.59 (2.37)	–
3838-23-	3938-23-		[ ]-0	8.86 (225)	9.92 (252)	≈ 1.96 (2.92)	≈ 1.62 (2.41)	–
3838-237-	3938-237-		[ ]-0	9.33 (237)	10.43 (265)	≈ 1.99 (2.96)	≈ 1.63 (2.43)	–
3838-25-	3938-25-	7838-25-	[ ]-0	9.84 (250)	10.91 (277)	≈ 2.05 (3.05)	≈ 1.66 (2.47)	≈ 2.91 (4.33)
3838-262-	3938-262-		[ ]-0	10.31 (262)	11.42 (290)	≈ 2.06 (3.06)	≈ 1.67 (2.48)	–
3838-28	3938-28-		[ ]-0	10.83 (275)	11.89 (302)	≈ 2.13 (3.17)	≈ 1.70 (2.53)	–
3838-29-	3938-29-		[ ]-0	11.30 (287)	12.40 (315)	≈ 2.14 (3.19)	≈ 1.71 (2.54)	–
3838-30-	3938-30-	7838-30-	[ ]-0	11.81 (300)	12.87 (327)	≈ 2.23 (3.32)	≈ 1.75 (2.61)	≈ 3.29 (4.89)
3838-312-	3938-312-		[ ]-0	12.28 (312)	13.39 (340)	≈ 2.24 (3.34)	≈ 1.76 (2.62)	–
3838-325-	3938-325-		[ ]-0	12.79 (325)	13.86 (352)	≈ 2.29 (3.41)	≈ 1.79 (2.66)	–
3838-337-	3938-337-		[ ]-0	13.27 (337)	14.37 (365)	≈ 2.33 (3.46)	≈ 1.80 (2.68)	–
3838-350-	3938-350-		[ ]-0	13.78 (350)	15.41 (377)	≈ 2.47 (3.68)	≈ 1.88 (2.79)	–
3838-362-	3938-362-		[ ]-0	14.25 (362)	15.36 (390)	≈ 2.51 (3.74)	≈ 1.90 (2.82)	–
3838-375-	3938-375-		[ ]-0	14.76 (375)	15.83 (402)	≈ 2.55 (3.79)	≈ 1.91 (2.84)	–
3838-387-	3938-387-		[ ]-0	15.24 (387)	16.34 (415)	≈ 2.59 (3.85)	≈ 1.93 (2.87)	–
3838-400	3938-400-		[ ]-0	15.75 (400)	16.81 (427)	≈ 2.62 (3.90)	≈ 1.95 (2.90)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: 3838-07-[150]-0

	[075**]	[100**]	[115**]	[125**]	[150]	[170]	[200]	[215]	[250]	[300]	[350]
R	2.95 (075)	3.94 (100)	4.53 (115)	4.92 (125)	5.91 (150)	6.69 (170)	7.87 (200)	8.46 (215)	9.84 (250)	11.81 (300)	13.78 (350)
H $^{-0}_{+20}$	8.46 (215)	10.43 (265)	11.61 (295)	12.40 (315)	14.37 (365)	15.94 (405)	18.31 (465)	19.49 (495)	22.24 (565)	26.18 (665)	30.12 (765)
D	6.85 (174)	7.83 (199)	8.43 (214)	8.82 (224)	9.80 (249)	10.59 (269)	11.77 (299)	12.36 (314)	13.74 (349)	15.71 (399)	17.68 (449)
K	14.57 (370)	17.72 (450)	19.69 (500)	20.87 (530)	24.02 (610)	26.38 (670)	30.12 (765)	31.89 (810)	36.22 (920)	42.52 (1080)	48.62 (1235)

** This radius is not available for the R7838 Series
*Removable lid only, no hinged option

0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.235. For large diameter hoses see page 6.235

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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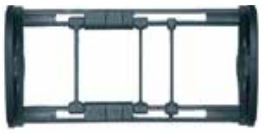
3838
3938
R7838

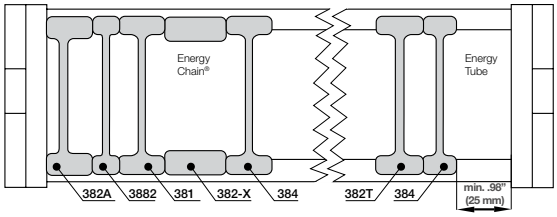
igus®

E-Chain System® E4/4
Series 3838/3938/R7838
Interior Separation

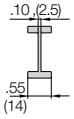


Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.
NOTE: Observe a lateral spacing of at least .98 in. (25mm) for E-Tubes



STANDARD
Vertical separator
380

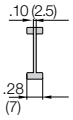


Separator (chain/tube)

Unassembled	**Part No. 380**
Assembled	**Part No. 381**

- **Standard separator 380 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

Vertical separator
3881

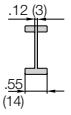


Separator (chain only)

Unassembled	**Part No. 3881**
Assembled	**Part No. 3882**

- **Vertical separator 3881 for E-Chains®**
  This separator features a narrow 7mm base for applications where a large number of small cables need to be individually separated.

Vertical separator
380T

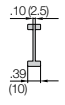


Vertical Separator (tubes only)

Unassembled	**Part No. 380T**
Assembled	**Part No. 381T**

- **Locking separator 380T for E-Tubes**
  It clamps to the fixed radius and remains free along the other radius to facilitate lid removal. When installing please ensure they are identically aligned.

Vertical separator
383

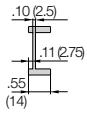


Locking Separator (chain only)

Unassembled	**Part No. 383**
Assembled	**Part No. 384**

- **Vertical separator 383 for E-Chains®**
  This separator features an increased retention force for applications exposed to very high humidity or extreme loads. It features asymmetric claws for the crossbar which results in the increased retention force. Ensures proper alignment.

Asymmetric separator
381A



Asymmetric separator (chain only)

Unassembled	**Part No. 381A**
Assembled	**Part No. 382A**

- **Asymmetrical separator 381A for E-Chains®**
  This separator features an (14mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

Spacers
381-XX

Spacer (chain only)

Unassembled	**Part No. 381-XX**
Assembled	**Part No. 382-XX**

XX = width of the spacer

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
381 -10	**382 -10**	.39"	(10)
381 -15	**382 -15**	.59"	(15)
381 -20	**382 -20**	79"	(20)

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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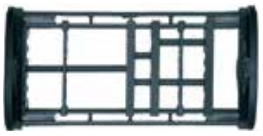
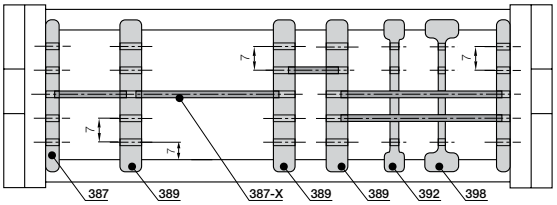
E-Chain System® E4/4
Series 3838/3938/R7838
Interior Separation



Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements. ➤ **Design, Chapter 1** for layout recommendations.



- **Side plates 386**
  This component is used to form the basic pattern of a shelf system.

Side Plate	
Unassembled	**Part No. 386**
Assembled	**Part No. 387**

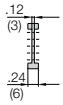
Side plate 386

- **Vertical separator 388**
  This component is used to form the basic pattern of a shelf system.

Vertical Separator	
Unassembled	**Part No. 388**
Assembled	**Part No. 389**

Vertical separator 388

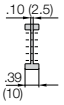
- **Closed slotted separators 391**
  These are used for complex subdivisions. However, they cannot be retrofitted into an existing interior separation system without removing the shelves first.



Slotted Separators	
Unassembled	**Part No. 391**
Assembled	**Part No. 392**

Closed slotted separator 391

- **Open slotted separator 397**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into the 3 middle slots only.

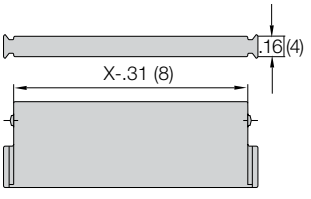


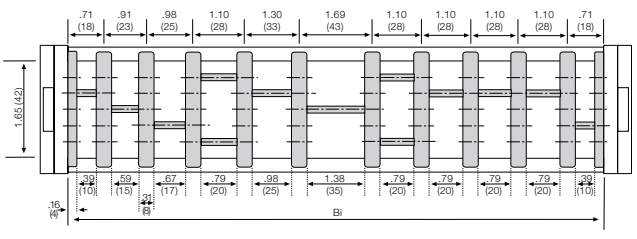
Slotted Separators, Open	
Unassembled	**Part No. 397**
Assembled	**Part No. 398**

Open slotted separator 397

Width X in.	Width X (mm)	Usable Width in.	Usable Width (mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	.39	(10)	**386-18**	**387-18**
.91	(23)	.59	(15)	**386-23**	**387-23**
.98	(25)	.67	(17)	**386-25**	**387-25**
1.10	(28)	.79	(20)	**386-28**	**387-28**
1.30	(33)	.98	(25)	**386-33**	**387-33**
1.69	(43)	1.38	(35)	**386-43**	**387-43**
1.97	(50)	1.65	(42)	**386-50**	**387-50**
2.13	(54)	1.81	(46)	**386-54**	**387-54**
2.44	(62)	2.13	(54)	**386-62**	**387-62**
2.95	(75)	2.64	(67)	**386-75**	**387-75**
3.43	(87)	3.12	(87)	**386-87**	**387-87**
3.94	(100)	3.62	(92)	**386-100**	**387-100**
4.25	(108)	3.94	(100)	**386-108**	**387-108**
4.92	(125)	4.61	(117)	**386-125**	**387-125**
5.91	(150)	5.59	(142)	**386-150**	**387-150**
6.89	(175)	6.57	(167)	**386-175**	**387-175**
7.87	(200)	7.56	(192)	**386-200**	**387-200**
8.19	(208)	7.87	(200)	**386-208**	**387-208**

Shelves 386-XX
These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 5 different heights in .28" (7mm) increments





PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E4/4
Series 3838/3938/R7838
Special Accessories

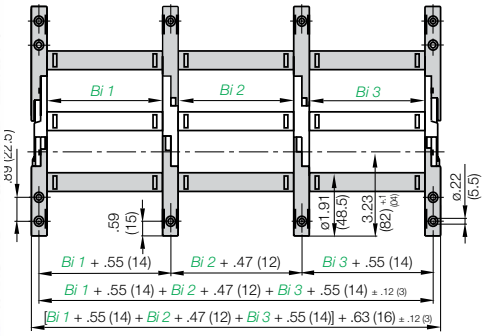
Telephone 1-800-521-2747
Fax 1-401-438-7270

Part number example for E-Chain®
3838-10/20/10-[200]-0
3838-*Bi1*/*Bi2*/*Bi3*-[R]-0

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

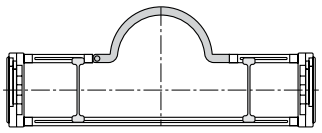
- For applications in which particularly high fill weights necessitate extremely wide E-Chains® (up to 118" (3000 mm)
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



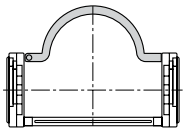
Extender crossbars - For careful guiding of large diameter cables and hoses

- Intended for cables and hoses with a maximum outer diameter of 4.53 in. (115 mm).
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.

Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.



Round extender crossbar combined with standard snap-open crossbars.

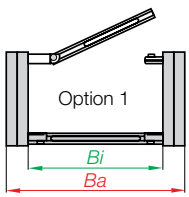


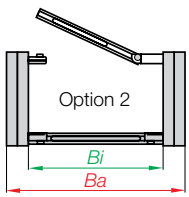
Attached directly to the side link.

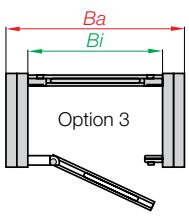
Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
385-15-RHD115	By request	Round	No	Yes
385-18-RD115	By request	Round	Yes	No

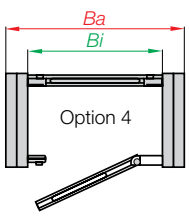
Hinged crossbars

- Typically, E-Chain® crossbars are completely removable. In cases where it is preferable that the opening crossbars remain on the E-Chain®, a hinged design has been developed.
- Please consult igus® for design assistance









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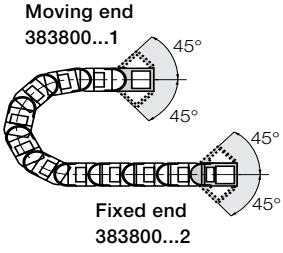
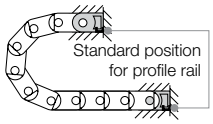
E-Chain System® E4/4
Series 3838/3938/R7838
Mounting Brackets - KMA

Standard

Option 1: KMA pivoting

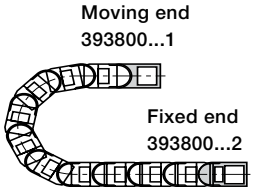
- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

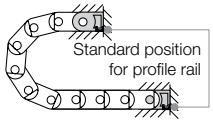




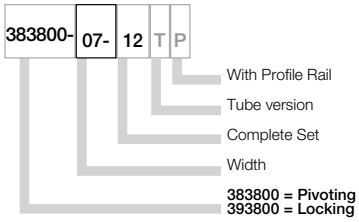
Option 2: KMA locking

- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations

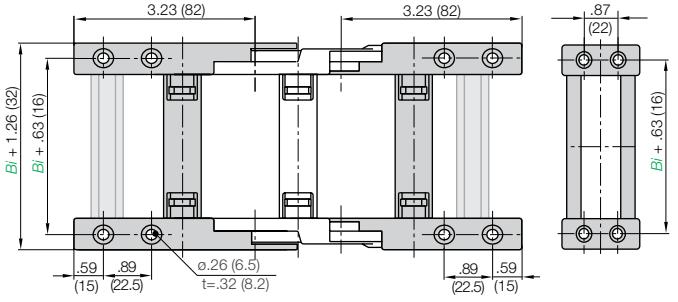




Part Number Structure



Full set, for both ends:
383800- 05- 12 Full set, **each part with pin/bore**
Single-part order:
383800- 05- 1 Mounting bracket **with bore**
383800- 05- 2 Mounting bracket **with pin**



Part number examples are shown for pivoting brackets. For locking brackets change part number to 393800

Part No. Full Set (pivoting)
Series 3838 or 3938:
383800-Width-12

Part No. Full Set (pivoting)
with profile rail
Series 3838 or 3938
383800-Width-12P

Part No. Full Set (pivoting)
Tube Series R7838
383800-Width-12T

Part No. Full Set (pivoting)
with Profile Rail
Tube Series R7838
383800-Width-12TP

Width	Part No. Full Set Pivoting	Part No. Full Set Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-05*	383800	393800	-05-12	T	P	1.97 (50)
-06	383800	393800	-06-12		P	2.68 (68)
-07	383800	393800	-07-12	T	P	2.95 (75)
-087	383800	393800	-087-12		P	3.43 (87)
-10	383800	393800	-10-12	T	P	3.94 (100)
-11	383800	393800	-11-12	T	P	4.25 (108)
-112	383800	393800	-112-12		P	4.41 (112)
-12	383800	393800	-12-12	T	P	4.92 (125)
-137	383800	393800	-137-12		P	5.39 (137)
-15	383800	393800	-15-12	T	P	5.91 (150)
-162	383800	393800	-162-12		P	6.38 (162)
-17	383800	393800	-17-12	T	P	6.61 (168)
-18	383800	393800	-18-12		P	6.89 (175)
-187	383800	393800	-187-12		P	7.36 (187)
-20	383800	393800	-20-12	T	P	7.87 (200)
-212	383800	393800	-212-12		P	8.35 (212)

Width	Part No. Full Set Pivoting	Part No. Full Set Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-23	383800	393800	-23-12		P	8.86 (225)
-237	383800	393800	-237-12		P	9.33 (237)
-25	383800	393800	-25-12	T	P	9.84 (250)
-262	383800	393800	-262-12		P	10.31 (262)
-28	383800	393800	-28-12		P	10.83 (275)
-29	383800	393800	-29-12		P	11.30 (287)
-30	383800	393800	-30-12	T	P	11.81 (300)
-312	383800	393800	-312-12		P	12.28 (312)
-325	383800	393800	-325-12		P	12.79 (325)
-337	383800	393800	-337-12		P	13.27 (337)
-350	383800	393800	-350-12		P	13.78 (350)
-362	383800	393800	-362-12		P	14.25 (362)
-375	383800	393800	-375-12		P	14.76 (375)
-387	383800	393800	-387-12		P	15.24 (387)
-400	383800	393800	-400-12		P	15.75 (400)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E4/4
Series 3838/3938/R7838
Mounting Brackets - Steel

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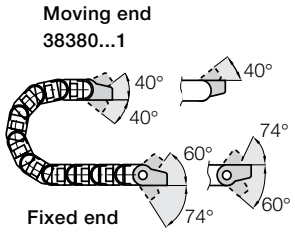
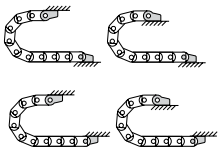
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Option 1: pivoting

- For pivoting connections
- One part (two-piece) for all chain widths
- Electrically conductive



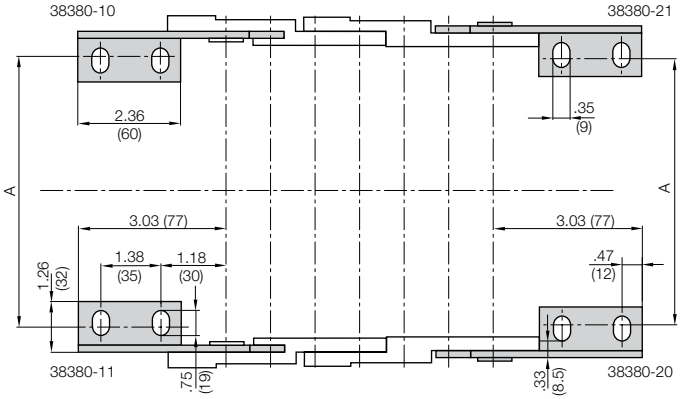


Possible installation configurations -

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 3838, 3938 or R7838:
38380-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right
Series 3838, 3938 or R7838:
38380-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right
Series 3838, 3938 or R7838:
38380-2



Width of Chain *Bi*	Mounting Brackets Part Number	Full Set	Moving End Only	Fixed End Only	Mounting Dimension A in. (mm)	Width of Chain *Bi*	Mounting Brackets Part Number	Full Set	Moving End Only	Fixed End Only	Mounting Dimension A in. (mm)
1.97 (50)*	38380	-12	-1	-2	3.54 (90)	8.86 (225)	38380	-12	-1	-2	7.75 (197)
2.68 (68)	38380	-12	-1	-2	1.57 (40)	9.33 (237)	38380	-12	-1	-2	8.22 (209)
2.95 (75)	38380	-12	-1	-2	18.5 (47)	9.84 (250)	38380	-12	-1	-2	8.74 (222)
3.43 (87)	38380	-12	-1	-2	2.32 (59)	10.31 (262)	38380	-12	-1	-2	9.21 (234)
3.94 (100)	38380	-12	-1	-2	2.83 (72)	10.83 (275)	38380	-12	-1	-2	9.72 (247)
4.25 (108)	38380	-12	-1	-2	3.14 (80)	11.30 (287)	38380	-12	-1	-2	10.19 (259)
4.41 (112)	38380	-12	-1	-2	3.30 (84)	11.81 (300)	38380	-12	-1	-2	10.70 (272)
4.92 (125)	38380	-12	-1	-2	3.81 (97)	12.28 (312)	38380	-12	-1	-2	11.18 (284)
5.39 (137)	38380	-12	-1	-2	4.29 (109)	12.79 (325)	38380	-12	-1	-2	11.69 (297)
5.91 (150)	38380	-12	-1	-2	4.80 (122)	13.27 (337)	38380	-12	-1	-2	12.16 (309)
6.38 (162)	38380	-12	-1	-2	5.27 (134)	13.78 (350)	38380	-12	-1	-2	12.67 (322)
6.61 (168)	38380	-12	-1	-2	5.51 (140)	14.25 (362)	38380	-12	-1	-2	13.14 (334)
6.89 (175)	38380	-12	-1	-2	5.78 (147)	14.76 (375)	38380	-12	-1	-2	13.66 (347)
7.36 (187)	38380	-12	-1	-2	6.25 (159)	15.24 (387)	38380	-12	-1	-2	14.13 (359)
7.87 (200)	38380	-12	-1	-2	6.77 (172)	15.75 (400)	38380	-12	-1	-2	4.64 (372)
8.35 (212)	38380	-12	-1	-2	7.24 (184)						

*Mounting bracket feet must face outward

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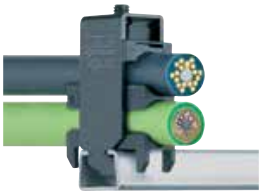
E-Chain System® E4/4
Series 3838/3938/R7838
Strain Relief

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

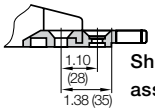
Chainfix Clip

Modular snap-on strain relief device

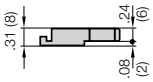
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(04-08)	CFC-08-M	CFC-08-C
.31-.47	(08-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

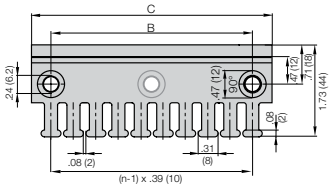


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10

Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3850-ZS	5	1.89	(48)

For more information please refer to strain relief section of Chapter 10

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E-Chain System® E4/4
Series 3838/3938/R7838
Guide Troughs

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 93-30
- 1/2 travel length of glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 93-50-XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table below. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel

Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough,
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 93-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01

Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **93-50-XXX**
Example: 93-50-400 for 15.75 (400 mm) long profile rail

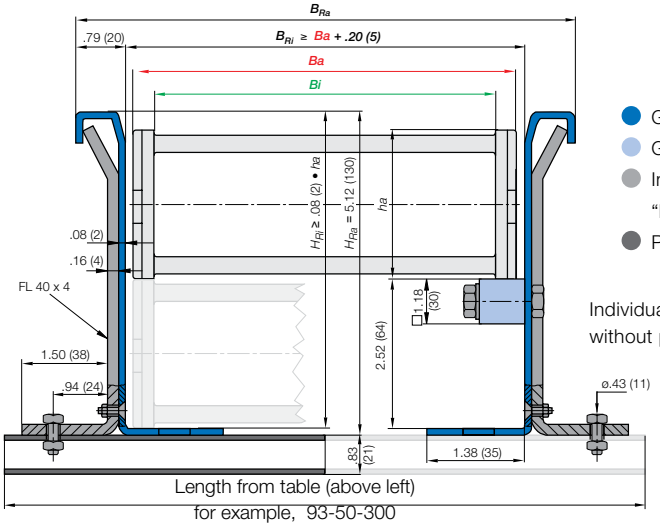
Left: Guide trough with glide bars
Right: Guide troughs without glide bars

Installation sets as section connectors

Width of Crossbar
380-**05**-200-0

	B_{Ri}	Installation Part No.
-05	3.23 (82)	**93-50-200**
-06	3.94 (100)	**93-50-225**
-07	4.21 (107)	**93-50-225**
-087	4.72 (120)	**93-50-250**
-10	5.20 (132)	**93-50-250**
-11	5.51 (140)	**93-50-250**
-112	5.71 (145)	**93-50-275**
-12	6.18 (157)	**93-50-275**
-137	6.69 (170)	**93-50-300**
-15	7.16 (182)	**93-50-300**
-162	7.68 (195)	**93-50-325**
-17	7.87 (200)	**93-50-325**
-18	8.15 (207)	**93-50-325**
-187	8.66 (220)	**93-50-350**
-20	9.13 (232)	**93-50-350**
-212	9.65 (245)	**93-50-375**
-23	10.12 (257)	**93-50-375**
-237	10.63 (270)	**93-50-400**
-25	11.10 (282)	**93-50-400**
-262	11.61 (295)	**93-50-425**
-28	12.09 (307)	**93-50-425**
-29	12.60 (320)	**93-50-450**
-30	13.07 (332)	**93-50-450**
-312	13.58 (345)	**93-50-475**
-325	14.06 (357)	**93-50-475**
-337	14.57 (370)	**93-50-500**
-350	15.04 (382)	**93-50-500**
-362	15.55 (395)	**93-50-525**
-375	16.02 (407)	**93-50-525**
-387	16.53 (420)	**93-50-550**
-400	17.01 (432)	**93-50-550**

Standard length profile rail



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

For further technical information on guide troughs
➤ Chapter 9

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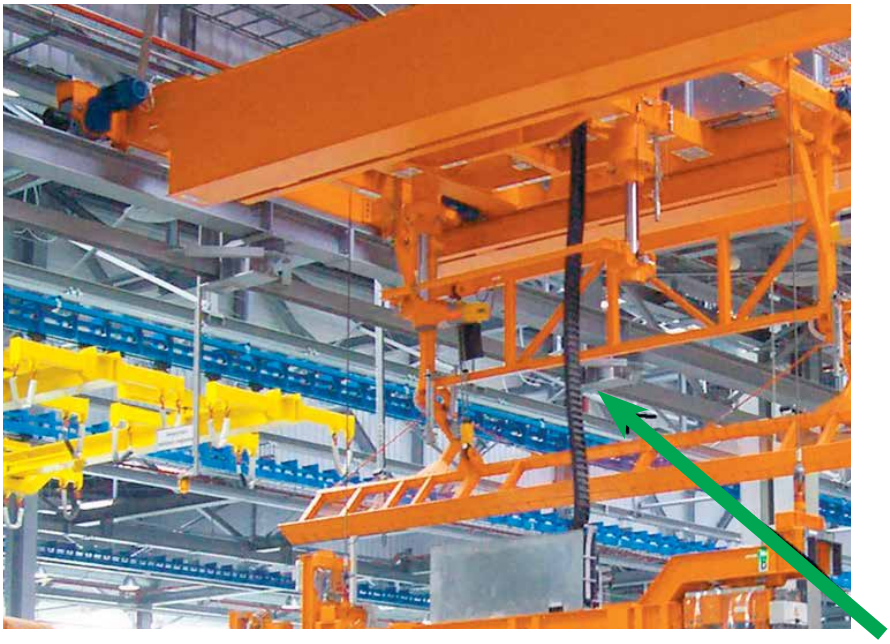
E-Chain System® E4/4
Series 3838/3938/R7838
Application Examples



E4/4 as ZigZag version in this crane.

Roll instead of gliding: Rol E-Chain®

Special solution for long travels. 75% less drive power (gliding application) with igus® Rol E-Chain®.
Series 3838R - Order example 3838R-30-220-0
Further information: Call igus® at 800-521-2747

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
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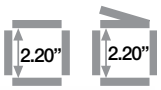
4040
4140
R8840

igus®

E-Chain System® E4/4
Series 4040/4140/R8840

For new applications use Series E4-56



Price Index

Series 4040 ●●●
Series 4140 ●●●
Series R8840 ●●●

Special Features / Options

- Side-mounted - unsupported
- ESD classification: Electrically conductive ESD/ ATEX version upon request
- High torsional rigidity

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 328 ft (100 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 9.84 ft (3 m)
Rotary requires further calculation

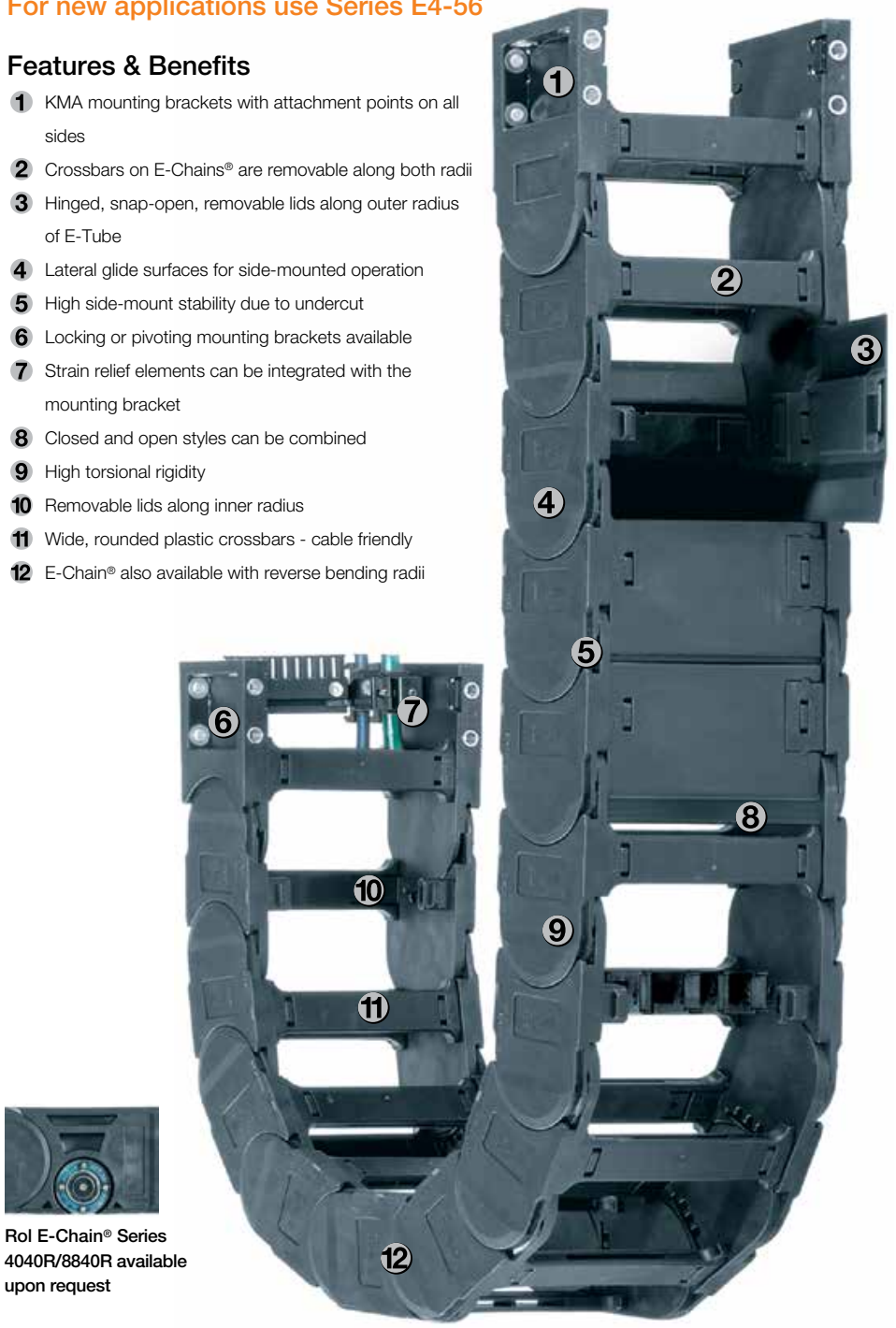
Usage Guidelines

- If subject to high torsional or shearing forces
- For side mounted applications involving long unsupported lengths
- For long-term operation in very moist environments

- If a quieter version is required
  ➤ **Series 400/410/R880**
- If a simple low-cost solution is required
  ➤ **Series 14040/R18840**
- When very long travels or high additional loads are involved
  ➤ **Series 4040HD**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Crossbars on E-Chains® are removable along both radii
3. Hinged, snap-open, removable lids along outer radius of E-Tube
4. Lateral glide surfaces for side-mounted operation
5. High side-mount stability due to undercut
6. Locking or pivoting mounting brackets available
7. Strain relief elements can be integrated with the mounting bracket
8. Closed and open styles can be combined
9. High torsional rigidity
10. Removable lids along inner radius
11. Wide, rounded plastic crossbars - cable friendly
12. E-Chain® also available with reverse bending radii



RoI E-Chain® Series 4040R/8840R available upon request

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

16.4 ft (5 m) **4040-30-300-0**	E-Chain®
With 2 separators **411** assembled every 2nd link	Interior Separation
1 Set **404000-30-12P**	Mounting Bracket

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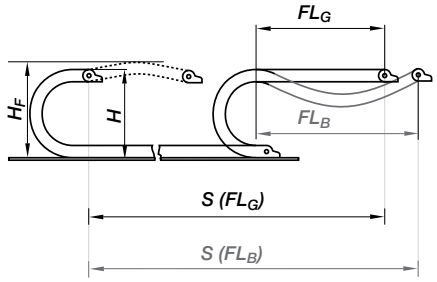
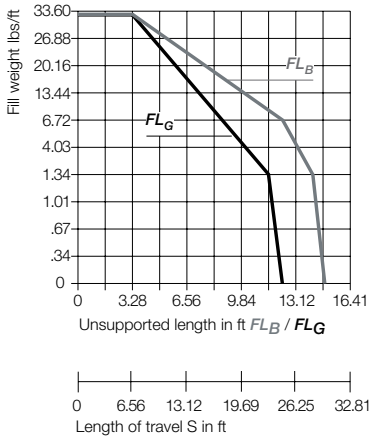
E-Chain System® E4/4
Series 4040/4140/R8840
Installation Dimensions

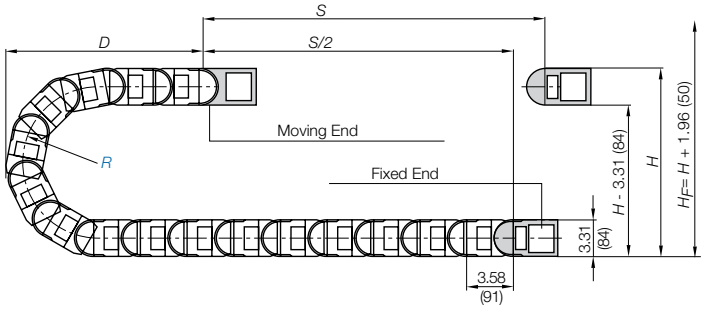
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $\frac{S}{2} + K$

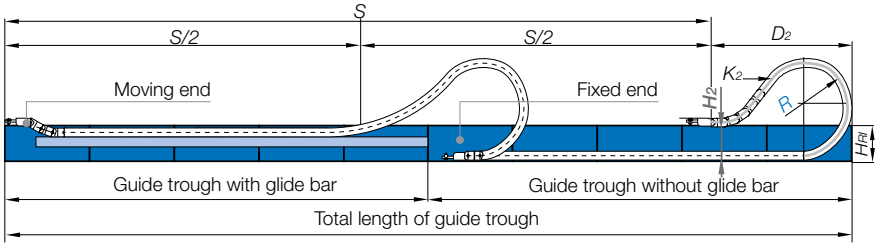
The required clearance height: $H_F = H + 1.96$ in. (50 mm) (with 2.02 lbs/ft (3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.45 (240)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)
H^{*}_{+25}	14.17 (360)	15.16 (385)	17.13 (435)	19.09 (485)	22.24 (565)	23.03 (585)	26.97 (685)	30.91 (785)	34.84 (885)	42.72 (1085)
D	10.63 (270)	11.22 (285)	12.20 (310)	13.19 (335)	14.76 (375)	15.16 (385)	17.13 (435)	19.09 (485)	21.06 (535)	25.00 (635)
K	25.59 (650)	29.53 (750)	32.48 (825)	35.43 (900)	40.16 (1020)	41.34 (1050)	48.23 (1225)	52.76 (1340)	57.09 (1450)	69.88 (1775)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 984 ft. (300m)

For center mount applications:
Chain length: = $\frac{S}{2} + K_2$



R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.45 (240)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)
H_2	-	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)
$D_{2\,+25}$	-	18.90 (480)	23.62 (600)	28.74 (730)	36.61 (930)	37.01 (940)	46.46 (1180)	56.69 (1440)	60.24 (1530)	72.83 (1850)
K_2	-	32.24 (819)	42.99 (1092)	50.16 (274)	60.91 (1547)	60.91 (1547)	78.82 (2002)	93.15 (2366)	100.31 (2548)	125.39 (3185)

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

- S = Length of travel
- R = Bending radius
- H = Nominal clearance height
- D = Overlength E-Chain® radius in final position
- K = π • R + *safety buffer*
- H_F = Required clearance height
- H_{RI} = Trough inner height
- H_2 = *Mounting height
- D_2 = Overlength - long travels, gliding
- K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ **Chapter 1**

4040
4140
R8840

2.20"

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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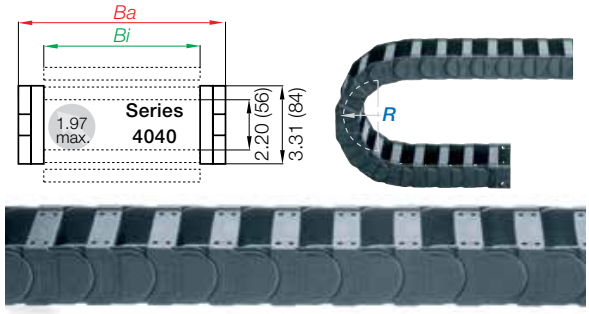
4040
4140
R8840

igus®

E-Chain System® E4/4
Series 4040/4140/R8840

Series 4040 - E-Chain® with crossbars every link

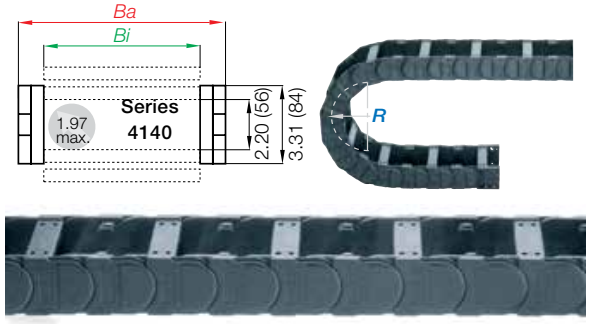


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

4040-	30-	250-	0
Series	Width	Bending radius	Color - Black

Series 4140 - E-Chain® with crossbars every other link

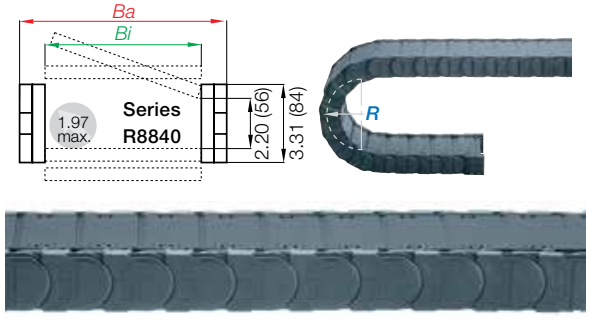


- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

4140-	30-	250-	0
Series	Width	Bending radius	Color - Black

Series R8840 - fully enclosed E-Tube

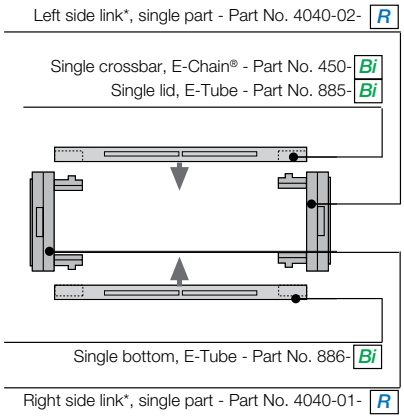


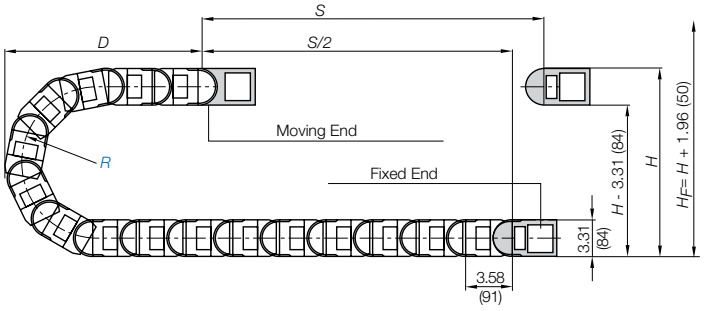
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

Part Number Structure

8840-	30-	250-	0
Series	Width	Bending radius	Color - Black

E-Chain® as separate parts, links and side plates





*View from the moving point of the E-Chain®/E-Tube

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E-Chain System® E4/4
Series 4040/4140/R8840

Supplement part number with required radius. Example: 4040-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

Part Number. Crossbars Every link	Crossbars Every other	Tube Version		*Bi* in. (mm)	*Ba* in. (mm)	4040 lbs/ft (kg/m)	4140 lbs/ft (kg/m)	R8840 lbs/ft (kg/m)
4040-05-	4140-05-		-0	1.97 (50)	3.39 (86)	≈ 2.45 (3.65)	≈ 2.63 (3.58)	–
4040-06-	4140-06-		-0	2.56 (65)	3.98 (101)	≈ 2.47 (3.67)	≈ 2.15 (3.60)	–
4040-07-	4140-07-	8840-07-	-0*	2.95 (75)	4.37 (111)	≈ 2.54 (3.78)	≈ 2.31 (3.70)	≈ 2.85 (4.24)
4040-08-	4140-08-		-0	3.43 (87)	4.84 (123)	≈ 2.57 (3.83)	≈ 2.52 (3.75)	–
4040-10-	4140-10-	8840-10-	-0	3.94 (100)	5.35 (136)	≈ 2.66 (3.96)	≈ 2.37 (3.78)	≈ 3.04 (4.52)
4040-11-	4140-11	-	-0	4.41 (112)	5.87 (149)	≈ 2.75 (4.09)	≈ 2.42 (3.85)	–
4040-12-	4140-12-	8840-12-	-0	4.92 (125)	6.34 (161)	≈ 2.80 (4.16)	≈ 2.44 (3.88)	≈ 3.28 (4.88)
4040-13-	4140-13-		-0	5.39 (137)	6.85 (174)	≈ 2.88 (4.29)	≈ 2.49 (3.95)	–
4040-15-	4140-15-	8840-15-	-0	5.91 (150)	7.32 (186)	≈ 2.93 (4.36)	≈ 2.51 (3.98)	≈ 3.57 (5.31)
4040-16-	4140-16-		-0	6.38 (162)	7.83 (199)	≈ 3.00 (4.47)	≈ 2.54 (4.04)	–
4040-17-	4140-17-	8840-17	-0	6.89 (175)	8.31 (211)	≈ 3.08 (4.58)	≈ 2.58 (4.09)	≈ 3.74 (5.56)
4040-18-	4140-18-		-0	7.36 (187)	8.81 (224)	≈ 3.15 (4.69)	≈ 2.61 (4.15)	–
4040-20-	4140-20-	8840-20-	-0	7.87 (200)	9.29 (236)	≈ 3.17 (4.71)	≈ 2.63 (4.16)	≈ 3.96 (5.89)
4040-21-	4140-21-		-0	8.35 (212)	9.80 (249)	≈ 3.24 (4.82)	≈ 2.66 (4.21)	–
4040-22-	4140-22-		-0	8.86 (225)	10.28 (261)	≈ 3.28 (4.88)	≈ 2.68 (4.25)	–
4040-23-	4140-23-		-0	9.33 (237)	10.79 (274)	≈ 3.37 (5.02)	≈ 2.73 (4.31)	–
4040-25-	4140-25-	8840-25-	-0	9.84 (250)	11.26 (286)	≈ 3.43 (5.10)	≈ 2.76 (4.36)	≈ 4.44 (6.61)
4040-26-	4140-26-		-0	10.31 (262)	11.77 (299)	≈ 3.49 (5.19)	≈ 2.79 (4.40)	–
4040-27-	4140-27-	8840-27	-0	10.83 (275)	12.24 (311)	≈ 3.56 (5.30)	≈ 2.82 (4.46)	≈ 4.63 (6.89)
4040-28-	4140-28-		-0	11.30 (287)	12.76 (324)	≈ 3.58 (5.32)	≈ 2.83 (4.47)	–
4040-30-	4140-30-	8840-30-	-0	11.81 (300)	13.23 (336)	≈ 3.72 (5.54)	≈ 2.90 (4.58)	≈ 4.89 (7.27)
4040-31-	4140-31-		-0	12.28 (312)	13.74 (349)	≈ 3.75 (5.58)	≈ 3.09 (4.60)	–
4040-32-	4140-32-		-0	12.79 (325)	14.21 (361)	≈ 3.78 (5.63)	≈ 2.94 (4.62)	–
4040-33-	4140-33-		-0	13.27 (337)	14.72 (374)	≈ 3.90 (5.81)	≈ 3.00 (4.71)	–
4040-35-	4140-35-	8840-35-	-0	13.78 (350)	15.20 (386)	≈ 4.01 (5.96)	≈ 3.04 (4.79)	≈ 5.39 (8.02)
4040-36-	4140-36-		-0	14.25 (362)	15.71 (399)	≈ 4.01 (5.96)	≈ 3.04 (4.79)	–
4040-37-	4140-37-		-0	14.76 (375)	16.18 (411)	≈ 4.02 (5.98)	≈ 3.05 (4.80)	–
4040-38-	4140-38-		-0	15.24 (387)	16.69 (424)	≈ 4.08 (6.07)	≈ 3.08 (4.84)	–
4040-40-	4140-40-	8840-40-	-0	15.75 (400)	17.17 (436)	≈ 4.21 (6.27)	≈ 3.15 (4.94)	≈ 6.04 (8.98)
4040-41-	4140-41-		-0	16.22 (412)	17.68 (449)	≈ 4.31 (6.42)	≈ 3.20 (5.02)	–
4040-42-	4140-42-		-0	16.73 (425)	18.15 (461)	≈ 4.42 (6.58)	≈ 3.25 (5.09)	–
4040-43-	4140-43-		-0	17.20 (437)	18.66 (474)	≈ 4.46 (6.64)	≈ 3.27 (5.13)	–
4040-45-	4140-45-		-0	17.72 (450)	19.13 (486)	≈ 4.51 (6.71)	≈ 3.30 (5.16)	–
4040-46-	4140-46-	8840-46-	-0	18.19 (462)	19.65 (499)	≈ 4.52 (6.73)	≈ 3.49 (5.19)	≈ 6.34 (9.44)
4040-47-	4140-47-		-0	18.70 (475)	20.12 (511)	≈ 4.61 (6.86)	≈ 3.35 (5.24)	–
4040-48-	4140-48-		-0	19.17 (487)	20.63 (524)	≈ 4.63 (6.88)	≈ 3.55 (5.28)	–
4040-50-	4140-50-		-0	19.69 (500)	21.10 (536)	≈ 4.70 (7.00)	≈ 3.39 (5.30)	–
4040-51-	4140-51-		-0	20.16 (512)	21.61 (549)	≈ 4.72 (7.02)	≈ 3.40 (5.31)	–
4040-52-	4140-52-		-0	20.67 (525)	22.09 (561)	≈ 4.74 (7.06)	≈ 3.41 (5.34)	–
4040-53-	4140-53-		-0	21.14 (537)	22.60 (574)	≈ 4.85 (7.22)	≈ 3.47 (5.41)	–
4040-55-	4140-55-		-0	21.65 (550)	23.07 (586)	≈ 5.17 (7.70)	≈ 3.63 (5.65)	–
4040-60-	4140-60-		-0	23.62 (600)	25.04 (636)	≈ 5.31 (7.90)	≈ 3.70 (5.75)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: 4040-30-300-0

	135**	150	175	200	240	250	300	350	400	500
R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.45 (240)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)
H*+25	14.17 (360)	15.16 (385)	17.13 (435)	19.09 (485)	22.24 (565)	23.03 (585)	26.97 (685)	30.91 (785)	34.84 (885)	42.72 (1085)
D	10.63 (270)	11.22 (285)	12.20 (310)	13.19 (335)	14.76 (375)	15.16 (385)	17.13 (435)	19.09 (485)	21.06 (535)	25.00 (635)
K	25.59 (650)	29.53 (750)	32.48 (825)	35.43 (900)	40.16 (1020)	41.34 (1050)	48.23 (1225)	52.76 (1340)	57.09 (1450)	69.88 (1775)

** This radius is not available for the R8840 Series
*Removable lid only, no hinged option

0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.247. For large diameter hoses see page 6.247

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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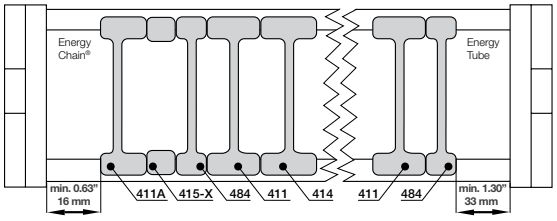
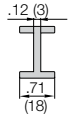
E-Chain System® E4/4
Series 4040/4140/R8840
Interior Separation

Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.
NOTE: Observe a lateral spacing of at least 1.30 in. (33mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates



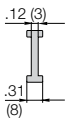
STANDARD
Vertical separator 401



Vertical separator

Unassembled	**Part No. 401**
Assembled	**Part No. 411**

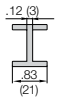
Vertical separator 483



Vertical separator

Unassembled	**Part No. 483**
Assembled	**Part No. 484**

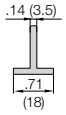
Locking separator 404



Locking separator (chain only)

Unassembled	**Part No. 404**
Assembled	**Part No. 414**

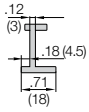
Locking separator 406



Locking separator (tube only)

Unassembled	**Part No. 406**
Assembled	**Part No. 416**

Asymmetric separator 401A



Asymmetrical separator (chain only)

Unassembled	**Part No. 401A**
Assembled	**Part No. 411A**

Spacers 405-XX

Spacer (chain only)

Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

XX = width of the spacer

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	**415 -10**	.39”	(10)
405 -15	**415 -15**	.59”	(15)
405 -20	**415 -20**	79”	(20)
405 -30	**415 -30**	1.18”	(30)
405 -40	**415 -40**	1.57”	(40)

- **Standard separator 401 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.
- **Vertical separator 483 for E-Chains® and E-Tubes**
  This separator offers a narrow base for applications where a large number of small cables need to be individually separated.
- **Locking separator 404 for E-Chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.
- **Locking separator 406 for E-Tubes**
  It features a single sided, secure fit, and can be placed on the lid or the bottom of the E-Tube. The single side locking design helps to eliminate difficulties in assembling the opposite cover or crossbar
- **Asymmetrical separator 401A for E-Chains®**
  This separator features an (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.
- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08” (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16” (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

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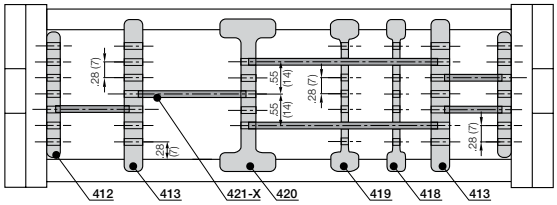
E-Chain System® E4/4
Series 4040/4140/R8840
Interior Separation

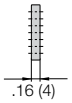
Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.



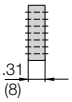
- **Side plates 402**
  This component is used to form the basic pattern of a shelf system.



Side plate	
Unassembled	**Part No. 402**
Assembled	**Part No. 412**

Side plate 402

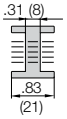
- **Vertical separator 403**
  This component is used to form the basic pattern of a shelf system.



Vertical separator	
Unassembled	**Part No. 403**
Assembled	**Part No. 413**

Vertical separator 403

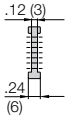
- **Locking vertical separator 410**
  This separator is slotted and able to be combined with shelves. For E-Chains® only.



Locking vertical separator	
Unassembled	**Part No. 410**
Assembled	**Part No. 420**

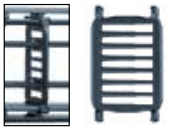
Locking vertical separator 410

- **Slotted separators 408**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.

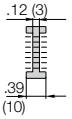


Slotted separators, closed	
Unassembled	**Part No. 408**
Assembled	**Part No. 418**

Closed slotted separator 408



- **Slotted separator 409**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 3 middle slots



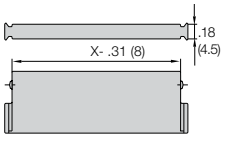
Slotted separators, open	
Unassembled	**Part No. 409**
Assembled	**Part No. 419**

Open slotted separator 409

Shelves 420-XX

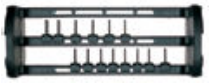
These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

Width X in.	(mm)	Usable Width in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Usable Width in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	.39	(10)	**420-18**	**421-18**	2.95	(75)	2.64	(67)	**420-75**	**421-75**
.91	(23)	.59	(15)	**420-23**	**421-23**	3.46	(88)	3.15	(80)	**420-88**	**421-88**
.98	(25)	.67	(17)	**420-25**	**421-25**	3.94	(100)	3.62	(92)	**420-100**	**421-100**
1.10	(28)	.79	(20)	**420-28**	**421-28**	4.92	(125)	4.61	(117)	**420-125**	**421-125**
1.30	(33)	.98	(25)	**420-33**	**421-33**	5.91	(150)	5.59	(142)	**420-150**	**421-150**
1.69	(43)	1.38	(35)	**420-43**	**421-43**	6.89	(175)	6.57	(167)	**420-175**	**421-175**
1.97	(50)	1.65	(42)	**420-50**	**421-50**	7.36	(187)	7.05	(179)	**420-187**	**421-187**
2.44	(62)	2.13	(54)	**420-62**	**421-62**	7.87	(200)	7.56	(192)	**420-200**	**421-200**

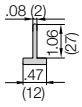


Center crossbar - developed for applications involving a very large number of thin cables, individually separated. This offers the option of subdividing the E-Chain® into upper and lower halves, with mutually independent separators.

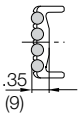
Rollclip - minimizes abrasion of particularly sensitive hoses or cables in an E-Chain®. The integrated rollers compensate for relative movement between the chain and the hose or cable. This reduces the abrasion of the hoses or cables



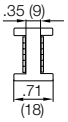
Roller separator - performs a similar function to the Rollclip, but doubles as a separator. Consult igus® if you have any questions regarding the roller separator.



Center crossbar	
Unassembled	**Part No. 405**
Assembled	**Part No. 415**



Rollclip	
Unassembled	**Part No. 489-27**
Assembled	**Part No. 490-27**



Roller separator	
Unassembled	**Part No. 429**
Assembled	**Part No. 430**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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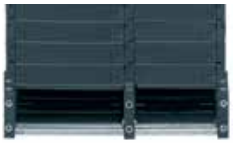
E-Chain System® E4/4
Series 4040/4140/R8840
Special Accessories

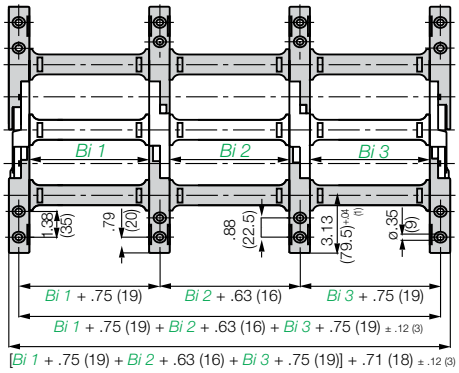


Part number example for E-Chain®
4040-10/20/10-[200]-0
4040-*Bi1*/*Bi2*/*Bi3*-[*R*]-0

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

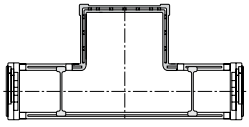
- For applications in which particularly high fill weights necessitate extremely wide E-Chains® (up to 118" (3000 mm)
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



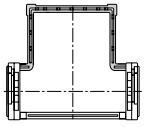
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

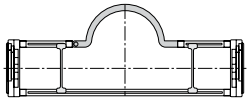
- Intended for cables and hoses with a maximum outer diameter of 9.64 in. (245 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



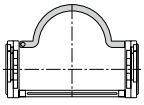
Square extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.



Round extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.

Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
450-15-RHD115	By request	Round	No	Yes
450-17-RD115	By request	Round	Yes	No
450-25-D150	By request	Square	Yes	No
450-30-D200	By request	Square	Yes	No
450-35-D250	By request	Square	Yes	No
450-40-D300	By request	Square	Yes	No
450-20-HD150	By request	Square	No	Yes
450-25-HD200	By request	Square	No	Yes
450-30-HD250	By request	Square	No	Yes

E4 clip on cable binder

- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on E-Chains®
- The loops can be adjusted as needed
- Compatible with many E4 E-Chains®
- Economical
- One clip and one locking band are needed for each chain link

Part No.	Form
450-B12	Locking clip, comprised of a locking element
450-B12-200	Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm

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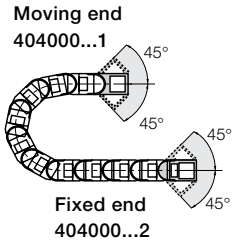
E-Chain System® E4/4
Series 4040/4140/R8840
Mounting Brackets - KMA

Standard

Option 1: KMA pivoting

- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions



Option 2: KMA locking

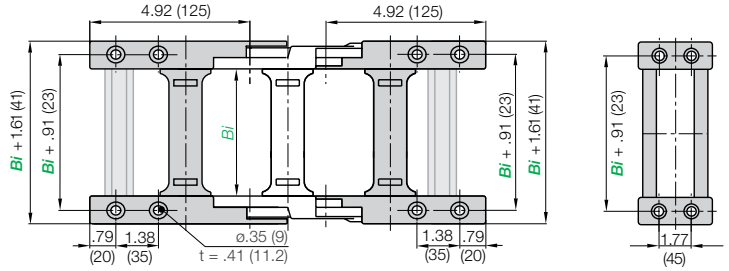
- Profile rail option
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels

Part Number Structure

404000- | 07- | 12 | T | P

- 12 — Width
- T — Tube version
- P — With Profile Rail

404000 = Pivoting
414000 = Locking



Full set, for both ends:

404000- 05- 12 Full set, **each part with pin/bore**

Single-part order:

404000- 05- 1 Mounting bracket **with bore**

404000- 05- 2 Mounting bracket **with pin**

Part number examples are shown for pivoting brackets. For locking brackets change part number to 414000

Part No. Full Set (pivoting)
Series 4040 or 4140:
404000-Width-12

Part No. Full Set (pivoting)
with profile rail
Series 4040 or 4140
404000-Width-12P

Part No. Full Set (pivoting)
Tube Series R8840
404000-Width-12T

Part No. Full Set (pivoting)
with Profile Rail
Tube Series R8840
404000-Width-12TP

Width	Part No. Full Set Pivoting	Part No. Full Set Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-05	404000	414000	-05-12		P	1.97 (50)
-06	404000	414000	-06-12		P	2.56 (65)
-07	404000	414000	-07-12	T	P	2.95 (75)
-08	404000	414000	-08-12			3.43 (87)
-10	404000	414000	-10-12	T	P	3.94 (100)
-11	404000	414000	-11-12		P	4.41 (112)
-12	404000	414000	-12-12	T	P	4.92 (125)
-13	404000	414000	-13-12		P	5.39 (137)
-15	404000	414000	-15-12	T	P	5.91 (150)
-16	404000	414000	-16-12		P	6.38 (162)
-17	404000	414000	-17-12	T	P	6.89 (175)
-18	404000	414000	-18-12		P	7.36 (187)
-20	404000	414000	-20-12	T	P	7.87 (200)
-21	404000	414000	-21-12		P	8.35 (212)
-22	404000	414000	-22-12		P	8.86 (225)
-23	404000	414000	-23-12		P	9.33 (237)
-25	404000	414000	-25-12	T	P	9.84 (250)
-26	404000	414000	-26-12		P	10.31 (262)
-27	404000	414000	-27-12	T	P	10.83 (275)
-28	404000	414000	-28-12		P	11.30 (287)
-30	404000	414000	-30-12	T	P	11.81 (300)

Width	Part No. Full Set Pivoting	Part No. Full Set Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-31	404000	414000	-31-12		P	12.28 (312)
-32	404000	414000	-32-12		P	12.79 (325)
-33	404000	414000	-33-12		P	13.27 (337)
-35	404000	414000	-35-12	T	P	13.78 (350)
-36	404000	414000	-36-12		P	14.25 (362)
-37	404000	414000	-37-12		P	14.76 (375)
-38	404000	414000	-38-12		P	15.24 (387)
-40	404000	414000	-40-12	T	P	15.75 (400)
-41	404000	414000	-41-12		P	16.22 (412)
-42	404000	414000	-42-12		P	16.73 (425)
-43	404000	414000	-43-12		P	17.20 (437)
-45	404000	414000	-45-12		P	17.72 (450)
-46	404000	414000	-46-12	T	P	18.19 (462)
-47	404000	414000	-47-12		P	18.70 (475)
-48	404000	414000	-48-12		P	19.17 (487)
-50	404000	414000	-50-12		P	19.69 (500)
-51	404000	414000	-51-12		P	20.16 (512)
-52	404000	414000	-52-12		P	20.67 (525)
-53	404000	414000	-53-12		P	21.14 (537)
-55	404000	414000	-55-12		P	21.65 (550)
-60	404000	414000	-60-12		P	23.62 (600)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

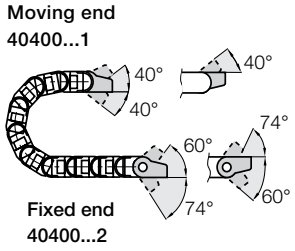
E-Chain System® E4/4
Series 4040/4140/R8840
Mounting Brackets - Steel

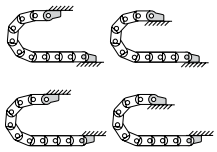
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive



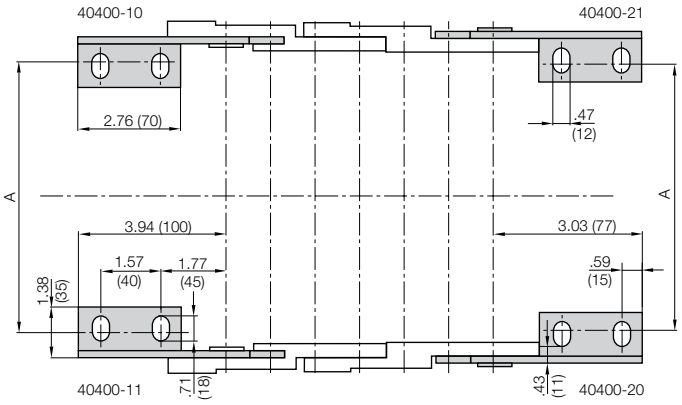


Possible installation configurations -

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 4040, 4140 or R8840:
40400-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right with bore
Series 4040, 4140 or R8840
40400-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right with pin
Series 4040, 4140 or R8840
40400-2



Bracket Mounting dimensions

Width of Chain *Bi*	Mounting Brackets Part Number	Full Set	Moving End Only	Fixed End Only	Mounting Dimension A in. (mm)	Width of Chain *Bi*	Mounting Brackets Part Number	Full Set	Moving End Only	Fixed End Only	Mounting Dimension A in. (mm)
1.97 (50)*	40400	-12	-1	-2	1.18 (30)	12.28 (312)	40400	-12	-1	-2	11.50 (292)
2.56 (65)	40400	-12	-1	-2	1.77 (45)	12.79 (325)	40400	-12	-1	-2	12.01 (305)
2.95 (75)	40400	-12	-1	-2	2.17 (55)	13.27 (337)	40400	-12	-1	-2	12.48 (317)
3.43 (87)	40400	-12	-1	-2	2.64 (67)	13.78 (350)	40400	-12	-1	-2	12.99 (330)
3.94 (100)	40400	-12	-1	-2	3.15 (80)	14.25 (362)	40400	-12	-1	-2	13.39 (342)
4.41 (112)	40400	-12	-1	-2	3.62 (92)	14.76 (375)	40400	-12	-1	-2	13.98 (355)
4.92 (125)	40400	-12	-1	-2	4.17 (105)	15.24 (387)	40400	-12	-1	-2	14.45 (367)
5.39 (137)	40400	-12	-1	-2	4.61 (117)	15.75 (400)	40400	-12	-1	-2	14.96 (380)
5.91 (150)	40400	-12	-1	-2	5.12 (130)	16.22 (412)	40400	-12	-1	-2	15.43 (392)
6.38 (162)	40400	-12	-1	-2	5.59 (142)	16.73 (425)	40400	-12	-1	-2	15.94 (405)
6.89 (175)	40400	-12	-1	-2	6.10 (155)	17.20 (437)	40400	-12	-1	-2	16.42 (417)
7.36 (187)	40400	-12	-1	-2	6.57 (167)	17.72 (450)	40400	-12	-1	-2	16.93 (430)
7.87 (200)	40400	-12	-1	-2	7.09 (180)	18.19 (462)	40400	-12	-1	-2	17.40 (442)
8.35 (212)	40400	-12	-1	-2	7.56 (192)	18.70 (475)	40400	-12	-1	-2	17.91 (455)
8.86 (225)	40400	-12	-1	-2	8.07 (205)	19.17 (487)	40400	-12	-1	-2	18.39 (467)
9.33 (237)	40400	-12	-1	-2	8.54 (217)	19.69 (500)	40400	-12	-1	-2	18.90 (480)
9.84 (250)	40400	-12	-1	-2	9.06 (230)	20.16 (512)	40400	-12	-1	-2	19.37 (492)
10.31 (262)	40400	-12	-1	-2	9.53 (242)	20.67 (525)	40400	-12	-1	-2	19.88 (505)
10.83 (275)	40400	-12	-1	-2	10.04 (255)	21.14 (537)	40400	-12	-1	-2	20.35 (517)
11.30 (287)	40400	-12	-1	-2	10.51 (267)	21.65 (550)	40400	-12	-1	-2	20.87 (530)
11.81 (300)	40400	-12	-1	-2	11.02 (280)	23.62 (600)	40400	-12	-1	-2	22.83 (580)

*Mounting bracket feet must face outward

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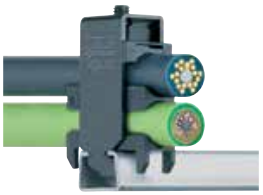
E-Chain System® E4/4
Series 4040/4140/R8840
Strain Relief

4040
4140
R8840

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

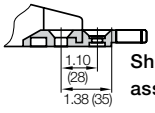
Chainfix Clip

Modular snap-on strain relief device

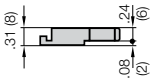
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

Cable ø		Part No. Clamp	Part No. Bottom
in.	(mm)		
.16-.31	(04-08)	CFC-08-M	CFC-08-C
.31-.47	(08-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

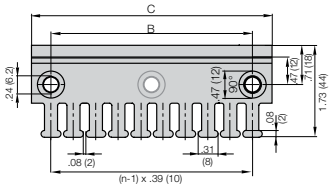


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10

Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
4550-ZS	5	1.89	(48)
4575-ZS	7	2.91	(74)

For more information please refer to strain relief section of Chapter 10

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E-Chain System® E4/4
Series 4040/4140/R8840
Guide Troughs

Width of Crossbar
4040-**05**-200-0

	B_{Ri}	Installation Part No.
-05	3.50 (89)	*
-06	4.23 (104)	**94-50-225**
-07	4.49 (114)	**94-50-225**
-08	5.04 (128)	**94-50-250**
-10	5.47 (139)	**94-50-250**
-11	5.98 (152)	**94-50-275**
-12	6.46 (164)	**94-50-275**
-13	6.97 (177)	**94-50-300**
-15	7.44 (189)	**94-50-300**
-16	7.95 (202)	**94-50-325**
-17	8.42 (214)	**94-50-325**
-18	8.94 (227)	**94-50-350**
-20	9.41 (239)	**94-50-350**
-21	9.92 (252)	**94-50-375**
-22	10.39 (264)	**94-50-375**
-23	10.91 (277)	**94-50-400**
-25	11.38 (289)	**94-50-400**
-26	11.89 (302)	**94-50-425**
-27	12.36 (314)	**94-50-425**
-28	12.87 (327)	**94-50-450**
-30	13.35 (339)	**94-50-450**
-31	13.86 (352)	**94-50-475**
-32	14.33 (364)	**94-50-475**
-33	14.84 (377)	**94-50-500**
-35	15.31 (389)	**94-50-500**
-36	15.82 (402)	**94-50-525**
-37	16.30 (414)	**94-50-525**
-38	16.81 (427)	**94-50-550**
-40	17.28 (439)	**94-50-550**
-41	17.79 (452)	**94-50-575**
-42	18.27 (464)	**94-50-575**
-43	18.78 (477)	**94-50-600**
-45	19.25 (489)	**94-50-600**
-46	19.76 (502)	**94-50-625**
-47	20.24 (514)	**94-50-625**
-48	20.75 (527)	**94-50-650**
-50	21.22 (539)	**94-50-650**
-51	21.73 (552)	**94-50-675**
-52	22.20 (564)	**94-50-675**
-53	22.72 (577)	**94-50-700**
-55	23.19 (589)	**94-50-700**
-60	25.28 (639)	**94-50-750**

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required.

- Full travel length of guide trough
  Part No. 94-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 94-50-XX

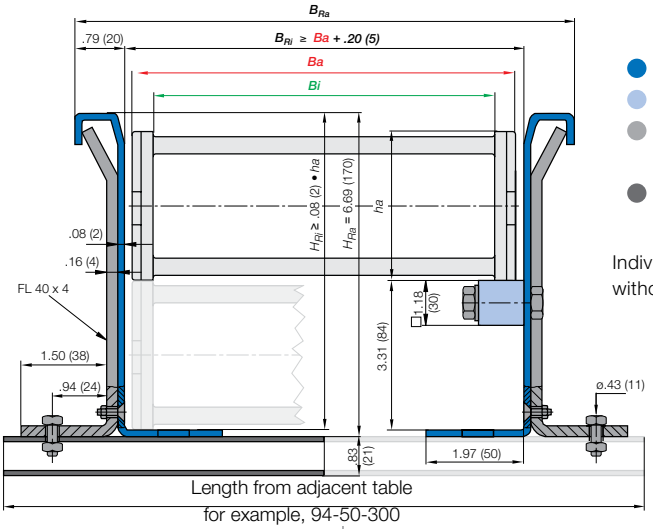
.XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center mounted

Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 94-30
= 13 sections of 6.56 ft (2 m) glide bars
Part No. 93-01
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
94-50-XXX
Example:
94-50-400 for 15.75 (400 mm) long profile rail

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

Installation sets as section connectors



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

Standard length profile rail

For further technical information on guide troughs
➤ **Chapter 9**

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E-Chain System® E4/4
Series 4040/4140/R8840
Application Examples

The maintenance-free Series 4040 protects the igus® Chainflex® motor and signal cables during the lifting and lowering movements of the tidal turbine and also protects them against aggressive ambient conditions. The travel distance amounts to approx. 65.6 ft. (20 m) in vertical direction above and underwater

RoI instead of gliding: RoI E-Chain®

Special solution for long travels. 75% less drive power (gliding application) with igus® RoI E-Chain®.
Series 4040R - Order example 4040R-30-250-0
Further information: Call igus® at 800-521-2747

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5050
5150
R9850

igus®

E-Chain System® E4/4
Series 5050/5150/R9850

For new applications use Series E4-80

3.15" 3.15"

Price Index

Series 5050 Series 5150
Series R9850

Special Features / Options

Side-mounted - unsupported

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 394 ft (120 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 9.84 ft (3 m)
Rotary requires further calculation

Usage Guidelines

- If subject to high torsional forces
- For side-mounted applications involving long unsupported lengths
- If subject to very dirty or dusty environments

- If a simpler low-cost solution is required
  ➤ **Series 15050/R19850**
- When very long travels or high additional loads are involved
  ➤ **Series 5050HD/R9850HD**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Crossbars on E-Chains® are removable along both radii
3. Hinged, snap-open, removable lids along outer radius of E-Tube
4. Lateral glide surfaces for side-mounted operation
5. Strain relief elements can be integrated with the mounting bracket
6. Wide, rounded plastic crossbars - cable friendly
7. High torsional rigidity
8. Closed and open styles can be combined
9. High side-mount stability due to undercut
10. Numerous interior separation possibilities
11. E-Chain® also available with reverse bending radii

Rol E-Chain® Series 5050R/9850R available upon request

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

16.4 ft (5 m) **5050-30-300-0**	E-Chain®
With 2 separators **511** assembled every 2nd link	Interior Separation
1 Set **505000-30-12P**	Mounting Bracket

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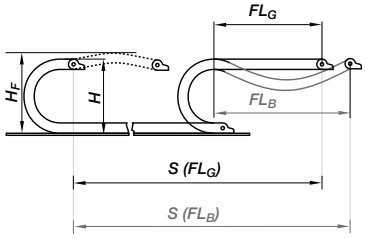
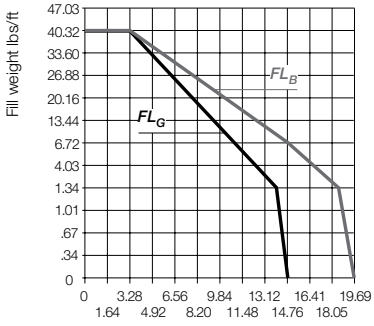
E-Chain System® E4/4
Series 5050/5150/R9850
Installation Dimensions

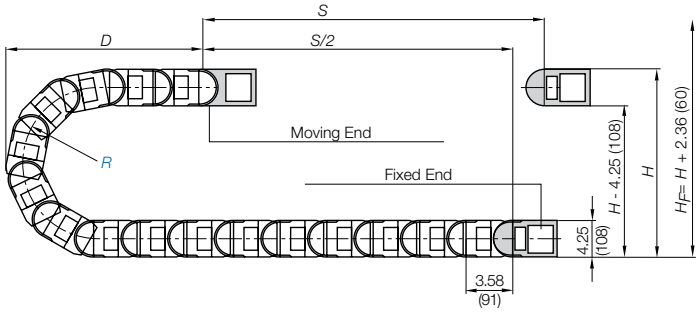
Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $\frac{S}{2} + K$

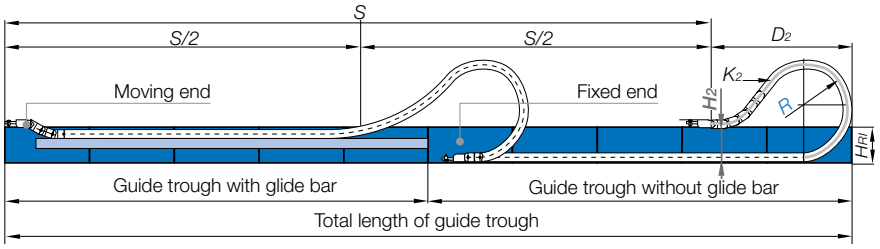
The required clearance height: $H_F = H + 2.36$ in. (60 mm) (with 2.02 lbs/ft (3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)	21.65 (550)	23.62 (600)	25.59 (650)	39.37 (1000)
H_{-0}^{+25}	16.06 (408)	20.00 (508)	23.94 (608)	27.87 (708)	31.81 (808)	35.75 (908)	43.62 (1108)	47.56 (1208)	51.50 (1308)	55.43 (1408)	82.99 (2108)
D	11.61 (295)	13.58 (345)	15.55 (395)	17.52 (445)	19.49 (495)	21.46 (545)	25.39 (645)	27.36 (695)	29.33 (745)	31.30 (795)	45.08 (1145)
K	25.79 (655)	32.09 (815)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.69 (1440)	69.09 (1755)	75.20 (1910)	81.50 (2070)	87.60 (2225)	128.15 (3255)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 1,312 ft. (400m)

For center mount applications:
Chain length: = $\frac{S}{2} + K_2$



R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)	21.65 (550)	23.62 (600)	25.59 (650)	39.37 (1000)
H_2	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	-	-
$D_{2\ +25}$	21.65 (550)	31.50 (800)	37.40 (950)	47.24 (1200)	61.02 (1550)	66.93 (1700)	85.63 (2175)	92.72 (2355)	101.57 (2580)	-	-
K_2	35.83 (910)	50.16 (1274)	64.49 (1638)	78.82 (2002)	96.73 (2457)	107.48 (2730)	136.14 (3458)	143.31 (3640)	175.55 (4459)	-	-

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

5050
5150
R9850

3.15"

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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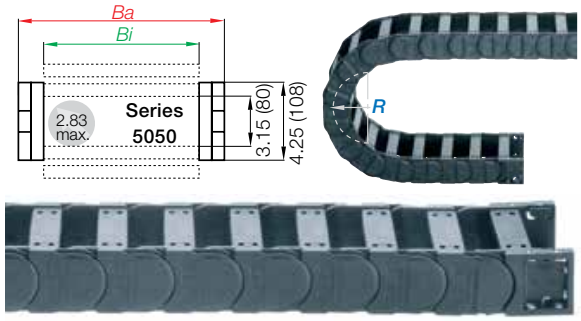
5050
5150
R9850

igus®

E-Chain System® E4/4
Series 5050/5150/R9850

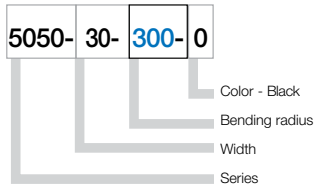
igus® E-Chain System®

Series 5050 - E-Chain® with crossbars every link

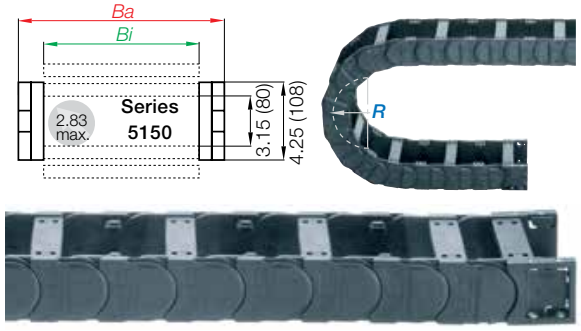


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

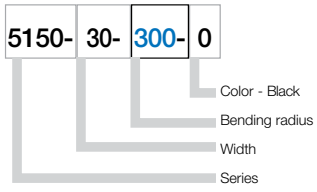


Series 5150 - E-Chain® with crossbars every other link

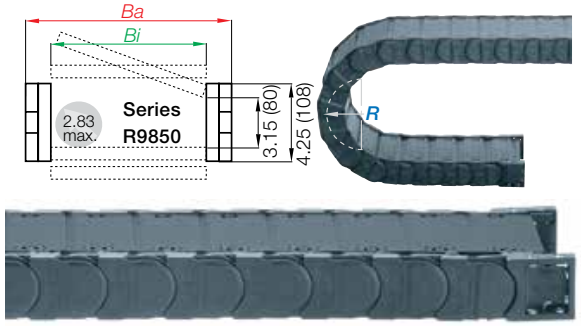


- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

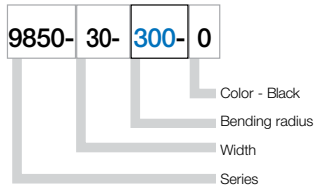


Series R9850 - fully enclosed E-Tube

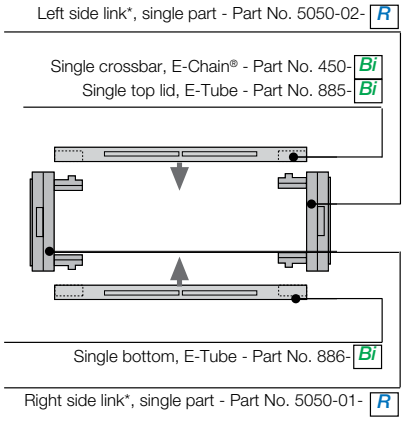


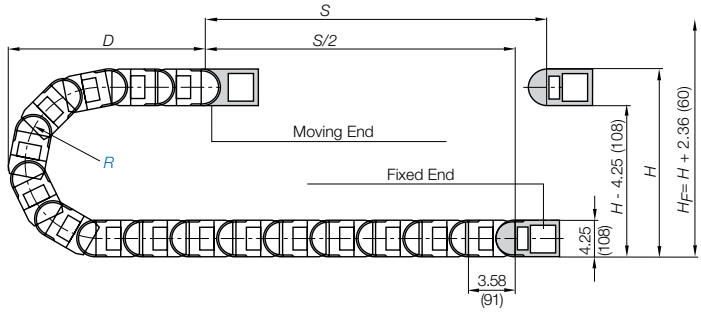
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

Part Number Structure



E-Chain® as separate parts, links and side plates





*View from the moving end of the E-Chain®/E-Tube

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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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E-Chain System® E4/4
Series 5050/5150/R9850

Supplement part number with required radius. Example: 5050-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

Part Number. Crossbars Every link	Crossbars Every other	Tube Version		Bi in. (mm)	Ba in. (mm)	5050 lbs/ft (kg/m)	5150 lbs/ft (kg/m)	R9850 lbs/ft (kg/m)
5050-05-	5150-05-		-0	1.97 (50)	3.94 (100)	≈ 3.78 (5.63)	≈ 3.78 (5.62)	–
5050-06-	5150-06-		-0	2.56 (65)	4.53 (115)	≈ 3.83 (5.70)	≈ 3.82 (5.68)	–
5050-07-	5150-07-	9850-07-	-0*	2.95 (75)	4.92 (125)	≈ 3.89 (5.79)	≈ 3.83 (5.70)	≈ 4.19 (6.24)
5050-08-	5150-08-		-0	3.43 (87)	5.39 (137)	≈ 3.96 (5.89)	≈ 3.87 (5.76)	–
5050-10-	5150-10-	9850-10-	-0	3.94 (100)	5.91 (150)	≈ 4.00 (5.96)	≈3.89 (5.79)	≈ 4.38 (6.52)
5050-11-	5150-11	-	-0	4.41 (112)	6.42 (163)	≈ 4.09 (6.09)	≈3.93 (5.85)	–
5050-12-	5150-12-	9850-12-	-0	4.92 (125)	6.89 (175)	≈ 4.14 (6.16)	≈3.96 (5.89)	≈ 4.63 (6.89)
5050-13-	5150-13-		-0	5.39 (137)	7.40 (188)	≈ 4.23 (6.29)	≈4.00 (5.95)	–
5050-15-	5150-15-	9850-15-	-0	5.91 (150)	7.87 (200)	≈ 4.27 (6.36)	≈4.02 (5.98)	≈ 4.92 (7.32)
5050-16-	5150-16-		-0	6.38 (162)	8.39 (213)	≈ 4.35 (6.47)	≈4.06 (6.04)	–
5050-17-	5150-17-	9850-17	-0	6.89 (175)	8.86 (225)	≈ 4.42 (6.58)	≈4.09 (6.09)	≈ 5.09 (7.58)
5050-18-	5150-18-		-0	7.36 (187)	9.37 (238)	≈ 4.50 (6.69)	≈4.13 (6.15)	–
5050-20-	5150-20-	9850-20-	-0	7.87 (200)	9.84 (250)	≈ 4.51 (6.71)	≈4.14 (6.16)	≈ 5.30 (7.89)
5050-21-	5150-21-		-0	8.35 (212)	10.35 (263)	≈ 4.58 (6.82)	≈4.18 (6.22)	–
5050-22-	5150-22-		-0	8.86 (225)	10.83 (275)	≈ 4.63 (6.89)	≈4.20 (6.25)	–
5050-23-	5150-23-		-0	9.33 (237)	11.34 (288)	≈ 4.72 (7.02)	≈4.24 (6.31)	–
5050-25-	5150-25-	9850-25-	-0	9.84 (250)	11.81 (300)	≈ 4.78 (7.11)	≈4.27 (6.36)	≈ 5.79 (8.61)
5050-26-	5150-26-		-0	10.31 (262)	12.32 (313)	≈ 4.83 (7.19)	≈4.30 (6.40)	–
5050-27-	5150-27-	9850-27	-0	10.83 (275)	12.80 (325)	≈ 4.91 (7.30)	≈4.34 (6.46)	≈ 5.93 (8.82)
5050-28-	5150-28-		-0	11.30 (287)	13.31 (338)	≈ 4.93 (7.33)	≈4.35 (6.47)	–
5050-30-	5150-30-	9850-30-	-0	11.81 (300)	13.78 (350)	≈ 5.07 (7.55)	≈4.42 (6.58)	≈ 6.23 (9.27)
5050-31-	5150-31-		-0	12.28 (312)	14.29 (363)	≈ 5.09 (7.58)	≈4.43 (6.60)	–
5050-32-	5150-32-		-0	12.79 (325)	14.76 (375)	≈ 5.13 (7.63)	≈4.45 (6.62)	–
5050-33-	5150-33-		-0	13.27 (337)	15.28 (388)	≈ 5.25 (7.81)	≈4.51 (6.71)	–
5050-35-	5150-35-	9850-35-	-0	13.78 (350)	15.75 (400)	≈ 5.35 (7.96)	≈4.56 (6.79)	≈ 6.73 (10.02)
5050-36-	5150-36-		-0	14.25 (362)	16.26 (413)	≈ 5.36 (7.97)	≈4.57 (6.80)	–
5050-37-	5150-37-		-0	14.76 (375)	16.73 (425)	≈ 5.37 (7.99)	≈4.57 (6.80)	–
5050-38-	5150-38-		-0	15.24 (387)	17.24 (438)	≈ 5.42 (8.07)	≈4.60 (6.84)	–
5050-40-	5150-40-	9850-40-	-0	15.75 (400)	17.72 (450)	≈ 5.56 (8.27)	≈4.66 (6.94)	≈ 7.38 (10.98)
5050-41-	5150-41-		-0	16.22 (412)	18.23 (463)	≈ 5.66 (8.43)	≈4.72 (7.02)	–
5050-42-	5150-42-		-0	16.73 (425)	18.70 (475)	≈ 5.77 (8.58)	≈4.77 (7.10)	–
5050-43-	5150-43-		-0	17.20 (437)	19.21 (488)	≈ 5.81 (8.65)	≈4.79 (7.13)	–
5050-45-	5150-45-		-0	17.72 (450)	19.69 (500)	≈ 5.85 (8.71)	≈4.81 (7.16)	–
5050-46-	5150-46-	9850-46-	-0	18.19 (462)	20.20 (513)	≈ 5.87 (8.73)	≈4.82 (7.17)	≈ 7.69 (11.44)
5050-47-	5150-47-		-0	18.70 (475)	20.67 (525)	≈ 5.96 (8.87)	≈4.87 (7.24)	–
5050-48-	5150-48-		-0	19.17 (487)	21.99 (538)	≈ 5.97 (8.88)	≈4.88 (7.26)	–
5050-50-	5150-50-		-0	19.69 (500)	21.65 (550)	≈ 6.05 (9.00)	≈4.91 (7.30)	–
5050-51-	5150-51-		-0	20.16 (512)	22.16 (563)	≈ 6.06 (9.02)	≈4.92 (7.32)	–
5050-52-	5150-52-		-0	20.67 (525)	22.64 (575)	≈ 6.09 (9.06)	≈4.93 (7.34)	–
5050-53-	5150-53-		-0	21.14 (537)	23.15 (588)	≈ 6.20 (9.22)	≈4.98 (7.41)	–
5050-55-	5150-55-		-0	21.65 (550)	23.62 (600)	≈ 6.52 (9.70)	≈5.15 (7.66)	–
5050-60-	5150-60-		-0	23.62 (600)	25.59 (650)	≈ 6.65 (9.90)	≈5.21 (7.76)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: 5050-30-300-0

	150	200	250	300	350	400	500	550	600	650	1000
R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)	21.65 (550)	23.62 (600)	25.59 (650)	39.37 (1000)
H^{-0}_{+25}	16.06 (408)	20.00 (508)	23.94 (608)	27.87 (708)	31.81 (808)	35.75 (908)	43.62 (1108)	47.56 (1208)	51.50 (1308)	55.43 (1408)	82.99 (2108)
D	11.61 (295)	13.58 (345)	15.55 (395)	17.52 (445)	19.49 (495)	21.46 (545)	25.39 (645)	27.36 (695)	29.33 (745)	31.30 (795)	45.08 (1145)
K	25.79 (655)	32.09 (815)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.69 (1440)	69.09 (1755)	75.20 (1910)	81.50 (2070)	87.60 (2225)	128.15 (3255)

** This radius is not available for the R9850 Series
*Removable lid only, no hinged option

0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.259. For large diameter hoses see page 6.259

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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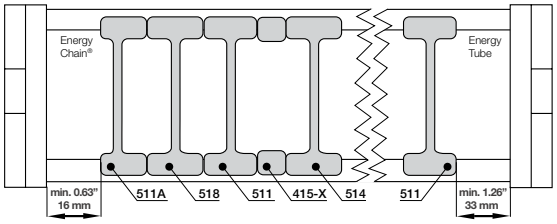
igus®

E-Chain System® E4/4
Series 5050/5150/R9850
Interior Separation

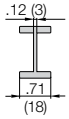
Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

NOTE: Observe a lateral spacing of at least 1.30 in. (33mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates



STANDARD
Vertical separator
501



Vertical separator

Unassembled	**Part No. 501**
Assembled	**Part No. 511**

- **Standard separator 501 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

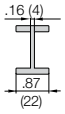
Locking separator
504

Locking separator (chain only)

Unassembled	**Part No. 504**
Assembled	**Part No. 514**

- **Locking separator 504 for E-Chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. If locking separators are used, the E-Chain® is more difficult to open.

Locking separator
508

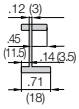


Locking separator (chain only)

Unassembled	**Part No. 508**
Assembled	**Part No. 518**

- **Locking separator 508 for E-Chains®**
  This separator is used for applications that are exposed to extremely high humidity. The clamp at the side serves to uniformly align the separators. In order to avoid destroying the separators when opening the E-Chain®, make sure all separators are identically aligned.

Asymmetric
separator
501A



Asymmetrical separator (chain only)

Unassembled	**Part No. 501A**
Assembled	**Part No. 511A**

- **Asymmetrical separator 501A for E-Chains®**
  This separator features an (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

Spacers
405-XX

Spacer (chain only)

Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	**415 -10**	.39"	(10)
405 -15	**415 -15**	.59"	(15)
405 -20	**415 -20**	79"	(20)
405 -30	**415 -30**	1.18"	(30)
405 -40	**415 -40**	1.57"	(40)

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QuickSpec: http://www.igus.com/quickspec

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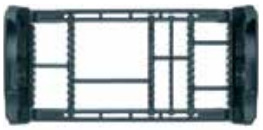
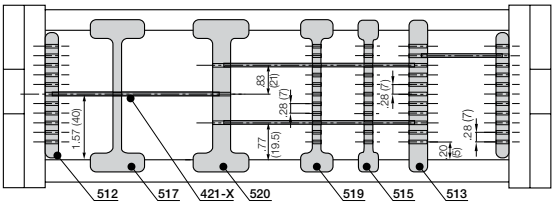
E-Chain System® E4/4
Series 5050/5150/R9850
Interior Separation



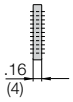
Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.



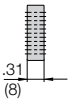
- **Side plates 502**
  This component is used to form the basic pattern of a shelf system.



Side plate	
Unassembled	**Part No. 502**
Assembled	**Part No. 512**

Side plate 502

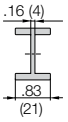
- **Vertical separator 503**
  This component is used to form the basic pattern of a shelf system.



Vertical separator	
Unassembled	**Part No. 503**
Assembled	**Part No. 513**

Vertical separator 503

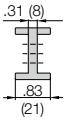
- **Locking vertical separator 507**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.



Locking vertical separator	
Unassembled	**Part No. 507**
Assembled	**Part No. 517**

Locking vertical separator 507

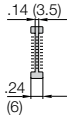
- **Locking vertical separator 510**
  This separator is slotted and able to be combined with shelves. For E-Chains® only.



Locking vertical separator (for E-Chains®)	
Unassembled	**Part No. 510**
Assembled	**Part No. 520**

Locking vertical separator 510

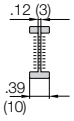
- **Slotted separators 505**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.



Slotted separators, closed	
Unassembled	**Part No. 505**
Assembled	**Part No. 515**

Closed slotted separator 505

- **Slotted separator 509**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 7 middle slots



Slotted separators, open	
Unassembled	**Part No. 509**
Assembled	**Part No. 519**

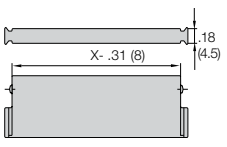
Open slotted separator 509

Shelves 420-XX

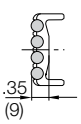
These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

Width X in.	(mm)	Usable Width in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	.39	(10)	**420-18**	**421-18**
.91	(23)	.59	(15)	**420-23**	**421-23**
.98	(25)	.67	(17)	**420-25**	**421-25**
1.10	(28)	.79	(20)	**420-28**	**421-28**
1.30	(33)	.98	(25)	**420-33**	**421-33**
1.69	(43)	1.38	(35)	**420-43**	**421-43**
1.97	(50)	1.65	(42)	**420-50**	**421-50**
2.44	(62)	2.13	(54)	**420-62**	**421-62**

Width X in.	(mm)	Usable Width in.	(mm)	Part No. Unassembled	Part No. Assembled
2.95	(75)	2.64	(67)	**420-75**	**421-75**
3.46	(88)	3.15	(80)	**420-88**	**421-88**
3.94	(100)	3.62	(92)	**420-100**	**421-100**
4.92	(125)	4.61	(117)	**420-125**	**421-125**
5.91	(150)	5.59	(142)	**420-150**	**421-150**
6.89	(175)	6.57	(167)	**420-175**	**421-175**
7.36	(187)	7.05	(179)	**420-187**	**421-187**
7.87	(200)	7.56	(192)	**420-200**	**421-200**



Rollclip - minimizes abrasion of particularly sensitive hoses or cables in an E-Chain®. The integrated rollers compensate for relative movement between the chain and the hose or cable. This reduces the abrasion of the hoses or cables



Rollclip	
Unassembled	**Part No. 489-27**
Assembled	**Part No. 490-27**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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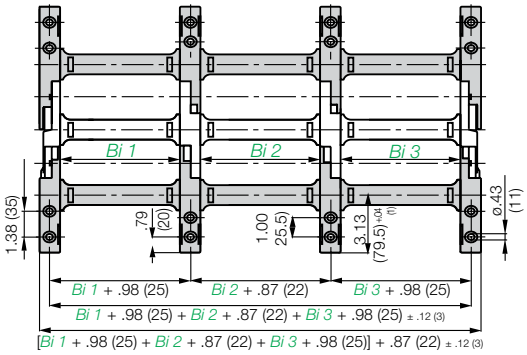
E-Chain System® E4/4
Series 5050/5150/R9850
Special Accessories

Part number example for E-Chain®
5050-10/20/10-[200]-0
5050-*Bi1*/*Bi2*/*Bi3*-[*R*]-0

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

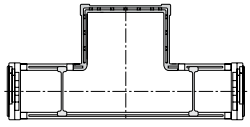
- For applications in which particularly high fill weights necessitate extremely wide E-Chains® (up to 118" (3000 mm)
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



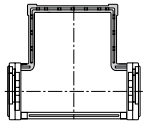
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

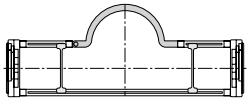
- Intended for cables and hoses with a maximum outer diameter of 10.63 in. (270 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



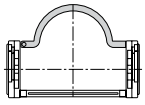
Square extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.



Round extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.

Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
450-15-RHD115	By request	Round	No	Yes
450-17-RD115	By request	Round	Yes	No
450-25-D150	By request	Square	Yes	No
450-30-D200	By request	Square	Yes	No
450-35-D250	By request	Square	Yes	No
450-40-D300	By request	Square	Yes	No
450-20-HD150	By request	Square	No	Yes
450-25-HD200	By request	Square	No	Yes
450-30-HD250	By request	Square	No	Yes

E4 clip on cable binder

- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on E-Chains®
- The loops can be adjusted as needed
- Compatible with many E4 E-Chains®
- Economical
- One clip and one locking band are needed for each chain link

Part No.	Form
450-B12	Locking clip, comprised of a locking element
450-B12-200	Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm

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E-Chain System® E4/4
Series 5050/5150/R9850
Mounting Brackets - KMA

Standard

Option 1: KMA pivoting

- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

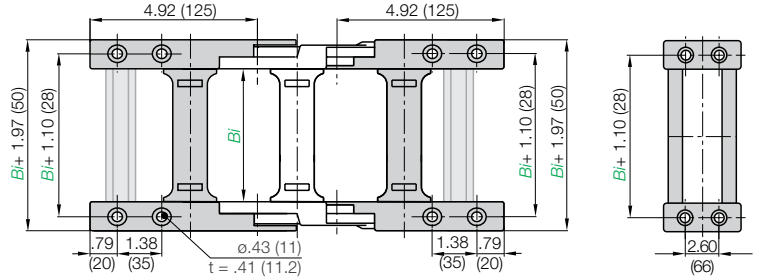
Option 2: KMA locking

- Profile rail option
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels

Part Number Structure

505000- 07- 12 T P

- With Profile Rail
- Tube version
- Complete Set
- Width
- 505000 = Pivoting, 515000 = Locking



Full set, for both ends:
505000- 05- 12 Full set, **each part with pin/bore**

Single-part order:
505000- 05- 1 Mounting bracket **with bore**
505000- 05- 2 Mounting bracket **with pin**

Part number examples are shown for pivoting brackets. For locking brackets change part number to 515000

Part No. Full Set (pivoting)
Series 5050 or 5150:
505000-Width-12

Part No. Full Set (pivoting)
with profile rail
Series 5050 or 5150
505000-Width-12P

Part No. Full Set (pivoting)
Tube Series R9850
505000-Width-12T

Part No. Full Set (pivoting)
with Profile Rail
Tube Series R9850
505000-Width-12TP

Width	Part No. Full Set Pivoting	Part No. Full Set Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-05	505000	515000	-05-12		P	1.97 (50)
-06	505000	515000	-06-12		P	2.56 (65)
-07	505000	515000	-07-12	T	P	2.95 (75)
-08	505000	515000	-08-12			3.43 (87)
-10	505000	515000	-10-12	T	P	3.94 (100)
-11	505000	515000	-11-12		P	4.41 (112)
-12	505000	515000	-12-12	T	P	4.92 (125)
-13	505000	515000	-13-12		P	5.39 (137)
-15	505000	515000	-15-12	T	P	5.91 (150)
-16	505000	515000	-16-12		P	6.38 (162)
-17	505000	515000	-17-12		P	6.89 (175)
-18	505000	515000	-18-12		P	7.36 (187)
-20	505000	515000	-20-12	T	P	7.87 (200)
-21	505000	515000	-21-12		P	8.35 (212)
-22	505000	515000	-22-12		P	8.86 (225)
-23	505000	515000	-23-12		P	9.33 (237)
-25	505000	515000	-25-12	T	P	9.84 (250)
-26	505000	515000	-26-12		P	10.31 (262)
-27	505000	515000	-27-12		P	10.83 (275)
-28	505000	515000	-28-12		P	11.30 (287)
-30	505000	515000	-30-12	T	P	11.81 (300)

Width	Part No. Full Set Pivoting	Part No. Full Set Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-31	505000	515000	-31-12		P	12.28 (312)
-32	505000	515000	-32-12		P	12.79 (325)
-33	505000	515000	-33-12		P	13.27 (337)
-35	505000	515000	-35-12	T	P	13.78 (350)
-36	505000	515000	-36-12		P	14.25 (362)
-37	505000	515000	-37-12		P	14.76 (375)
-38	505000	515000	-38-12		P	15.24 (387)
-40	505000	515000	-40-12	T	P	15.75 (400)
-41	505000	515000	-41-12		P	16.22 (412)
-42	505000	515000	-42-12		P	16.73 (425)
-43	505000	515000	-43-12		P	17.20 (437)
-45	505000	515000	-45-12		P	17.72 (450)
-46	505000	515000	-46-12	T	P	18.19 (462)
-47	505000	515000	-47-12		P	18.70 (475)
-48	505000	515000	-48-12		P	19.17 (487)
-50	505000	515000	-50-12		P	19.69 (500)
-51	505000	515000	-51-12		P	20.16 (512)
-52	505000	515000	-52-12		P	20.67 (525)
-53	505000	515000	-53-12		P	21.14 (537)
-55	505000	515000	-55-12		P	21.65 (550)
-60	505000	515000	-60-12		P	23.62 (600)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E-Chain System® E4/4
Series 5050/5150/R9850
Mounting Brackets - Steel

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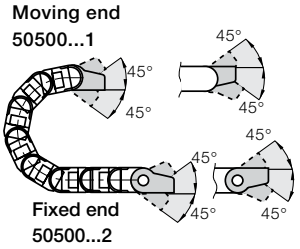
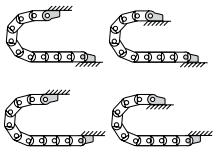
QuickSpec: http://www.igus.com/quickspec

Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive



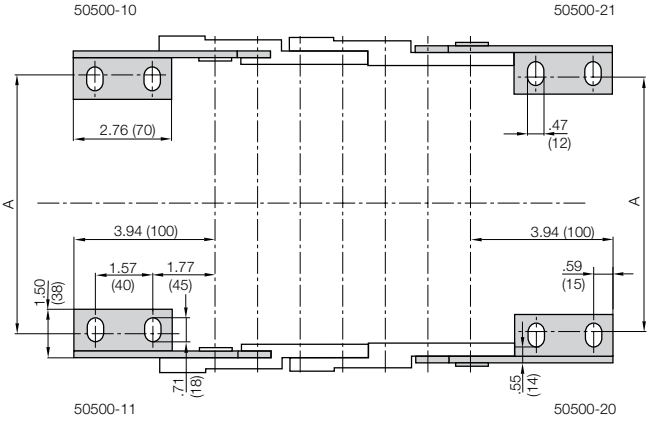


Possible installation configurations -

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 5050, 5150 or R9850:
50500-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right with bore
Series 5050, 5150 or R9850:
50500-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right with pin
Series 5050, 5150 or R9850:
50500-2



Bracket mounting dimensions

Width of Chain *Bi*	Mounting Brackets Part Number	Full Set	Moving End Only	Fixed End Only	Mounting Dimension A in. (mm)	Width of Chain *Bi*	Mounting Brackets Part Number	Full Set	Moving End Only	Fixed End Only	Mounting Dimension A in. (mm)
1.97 (50)	50500	-12	-1	-2	1.18 (30)	12.28 (312)	50500	-12	-1	-2	11.50 (292)
2.56 (65)	50500	-12	-1	-2	1.77 (45)	12.79 (325)	50500	-12	-1	-2	12.01 (305)
2.95 (75)	50500	-12	-1	-2	2.17 (55)	13.27 (337)	50500	-12	-1	-2	12.48 (317)
3.43 (87)	50500	-12	-1	-2	2.64 (67)	13.78 (350)	50500	-12	-1	-2	12.99 (330)
3.94 (100)	50500	-12	-1	-2	3.15 (80)	14.25 (362)	50500	-12	-1	-2	13.39 (342)
4.41 (112)	50500	-12	-1	-2	3.62 (92)	14.76 (375)	50500	-12	-1	-2	13.98 (355)
4.92 (125)	50500	-12	-1	-2	4.17 (105)	15.24 (387)	50500	-12	-1	-2	14.45 (367)
5.39 (137)	50500	-12	-1	-2	4.61 (117)	15.75 (400)	50500	-12	-1	-2	14.96 (380)
5.91 (150)	50500	-12	-1	-2	5.12 (130)	16.22 (412)	50500	-12	-1	-2	15.43 (392)
6.38 (162)	50500	-12	-1	-2	5.59 (142)	16.73 (425)	50500	-12	-1	-2	15.94 (405)
6.89 (175)	50500	-12	-1	-2	6.10 (155)	17.20 (437)	50500	-12	-1	-2	16.42 (417)
7.36 (187)	50500	-12	-1	-2	6.57 (167)	17.72 (450)	50500	-12	-1	-2	16.93 (430)
7.87 (200)	50500	-12	-1	-2	7.09 (180)	18.19 (462)	50500	-12	-1	-2	17.40 (442)
8.35 (212)	50500	-12	-1	-2	7.56 (192)	18.70 (475)	50500	-12	-1	-2	17.91 (455)
8.86 (225)	50500	-12	-1	-2	8.07 (205)	19.17 (487)	50500	-12	-1	-2	18.39 (467)
9.33 (237)	50500	-12	-1	-2	8.54 (217)	19.69 (500)	50500	-12	-1	-2	18.90 (480)
9.84 (250)	50500	-12	-1	-2	9.06 (230)	20.16 (512)	50500	-12	-1	-2	19.37 (492)
10.31 (262)	50500	-12	-1	-2	9.53 (242)	20.67 (525)	50500	-12	-1	-2	19.88 (505)
10.83 (275)	50500	-12	-1	-2	10.04 (255)	21.14 (537)	50500	-12	-1	-2	20.35 (517)
11.30 (287)	50500	-12	-1	-2	10.51 (267)	21.65 (550)	50500	-12	-1	-2	20.87 (530)
11.81 (300)	50500	-12	-1	-2	11.02 (280)	23.62 (600)	50500	-12	-1	-2	22.83 (580)

*Mounting bracket feet must face outward

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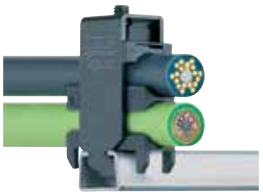
E-Chain System® E4/4
Series 5050/5150/R9850
Strain Relief

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

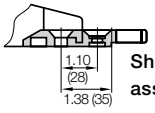
Chainfix Clip

Modular snap-on strain relief device

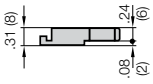
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

Cable ø		Part No. Clamp	Part No. Bottom
in.	(mm)		
.16-.31	(04-08)	CFC-08-M	CFC-08-C
.31-.47	(08-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

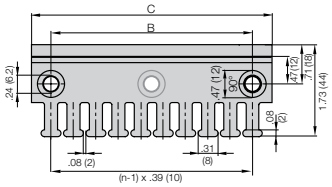


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10

Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
4550-ZS	5	1.89	(48)
4575-ZS	7	2.91	(74)

For more information please refer to strain relief section of Chapter 10

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Specs/CAD/RFQ: www.igus.com/e-chains
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igus®

E-Chain System® E4/4
Series 5050/5150/R9850
Guide Troughs

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 99-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 96-50-XX

-XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the right. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center-mounted

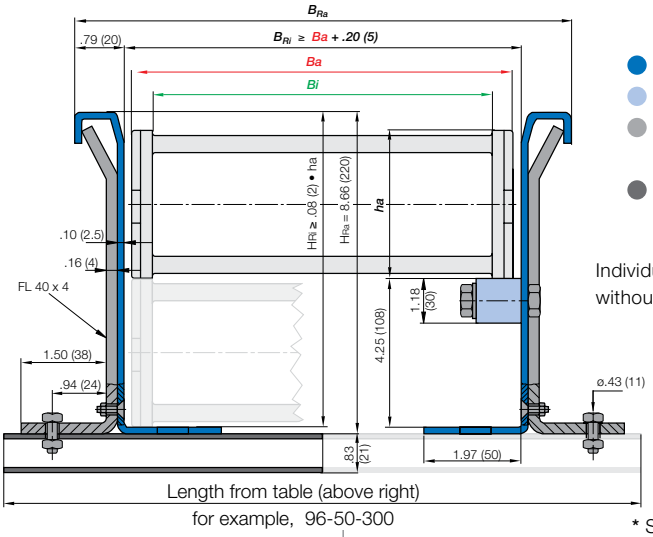
Required guide troughs:
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 99-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01
Required number of installation set:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **96-50-XXX**
Example: 96-50-400 for 15.75 (400 mm) long profile rail

Width of Crossbar 5050-**05**-200-0	B_{Ri}	Installation Part No.
-05	4.13 (105)	**96-50-225**
-06	4.72 (120)	**96-50-250**
-07	5.12 (130)	**96-50-250**
-08	5.59 (142)	**96-50-275**
-10	6.10 (155)	**96-50-275**
-11	6.61 (168)	**96-50-300**
-12	7.09 (180)	**96-50-300**
-13	7.60 (193)	**96-50-325**
-15	8.07 (205)	**96-50-325**
-16	8.58 (218)	**96-50-350**
-17	9.06 (230)	**96-50-350**
-18	9.57 (243)	**96-50-375**
-20	10.04 (255)	**96-50-375**
-21	10.55 (268)	**96-50-400**
-22	11.02 (280)	**96-50-400**
-23	11.54 (293)	**96-50-425**
-25	12.01 (305)	**96-50-425**
-26	12.52 (318)	**96-50-450**
-27	12.99 (330)	**96-50-450**
-28	13.50 (343)	**96-50-475**
-30	13.98 (355)	**96-50-475**
-31	14.49 (368)	**96-50-500**
-32	14.96 (380)	**96-50-500**
-33	15.47 (393)	**96-50-525**
-35	15.94 (405)	**96-50-525**
-36	16.46 (418)	**96-50-550**
-37	16.93 (430)	**96-50-550**
-38	17.44 (443)	**96-50-575**
-40	17.91 (455)	**96-50-575**
-41	18.43 (468)	**96-50-600**
-42	18.90 (480)	**96-50-600**
-43	19.41 (493)	**96-50-625**
-45	19.88 (505)	**96-50-625**
-46	20.39 (518)	**96-50-650**
-47	20.87 (530)	**96-50-650**
-48	21.38 (543)	**96-50-675**
-50	21.85 (555)	**96-50-675**
-51	22.36 (568)	**96-50-700**
-52	22.83 (580)	**96-50-700**
-53	23.35 (593)	**96-50-725**
-55	23.82 (605)	**96-50-725**
-60	25.79 (655)	**96-50-775**

Standard length profile rail

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

Installation sets as section connectors



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

For further technical information on guide troughs
➤ **Chapter 9**

Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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www.edfluidos.com

E-Chain System® E4/4
Series 5050/5150/R9850
Application Example

Very robust E4/4 E-Chain® Series 5050 with middle strap in a steel factory. Heat and dust are no problem for the maintenance-free igus® E-Chain® which has been in operation for 3 years.

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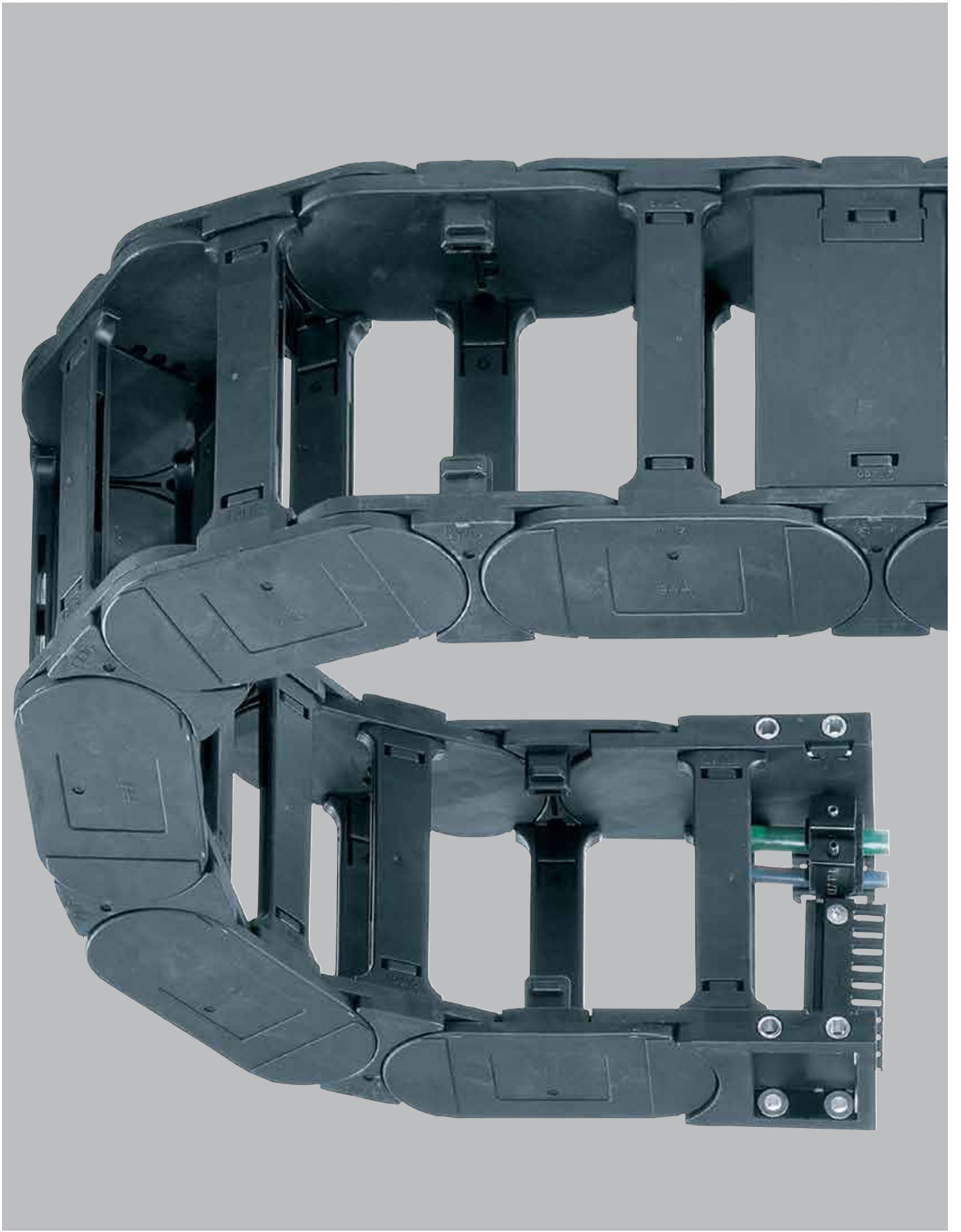

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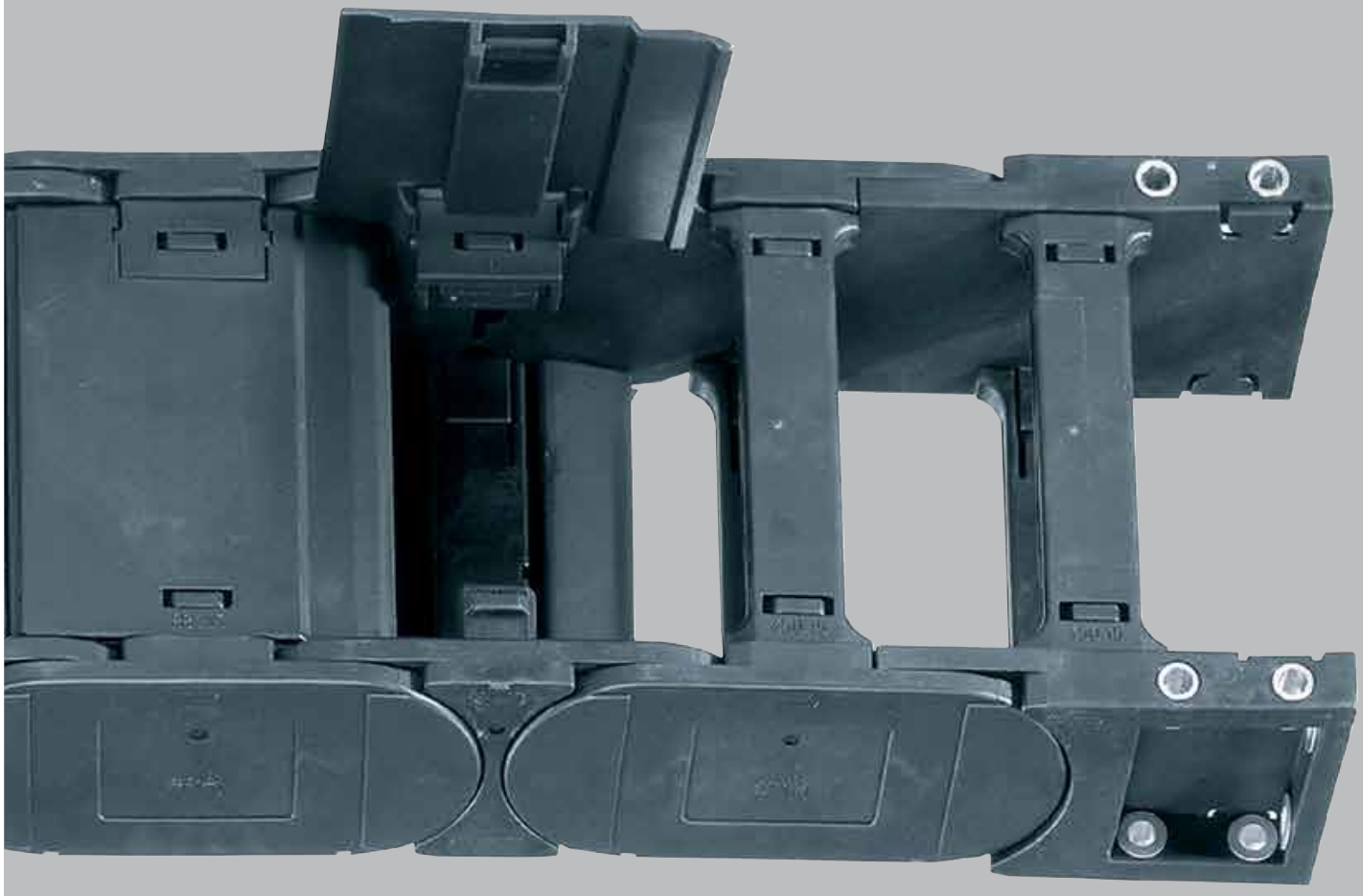


E4/100

For new applications we recommend using System E4-1 in place of the following series: Series 220, 280, 380 and 400.
Continue to use the Series 600 and 640 until and E4-1 equivalent is available.

For new applications we recommend System E4-1

E4/100 - for smooth running and easy assembly

E4/00 has a unique design featuring inner and outer side links, which makes it extremely easy to assemble and disassemble on site. E4/00 can reduce noise by up to 50 percent and can handle high fill weights, high accelerations and high speeds. Available from stock.

Typical industries and applications

- Robotics and handling
- Material handling
- Freezing environment
- Construction machinery
- Machine tools
- Woodworking machinery
- Machines of all kinds
- Semicon
- Cleanroom
- Welding machines
- General machinery

IPA Certificate, Cleanroom ISO Class 3 (DIN 14644-1) at v = 1 m/s for Series 280-10-100-0 tested with igus® Chainflex® cables

ATEX/ESD: Excellent performance with the special material igumid ESD (upon request) “Rear grip” achieves long-term electrical conductivity

High torsional rigidity

System E4/4 approved with long travels

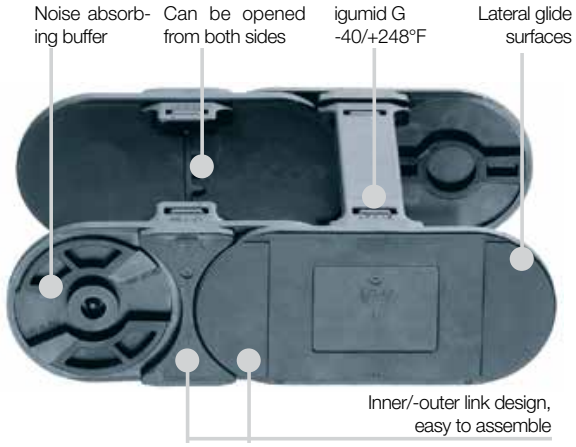
System E4 - 4-piece E-Chain® links

Long unsupported spans, high stability

Quiet and strong - ideal for handling applications

Sturdy design for construction equipment

E-Chain System® E4/100
Selection Guide



- Lowest noise in its class
- Further noise reduction with rubber pads (Series E4/101)
- Broad application spectrum
- Numerous interior separation possibilities
- Wide range of modular accessories
- Widths up to 118" (3000 mm) using extension links
- Maximum stability in the igus® range
- Can be opened along both the inner and outer radii
- Maximum travel: 656 - 1,312 ft. (200 - 400 m)
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

Crossbars every link
for particularly demanding applications

Series	Inner height *hi* in.	(mm)	Inner width *Bi* in.	(mm)	Outer width *Ba* in.	(mm)	Outer height *ha* in.	(mm)	Bending radius *R* in.	(mm)
220	1.10	(28)	1.57-11.81	(40-300)	2.36-12.60	(60-320)	1.65	(42)	2.16-9.84	(55-250)
280	1.26	(32)	1.97-15.75	(50-400)	2.87-16.65	(73-423)	2.13	(54)	2.48-11.81	(63-300)
380	1.65	(42)	1.97-15.75	(50-400)	2.99-16.77	(76-426)	2.52	(64)	2.95-13.78	(75-350)
400	2.20	(56)	1.97-23.62	(50-600)	3.31-24.96	(84-634)	3.31	(84)	5.31-19.69	(135-500)
600	4.25	(108)	7.87-23.62	(200-600)	9.92-25.67	(252-652)	5.51	(140)	7.87-39.37	(200-1000)
640	4.41	(112)	3.43-22.13	(87-562)	5.47-24.17	(139-614)	5.51	(140)	7.87-39.37	(200-1000)
800	7.87	(200)	7.87-23.62	(200-600)	9.84-25.98	(250-660)	9.29	(236)	12.80-39.37	(325-1000)

Crossbars every 2nd link
for almost all applications

Series	Inner height *hi* in.	(mm)	Inner width *Bi* in.	(mm)	Outer width *Ba* in.	(mm)	Outer height *ha* in.	(mm)	Bending radius *R* in.	(mm)
290	1.26	(32)	1.97-15.75	(50-400)	2.87-16.65	(73-423)	2.13	(54)	2.48-11.81	(63-300)
390	1.65	(42)	1.97-15.75	(50-400)	2.99-16.77	(76-426)	2.52	(64)	2.95-13.78	(75-350)
410	2.20	(56)	1.97-23.62	(50-600)	3.31-24.96	(84-634)	3.31	(84)	5.31-19.69	(135-500)
601	4.25	(108)	7.87-23.62	(200-600)	9.92-25.67	(252-652)	5.51	(140)	7.87-39.37	(200-1000)

E-Tubes
fully enclosed, excellent cable protection

Series	Inner height *hi* in.	(mm)	Inner width *Bi* in.	(mm)	Outer width *Ba* in.	(mm)	Outer height *ha* in.	(mm)	Bending radius *R* in.	(mm)
R760	1.10	(28)	1.97-11.81	(50-300)	2.76-12.60	(70-320)	1.65	(42)	2.95-9.84	(75-250)
R770	1.26	(32)	1.97-11.81	(50-300)	2.87-12.72	(73-323)	2.13	(54)	4.92-11.81	(125-300)
R780	1.65	(42)	1.97-11.81	(50-300)	2.99-12.83	(76-326)	2.52	(64)	4.92-13.78	(125-350)
R880	2.20	(56)	2.95-18.19	(75-462)	4.29-19.57	(109-497)	3.31	(84)	5.91-19.69	(150-500)
R608	4.25	(108)	7.87-15.75	(200-400)	9.92-17.80	(252-452)	5.51	(140)	9.84-39.37	(250-1000)

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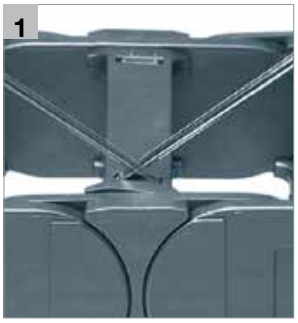
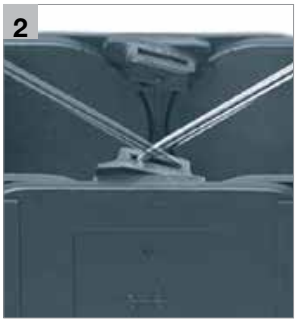
E-Chain System® E4/100
Assembly instructions

E-Chains® - Opening

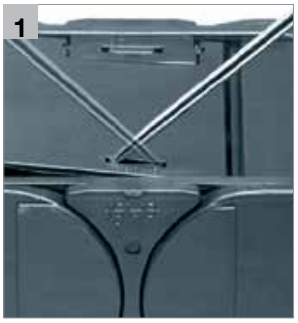


Remove crossbars - Insert screwdriver into the slot, using a lever action, apply pressure to the screwdriver to remove the crossbar.

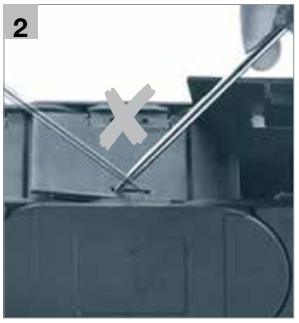


Remove clips - Insert screwdriver into the slot, using a lever action, apply pressure to the screwdriver to remove the clip

E-Tube - Opening



Remove lids/bottoms - Insert screwdriver into the slot, using a lever action apply pressure to the screwdriver to release

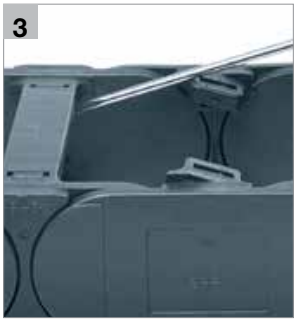


Release only **one side** to open the lid

E-Chains® and E-Tubes - Assembling

Line up two inner side links side by side. Attach an outer side link between

Assemble crossbars - push down and snap in using a screwdriver



Assemble clips (for E-Chains with crossbars every other link) - push down and snap in using a screw-driver

Assemble E-Tube lids and bottoms - Attach to the connector at an angle and snap in place

E-Chains® and E-Tubes - Separating

Remove crossbars, clips, lids and bottoms at the outer links

Insert screwdriver into the slot between the side links. Using a lever action, release the side links

Remove the outer links

Separate the E-Chain®

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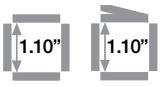
220
R760

igus®

E-Chain System® E4/100
Series 220/R760

For new applications use Series E4-28



Price Index

Series 220 Series R760

Special Features / Options

Low noise version E4/101 Series 221 available with special rubber pads

Clean-Room — Cleanroom test upon request

EX — ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 262 ft (80 m)
Vertical, standing ≤ 16.4 ft (5 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

Usage Guidelines

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High fill weights

- For zig-zag lift applications
  ➤ **System E4/4**
- For side-mounted applications
  ➤ **System E4/4**
- If an extremely vibration-free E-Chain® is necessary
  ➤ **Series E6-29/R6-29**

Features & Benefits

1. Locking or pivoting mounting brackets available
2. KMA mounting brackets with attachment points on all sides
3. Optimized glide pads with lateral wear allowance
4. Hinged snap-open removable lids along the outer radius of the Energy tube
5. Integrated strain relief possible
6. Closed and open styles can be combined
7. Crossbars on E-Chains® are removable along both radii
8. Wide, rounded crossbars
9. Numerous interior separation possibilities
10. Stop dog with “brake” for noise reduction
11. E-Chains® also available with reverse bending radius “RBR”

Also available as E4/00-NC without camber: 220-NC

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

9.84 ft (3 m) **220-300-250-0**	**E-Chain®**
With 2 separators **2211** assembled every 2nd link	**Interior Separation**
1 Set **2200-300-12**	**Mounting Bracket**

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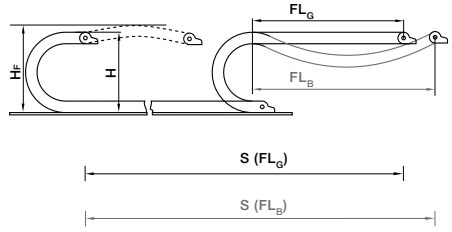
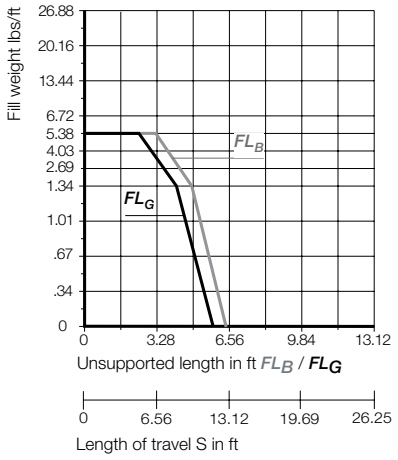
E-Chain System® E4/100
Series 220/R760
Installation Dimensions

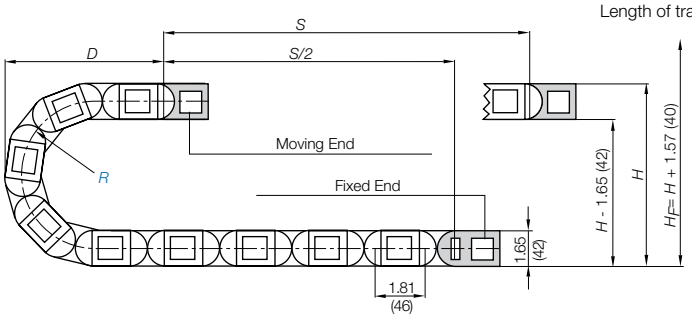
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.81" (46 mm)
Links per ft (m): = 6.71 (22)
For center mount applications:
Chain length = $S/2 + K$

The required clearance height: $H_F = H$ **+ 1.57 in. (40 mm)** (with .67 lbs/ft (1 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

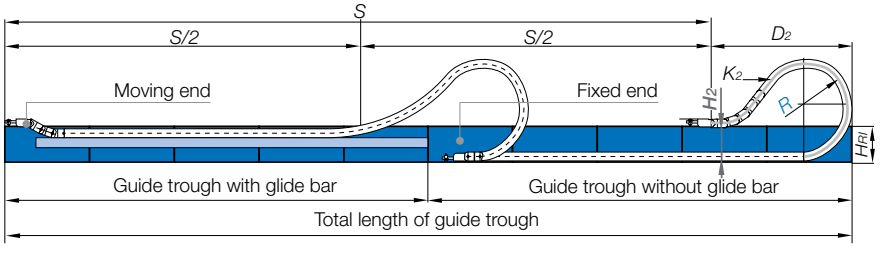
R	2.17 (055**)	2.48 (063*)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	6.06 (154)	6.69 (170)	7.64 (194)	9.61 (244)	11.57 (294)	13.54 (344)	15.51 (394)	17.48 (444)	21.42 (544)
D	4.92 (125)	5.24 (133)	5.71 (145)	6.69 (170)	7.68 (195)	8.66 (220)	9.65 (245)	10.63 (270)	12.60 (320)
K	10.43 (265)	11.42 (290)	12.99 (330)	16.14 (410)	19.09 (485)	22.24 (565)	25.39 (645)	28.54 (725)	34.65 (880)

**Not available for R760

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 656 ft. (200m)

For center mount applications:
Chain length: = $S/2 + K_2$



R	2.17 (055**)	2.48 (063**)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H2	-	-	-	6.22 (158)	6.22 (158)	6.22 (158)	6.22 (158)	6.22 (158)	6.22 (158)
D2	-	-	-	13.78 (350)	19.29 (490)	20.87 (530)	25.79 (655)	28.74 (730)	36.81 (935)
K2	-	-	-	23.54 (598)	30.79 (782)	36.22 (920)	43.46 (1104)	48.90 (1242)	63.39 (1610)

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

**Not available for R760

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

- S = Length of travel
- R = Bending radius
- H = Nominal clearance height
- D = Overlength E-Chain® radius in final position
- K = π • R + *safety buffer*
- H_F = Required clearance height
- H_{RI} = Trough inner height
- H_2 = *Mounting height
- D_2 = Overlength - long travels, gliding
- K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ **Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

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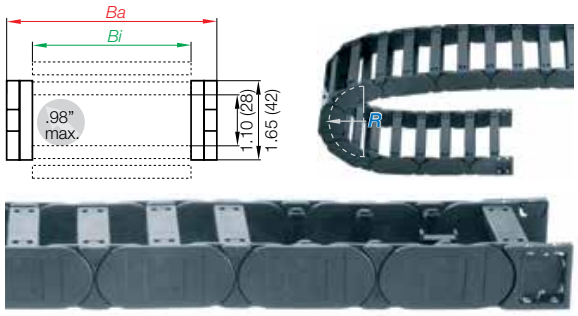
igus®

E-Chain System® E4/100
Series 220/R760

Telephone 1-800-521-2747
Fax 1-401-438-7270

Series 220 - E-Chain® with crossbars every link



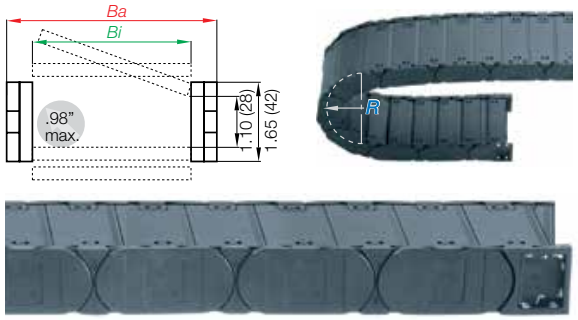
- Robust solution with crossbars every link
- Can be opened from two sides
- Removable crossbars

Part Number Structure

220- 300- 250- 0

- 250- : Color - Black
- 300- : Bending radius
- 220- : Width
- 0 : Series

Series R760 - fully enclosed E-Tube



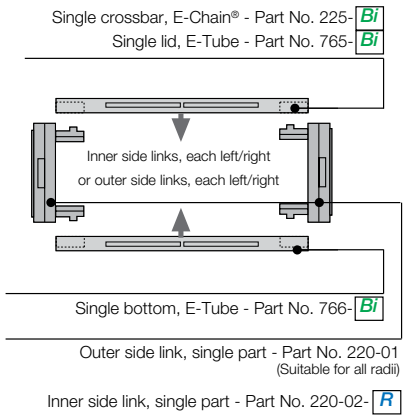
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

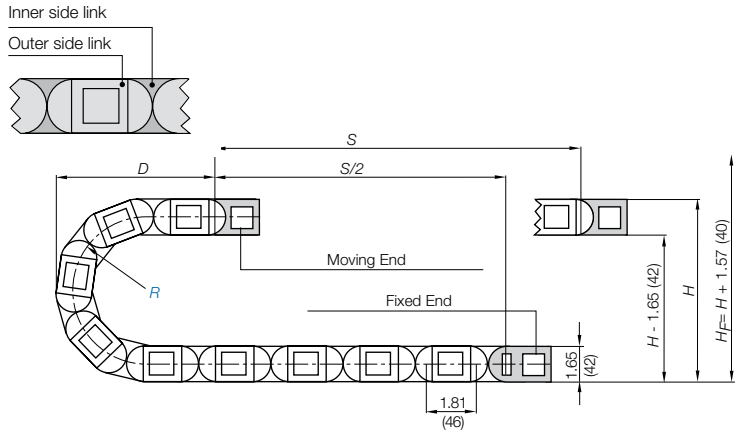
Part Number Structure

760- 300- 250- 0

- 250- : Color - Black
- 300- : Bending radius
- 760- : Width
- 0 : Series

E-Chain® as separate parts, links and side plates





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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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E-Chain System® E4/100
Series 220/R760

Supplement part number with required radius. Example: 220-300-250-0
Pitch: 1.81 in. (46mm) per link links/ft(m) = 6.71 (22)

Part Number. Crossbars Every link	Tube Version			*Bi* in. (mm)	*Ba* in. (mm)	220 lbs/ft (kg/m)	R760 lbs/ft (kg/m)
220-040-		☐	-0	1.57 (40)	2.36 (60)	≈ 0.71 (1.06)	–
220-050-	760-050-	☐	-0	1.97 (50)	2.76 (70)	≈ 0.74 (1.10)	≈ 0.84 (1.25)
220-062-		☐	-0	2.44 (62)	3.23 (82)	≈ 0.77 (1.14)	–
220-070-		☐	-0	2.76 (70)	3.54 (90)	≈ 0.79 (1.18)	–
220-075-	760-075	☐	-0	2.95 (75)	3.74 (95)	≈ 0.81 (1.21)	≈ 0.97 (1.44)
220-087-		☐	-0	3.43 (87)	4.21 (107)	≈ 0.85 (1.27)	–
220-100-	760-100-	☐	-0	3.94 (100)	4.72 (120)	≈ 0.89 (1.32)	≈ 1.10 (1.64)
220-125-	760-125-	☐	-0	4.92 (125)	5.71 (145)	≈ 0.96 (1.43)	≈ 1.24 (1.84)
220-150-	760-150-	☐	-0	5.91 (150)	6.69 (170)	≈ 1.03 (1.54)	≈ 1.36 (2.02)
220-175-	760-175-	☐	-0	6.89 (175)	7.68 (195)	≈ 1.11 (1.65)	≈ 1.52 (2.26)
220-200-	760-200-	☐	-0	7.87 (200)	8.66 (220)	≈ 1.18 (1.76)	≈ 1.61 (2.40)
220-225-	760-225-	☐	-0	8.86 (225)	9.65 (245)	≈ 1.26 (1.87)	≈ 1.72 (2.56)
220-250-	760-250-	☐	-0	9.84 (250)	10.63 (270)	≈ 1.33 (1.98)	≈ 1.92 (2.85)
220-275-		☐	-0	10.83 (275)	11.61 (295)	≈ 1.40 (2.09)	–
220-300-	760-300-	☐	-0	11.81 (300)	12.60 (320)	≈ 1.48 (2.20)	≈ 2.16 (3.21)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 220-300-250-0

	055**	063**	075	100	125	150	175	200	250
R	2.17 (055*)	2.48 (063*)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	6.06 (154)	6.69 (170)	7.64 (194)	9.61 (244)	11.57 (294)	13.54 (344)	15.51 (394)	17.48 (444)	21.42 (544)
D	4.92 (125)	5.24 (133)	5.71 (145)	6.69 (170)	7.68 (195)	8.66 (220)	9.65 (245)	10.63 (270)	12.60 (320)
K	10.43 (265)	11.42 (290)	12.99 (330)	16.14 (410)	19.09 (485)	22.24 (565)	25.39 (645)	28.54 (725)	34.65 (880)

** This radius is not available for the R760 Series
0=Standard color black. For other colors see Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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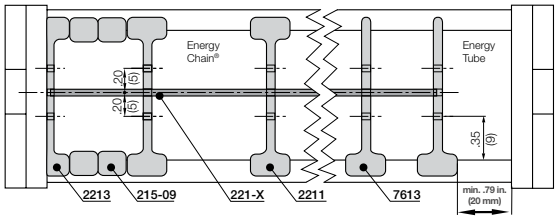
igus®

E-Chain System® E4/100
Series 220/R760
Interior Separation

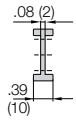
Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.
NOTE: Observe a lateral spacing of at least .79 in. (20mm) for E-Tubes and



Standard

Vertical separator 2201

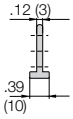


Vertical separator (Chain only)

Unassembled	**Part No. 2201**
Assembled	**Part No. 2211**

- **Standard separator 2201 for E-Chains®**
  This separator is used for vertical subdivision. Because they are slotted, separators can also be used horizontally to form simple compartments.

Vertical separator 7603

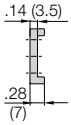


Vertical separator (tube only)

Unassembled	**Part No. 7603**
Assembled	**Part No. 7613**

- **Vertical separator 7603 for E-Tubes**
  This separator is used for vertical subdivision. Because they are slotted, separators can also be used horizontally to form simple compartments.

Side plate 2203



Side plate (chain only)

Unassembled	**Part No. 2203**
Assembled	**Part No. 2213**

- **Side plate 2203 for E-Chains®**
  Used in conjunction with full-width shelf 220-X, this option is used for applications involving many thin cables with similar diameters.

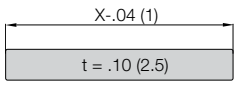
Spacers 205-09

Spacer (chain only)

Unassembled	**Part No. 205-09**
Assembled	**Part No. 215-09**

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Full-width shelf 220-XX



Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.57	(040)	**220-40**	**221-40**
1.97	(050)	**220-50**	**221-50**
2.44	(062)	**220-62**	**221-62**
2.76	(070)	**220-70**	**221-70**
2.95	(075)	**220-75**	**221-75**
3.43	(087)	**220-87**	**221-87**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
3.94	(100)	**220-100**	**221-100**
4.92	(125)	**220-125**	**221-125**
5.91	(150)	**220-150**	**221-150**
6.89	(175)	**220-175**	**221-175**
7.87	(200)	**220-200**	**221-200**

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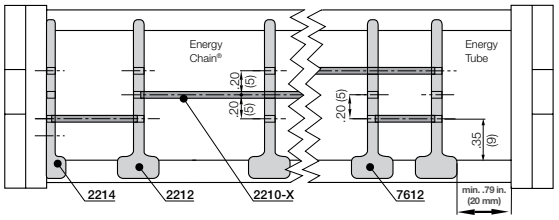
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E4/100
Series 220/R760
Interior Separation

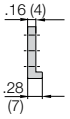
Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.



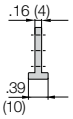
- **Side plates 2204**
  This component is used to form the basic pattern of a shelf system.



Side plate	
Unassembled	**Part No. 2204**
Assembled	**Part No. 2214**

Side plate
2204

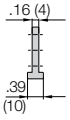
- **Vertical separator 2202 for E-Chain®**
  This component is used to form the basic pattern of a shelf system.



Vertical separator (chain only)	
Unassembled	**Part No. 2202**
Assembled	**Part No. 2212**

Vertical separator
2202

- **Vertical separator 7602 for E-Tube**
  This separator is slotted and able to be combined with shelves



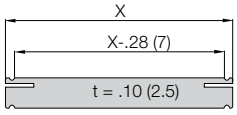
Vertical separator (tube only)	
Unassembled	**Part No. 7602**
Assembled	**Part No. 7612**

Vertical separator
7602

Shelves 420-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	**2200-18**	**2210-18**	1.89	(48)	**2200-48**	**2210-48**
.91	(23)	**2200-23**	**2210-23**	2.28	(58)	**2200-58**	**2210-58**
1.10	(28)	**2200-28**	**2210-28**	2.68	(68)	**2200-68**	**2210-68**
1.30	(33)	**2200-33**	**2210-33**	2.87	(73)	**2200-73**	**2210-73**
1.50	(38)	**2200-38**	**2210-38**	3.46	(88)	**2200-88**	**2210-88**
1.69	(43)	**2200-43**	**2210-43**	3.90	(99)	**2200-99**	**2210-99**



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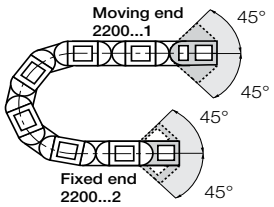
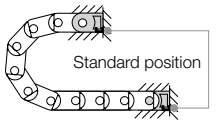
E-Chain System® E4/100
Series 220/R760
Mounting Brackets - KMA

Option 1: pivoting

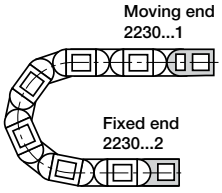
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

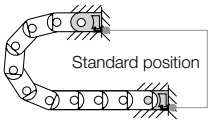




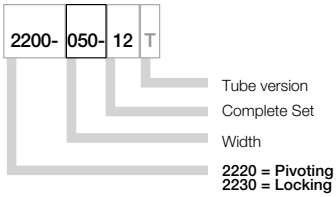
Option 2: locking

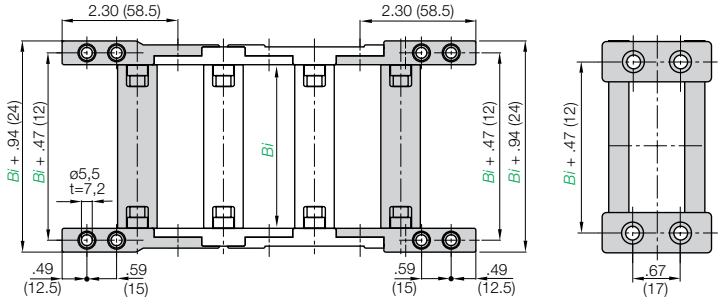
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels





Part Number Structure





Part number examples are shown for pivoting brackets. For locking brackets change part number to 2230

Part No. Full Set (pivoting)
Series 220
2220-Width-12

Part No. Full Set (pivoting)
Tube Series R760
2220-Width-12T

Due to the design of the E4/100 series chains, please note the following when ordering brackets:

Even number of links = full set, part number ending in **-12**
Odd number of links = 2 pieces, part number ending in **-2**

Width	Part No. Full Set Pivoting	Part No. Full Set Locking		Tube Option	*Bi* in. (mm)
-040	2220	2230	-040-12		1.57 (40)
-050	2220	2230	-050-12	T	1.97 (50)
-062	2220	2230	-062-12		2.44 (62)
-070	2220	2230	-070-12		2.76 (70)
-075	2220	2230	-075-12	T	2.95 (75)
-087	2220	2230	-087-12		3.43 (87)
-100	2220	2230	-100-12	T	3.94 (100)
-125	2220	2230	-125-12	T	4.92 (125)
-150	2220	2230	-150-12	T	5.91 (150)
-175	2220	2230	-175-12	T	6.89 (175)
-200	2220	2230	-200-12	T	7.87 (200)
-225	2220	2230	-225-12	T	8.86 (225)
-250	2220	2230	-250-12	T	9.84 (250)
-275	2220	2230	-275-12		10.83 (275)
-300	2220	2230	-300-12	T	11.81 (300)

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E-Chain System® E4/100
Series 220/R760
Guide Troughs

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

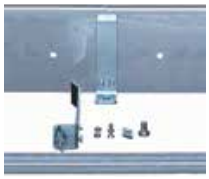
- Full travel length of guide trough
  Part No. 96-30
- 1/2 travel length of glide bars
  Part No. 92-01
- Installation sets as end connectors
  Part No. 95-50-XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. Standard length of the trough components and glide bars is 6.56 ft (2m). The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft. (50 m)
Center mounted

Required guide troughs:
164 ft (50 m) guide trough,
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 96-30
= 13 sections of 6.56 ft. (2 m) glide bar
Part No. 92-01
Required number of installation sets
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
95-50-XXX
Example: 95-50-400 for 15.75 (400 mm) long profile rail

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

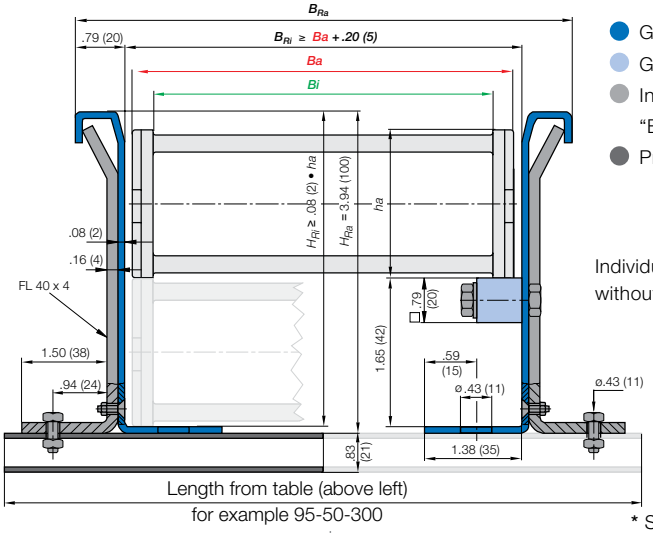


Installation sets as section connectors

Width of Crossbar
220-**040**-200-0

B_{Ri}	Installation Part No.
-040 2.56 (65)	*
-050 2.95 (75)	**95-50-200**
-062 3.43 (87)	**95-50-200**
-070 3.74 (95)	**95-50-200**
-075 3.94 (100)	**95-50-225**
-100 4.92 (125)	**95-50-250**
-125 5.91 (150)	**95-50-275**
-150 6.89 (175)	**95-50-300**
-175 7.87 (200)	**95-50-325**
-200 8.86 (225)	**95-50-350**
-225 9.84 (250)	**95-50-375**
-250 10.83 (275)	**95-50-400**
-275 11.81 (300)	**95-50-425**
-300 12.80 (325)	**95-50-450**

Standard length profile rail



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
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280
290
R770

igus®

E-Chain System® E4/100
Series 280/290/R770

For new applications use Series E4-32

1.26" 1.26"

Price Index

Series 280 Series 290 Series R770

Special Features / Options

Low noise version E4/101 Series 281 available with special rubber pads

IPA Certificate, Cleanroom ISO Class 3 (DIN 14644-1) at v = 1 m/s for Series 280.10.100.0 tested with igus® Chainflex® cables

ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 262 ft (80 m)
Vertical, standing ≤ 16.4 ft (5 m)
Side-mounted, unsupp. ≤ 4.92 ft (1.5 m)
Rotary requires further calculation

Usage Guidelines

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High fill weights

- If long, side-mounted, unsupported length is required
  ➤ **Series 2828/2928/R7728**
- If single-radius accessibility is sufficient
  ➤ **Series 26/27/27i, Chapter 4**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Locking or pivoting mounting brackets available
3. Crossbars on E-Chains® are removable along both radii
4. Hinged snap-open removable lids along the outer radius of the Energy tube
5. Closed and open styles can be combined
6. Optimized glide pads with lateral wear allowance
7. Integrated strain relief possible
8. Numerous interior separation possibilities
9. Wide, rounded crossbars
10. Stop dog with “brake” for noise reduction
11. E-Chains® also available with reverse bending radius “RBR”

Also available as
E4/00-NC without camber:
280-NCST

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

13.12 ft (4 m) **280-30-300-0**	**E-Chain®**
With 2 separators **281** assembled every 2nd link	**Interior Separation**
1 Set **28000-30-12P**	**Mounting Bracket**

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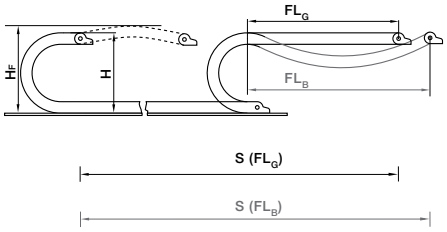
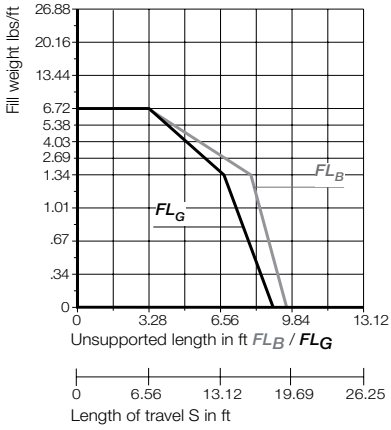
E-Chain System® E4/100
Series 280/290/R770
Installation Dimensions

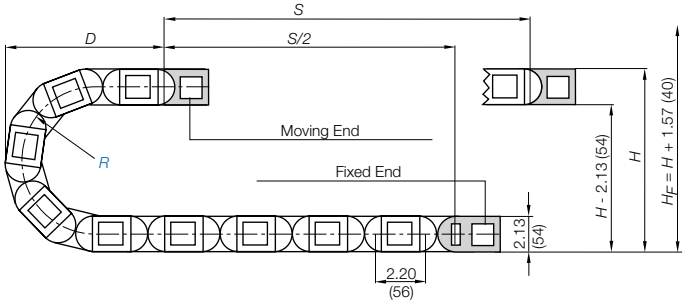
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.49 (18)
For center mount applications:
Chain length = $S/2 + K$

The required clearance height: H_F **= H + 1.57 in. (40 mm)** (with 1.34 lbs/ft (2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

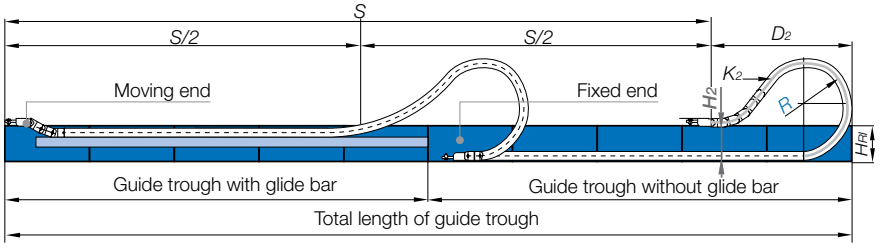
R	2.48 (063**)	2.95 (075**)	3.94 (100**)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
H^{-0}_{+20}	7.09 (180)	8.07 (205)	10.04 (255)	12.01 (305)	13.98 (355)	15.51 (405)	17.91 (455)	19.49 (495)	21.85 (555)	25.79 (655)
D	5.75 (146)	6.22 (158)	7.20 (183)	8.19 (208)	9.17 (233)	10.16 (258)	11.14 (283)	11.93 (303)	13.11 (333)	15.08 (383)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.88 (505)	23.03 (585)	26.18 (665)	29.33 (745)	31.69 (805)	35.43 (900)	41.54 (1055)

**Not available for R770

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 656 ft. (200m)

For center mount applications:
Chain length: = $S/2 + K_2$



Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

R	2.48 (063**)	2.95 (075**)	3.94 (100**)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
H_2	-	-	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
D_2+25	-	-	14.57 (370)	18.50 (470)	19.69 (500)	25.79 (655)	30.31 (770)	35.43 (900)	36.61 (930)	43.31 (1100)
K_2	-	-	24.25 (616)	30.87 (784)	35.27 (896)	44.10 (1120)	50.71 (1288)	57.32 (1456)	61.73 (1568)	75.00 (1904)

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

**Not available for R770

Technical Data

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Details of material properties
➤ Chapter 1

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igus®

E-Chain System® E4/100
Series 280/290/R770

igus® E-Chain System®
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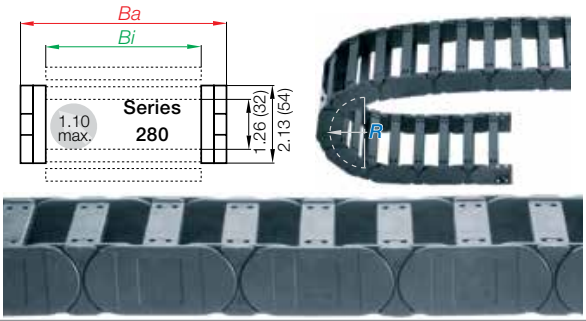
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Series 280 - E-Chain® with crossbars every link

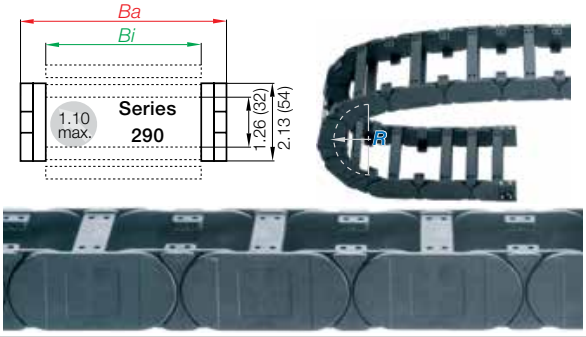


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

280	30-	300-	0
Series	Width	Bending radius	Color - Black

Series 290 - E-Chain® with crossbars every other link

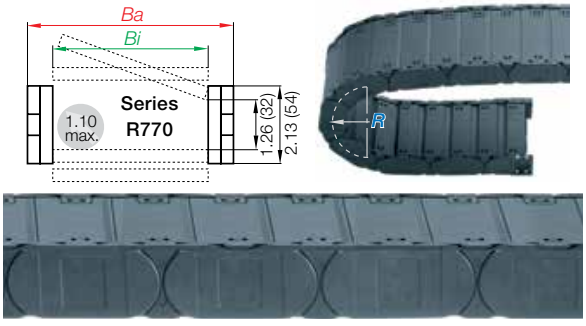


- Crossbars every other link Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

290-	20-	300-	0
Series	Width	Bending radius	Color - Black

Series R770 - fully enclosed E-Tube

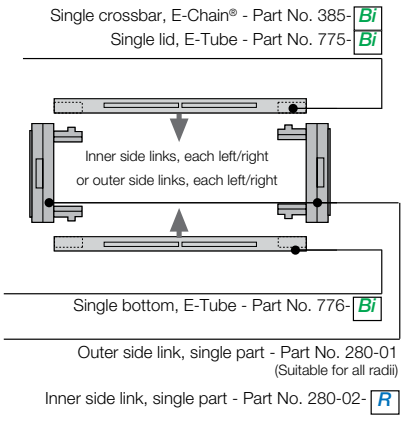


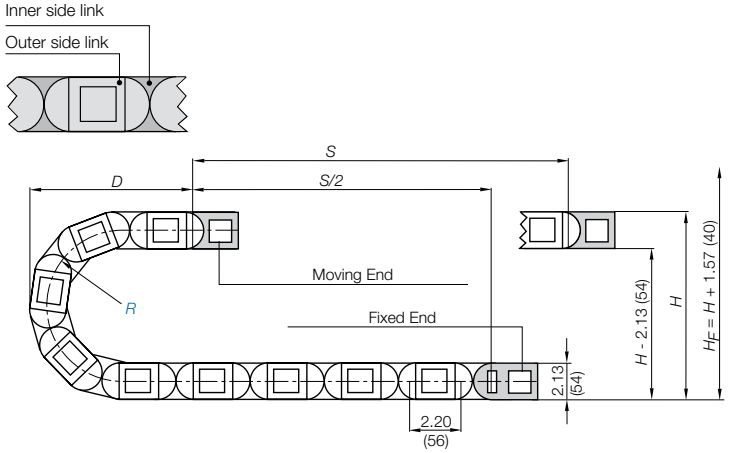
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

Part Number Structure

770-	30-	300-	0
Series	Width	Bending radius	Color - Black

E-Chain® as separate parts, links and side plates





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E-Chain System® E4/100
Series 280/290/R770

Supplement part number with required radius. Example: 280-30-[300]-0
Pitch: 2.20 in. (56mm) per link links/ft (m) = 5.49 (18)

Part Number				Bi	Ba	Weight		
Crossbars Every link	Crossbars Every other	Tube Version		in. (mm)	in. (mm)	280 lbs/ft (kg/m)	290 lbs/ft (kg/m)	R770 lbs/ft (kg/m)
280-05-	290-05	*770-05-	[ ]-0	1.97 (50)	2.87 (73)	≈ 1.16 (1.73)	≈ 1.10 (1.64)	≈ 1.76 (2.63)
280-06-	290-06-		[ ]-0	2.68 (68)	3.58 (91)	≈ 1.20 (1.79)	≈ 1.12 (1.67)	–
280-07-	290-07	770-07-	[ ]-0	2.95 (75)	3.86 (98)	≈ 1.24 (1.84)	≈ 1.14 (1.69)	≈ 1.84 (2.75)
280-087-	290-087-		[ ]-0	3.43 (87)	4.33 (110)	≈ 1.30 (1.93)	≈ 1.16 (1.73)	–
280-10-	290-10-	770-10-	[ ]-0	3.94 (100)	4.84 (123)	≈ 1.36 (2.02)	≈ 1.20 (1.78)	≈ 1.90 (2.83)
280-11-	290-11-	770-11-	[ ]-0	4.25 (108)	5.16 (131)	≈ 1.40 (2.08)	≈ 1.22 (1.81)	≈ 1.98 (2.94)
280-112-	290-112-		[ ]-0	4.41(112)	5.35 (136)	≈ 1.44 (2.15)	≈ 1.24 (1.84)	–
280-12-	290-12-	770-12-	[ ]-0	4.92 (125)	5.83 (148)	≈ 1.48 (2.20)	≈ 1.26 (1.87)	≈ 2.04 (3.03)
280-137-	290-137-		[ ]-0	5.39 (137)	6.34 (161)	≈ 1.54 (2.29)	≈ 1.28 (1.91)	–
280-15-	290-15-	770-15-	[ ]-0	5.91 (150)	6.81 (173)	≈ 1.60 (2.38)	≈ 1.32 (1.96)	≈ 2.14 (3.19)
280-162-	290-162-		[ ]-0	6.38 (162)	7.32 (186)	≈ 1.64 (2.44)	≈ 1.34 (1.99)	–
280-17-	290-17-	770-17-	[ ]-0	6.61 (168)	7.52 (191)	≈ 1.69 (2.51)	≈ 1.36 (2.02)	≈ 2.28 (3.39)
280-18-	290-18-		[ ]-0	6.89 (175)	7.80 (198)	≈ 1.72 (2.56)	≈ 1.38 (2.05)	–
280-187-	290-187-		[ ]-0	7.36 (187)	8.31 (211)	≈ 1.78 (2.65)	≈ 1.40 (2.09)	–
280-20-	290-20-	770-20-	[ ]-0	7.87 (200)	8.78 (223)	≈ 1.84 (2.74)	≈ 1.44 (2.14)	≈ 2.41 (3.59)
280-212-	290-212-		[ ]-0	8.35 (212)	9.29 (236)	≈ 1.93 (2.87)	≈ 1.48 (2.20)	–
280-23-	290-23-		[ ]-0	8.86 (225)	9.76 (248)	≈ 1.96 (2.92)	≈ 1.49 (2.22)	–
280-237-	290-237-		[ ]-0	9.33 (237)	10.28 (261)	≈ 2.05 (3.05)	≈ 1.54 (2.29)	–
280-25-	290-25-	770-25-	[ ]-0	9.84 (250)	10.75 (273)	≈ 2.08 (3.10)	≈ 1.56 (2.32)	≈ 2.72 (4.04)
280-262-	290-262-		[ ]-0	10.31 (262)	11.26 (286)	≈ 2.14 (3.19)	≈ 1.59 (2.36)	–
280-28	290-28-		[ ]-0	10.83 (275)	11.73 (298)	≈ 2.20 (3.28)	≈ 1.62 (2.41)	–
280-29-	290-29-		[ ]-0	11.30 (287)	12.24 (311)	≈ 2.26 (3.37)	≈ 1.65 (2.45)	–
280-30-	290-30-	770-30-	[ ]-0	11.81 (300)	12.72 (323)	≈ 2.33 (3.46)	≈ 1.68 (2.50)	≈ 2.98 (4.43)
280-312-	290-312-		[ ]-0	12.28 (312)	13.23 (336)	≈ 3.86 (3.59)	≈ 1.72 (2.56)	–
280-325-	290-325-		[ ]-0	12.79 (325)	13.70 (348)	≈ 2.47 (3.68)	≈ 1.75 (2.60)	–
280-337-	290-337-		[ ]-0	13.27 (337)	14.21 (361)	≈ 2.53 (3.77)	≈ 1.78 (2.65)	–
280-350-	290-350-		[ ]-0	13.78 (350)	14.69 (373)	≈ 2.59 (3.86)	≈ 1.81 (2.69)	–
280-362-	290-362-		[ ]-0	14.25 (362)	15.20 (386)	≈ 2.65 (3.95)	≈ 1.84 (2.74)	–
280-375-	290-375-		[ ]-0	14.76 (375)	15.67 (398)	≈ 2.72 (4.04)	≈ 1.88 (2.79)	–
280-387-	290-387-		[ ]-0	15.24 (387)	16.18 (411)	≈ 2.76 (4.11)	≈ 1.90 (2.82)	–
280-400	290-400-		[ ]-0	15.75 (400)	16.65 (423)	≈ 2.81 (4.18)	≈ 1.92 (2.86)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: 280-07-[150]-0

	063**	075**	100**	125	150	175	200	220	250	300
R	2.48 (063*)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
H $^{-0}_{+20}$	7.09 (180)	8.07 (205)	10.04 (255)	12.01 (305)	13.98 (355)	15.94 (405)	17.91 (455)	19.49 (495)	21.85 (555)	25.79 (655)
D	5.75 (146)	6.22 (158)	7.20 (183)	8.19 (208)	9.17 (233)	10.16 (258)	11.14 (283)	11.93 (303)	13.11 (333)	15.08 (383)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.88 (505)	23.03 (585)	26.18 (665)	29.33 (745)	31.69 (805)	35.43 (900)	41.54 (1055)

** This radius is not available for the R770 Series
*Removable lid only, no hinged option

0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.285. For large diameter hoses see page 6.285

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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280
290
R770

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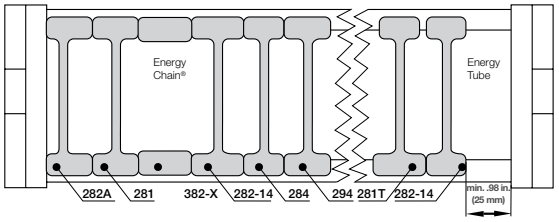
6.283

E-Chain System® E4/100
Series 280/290/R770
Interior Separation

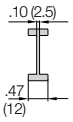
Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

NOTE: Observe a lateral spacing of at least .98 in. (25mm) for E-Tubes



Vertical separator 280



Separator (chain/tube)	
Unassembled	**Part No. 280**
Assembled	**Part No. 281**

- **Standard separator 280 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

Vertical separator 280 -14

Separator (chain/tube)	
Unassembled	**Part No. 280-14**
Assembled	**Part No. 281-14**

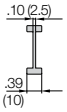
- **Vertical separator 280-14 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its broad base design when used with thick cables or hoses.

Vertical separator 283

Separator (chain only)	
Unassembled	**Part No. 283**
Assembled	**Part No. 284**

- **Vertical separator 283 for E-Chains®**
  This separator features a narrow base for use in applications where a large number of small cables need to be individually separated.

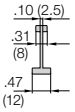
Locking separator 293



Locking Separator (chain only)	
Unassembled	**Part No. 293**
Assembled	**Part No. 294**

- **Locking separator 293 for E-Chains®**
  This separator is used in applications with very high relative humidity It features increased retention force which is produced by asymmetrical retention “clamps” attached to the chain’s crossbar. Please ensure that they are properly aligned.

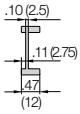
Locking separator 281T



Locking Separator (tubes only)	
Unassembled	**Part No. 280T**
Assembled	**Part No. 281T**

- **Locking separator 281T for E-Tubes**
  It clamps to the fixed radius and remains free along the other radius to facilitate lid removal.

Asymmetric separator 281A



Asymmetric separator (chain only)	
Unassembled	**Part No. 280A**
Assembled	**Part No. 281A**

- **Asymmetrical separator 281A for E-Chains®**
  This separator features an (12mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

Spacers 381-XX

Spacer (chain only)	
Unassembled	**Part No. 381-XX**
Assembled	**Part No. 382-XX**

XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08” (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16” (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
381 -10	**382 -10**	.39”	(10)
381 -15	**382 -15**	.59”	(15)
381 -20	**382 -20**	79”	(20)

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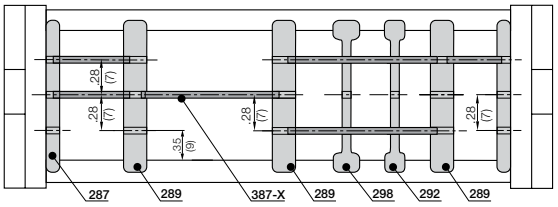
E-Chain System® E4/100
Series 280/290/R770
Interior Separation

Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements. ➤ **Design, Chapter 1** for layout recommendations.



- **Side plates 286**
  This component is used to form the basic pattern of a shelf system.

Side Plate	
Unassembled	Part No. 286
Assembled	Part No. 287

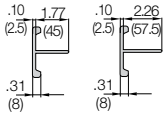
Side plate 286

- **Vertical separator 288**
  This component is used to form the basic pattern of a shelf system.

Vertical Separator	
Unassembled	Part No. 288
Assembled	Part No. 289

Vertical separator 288

- **Locking vertical separator 281-S**
  This separator is slotted and able to be combined with shelves



Separators w/Integrated Shelf	
Unassembled	Part No. 281-S-45
Assembled	Part No. 282-S-45
Unassembled	Part No. 281-S-57
Assembled	Part No. 282-S-57

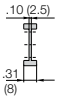
Separator with integrated shelf 281-S

- **Closed Slotted separators 291**
  These are used for complex subdivisions. However, they cannot be retrofitted into an existing interior separation system without removing the shelves first.

Slotted Separators	
Unassembled	Part No. 291
Assembled	Part No. 292

Closed slotted separator 291

- **Open slotted separator 297**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into the middle slot only.

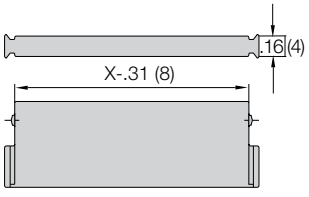


Slotted Separators, Open	
Unassembled	Part No. 297
Assembled	Part No. 298

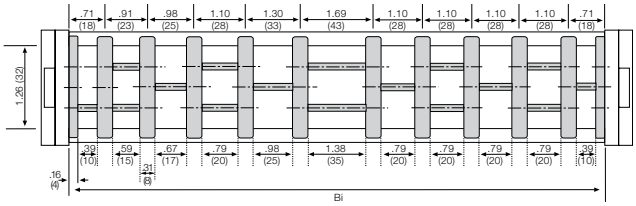
Open slotted separator 297

Width X in.	Width X (mm)	Usable Width in.	Usable Width (mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	.39	(10)	386-18	387-18
.91	(23)	.59	(15)	386-23	387-23
.98	(25)	.67	(17)	386-25	387-25
1.10	(28)	.79	(20)	386-28	387-28
1.30	(33)	.98	(25)	386-33	387-33
1.69	(43)	1.38	(35)	386-43	387-43
1.97	(50)	1.65	(42)	386-50	387-50
2.13	(54)	1.81	(46)	386-54	387-54
2.44	(62)	2.13	(54)	386-62	387-62
2.95	(75)	2.64	(67)	386-75	387-75
3.43	(87)	3.12	(87)	386-87	387-87
3.94	(100)	3.62	(92)	386-100	387-100
4.25	(108)	3.94	(100)	386-108	387-108
4.92	(125)	4.61	(117)	386-125	387-125
5.91	(150)	5.59	(142)	386-150	387-150
6.89	(175)	6.57	(167)	386-175	387-175
7.87	(200)	7.56	(192)	386-200	387-200
8.19	(208)	7.87	(200)	386-208	387-208

Shelves 386-XX
These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 3 different heights in .28" (7mm) increments



The diagram below is for reference purposes only. Multiple configurations are possible. To create your E-Chain shelving cross section please see our online E-Chain configurator. Call 1-800-521-2747 for assistance and/or go to igus.com click on the ***Products*** drop down menu, choose ***E-Chain Cable Carriers*** and on the next drop down menu simply click on ***E-Chain Configurator.***



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

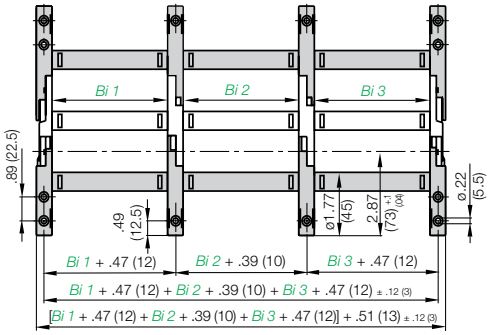
E-Chain System® E4/100
Series 280/290/R770
Special Accessories

Part number example for E-Chain®
280-10/20/10- 200 **-0**
280-*Bi1*/*Bi2*/*Bi3*- *R* **-0**

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

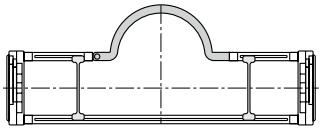
- For applications in which particularly high fill weights necessitate extremely wide E-Chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



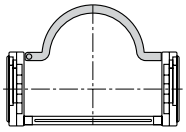
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

- Intended for cables and hoses with a maximum outer diameter of 4.13 in. (105 mm).
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



Round extender crossbar combined with standard snap-open crossbars.

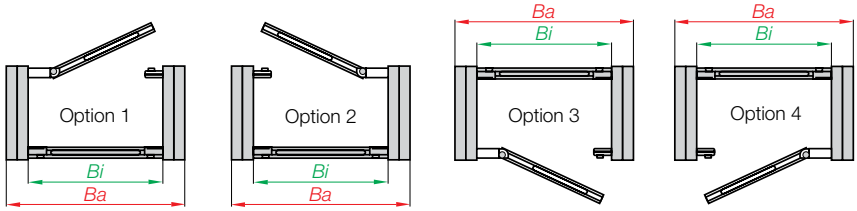


Attached directly to the side link.

Part No.	Max Ø Hose in. (mm)	Style	Installation Side Link	Combined with Snap-Open Crossbars
385-15-RHD115	4.13 (105)	Round	No	Yes
385-18-RD115	4.13 (105)	Round	Yes	No

Hinged crossbars

- Typically, E-Chain® crossbars are completely removable. In cases where it is preferable that the opening crossbars remain on the E-Chain®, a hinged design has been developed.
- Please consult igus® for design assistance



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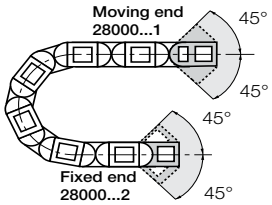
E-Chain System® E4/100
Series 280/290/R770
Mounting Brackets - KMA

Standard

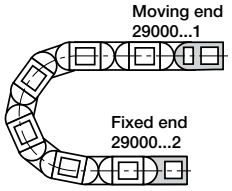
Option 1: pivoting

- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

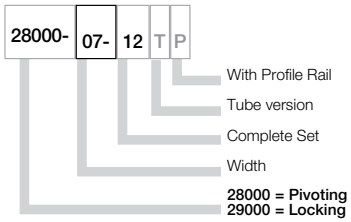


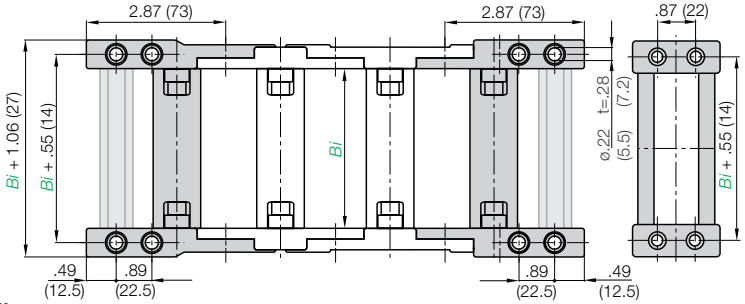
Option 2: locking

- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations



Part Number Structure





Due to the design of the E4/100 series chains, please note the following when ordering brackets:

Even number of links = full set, part number ending in **-12**
Odd number of links = 2 pieces, part number ending in **-2**

Part number examples are shown for pivoting brackets. For locking brackets change part number to 29000

Part No. Full Set (pivoting)
Series 2828 or 290:
28000-Width-12

Part No. Full Set (pivoting)
with profile rail
Series 2828 or 290
28000-Width-12P

Part No. Full Set (pivoting)
Tube Series R770
28000-Width-12T

Part No. Full Set (pivoting)
with Profile Rail
Series 770
28000-Width-12TP

Width	Part No. Full Set Pivoting	Part No. Full Set Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-05*	28000	29000	-05-12	T	P	1.97 (50)
-06	28000	29000	-06-12		P	2.68 (68)
-07	28000	29000	-07-12	T	P	2.95 (75)
-087	28000	29000	-087-12		P	3.43 (87)
-10	28000	29000	-10-12	T	P	3.94 (100)
-11	28000	29000	-11-12	T	P	4.25 (108)
-112	28000	29000	-112-12		P	4.41 (112)
-12	28000	29000	-12-12	T	P	4.92 (125)
-137	28000	29000	-137-12		P	5.39 (137)
-15	28000	29000	-15-12	T	P	5.91 (150)
-162	28000	29000	-162-12		P	6.38 (162)
-17	28000	29000	-17-12	T	P	6.61 (168)
-18	28000	29000	-18-12		P	6.89 (175)
-187	28000	29000	-187-12		P	7.36 (187)
-20	28000	29000	-20-12	T	P	7.87 (200)
-212	28000	29000	-212-12		P	8.35 (212)

Width	Part No. Full Set Pivoting	Part No. Full Set Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-23	28000	29000	-23-12		P	8.86 (225)
-237	28000	29000	-237-12		P	9.33 (237)
-25	28000	29000	-25-12	T	P	9.84 (250)
-262	28000	29000	-262-12		P	10.31 (262)
-28	28000	29000	-28-12		P	10.83 (275)
-29	28000	29000	-29-12		P	11.30 (287)
-30	28000	29000	-30-12	T	P	11.81 (300)
-312	28000	29000	-312-12		P	12.28 (312)
-325	28000	29000	-325-12		P	12.79 (325)
-337	28000	29000	-337-12		P	13.27 (337)
-350	28000	29000	-350-12		P	13.78 (350)
-362	28000	29000	-362-12		P	14.25 (362)
-375	28000	29000	-375-12		P	14.76 (375)
-387	28000	29000	-387-12		P	15.24 (387)
-400	28000	29000	-400-12		P	15.75 (400)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E-Chain System® E4/100
Series 280/290/R770
Strain Relief

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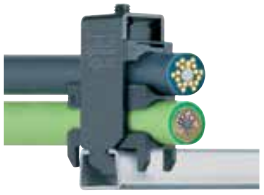
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1M	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1M	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1M	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1M	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1M	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1M	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1M	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1M	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1M	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1M	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1M	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

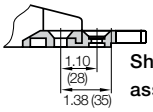
Chainfix Clip

Modular snap-on strain relief device

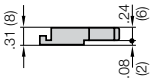
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(04-08)	CFC-08-M	CFC-08-C
.31-.47	(08-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

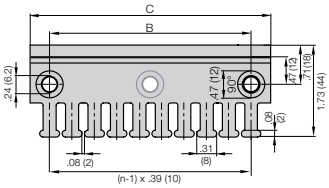


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10

Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3850-ZS	5	1.89	(48)

For more information please refer to strain relief section of Chapter 10

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E-Chain System® E4/100
Series 280/290/R770
Guide Troughs

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part Number 98-30
- 1/2 travel length of glide bars
  Part number 92-01
- Installation sets as end connectors
  Part Number 93-50-XX

Width of Crossbar
280-**05**-200-0

-05	3.15 (78)	93-50-200
-06	3.86 (96)	93-50-225
-07	4.13 (103)	93-50-225
-087	4.61 (115)	93-50-225
-10	5.12 (128)	93-50-250
-11	5.43 (136)	93-50-250
-112	5.59 (141)	93-50-250
-12	6.10 (153)	93-50-275
-137	6.57 (166)	93-50-275
-15	7.09 (178)	93-50-300
-162	7.56 (191)	93-50-300
-17	7.80 (196)	93-50-325
-18	8.07 (203)	93-50-325
-187	8.54 (216)	93-50-325
-20	9.06 (228)	93-50-350
-212	9.53 (241)	93-50-350
-23	10.04 (253)	93-50-375
-237	10.51 (266)	93-50-375
-25	11.02 (278)	93-50-400
-262	11.50 (291)	93-50-400
-28	12.01 (303)	93-50-425
-29	12.48 (316)	93-50-425
-30	12.99 (328)	93-50-450
-312	13.46 (341)	93-50-450
-325	13.98 (353)	93-50-475
-337	14.45 (366)	93-50-475
-350	14.96 (378)	93-50-500
-362	15.43 (391)	93-50-500
-375	15.94 (403)	93-50-525
-387	16.42 (416)	93-50-525
-400	16.93 (428)	93-50-550

B_{Ri}

Installation Part No.

Standard length profile rail

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bar

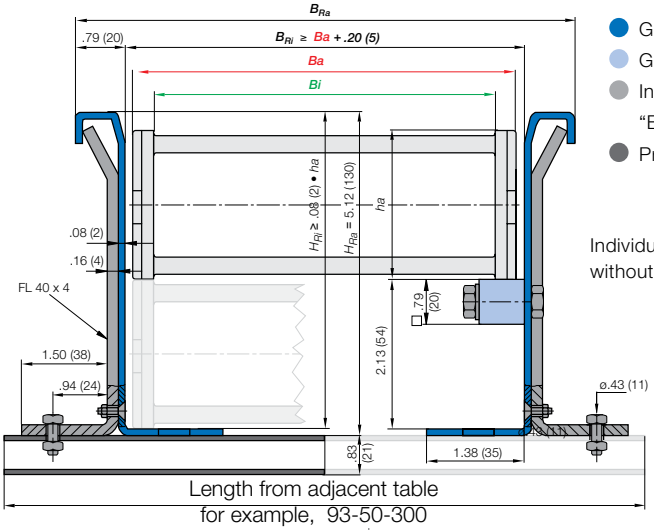
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 98-30

= 13 sections of 6.56 ft (2 m) glide bar
Part No. 92-01

Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
93-50-XXX
Example: 93-50-400 for 15.75" (400 mm) long profile rail.

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

Installation sets as section connectors



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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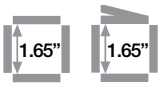
380
390
R780

igus®

E-Chain System® E4/100
Series 380/390/R780

For new applications use Series E4-42



Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Locking or pivoting mounting brackets available
3. Crossbars on E-Chains® are removable along both radii
4. Hinged snap-open removable lids along the outer radius of the Energy tube
5. Optimized glide pads with lateral wear allowance
6. Closed and open styles can be combined
7. Integrated strain relief possible
8. Stop dog with “brake” for noise reduction
9. Numerous interior separation possibilities
10. Wide, rounded crossbars
11. E-Chains® also available with reverse bending radius “RBR”

Also available as
E4/00-NC without camber:
380-NCST

Price Index

Series 380 ●●●
Series 390 ●●●
Series R780 ●●●

Special Features / Options

- Low noise version E4/101 Series 381 available with special rubber pads
- Clean-Room: Cleanroom test upon request
- EX: ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 328 ft (100 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

Usage Guidelines

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High fill weights

- If long, side-mounted, unsupported length is required
  ➤ **Series 3838/3938/R7838**
- If single-radius accessibility is sufficient
  ➤ **Series 340/350, Chapter 4**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

16.4 ft (5 m) **380-20-300-0**	**E-Chain®**
With 2 separators **381** assembled every 2nd link	**Interior Separation**
1 Set **38000-20-12P**	**Mounting Bracket**

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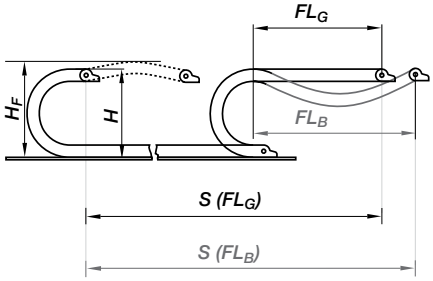
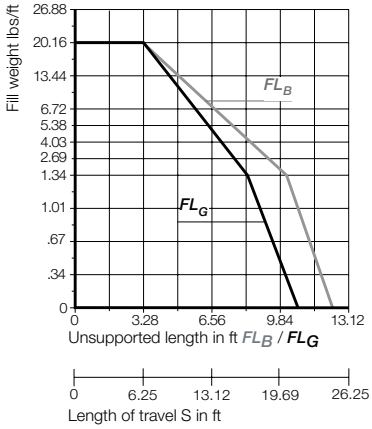
E-Chain System® E4/100
Series 380/390/R780
Installation Dimensions

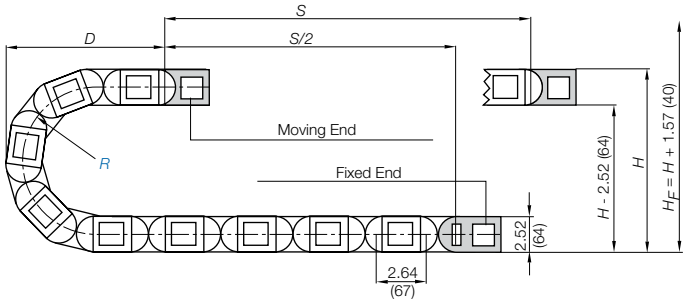
Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.64" (67 mm)
Links per ft (m): = 4.57 (15)
For center mount applications:
Chain length = $S/2 + K$

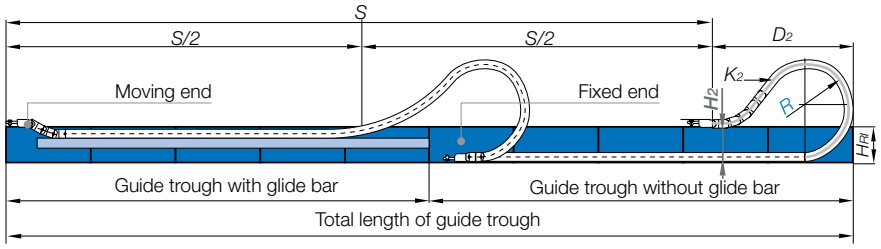
The required clearance height: H_F = **H + 1.57 in. (40 mm)** (with 1.34 lbs/ft (2 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	2.95 (075)	3.94 (100)	4.53 (115)	4.92 (125)	5.91 (150)	6.69 (170)	7.87 (200)	8.46 (215)	9.84 (250)	11.81 (300)	13.78 (350)
H $^{-0}_{+25}$	8.46 (215)	10.43 (265)	11.61 (295)	12.40 (315)	14.37 (365)	15.94 (405)	18.31 (465)	19.49 (495)	22.24 (565)	26.18 (665)	30.12 (765)
D	6.85 (174)	7.83 (199)	8.43 (214)	8.82 (224)	9.80 (249)	10.59 (269)	11.77 (299)	12.36 (314)	13.74 (349)	15.71 (399)	17.68 (449)
K	14.57 (370)	17.72 (450)	19.69 (500)	20.87 (530)	24.02 (610)	26.38 (670)	30.12 (765)	31.89 (810)	36.22 (920)	42.52 (1080)	48.62 (1235)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 984 ft. (300 m)

For center mount applications:
Chain length: = $S/2 + K_2$



R	2.95 (075)	3.94 (100)	4.53 (115)	4.92 (125)	5.91 (150)	6.69 (170)	7.87 (200)	8.46 (215)	9.84 (250)	11.81 (300)	13.78 (350)
H_2	-	-	-	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)
$D_{2\ +25}$	-	-	-	18.70 (475)	22.44 (570)	24.41 (620)	30.71 (780)	34.06 (865)	40.55 (1030)	45.28 (1150)	59.06 (1500)
K_2	-	-	-	31.65 (804)	36.93 (938)	42.20 (1072)	52.76 (1340)	55.39 (1407)	65.94 (1675)	76.50 (1943)	94.96 (2412)

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ **Chapter 1**

380
390
R780

1.65"

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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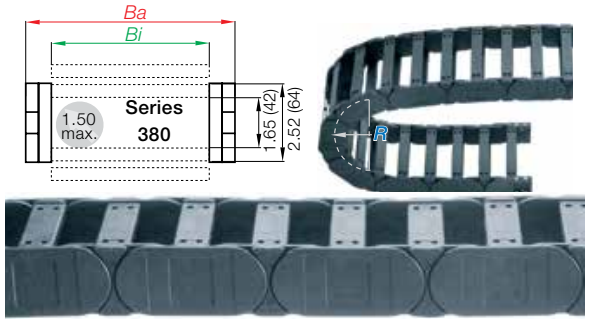
www.edfluidos.com

igus®

E-Chain System® E4/100
Series 380/390/R780

Telephone 1-800-521-2747
Fax 1-401-438-7270

Series 380 - E-Chain® with crossbars every link



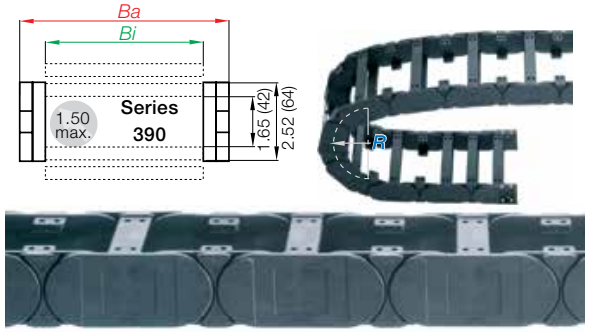
- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

380- 400- 300- 0

- Color - Black
- Bending radius
- Width
- Series

Series 390 - E-Chain® with crossbars every other link



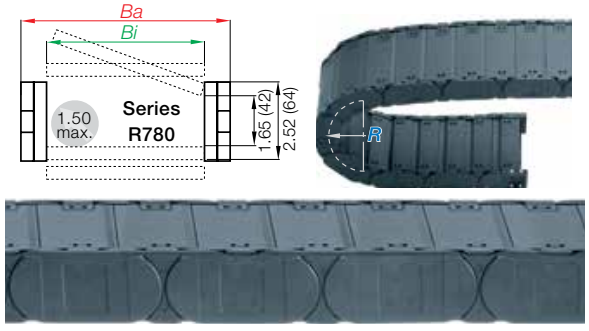
- Crossbars every other link Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

390- 400- 300- 0

- Color - Black
- Bending radius
- Width
- Series

Series R780 - fully enclosed E-Tube



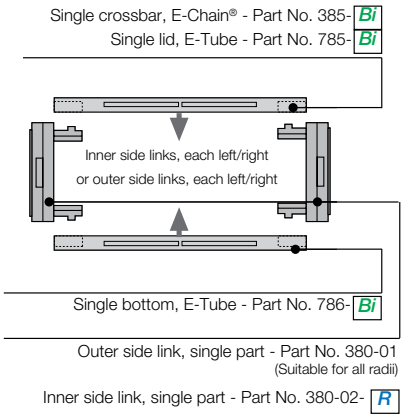
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

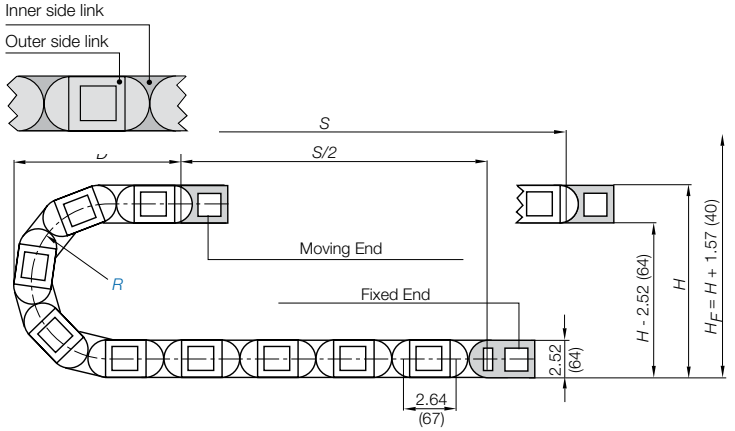
Part Number Structure

780- 25- 300- 0

- Color - Black
- Bending radius
- Width
- Series

E-Chain® as separate parts, links and side plates





Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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E-Chain System® E4/100
Series 380/390/R780

Supplement part number with required radius. Example: 380-30-[300]-0
Pitch: 2.64 in. (67mm) per link, links/ft (m) = 4.57 (15)

Part Number				Bi	Ba	Weight		
Crossbars Every link	Crossbars Every other	Tube Version		in. (mm)	in. (mm)	380 lbs/ft (kg/m)	390 lbs/ft (kg/m)	R780 lbs/ft (kg/m)
380-05-	390-05	*780-05-	[ ]-0	1.97 (50)	2.99 (76)	≈ 1.38 (2.06)	≈ 1.33 (1.98)	≈ 1.51 (2.25)
380-06-	390-06-		[ ]-0	2.68 (68)	3.70 (94)	≈ 1.40 (2.09)	≈ 1.34 (1.99)	–
380-07-	390-07	780-07-	[ ]-0	2.95 (75)	3.98 (101)	≈ 1.42 (2.12)	≈ 1.35 (2.01)	≈ 1.60 (2.38)
380-087-	390-087-		[ ]-0	3.43 (87)	4.49 (114)	≈ 1.47 (2.18)	≈ 1.37 (2.04)	–
380-10-	390-10-	780-10-	[ ]-0	3.94 (100)	4.96 (126)	≈ 1.51 (2.25)	≈ 1.40 (2.08)	≈ 1.75 (2.60)
380-11-	390-11-	780-11-	[ ]-0	4.25 (108)	5.28 (134)	≈ 1.55 (2.30)	≈ 1.41 (2.10)	≈ 1.78 (2.65)
380-112-	390-112-		[ ]-0	4.41(112)	5.47 (139)	≈ 1.55 (2.30)	≈ 1.41 (2.10)	–
380-12-	390-12-	780-12-	[ ]-0	4.92 (125)	5.94 (151)	≈ 1.61 (2.40)	≈ 1.44 (2.15)	≈ 1.89 (2.81)
380-137-	390-137-		[ ]-0	5.39 (137)	6.46 (164)	≈ 1.64 (2.44)	≈ 1.46 (2.17)	–
380-15-	390-15-	780-15-	[ ]-0	5.91 (150)	6.93 (176)	≈ 1.70 (2.53)	≈ 1.49 (2.21)	≈ 2.06 (3.07)
380-162-	390-162-		[ ]-0	6.38 (162)	7.44 (189)	≈ 1.71 (2.55)	≈ 1.49 (2.22)	–
380-17-	390-17-	780-17-	[ ]-0	6.61 (168)	7.64 (194)	≈ 1.76 (2.62)	≈ 1.52 (2.26)	≈ 2.18 (3.24)
380-18-	390-18-		[ ]-0	6.89 (175)	7.91 (201)	≈ 1.76 (2.62)	≈ 1.52 (2.26)	–
380-187-	390-187-		[ ]-0	7.36 (187)	8.43 (214)	≈ 1.81 (2.69)	≈ 1.55 (2.30)	–
380-20-	390-20-	780-20-	[ ]-0	7.87 (200)	8.90 (226)	≈ 1.86 (2.77)	≈ 1.57 (2.33)	≈ 2.37 (3.53)
380-212-	390-212-		[ ]-0	8.35 (212)	9.41 (239)	≈ 1.91 (2.84)	≈ 1.59 (2.37)	–
380-23-	390-23-		[ ]-0	8.86 (225)	9.88 (251)	≈ 1.96 (2.92)	≈ 1.62 (2.41)	–
380-237-	390-237-		[ ]-0	9.33 (237)	10.39 (264)	≈ 1.99 (2.96)	≈ 1.63 (2.43)	–
380-25-	390-25-	780-25-	[ ]-0	9.84 (250)	10.87 (276)	≈ 2.05 (3.05)	≈ 1.66 (2.47)	≈ 2.91 (4.33)
380-262-	390-262-		[ ]-0	10.31 (262)	11.38 (289)	≈ 2.06 (3.06)	≈ 1.67 (2.48)	–
380-28	390-28-		[ ]-0	10.83 (275)	11.85 (301)	≈ 2.13 (3.17)	≈ 1.70 (2.53)	–
380-29-	390-29-		[ ]-0	11.30 (287)	12.36 (314)	≈ 2.14 (3.19)	≈ 1.71 (2.54)	–
380-30-	390-30-	780-30-	[ ]-0	11.81 (300)	12.83 (326)	≈ 2.23 (3.32)	≈ 1.75 (2.61)	≈ 3.29 (4.89)
380-312-	390-312-		[ ]-0	12.28 (312)	13.35 (339)	≈ 2.24 (3.34)	≈ 1.76 (2.62)	–
380-325-	390-325-		[ ]-0	12.79 (325)	13.82 (351)	≈ 2.29 (3.41)	≈ 1.79 (2.66)	–
380-337-	390-337-		[ ]-0	13.27 (337)	14.33 (364)	≈ 2.33 (3.46)	≈ 1.80 (2.68)	–
380-350-	390-350-		[ ]-0	13.78 (350)	14.80 (376)	≈ 2.47 (3.68)	≈ 1.88 (2.79)	–
380-362-	390-362-		[ ]-0	14.25 (362)	15.31 (389)	≈ 2.51 (3.74)	≈ 1.90 (2.82)	–
380-375-	390-375-		[ ]-0	14.76 (375)	15.83 (402)	≈ 2.55 (3.79)	≈ 1.91 (2.84)	–
380-387-	390-387-		[ ]-0	15.24 (387)	16.30 (414)	≈ 2.59 (3.85)	≈ 1.93 (2.87)	–
380-400	390-400-		[ ]-0	15.75 (400)	16.77 (426)	≈ 2.62 (3.90)	≈ 1.95 (2.90)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: 380-30-[150]-0

	075**	100**	115**	125	150	170	200	215	250	300	350
R	2.95 (075)	3.94 (100)	4.53 (115)	4.92 (125)	5.91 (150)	6.69 (170)	7.87 (200)	8.46 (215)	9.84 (250)	11.81 (300)	13.78 (350)
H $^{0}_{+20}$	8.46 (215)	10.43 (265)	11.61 (295)	12.40 (315)	14.37 (365)	15.94 (405)	18.31 (465)	19.49 (495)	22.24 (565)	26.18 (665)	30.12 (765)
D	6.85 (174)	7.83 (199)	8.43 (214)	8.82 (224)	9.80 (249)	10.59 (269)	11.77 (299)	12.36 (314)	13.74 (349)	15.71 (399)	17.68 (449)
K	14.57 (370)	17.72 (450)	19.69 (500)	20.87 (530)	24.02 (610)	26.38 (670)	30.12 (765)	31.89 (810)	36.22 (920)	42.52 (1080)	48.62 (1235)

** This radius is not available for the R780 Series
*Removable lid only, no hinged option

0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.295. For large diameter hoses see page 6.295

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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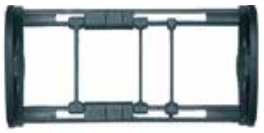
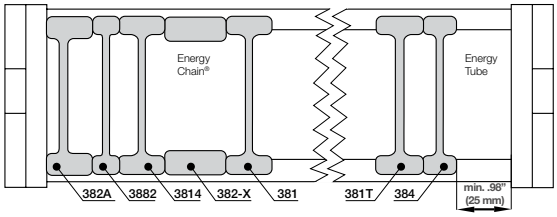
E-Chain System® E4/100
Series 380/390/R780
Interior Separation



Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.
NOTE: Observe a lateral spacing of at least .98 in. (25mm) for E-Tubes



Vertical separator 380

.10 (2.5)
.55 (14)

Separator (chain/tube)

Unassembled	**Part No. 380**
Assembled	**Part No. 381**

- **Standard separator 380 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

Vertical separator 3881

.10 (2.5)
.28 (7)

Separator (chain only)

Unassembled	**Part No. 3881**
Assembled	**Part No. 3882**

- **Vertical separator 3881 for E-Chains®**
  This separator features a narrow 7mm base for applications where a large number of small cables need to be individually separated.

Vertical separator 380T

.12 (3)
.55 (14)

Vertical Separator (tubes only)

Unassembled	**Part No. 380T**
Assembled	**Part No. 381T**

- **Vertical separator 380T for E-Tubes**
  It clamps to the fixed radius and remains free along the other radius to facilitate lid removal. When installing please ensure they are identically aligned.

Locking separator 383

.10 (2.5)
.39 (10)

Locking Separator (tubes only)

Unassembled	**Part No. 383**
Assembled	**Part No. 384**

- **Locking separator 383 for E-Tubes**
  This separator features an increased retention force for applications exposed to very high humidity or extreme loads. It features asymmetric claws for the crossbar which results in the increased retention force.

Asymmetric separator 381A

.10 (2.5)
.11 (2.75)
.55 (14)

Asymmetric separator (chain only)

Unassembled	**Part No. 381A**
Assembled	**Part No. 382A**

- **Asymmetrical separator 381A for E-Chains®**
  This separator features an (14mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

Spacers 381-XX

XX

Spacer (chain only)

Unassembled	**Part No. 381-XX**
Assembled	**Part No. 382-XX**

XX = width of the spacer

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
381 -10	**382 -10**	.39"	(10)
381 -15	**382 -15**	.59"	(15)
381 -20	**382 -20**	79"	(20)

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

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QuickSpec: http://www.igus.com/quickspec

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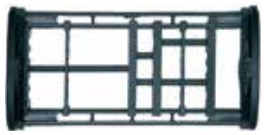
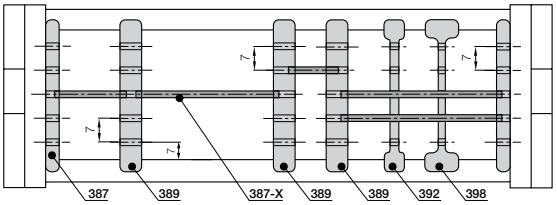
E-Chain System® E4/100
Series 380/390/R780
Interior Separation



Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements. ➤ **Design, Chapter 1** for layout recommendations.



- **Side plates 386**
  This component is used to form the basic pattern of a shelf system.

Side Plate	
Unassembled	Part No. 386
Assembled	Part No. 387

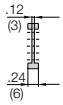
Side plate 386

- **Vertical separator 388**
  This component is used to form the basic pattern of a shelf system.

Vertical Separator	
Unassembled	Part No. 388
Assembled	Part No. 389

Vertical separator 388

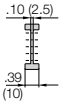
- **Closed Slotted separators 391**
  These are used for complex subdivisions. However, they cannot be retrofitted into an existing interior separation system without removing the shelves first.



Slotted Separators	
Unassembled	Part No. 391
Assembled	Part No. 392

Closed slotted separator 391

- **Open slotted separator 397**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into the middle 3 slots only.

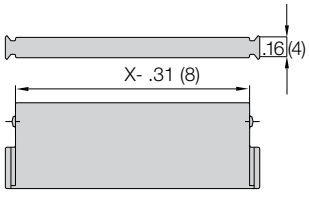


Slotted Separators, Open	
Unassembled	Part No. 397
Assembled	Part No. 398

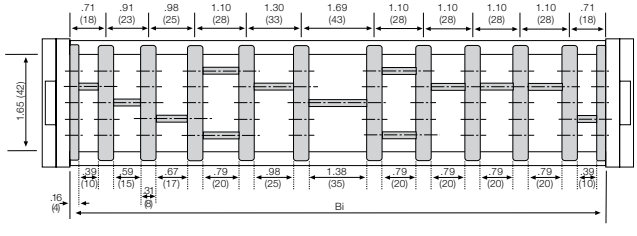
Open slotted separator 397

Width X in.	Width X (mm)	Usable Width in.	Usable Width (mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	.39	(10)	386-18	387-18
.91	(23)	.59	(15)	386-23	387-23
.98	(25)	.67	(17)	386-25	387-25
1.10	(28)	.79	(20)	386-28	387-28
1.30	(33)	.98	(25)	386-33	387-33
1.69	(43)	1.38	(35)	386-43	387-43
1.97	(50)	1.65	(42)	386-50	387-50
2.13	(54)	1.81	(46)	386-54	387-54
2.44	(62)	2.13	(54)	386-62	387-62
2.95	(75)	2.64	(67)	386-75	387-75
3.43	(87)	3.12	(87)	386-87	387-87
3.94	(100)	3.62	(92)	386-100	387-100
4.25	(108)	3.94	(100)	386-108	387-108
4.92	(125)	4.61	(117)	386-125	387-125
5.91	(150)	5.59	(142)	386-150	387-150
6.89	(175)	6.57	(167)	386-175	387-175
7.87	(200)	7.56	(192)	386-200	387-200
8.19	(208)	7.87	(200)	386-208	387-208

Shelves 386-XX
These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 5 different heights in .28" (7mm) increments



The diagram below is for reference purposes only. Multiple configurations are possible. To create your E-Chain shelving cross section please see our online E-Chain configurator. Call 1-800-521-2747 for assistance and/or go to igus.com click on the ***Products*** drop down menu, choose ***E-Chain Cable Carriers*** and on the next drop down menu simply click on ***E-Chain Configurator***.



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Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E-Chain System® E4/100
Series 380/390/R780
Special Accessories

Part number example for E-Chain®

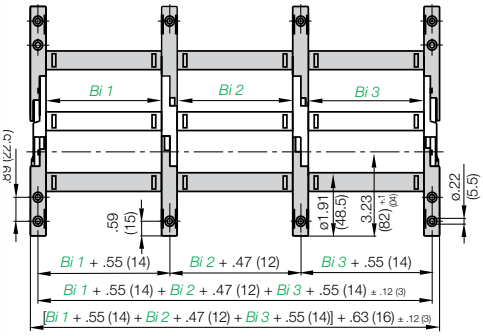
380-10/20/10-[200]-0

380-*Bi1*/*Bi2*/*Bi3*-[*R*]-0

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

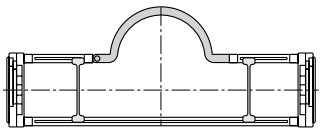
- For applications in which particularly high fill weights necessitate extremely wide E-Chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



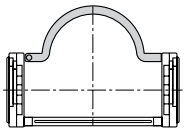
Extender crossbars - For careful guiding of large diameter cables and hoses

- Intended for cables and hoses with a maximum outer diameter of 4.53 in. (115 mm).
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.

Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.



Round extender crossbar combined with standard snap-open crossbars.

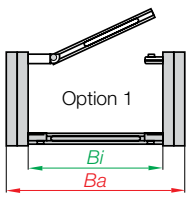


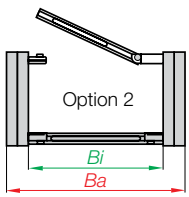
Attached directly to the side link.

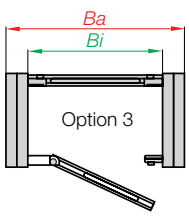
Part No.	Max Ø Hose in. (mm)	Style	Installation Side Link	Combined with Snap-Open Crossbars
385-15-RHD115	4.53 (115)	Round	No	Yes
385-18-RD115	4.53 (115)	Round	Yes	No

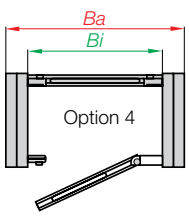
Hinged crossbars

- Typically, E-Chain® crossbars are completely removable. In cases where it is preferable that the opening crossbars remain on the E-Chain®, a hinged design has been developed.
- Please consult igus® for design assistance









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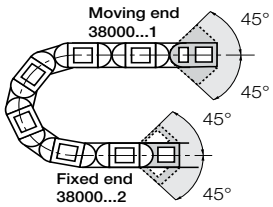
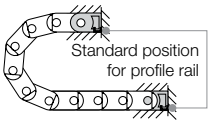
E-Chain System® E4/100
Series 380/390/R780
Mounting Brackets - KMA

Standard

Option 1: KMA pivoting

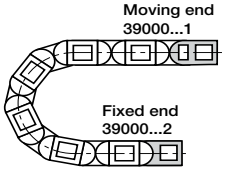
- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

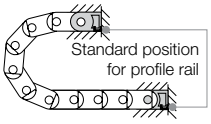




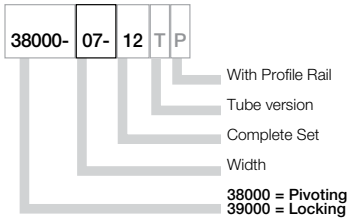
Option 2: KMA locking

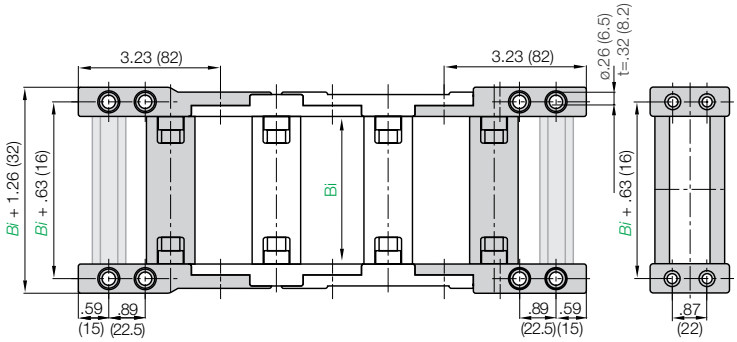
- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations





Part Number Structure





Due to the design of the E4/100 series chains, please note the following when ordering brackets:

Even number of links = full set, part number ending in **-12**
Odd number of links = 2 pieces, part number ending in **-2**

Part number examples are shown for pivoting brackets. For locking brackets change part number to 39000

Part No. Full Set (pivoting)
Series 380 or 390:
38000-Width-12

Part No. Full Set (pivoting)
with profile rail
Series 380 or 390
38000-Width-12P

Part No. Full Set (pivoting)
Tube Series R780
38000-Width-12T

Part No. Full Set (pivoting)
with Profile Rail
Series 780
38000-Width-12TP

Width	Part No. Full Set Pivoting	Part No. Full Set Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-05*	38000	39000	-05-12	T	P	1.97 (50)
-06	38000	39000	-06-12		P	2.68 (68)
-07	38000	39000	-07-12	T	P	2.95 (75)
-087	38000	39000	-087-12		P	3.43 (87)
-10	38000	39000	-10-12	T	P	3.94 (100)
-11	38000	39000	-11-12	T	P	4.25 (108)
-112	38000	39000	-112-12		P	4.41 (112)
-12	38000	39000	-12-12	T	P	4.92 (125)
-137	38000	39000	-137-12		P	5.39 (137)
-15	38000	39000	-15-12	T	P	5.91 (150)
-162	38000	39000	-162-12		P	6.38 (162)
-17	38000	39000	-17-12	T	P	6.61 (168)
-18	38000	39000	-18-12		P	6.89 (175)
-187	38000	39000	-187-12		P	7.36 (187)
-20	38000	39000	-20-12	T	P	7.87 (200)
-212	38000	39000	-212-12		P	8.35 (212)

Width	Part No. Full Set Pivoting	Part No. Full Set Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-23	38000	39000	-23-12		P	8.86 (225)
-237	38000	39000	-237-12		P	9.33 (237)
-25	38000	39000	-25-12	T	P	9.84 (250)
-262	38000	39000	-262-12		P	10.31 (262)
-28	38000	39000	-28-12		P	10.83 (275)
-29	38000	39000	-29-12		P	11.30 (287)
-30	38000	39000	-30-12	T	P	11.81 (300)
-312	38000	39000	-312-12		P	12.28 (312)
-325	38000	39000	-325-12		P	12.79 (325)
-337	38000	39000	-337-12		P	13.27 (337)
-350	38000	39000	-350-12		P	13.78 (350)
-362	38000	39000	-362-12		P	14.25 (362)
-375	38000	39000	-375-12		P	14.76 (375)
-387	38000	39000	-387-12		P	15.24 (387)
-400	38000	39000	-400-12		P	15.75 (400)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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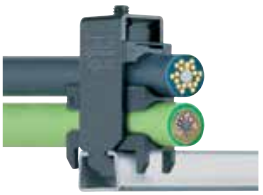
E-Chain System® E4/100
Series 380/390/R780
Strain Relief

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

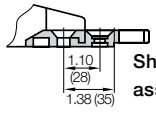
Chainfix Clip

Modular snap-on strain relief device

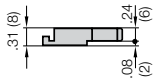
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(04-08)	CFC-08-M	CFC-08-C
.31-.47	(08-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

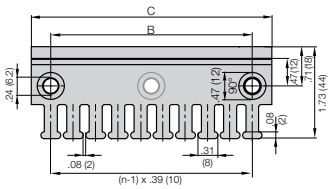


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10

Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3850-ZS	5	1.89	(48)

For more information please refer to strain relief section of Chapter 10

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E-Chain System® E4/100
Series 380/390/R780
Guide Trough

Width of Crossbar
380-**05**-200-0

	B_{Ri}	Installation Part No.
-05	3.19 (81)	**93-50-200**
-06	3.90 (99)	**93-50-225**
-07	4.17 (106)	**93-50-225**
-087	4.69 (119)	**93-50-250**
-10	5.16 (131)	**93-50-250**
-11	5.47 (139)	**93-50-250**
-112	5.67 (144)	**93-50-275**
-12	6.14 (156)	**93-50-275**
-137	6.65 (169)	**93-50-300**
-15	7.12 (181)	**93-50-300**
-162	7.64 (194)	**93-50-325**
-17	7.83 (199)	**93-50-325**
-18	8.11 (206)	**93-50-325**
-187	8.62 (219)	**93-50-350**
-20	9.09 (231)	**93-50-350**
-212	9.61 (244)	**93-50-375**
-23	10.08 (256)	**93-50-375**
-237	10.59 (269)	**93-50-400**
-25	11.06 (281)	**93-50-400**
-262	11.57 (294)	**93-50-425**
-28	12.05 (306)	**93-50-425**
-29	12.56 (319)	**93-50-450**
-30	13.03 (331)	**93-50-450**
-312	13.54 (344)	**93-50-475**
-325	14.01 (356)	**93-50-475**
-337	14.52 (369)	**93-50-500**
-350	15.00 (381)	**93-50-500**
-362	15.51 (394)	**93-50-525**
-375	16.02 (407)	**93-50-525**
-387	16.50 (419)	**93-50-550**
-400	16.97 (431)	**93-50-550**

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 93-30
- 1/2 travel length of glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 93-50-XX

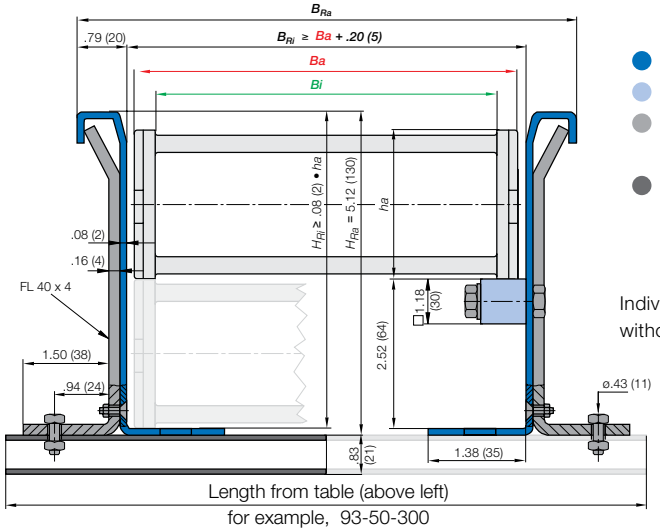
-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table below. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel

Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough,
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 93-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01

Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **93-50-XXX**
Example: 93-50-400 for 15.75 (400 mm) long profile rail

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

Installation sets as section connectors



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

Standard length profile rail

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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400
410
R880

igus®

E-Chain System® E4/100
Series 400/410/R880

For new applications use Series E4-56

Price Index

Series 400 | Series 410 | Series R880

Special Features / Options

- Low noise version E4/101 Series 401 available with special rubber pads
- Clean-Room: Cleanroom test upon request
- EX: ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

- Vertical, hanging ≤ 328 ft (100 m)
- Vertical, standing ≤ 19.69 ft (6 m)
- Side-mounted, unsupp. ≤ 8.20 ft (2.5 m)
- Rotary requires further calculation

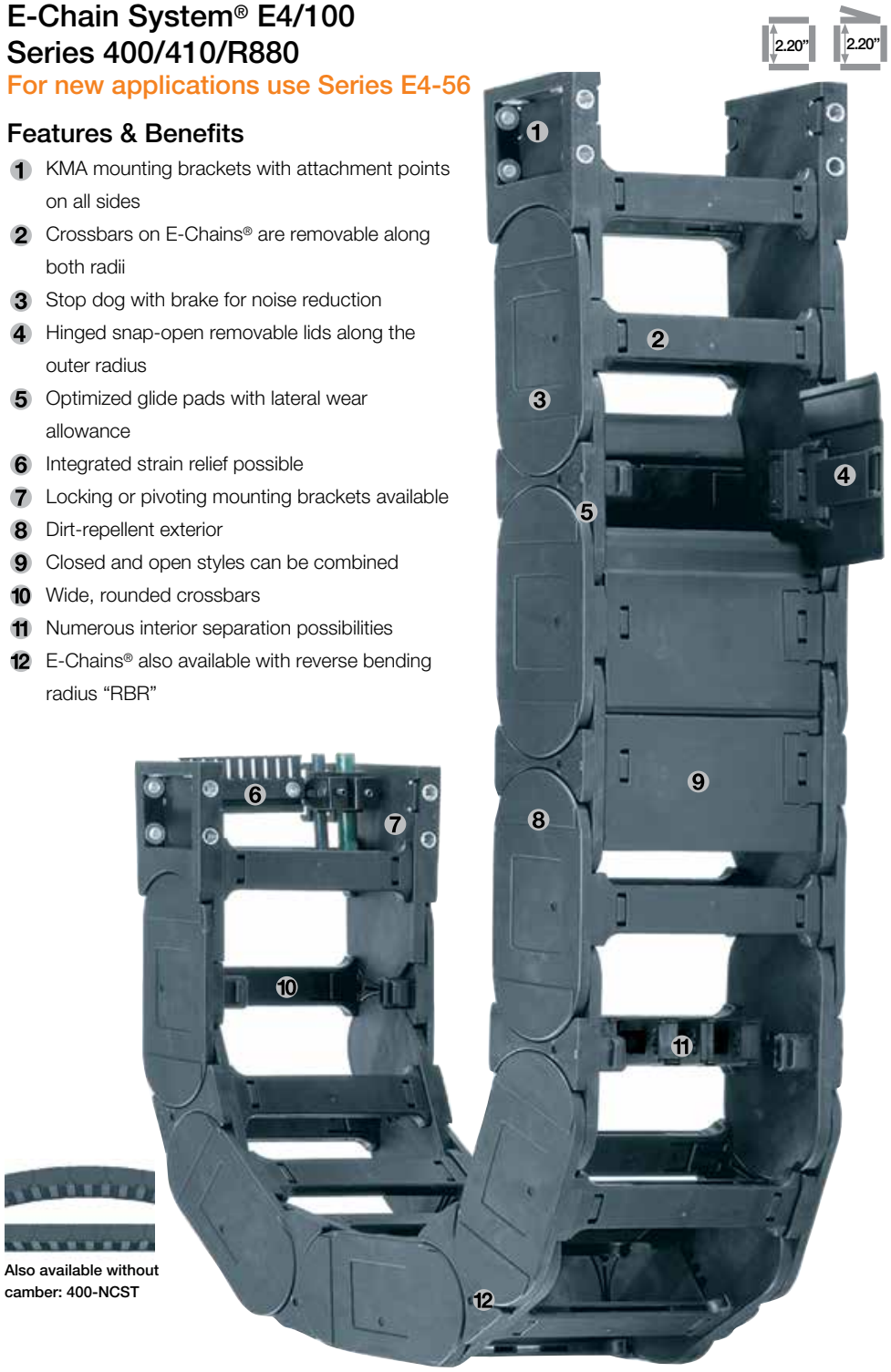
Usage Guidelines

- When quiet operation is required
- When very high speeds and/or accelerations are required
- For long travels
- For high fill weights

- When side-mounting with a long unsupported length is required
  ➤ **Series 4040/4041/R8840**
- When a simpler, low-cost solution is required
  ➤ **Series 14040/R18840**
- If an extreme vibration-free solution is required
  ➤ **Series 14040/R18840**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Crossbars on E-Chains® are removable along both radii
3. Stop dog with brake for noise reduction
4. Hinged snap-open removable lids along the outer radius
5. Optimized glide pads with lateral wear allowance
6. Integrated strain relief possible
7. Locking or pivoting mounting brackets available
8. Dirt-repellent exterior
9. Closed and open styles can be combined
10. Wide, rounded crossbars
11. Numerous interior separation possibilities
12. E-Chains® also available with reverse bending radius “RBR”



Also available without camber: 400-NCST

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

9.84 ft (3 m) **400-30-300-0**	**E-Chain®**
With 2 separators **411** assembled every 2nd link	**Interior separation**
1 Set **40000-30-12P**	**Mounting bracket**

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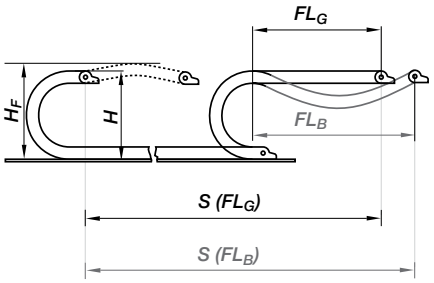
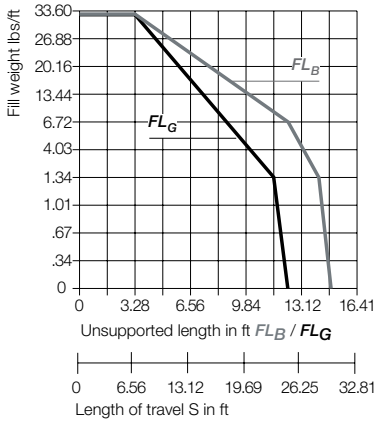
E-Chain System® E4/100
Series 400/410/R880
Installation Dimensions

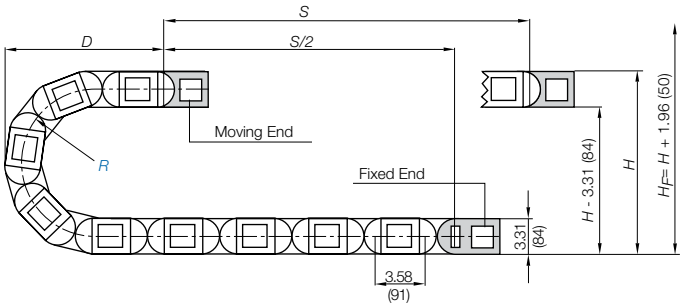
Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $\frac{S}{2} + K$

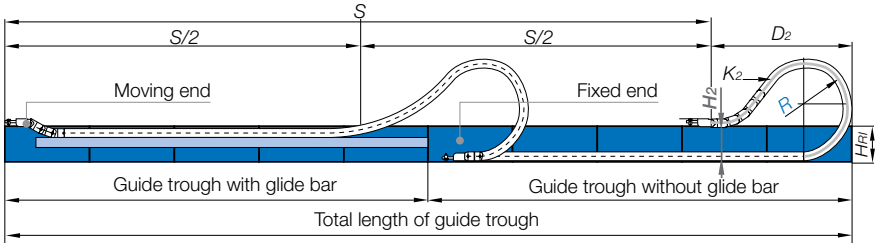
The required clearance height: $H_F = H$ **+ 1.96 in. (50 mm)** (with 2.02 lbs/ft (3 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.45 (240)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)
H**+25	14.17 (360)	15.16 (385)	17.13 (435)	19.09 (485)	22.24 (565)	23.03 (585)	26.97 (685)	30.91 (785)	34.84 (885)	42.72 (1085)
D	10.63 (270)	11.22 (285)	12.20 (310)	13.19 (335)	14.76 (375)	15.16 (385)	17.13 (435)	19.09 (485)	21.06 (535)	25.00 (635)
K	25.59 (650)	29.53 (750)	32.48 (825)	35.43 (900)	40.16 (1020)	41.34 (1050)	48.23 (1225)	52.76 (1340)	57.09 (1450)	69.88 (1775)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 1,312.4 ft. (400m)

For center mount applications:
Chain length: = $\frac{S}{2} + K_2$



R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.45 (240)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)
H2	-	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)
D2	-	18.90 (480)	23.62 (600)	28.74 (730)	36.22 (920)	37.40 (950)	46.46 (1180)	56.69 (1440)	60.24 (1530)	74.80 (1900)
K2	-	32.24 (819)	42.99 (1092)	50.16 (1274)	60.91 (1547)	60.91 (1547)	78.82 (2002)	89.57 (2275)	100.31(2548)	128.98 (3276)

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R + safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ **Design , Chapter 1**

400
410
R880

2.20"

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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400
410
R880

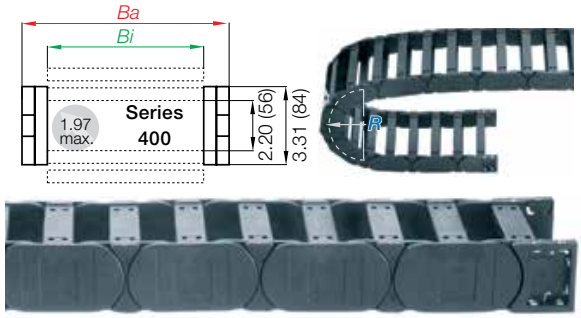
igus®

E-Chain System® E4/100
Series 400/410/R880

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Series 400 - E-Chain® with crossbars every link

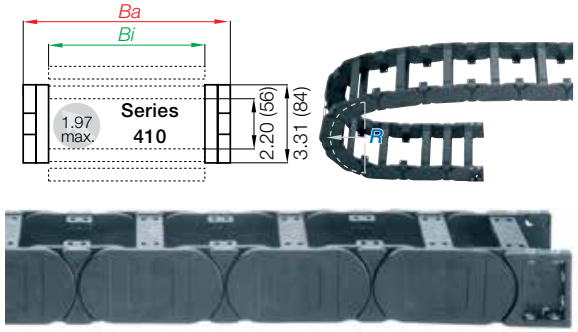


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

400-	13-	250-	0
			Color - Black
		Bending radius	
	Width		
Series			

Series 410 - E-Chain® with crossbars every other link

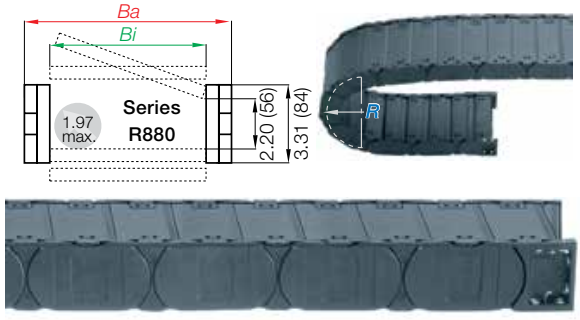


- Crossbars every other link
- Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

410-	13-	250-	0
			Color - Black
		Bending radius	
	Width		
Series			

Series R880 - fully enclosed E-Tube

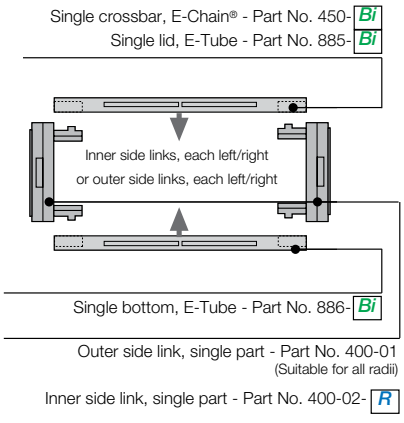


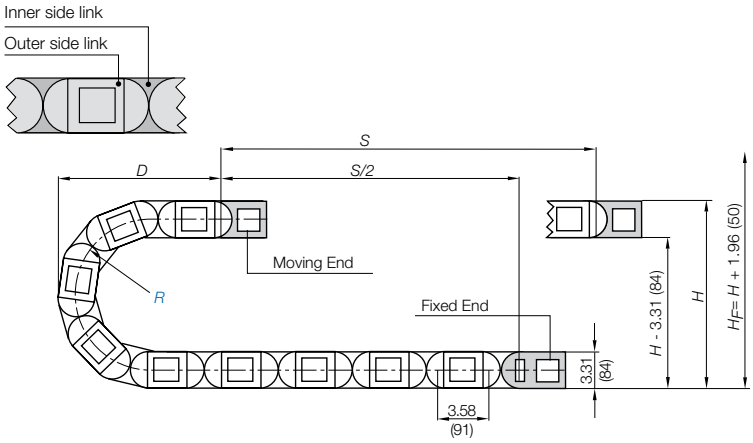
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

Part Number Structure

880-	25-	250-	0
			Color - Black
		Bending radius	
	Width		
Series			

E-Chain® as separate parts, links and side plates





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E-Chain System® E4/100
Series 400/410/R880

Supplement part number with required radius. Example: 400-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

Part Number. Crossbars Every link	Crossbars Every other	Tube Version			*Bi* in. (mm)	*Ba* in. (mm)	400 lbs/ft (kg/m)	410 lbs/ft (kg/m)	R880 lbs/ft (kg/m)
400-05-	410-05-			-0	1.97 (50)	3.31 (84)	≈ 2.31 (3.44)	≈ 2.10 (3.12)	–
400-06-	410-06-			-0	2.56 (65)	3.90 (99)	≈ 2.35 (3.50)	≈ 2.15 (3.20)	–
400-07-	410-07-	880-07-		-0*	2.95 (75)	4.29 (109)	≈ 2.37 (3.53)	≈ 2.31 (3.44)	≈ 2.67 (3.98)
400-10-	410-10-	880-10-		-0	3.94 (100)	5.28 (134)	≈ 2.49 (3.71)	≈ 2.37 (3.53)	≈ 2.87 (4.27)
400-11-	410-11	-		-0	4.41 (112)	5.79 (147)	≈ 2.58 (3.84)	≈ 2.42 (3.60)	–
400-12-	410-12-	880-12-		-0	4.92 (125)	6.26 (159)	≈ 2.63 (3.91)	≈ 2.44 (3.63)	≈ 3.11 (4.63)
400-13-	410-13-			-0	5.39 (137)	6.77 (172)	≈ 2.72 (4.04)	≈ 2.49 (3.70)	–
400-15-	410-15-	880-15-		-0	5.91 (150)	7.24 (184)	≈ 2.76 (4.10)	≈ 2.51 (3.73)	≈ 3.40 (5.06)
400-16-	410-16-			-0	6.38 (162)	7.76 (197)	≈ 2.83 (4.21)	≈ 2.54 (3.78)	–
400-17-	410-17-			-0	6.89 (175)	8.23 (209)	≈ 2.90 (4.32)	≈ 2.58 (3.84)	–
400-18-	410-18-			-0	7.36 (187)	8.74 (222)	≈ 2.98 (4.43)	≈ 2.61 (3.89)	–
400-20-	410-20-	880-20-		-0	7.87 (200)	9.21 (234)	≈ 3.00 (4.46)	≈ 2.63 (3.91)	≈ 3.78 (5.63)
400-21-	410-21-			-0	8.35 (212)	9.72 (247)	≈ 3.07 (4.57)	≈ 2.66 (3.96)	–
400-22-	410-22-			-0	8.86 (225)	10.20 (259)	≈ 3.11 (4.63)	≈ 2.68 (3.99)	–
400-23-	410-23-			-0	9.33 (237)	10.71 (272)	≈ 3.20 (4.76)	≈ 2.73 (4.06)	–
400-25-	410-25-	880-25-		-0	9.84 (250)	11.18 (284)	≈ 3.26 (4.85)	≈ 2.76 (4.10)	≈ 4.27 (6.36)
400-26-	410-26-			-0	10.31 (262)	11.69 (297)	≈ 3.32 (4.94)	≈ 2.79 (4.15)	–
400-27-	410-27-	880-27-		-0	10.83 (275)	12.17 (309)	≈ 3.39 (5.05)	≈ 2.82 (4.20)	≈ 4.52 (6.72)
400-28-	410-28-			-0	11.30 (287)	12.68 (322)	≈ 3.41 (5.07)	≈ 2.83 (4.21)	–
400-30-	410-30-	880-30-		-0	11.81 (300)	13.15 (334)	≈ 3.56 (5.29)	≈ 2.90 (4.32)	≈ 4.72 (7.02)
400-31-	410-31-			-0	12.28 (312)	13.66 (347)	≈ 3.56 (5.29)	≈ 2.90 (4.32)	–
400-32-	410-32-			-0	12.79 (325)	14.13 (359)	≈ 3.62 (5.38)	≈ 2.94 (4.37)	–
400-33-	410-33-			-0	13.27 (337)	14.65 (372)	≈ 3.74 (5.56)	≈ 3.00 (4.46)	–
400-35-	410-35-	880-35-		-0	13.78 (350)	15.12 (384)	≈ 3.84 (5.71)	≈ 3.04 (4.53)	≈ 5.19 (7.72)
400-36-	410-36-			-0	14.25 (362)	15.63 (397)	≈ 3.84 (5.71)	≈ 3.04 (4.53)	–
400-37-	410-37-			-0	14.76 (375)	16.10 (409)	≈ 3.85 (5.73)	≈ 3.05 (4.54)	–
400-38-	410-38-			-0	15.24 (387)	16.61 (422)	≈ 3.91 (5.82)	≈ 3.08 (4.59)	–
400-40-	410-40-	880-40-		-0	15.75 (400)	17.09 (434)	≈ 4.05 (6.02)	≈ 3.15 (4.69)	≈ 5.86 (8.72)
400-41-	410-41-			-0	16.22 (412)	17.60 (447)	≈ 4.15 (6.17)	≈ 3.20 (4.76)	–
400-42-	410-42-			-0	16.73 (425)	18.07 (459)	≈ 4.25 (6.33)	≈ 3.25 (4.84)	–
400-43-	410-43-			-0	17.20 (437)	18.58 (472)	≈ 4.29 (6.39)	≈ 3.27 (4.87)	–
400-45-	410-45-			-0	17.72 (450)	19.06 (484)	≈ 4.34 (6.46)	≈ 3.30 (4.91)	–
400-46-	410-46-	880-46-		-0	18.19 (462)	19.57 (497)	≈ 4.35 (6.48)	≈ 3.31 (4.92)	≈ 6.18 (9.19)
400-47-	410-47-			-0	18.70 (475)	20.04 (509)	≈ 4.44 (6.61)	≈ 3.35 (4.98)	–
400-48-	410-48-			-0	19.17 (487)	20.55 (522)	≈ 4.47 (6.65)	≈ 3.37 (5.01)	–
400-50-	410-50-			-0	19.69 (500)	21.02 (534)	≈ 4.53 (6.74)	≈ 3.39 (5.05)	–
400-51-	410-51-			-0	20.16 (512)	21.54 (547)	≈ 4.55 (6.77)	≈ 3.40 (5.06)	–
400-52-	410-52-			-0	20.67 (525)	22.01 (559)	≈ 4.58 (6.81)	≈ 3.41 (5.08)	–
400-53-	410-53-			-0	21.14 (537)	22.52 (572)	≈ 4.68 (6.96)	≈ 3.47 (5.16)	–
400-55-	410-55-			-0	21.65 (550)	22.99 (584)	≈ 5.01 (7.45)	≈ 3.63 (5.40)	–
400-60-	410-60-			-0	23.62 (600)	24.96 (634)	≈ 5.14 (7.65)	≈ 3.70 (5.50)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: 400-30-300-0

	135**	150	175	200	240	250	300	350	400	500
R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.45 (240)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.69 (500)
H*+25	14.17 (360)	15.16 (385)	17.13 (435)	19.09 (485)	22.24 (565)	23.03 (585)	26.97 (685)	30.91 (785)	34.84 (885)	42.72 (1085)
D	10.63 (270)	11.22 (285)	12.20 (310)	13.19 (335)	14.76 (375)	15.16 (385)	17.13 (435)	19.09 (485)	21.06 (535)	25.00 (635)
K	25.59 (650)	29.53 (750)	32.48 (825)	35.43 (900)	40.16 (1020)	41.34 (1050)	48.23 (1225)	52.76 (1340)	57.09 (1450)	69.88 (1775)

** This radius is not available for the R880 Series
*Removable lid only, no hinged option

0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.305. For large diameter hoses see page 6.305

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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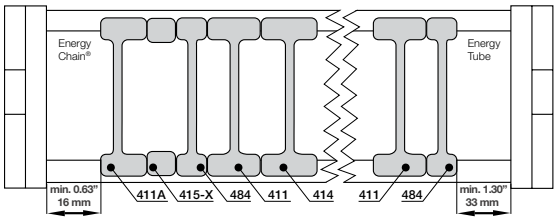
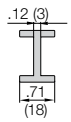
E-Chain System® E4/100
Series 400/410/R880
Interior Separation

Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.
NOTE: Observe a lateral spacing of at least 1.26 in. (32mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates



Vertical separator 401

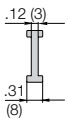


Vertical separator

Unassembled	**Part No. 401**
Assembled	**Part No. 411**

- **Standard separator 401 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

Vertical separator 483

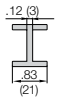


Vertical separator

Unassembled	**Part No. 483**
Assembled	**Part No. 484**

- **Vertical separator 483 for E-Chains® and E-Tubes**
  This separator offers a narrow base for applications where a large number of small cables need to be individually separated.

Locking separator 404

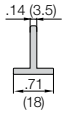


Locking separator (chain only)

Unassembled	**Part No. 404**
Assembled	**Part No. 414**

- **Locking separator 404 for E-Chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.

Locking separator 406

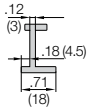


Locking separator (tube only)

Unassembled	**Part No. 406**
Assembled	**Part No. 416**

- **Locking separator 406 for E-Tubes**
  It features a single sided, secure fit, and can be placed on the lid or the bottom of the E-Tube. The single side locking design helps to eliminate difficulties in assembling the opposite cover or crossbar

Asymmetric separator 401A



Asymmetrical separator (chain only)

Unassembled	**Part No. 401A**
Assembled	**Part No. 411A**

- **Asymmetrical separator 401A for E-Chains®**
  This separator features an .71" (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

Spacers 405-XX

Spacer (chain only)

Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	415 -10	.39"	(10)
405 -15	415 -15	.59"	(15)
405 -20	415 -20	.79"	(20)
405 -30	415 -30	1.18"	(30)
405 -40	415 -40	1.57"	(40)

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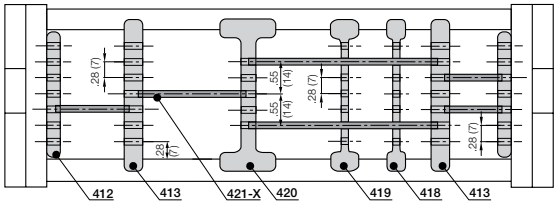
E-Chain System® E4/100
Series 400/410/R880
Interior Separation

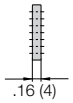
Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.



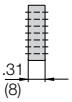
- **Side plates 402**
  This component is used to form the basic pattern of a shelf system.



Side plate	
Unassembled	Part No. 402
Assembled	Part No. 412

Side plate 402

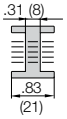
- **Vertical separator 403**
  This component is used to form the basic pattern of a shelf system.



Vertical separator	
Unassembled	Part No. 403
Assembled	Part No. 413

Vertical separator 403

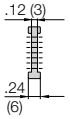
- **Locking vertical separator 410**
  This separator is slotted and able to be combined with shelves



Locking vertical separator	
Unassembled	Part No. 410
Assembled	Part No. 420

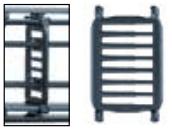
Locking vertical separator 410

- **Slotted separators 408**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.

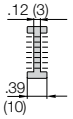


Slotted separators, closed	
Unassembled	Part No. 408
Assembled	Part No. 418

Closed slotted separator 408



- **Slotted separator 409**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 3 middle slots



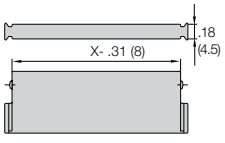
Slotted separators, open	
Unassembled	Part No. 409
Assembled	Part No. 419

Open slotted separator 409

Shelves 420-XX

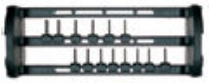
These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

Width X in.	(mm)	Usable Width in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Usable Width in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	.39	(10)	420-18	421-18	2.95	(75)	2.64	(67)	420-75	421-75
.91	(23)	.59	(15)	420-23	421-23	3.46	(88)	3.15	(80)	420-88	421-88
.98	(25)	.67	(17)	420-25	421-25	3.94	(100)	3.62	(92)	420-100	421-100
1.10	(28)	.79	(20)	420-28	421-28	4.92	(125)	4.61	(117)	420-125	421-125
1.30	(33)	.98	(25)	420-33	421-33	5.91	(150)	5.59	(142)	420-150	421-150
1.69	(43)	1.38	(35)	420-43	421-43	6.89	(175)	6.57	(167)	420-175	421-175
1.97	(50)	1.65	(42)	420-50	421-50	7.36	(187)	7.05	(179)	420-187	421-187
2.44	(62)	2.13	(54)	420-62	421-62	7.87	(200)	7.56	(192)	420-200	421-200

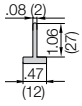


Center crossbar - developed for applications involving a very large number of thin cables, individually separated. This offers the option of subdividing the E-Chain® into upper and lower halves, with mutually independent separators.

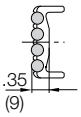
Rollclip - minimizes abrasion of particularly sensitive hoses or cables in an E-Chain®. The integrated rollers compensate for relative movement between the chain and the hose or cable. This reduces the abrasion of the hoses or cables



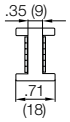
Roller separator - performs a similar function to the Rollclip, but doubles as a separator. Consult igus® if you have any questions regarding the roller separator.



Center crossbar	
Unassembled	Part No. 405
Assembled	Part No. 415



Rollclip	
Unassembled	Part No. 489-27
Assembled	Part No. 490-27



Center crossbar	
Unassembled	Part No. 429
Assembled	Part No. 430

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

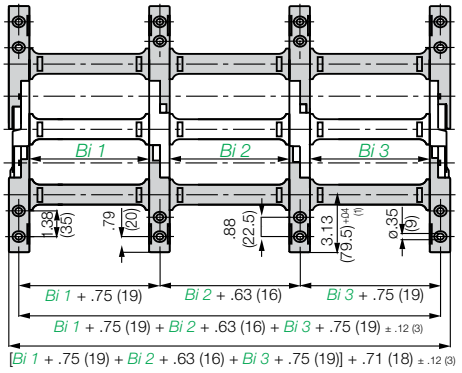
E-Chain System® E4/100
Series 400/410/R880
Special Accessories

Part number example for E-Chain®
400-10/20/10-[200]-0
400-*Bi1*/*Bi2*/*Bi3*-[*R*]-0

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

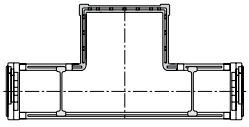
- For applications in which particularly high fill weights necessitate extremely wide E-Chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



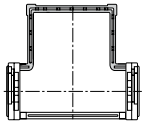
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

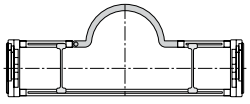
- Intended for cables and hoses with a maximum outer diameter of 9.65 in. (245 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



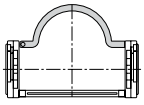
Square extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.



Round extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.

Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
450-15-RHD115	By request	Round	No	Yes
450-17-RD115	By request	Round	Yes	No
450-25-D150	By request	Square	Yes	No
450-30-D200	By request	Square	Yes	No
450-35-D250	By request	Square	Yes	No
450-40-D300	By request	Square	Yes	No
450-20-HD150	By request	Square	No	Yes
450-25-HD200	By request	Square	No	Yes
450-30-HD250	By request	Square	No	Yes

E4 clip on cable binder

- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on E-Chains®
- The loops can be adjusted as needed
- Compatible with many E4 E-Chains®
- Economical
- One clip and one locking band are needed for each chain link

Part No.	Form
450-B12	Locking clip, comprised of a locking element
450-B12-200	Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm

igus® E-Chain System®
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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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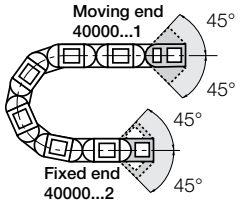
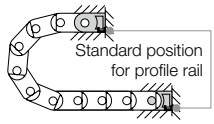
E-Chain System® E4/100
Series 400/410/R880
Mounting Brackets, KMA

Option 1: pivoting

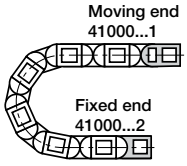
- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

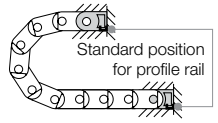




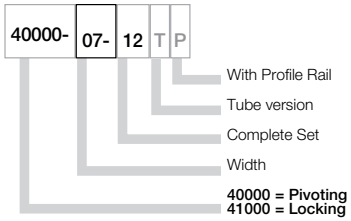
Option 2: locking

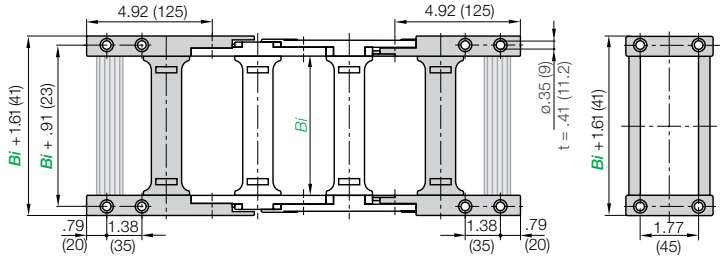
- Profile rail option
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels





Part Number Structure





Due to the design of the E4/100 series chains, please note the following when ordering brackets:

Even number of links = full set, part number ending in **-12**
Odd number of links = 2 pieces, part number ending in **-2**

Part number examples are shown for pivoting brackets. For locking brackets change part number to 41000

Part No. Full Set (pivoting)
Series 400 or 410:
40000-Width-12

Part No. Full Set (pivoting)
with profile rail
Series 400 or 410
40000-Width-12P

Part No. Full Set (pivoting)
Tube Series R880
40000-Width-12T

Part No. Full Set (pivoting)
with Profile Rail
Series R880
40000-Width-12TP

Width	Part No. Full Set Pivoting	Part No. Full Set Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-05	40000	41000	-05-12		P	1.97 (50)
-06	40000	41000	-06-12		P	2.56 (65)
-07	40000	41000	-07-12	T	P	2.95 (75)
-10	40000	41000	-10-12	T	P	3.94 (100)
-11	40000	41000	-11-12		P	4.41 (112)
-12	40000	41000	-12-12	T	P	4.92 (125)
-13	40000	41000	-13-12		P	5.39 (137)
-15	40000	41000	-15-12	T	P	5.91 (150)
-16	40000	41000	-16-12		P	6.38 (162)
-17	40000	41000	-17-12		P	6.89 (175)
-18	40000	41000	-18-12		P	7.36 (187)
-20	40000	41000	-20-12	T	P	7.87 (200)
-21	40000	41000	-21-12		P	8.35 (212)
-22	40000	41000	-22-12		P	8.86 (225)
-23	40000	41000	-23-12		P	9.33 (237)
-25	40000	41000	-25-12	T	P	9.84 (250)
-26	40000	41000	-26-12		P	10.31 (262)
-27	40000	41000	-27-12	T	P	10.83 (275)
-28	40000	41000	-28-12		P	11.30 (287)
-30	40000	41000	-30-12	T	P	11.81 (300)
-31	40000	41000	-31-12		P	12.28 (312)

Width	Part No. Full Set Pivoting	Part No. Full Set Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-32	40000	41000	-32-12		P	12.79 (325)
-33	40000	41000	-33-12		P	13.27 (337)
-35	40000	41000	-35-12	T	P	13.78 (350)
-36	40000	41000	-36-12		P	14.25 (362)
-37	40000	41000	-37-12		P	14.76 (375)
-38	40000	41000	-38-12		P	15.24 (387)
-40	40000	41000	-40-12	T	P	15.75 (400)
-41	40000	41000	-41-12		P	16.22 (412)
-42	40000	41000	-42-12		P	16.73 (425)
-43	40000	41000	-43-12		P	17.20 (437)
-45	40000	41000	-45-12		P	17.72 (450)
-46	40000	41000	-46-12	T	P	18.19 (462)
-47	40000	41000	-47-12		P	18.70 (475)
-48	40000	41000	-48-12		P	19.17 (487)
-50	40000	41000	-50-12		P	19.69 (500)
-51	40000	41000	-51-12		P	20.16 (512)
-52	40000	41000	-52-12		P	20.67 (525)
-53	40000	41000	-53-12		P	21.14 (537)
-55	40000	41000	-55-12		P	21.65 (550)
-60	40000	41000	-60-12		P	23.62 (600)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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Series 400/410/R880
Strain Relief

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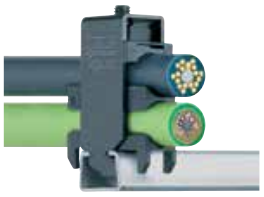
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

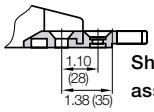
Chainfix Clip

Modular snap-on strain relief device

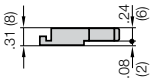
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(04-08)	CFC-08-M	CFC-08-C
.31-.47	(08-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



Shown assembled

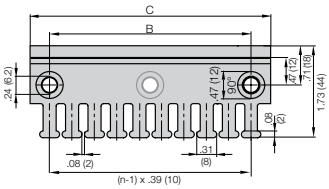


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10

Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
4550-ZS	5	1.89	(48)
4575-ZS	7	2.91	(74)

For more information please refer to strain relief section of Chapter 10

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E-Chain System® E4/100
Series 400/410/R880
Guide Trough

Width of Crossbar
400-**05**-200-0

B_{Ri}	Installation Part No.
-05 3.50 (89)	*
-06 4.09 (104)	**94-50-225**
-07 4.49 (114)	**94-50-225**
-10 5.47 (139)	**94-50-250**
-11 5.98 (152)	**94-50-275**
-12 6.46 (164)	**94-50-275**
-13 6.97 (177)	**94-50-300**
-15 7.44 (189)	**94-50-300**
-16 7.95 (202)	**94-50-325**
-17 8.42 (214)	**94-50-325**
-18 8.94 (227)	**94-50-350**
-20 9.41 (239)	**94-50-350**
-21 9.92 (252)	**94-50-375**
-22 10.39 (264)	**94-50-375**
-23 10.91 (277)	**94-50-400**
-25 11.38 (289)	**94-50-400**
-26 11.89 (302)	**94-50-425**
-27 12.36 (314)	**94-50-425**
-28 12.87 (327)	**94-50-450**
-30 13.35 (339)	**94-50-450**
-31 13.86 (352)	**94-50-475**
-32 14.33 (364)	**94-50-475**
-33 14.84 (377)	**94-50-500**
-35 15.31 (389)	**94-50-500**
-36 15.82 (402)	**94-50-525**
-37 16.30 (414)	**94-50-525**
-38 16.81 (427)	**94-50-550**
-40 17.28 (439)	**94-50-550**
-41 17.79 (452)	**94-50-575**
-42 18.27 (464)	**94-50-575**
-43 18.78 (477)	**94-50-600**
-45 19.25 (489)	**94-50-600**
-46 19.76 (502)	**94-50-625**
-47 20.24 (514)	**94-50-625**
-48 20.75 (527)	**94-50-650**
-50 21.22 (539)	**94-50-650**
-51 21.73 (552)	**94-50-675**
-52 22.20 (564)	**94-50-675**
-53 22.72 (577)	**94-50-700**
-55 23.19 (589)	**94-50-700**
-60 25.16 (639)	**94-50-750**

Standard length profile rail

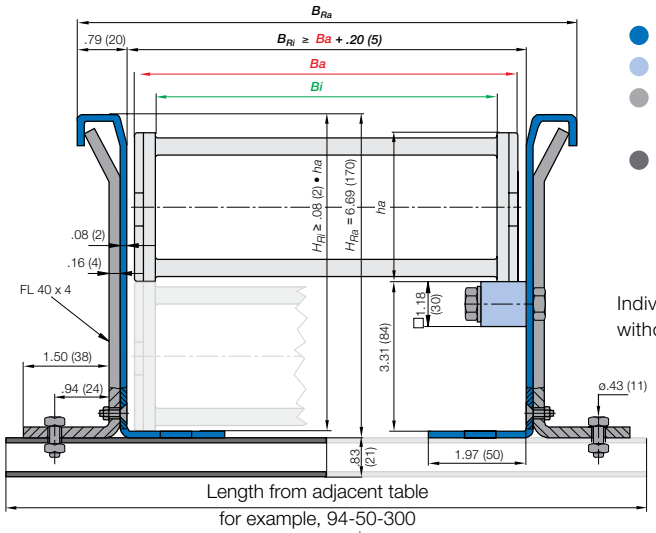
Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required.

- Full travel length of guide trough
  Part No. 94-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 94-50-XX

.XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2m). The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center mounted

Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 94-30
= 13 sections of 6.56 ft (2 m) glide bars
Part No. 93-01
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
94-50-XXX
Example:
94-50-400 for 15.75 (400 mm) long profile rail

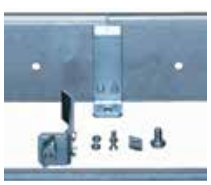


- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

Left: Guide trough with glide bars
Right: Guide troughs without glide bars



Installation sets as section connectors

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
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640

E-Chain System® E4/100
Series 640

4.41”

Price Index

Series 640

Special Features / Options

This E4 Series is a low-noise version

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Other Installation Methods

Vertical, hanging ≤ 394 ft (120 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 13.12 ft (4 m)
Rotary requires further calculation

Usage Guidelines

- When quiet operation is required
- When very high speeds and/or accelerations are required
- For long travels
- For high fill weights

- When a simpler, low-cost solution is required
  ➤ **Series 1640**
- If higher stability is required
  ➤ **Series 600/601/R608**
- If an enclosed solution is required
  ➤ **Series R608**

Features & Benefits

1. Crossbars on E-Chains® are removable along both radii
2. Dirt-repellent exterior
3. Optimum ratio of inner height to outer height
4. Numerous interior separation possibilities
5. Optimized glide pads with lateral wear allowance
6. Wide, rounded crossbars
7. Stop dog with brake for noise reduction
8. E-Chains® also available with reverse bending radius “RBR”

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

13.12 ft (4 m) **640-33-300-0**	**E-Chain®**
With 2 separators **6411** assembled every 2nd link	**Interior Separation**
1 Set **6000-12**	**Mounting Bracket**

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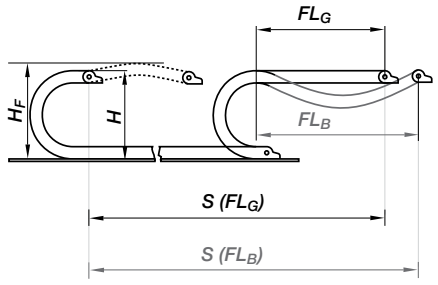
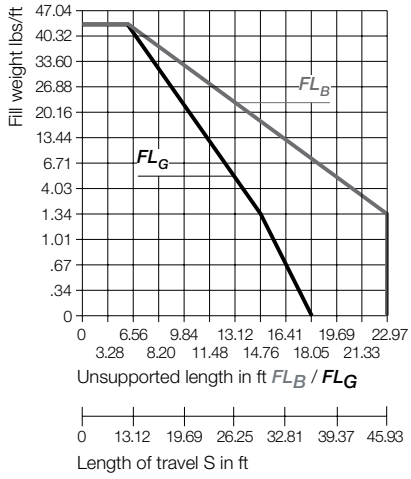
E-Chain System® E4/100
Series 640
Installation Dimensions

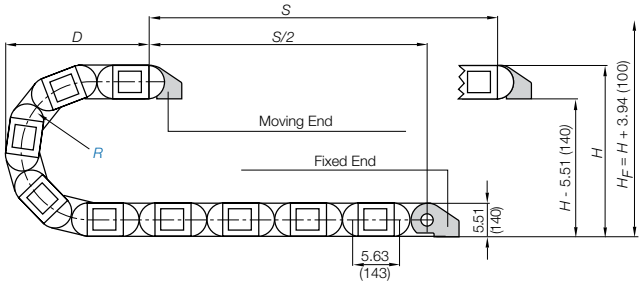
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 5.63" (143 mm)
Links per ft (m): = 2.13 (7)
For center mount applications:
Chain length = $^{S}/_{2} + K$

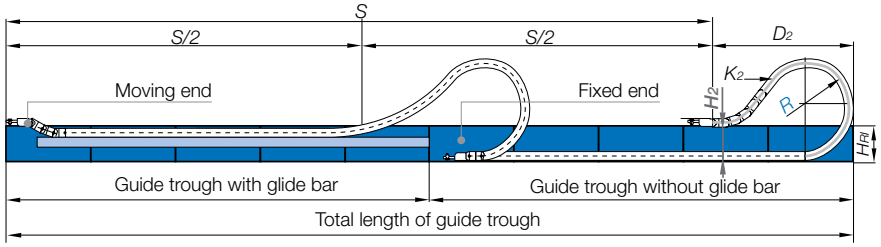
The required clearance height: $H_F = H + 3.94$ **in. (100 mm)** (with 3.36 lbs/ft (5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	21.65 (550)	23.62 (600)	29.53 (750)	39.37 (1000)
H	21.46 (545)	25.39 (645)	29.33 (745)	33.27 (845)	37.20 (945)	41.14 (1045)	45.08 (1145)	49.02 (1245)	52.95 (1345)	64.76 (1645)	84.45 (2145)
D	16.34 (415)	18.31 (465)	20.27 (515)	22.24 (565)	24.21 (615)	26.18 (665)	28.15 (715)	30.12 (765)	32.09 (815)	37.99 (965)	47.83 (1215)
K	36.22 (920)	42.52 (1080)	48.82 (1240)	55.12 (1400)	61.42 (1560)	67.72 (1720)	73.62 (1870)	79.53 (2020)	85.63 (2175)	104.72 (2660)	135.24 (3435)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 1,476 ft. (450 m)

For center mount applications:
Chain length: = $^{S}/_{2} + K_2$



R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	21.65 (550)	23.62 (600)	29.53 (750)	39.37 (1000)
H_2	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	-
D_{2+20}	31.50 (800)	35.43 (900)	43.31 (1100)	47.24 (1200)	56.30 (1430)	62.20 (1580)	66.93 (1700)	72.83 (1850)	80.71 (2050)	112.20 (2850)	-
K_2	50.67 (1287)	56.30 (1430)	73.19 (1859)	84.45 (2145)	101.33 (2574)	112.60 (2860)	123.86 (3146)	135.12 (3432)	152.01 (3861)	197.05 (5005)	-

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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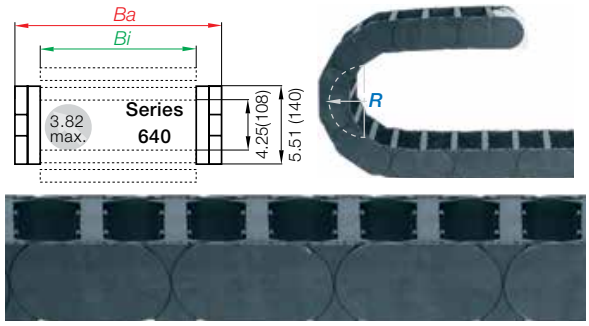
igus®

E-Chain System® E4/100
Series 640

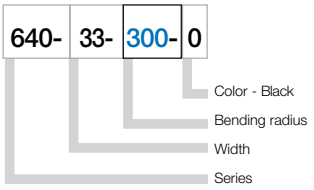
Telephone 1-800-521-2747
Fax 1-401-438-7270

Series 600 - E-Chain® with crossbars every link

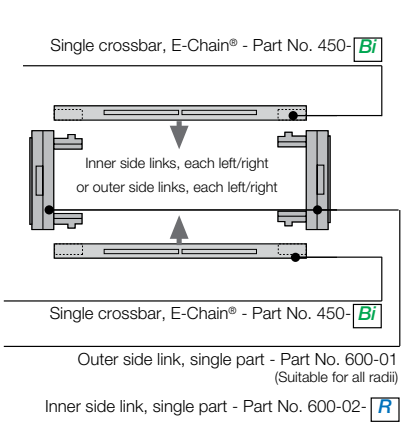


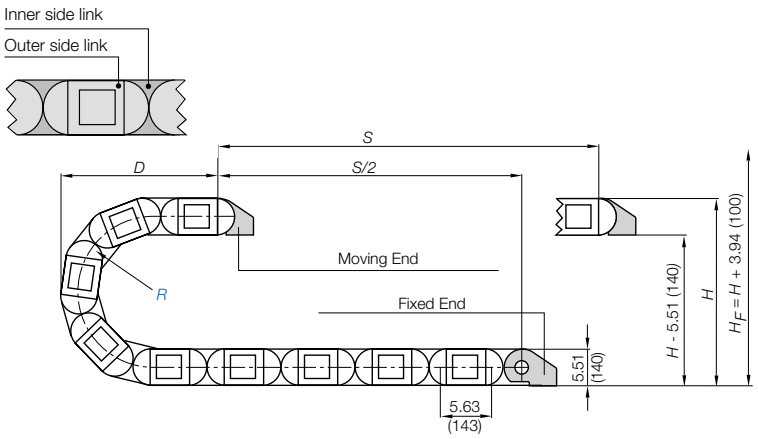
- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure



E-Chain® as separate parts, links and side plates





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E-Chain System® E4/100
Series 640

Supplement part number with required radius. Example: 640-33-300-0
Pitch: 5.63 in. (143 mm) per link links/ft (m) = 2.13 (7)

Part Number. Crossbars Every link			*Bi* in. (mm)	*Ba* in. (mm)	640 lbs/ft (kg/m)
640-12-		-0	3.43 (87)	5.47 (139)	≈ 5.09 (7.57)
640-13-		-0	3.90 (99)	5.98 (152)	≈ 5.15 (7.66)
640-15-		-0	4.41 (112)	6.46 (164)	≈ 5.17 (7.70)
640-16-		-0	4.88 (124)	6.97 (177)	≈ 5.22 (7.77)
640-17-		-0	5.39 (137)	7.44 (189)	≈ 5.27 (7.84)
640-18-		-0	5.87 (149)	7.95 (202)	≈ 5.32 (7.91)
640-20-		-0	6.38 (162)	8.43 (214)	≈ 5.32 (7.92)
640-21-		-0	6.85 (174)	8.94 (227)	≈ 5.37 (7.99)
640-22-		-0	7.36 (187)	9.41 (239)	≈ 5.40 (8.04)
640-23-		-0	7.83 (199)	9.92 (252)	≈ 5.46 (8.12)
640-25-		-0	8.35 (212)	10.39 (264)	≈ 5.50 (8.18)
640-26-		-0	8.82 (224)	10.91 (277)	≈ 5.53 (8.23)
640-27-		-0	9.33 (237)	11.38 (289)	≈ 5.58 (8.30)
640-28-		-0	9.80 (249)	11.89 (302)	≈ 5.59 (8.32)
640-30-		-0	10.31 (262)	12.36 (314)	≈ 5.69 (8.39)
640-31-		-0	10.79 (274)	12.87 (327)	≈ 5.69 (8.46)
640-32-		-0	11.30 (287)	13.35 (339)	≈ 5.73 (8.51)
640-33-		-0	11.81 (300)	13.86 (352)	≈ 5.79 (8.62)
640-35-		-0	12.28 (312)	14.33 (364)	≈ 5.86 (8.68)
640-36-		-0	12.76 (324)	14.84 (377)	≈ 5.86 (8.72)
640-37-		-0	13.27 (337)	15.31 (389)	≈ 5.87 (8.74)
640-38-		-0	13.74 (349)	15.83 (402)	≈ 5.91 (8.79)
640-40-		-0	14.25 (362)	16.30 (414)	≈ 5.99 (8.92)
640-41-		-0	14.72 (374)	16.81 (427)	≈ 6.06 (9.02)
640-42-		-0	15.24 (387)	17.28 (439)	≈ 6.12 (9.11)
640-43-		-0	15.71 (399)	17.80 (452)	≈ 6.16 (9.16)
640-45-		-0	16.22 (412)	18.27 (464)	≈ 6.18 (9.20)
640-46-		-0	16.69 (424)	18.78 (477)	≈ 6.19 (9.21)
640-47-		-0	17.20 (437)	19.25 (489)	≈ 6.25 (9.26)
640-48-		-0	17.67 (449)	19.76 (502)	≈ 6.25 (9.30)
640-50-		-0	18.19 (462)	20.24 (514)	≈ 6.30 (9.38)
640-51-		-0	18.66 (474)	20.75 (527)	≈ 6.31 (9.39)
640-52-		-0	19.17 (487)	21.22 (539)	≈ 6.33 (9.42)
640-53-		-0	19.65 (499)	21.73 (552)	≈ 6.40 (9.52)
640-55-		-0	20.16 (512)	22.20 (564)	≈ 6.61 (9.83)
640-60-		-0	22.13 (562)	24.17 (614)	≈ 6.69 (9.95)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 640-33-300-0

	200	250	300	350	400	450	500	550	600	750	1000
R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	21.65 (550)	23.62 (600)	29.53 (750)	39.37 (1000)
H	21.46 (545)	25.39 (645)	29.33 (745)	33.27 (845)	37.20 (945)	41.14 (1045)	45.08 (1145)	49.02 (1245)	52.95 (1345)	64.76 (1645)	84.45 (2145)
D	16.34 (415)	18.31 (465)	20.27 (515)	22.24 (565)	24.21 (615)	26.18 (665)	28.15 (715)	30.12 (765)	32.09 (815)	37.99 (965)	47.83 (1215)
K	36.22 (920)	42.52 (1080)	48.82 (1240)	55.12 (1400)	61.42 (1560)	67.72 (1720)	73.62 (1870)	79.53 (2020)	85.63 (2175)	104.72 (2660)	135.24 (3435)

0=Standard color black. For other colors see Chapter 1
. For large diameter hoses see page 6.315

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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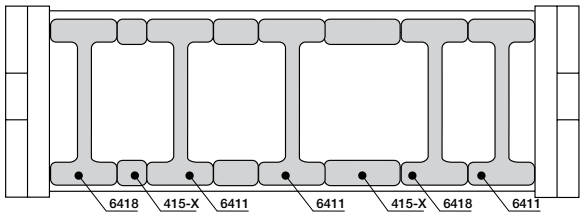
igus®

E-Chain System® E4/100
Series 640
Interior Separation

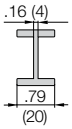
Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.
NOTE: Observe a lateral spacing of at least 1.26 in. (32mm) for E-Tubes and .63 in. (16mm) for E-Chain®.
There is no minimum spacing needed for side plates
Exception: Minimum spacing
Locking separator 6008 = .91" (23 mm)



Standard

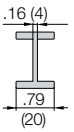
Vertical separator 6401



Vertical separator	
Unassembled	**Part No. 6401**
Assembled	**Part No. 6411**

- **Standard separator 6401 for E-Chains®**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

Locking separator 6408



Locking separator (chain only)	
Unassembled	**Part No. 6408**
Assembled	**Part No. 6418**

- **Locking separator 6408 for E-Chains®**
  This separator is used for applications that are exposed to extremely high humidity. The clamp at the side serves to uniformly align the separators. In order to avoid destroying the separators when opening the E-Chain®, make sure all separators are identically aligned.

Spacers 405-XX

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	415 -10	.39"	(10)
405 -15	415 -15	.59"	(15)
405 -20	415 -20	79"	(20)
405 -30	415 -30	1.18"	(30)
405 -40	415 -40	1.57"	(40)

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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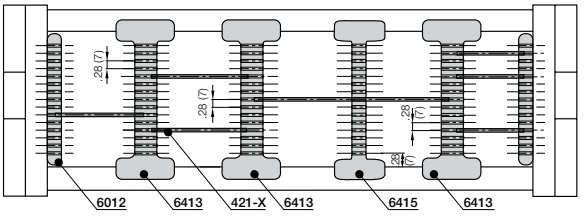
E-Chain System® E4/100
Series 640
Interior Separation

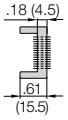
Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.



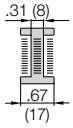
- **Side plates 6002**
  This component is used to form the basic pattern of a shelf system.



Side plate	
Unassembled	**Part No. 6002**
Assembled	**Part No. 6012**

Side plate 6002

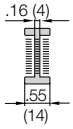
- **Vertical separator 6403**
  This component is used to form the basic pattern of a shelf system.



Vertical separator	
Unassembled	**Part No. 6403**
Assembled	**Part No. 6413**

Vertical separator 6403

- **Slotted separator 6405**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 13 middle slots



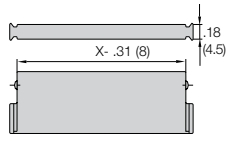
Slotted separators, open	
Unassembled	**Part No. 6405**
Assembled	**Part No. 6415**

Open slotted separator 6405

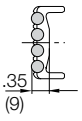
Shelves 420-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

Width X in.	(mm)	Usable Width in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Usable Width in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	.39	(10)	**420-18**	**421-18**	2.95	(75)	2.64	(67)	**420-75**	**421-75**
.91	(23)	.59	(15)	**420-23**	**421-23**	3.46	(88)	3.15	(80)	**420-88**	**421-88**
.98	(25)	.67	(17)	**420-25**	**421-25**	3.94	(100)	3.62	(92)	**420-100**	**421-100**
1.10	(28)	.79	(20)	**420-28**	**421-28**	4.92	(125)	4.61	(117)	**420-125**	**421-125**
1.30	(33)	.98	(25)	**420-33**	**421-33**	5.91	(150)	5.59	(142)	**420-150**	**421-150**
1.69	(43)	1.38	(35)	**420-43**	**421-43**	6.89	(175)	6.57	(167)	**420-175**	**421-175**
1.97	(50)	1.65	(42)	**420-50**	**421-50**	7.36	(187)	7.05	(179)	**420-187**	**421-187**
2.44	(62)	2.13	(54)	**420-62**	**421-62**	7.87	(200)	7.56	(192)	**420-200**	**421-200**



Rollclip - minimizes abrasion of particularly sensitive hoses or cables in an E-Chain®. The integrated rollers compensate for relative movement between the chain and the hose or cable. This reduces the abrasion of the hoses or cables



Rollclip	
Unassembled	**Part No. 489-27**
Assembled	**Part No. 490-27**

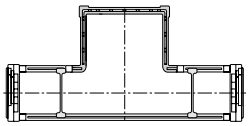
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

E-Chain System® E4/100
Series 640
Special Accessories

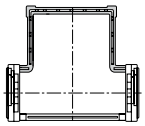
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

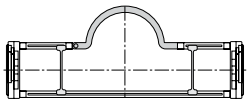
- Intended for cables and hoses with a maximum outer diameter of 11.81 in. (300 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



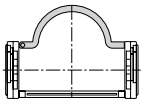
Square extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.



Round extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.

Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
450-15-RHD115	By request	Round	No	Yes
450-17-RD115	By request	Round	Yes	No
450-25-D150	By request	Square	Yes	No
450-30-D200	By request	Square	Yes	No
450-35-D250	By request	Square	Yes	No
450-40-D300	By request	Square	Yes	No
450-20-HD150	By request	Square	No	Yes
450-25-HD200	By request	Square	No	Yes
450-30-HD250	By request	Square	No	Yes

E4 clip on cable binder

- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on E-Chains®
- The loops can be adjusted as needed
- Compatible with many E4 E-Chains®
- Economical
- One clip and one locking band are needed for each chain link

Part No.	Form
450-B12	Locking clip, comprised of a locking element
450-B12-200	Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm

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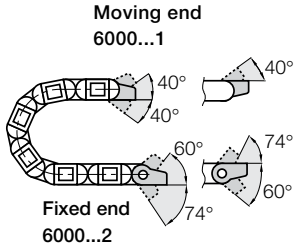
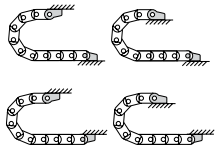
E-Chain System® E4/100
Series 640
Mounting Brackets - Steel

Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive





Possible installation configurations -

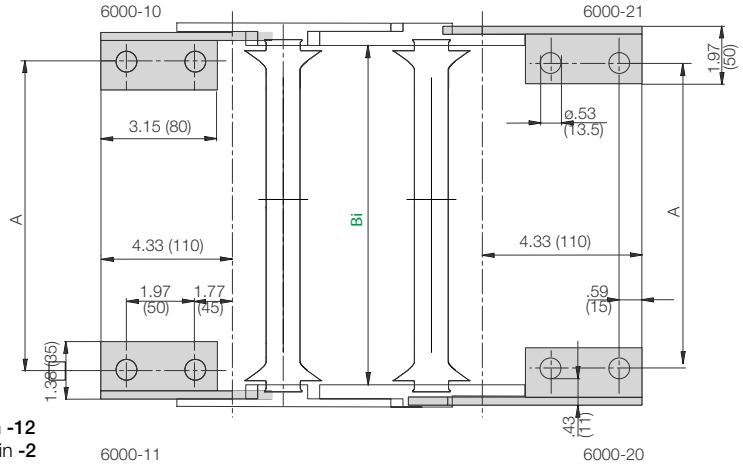
Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 640
6000-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right with bore
Series 640
6000-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right with pin
Series 640
6000-2

Due to the design of the E4/100 series chains, please note the following when ordering brackets:

Even number of links = full set, part number ending in **-12**
Odd number of links = 2 pieces, part number ending in **-2**



Bracket Mounting Dimensions

Width of Chain *Bi*	Mounting Brackets Part Number	Full Set	Moving End Only	Fixed End Only	Mounting Dimension A in. (mm)	Width of Chain *Bi*	Mounting Brackets Part Number	Full Set	Moving End Only	Fixed End Only	Mounting Dimension A in. (mm)
3.43 (87)	6000	-12	-1	-2	2.24 (57)	12.28 (312)	6000	-12	-1	-2	11.10 (282)
3.90 (99)	6000	-12	-1	-2	2.72 (69)	12.76 (324)	6000	-12	-1	-2	11.57 (294)
4.41 (112)	6000	-12	-1	-2	3.23 (82)	13.27 (337)	6000	-12	-1	-2	12.09 (307)
4.88 (124)	6000	-12	-1	-2	3.70 (94)	13.74 (349)	6000	-12	-1	-2	12.56 (319)
5.39 (137)	6000	-12	-1	-2	4.21 (107)	14.25 (362)	6000	-12	-1	-2	13.07 (332)
5.87 (149)	6000	-12	-1	-2	4.69 (119)	14.72 (374)	6000	-12	-1	-2	13.54 (344)
6.38 (162)	6000	-12	-1	-2	5.20 (132)	15.24 (387)	6000	-12	-1	-2	14.06 (357)
6.85 (174)	6000	-12	-1	-2	5.67 (144)	15.71 (399)	6000	-12	-1	-2	14.53 (369)
7.36 (187)	6000	-12	-1	-2	6.18 (157)	16.22 (412)	6000	-12	-1	-2	15.04 (382)
7.83 (199)	6000	-12	-1	-2	6.65 (169)	16.69 (424)	6000	-12	-1	-2	15.51 (394)
8.35 (212)	6000	-12	-1	-2	7.16 (182)	17.20 (437)	6000	-12	-1	-2	16.02 (407)
8.82 (224)	6000	-12	-1	-2	7.64 (194)	17.68 (449)	6000	-12	-1	-2	16.49 (419)
9.33 (237)	6000	-12	-1	-2	8.15 (207)	18.19 (462)	6000	-12	-1	-2	17.01 (432)
9.80 (249)	6000	-12	-1	-2	8.62 (219)	18.66 (474)	6000	-12	-1	-2	17.48 (444)
10.31 (262)	6000	-12	-1	-2	9.13 (232)	19.17 (487)	6000	-12	-1	-2	17.99 (457)
10.79 (274)	6000	-12	-1	-2	9.61 (244)	19.65 (499)	6000	-12	-1	-2	18.46 (469)
11.30 (287)	6000	-12	-1	-2	10.12 (257)	20.16 (512)	6000	-12	-1	-2	18.98 (482)
11.77 (299)	6000	-12	-1	-2	10.59 (269)	22.13 (562)	6000	-12	-1	-2	20.94 (532)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E4/100
Series 640
Guide Trough

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Fax 1-401-438-7270

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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Width of Crossbar
640-**12**-200-0

	B_{Ri}	Installation Part No.
-12	5.67 (144)	**97-50-275**
-13	6.18 (157)	**97-50-275**
-15	6.65 (169)	**97-50-300**
-16	7.16 (182)	**97-50-300**
-17	6.46 (164)	**97-50-325**
-18	8.15 (207)	**97-50-325**
-20	8.62 (219)	**97-50-350**
-21	9.13 (232)	**97-50-350**
-22	9.61 (244)	**97-50-375**
-23	10.12 (257)	**97-50-375**
-25	10.59 (269)	**97-50-400**
-26	11.10 (282)	**97-50-400**
-27	11.57 (294)	**97-50-425**
-28	12.09 (307)	**97-50-425**
-30	12.56 (319)	**97-50-450**
-31	13.07 (332)	**97-50-450**
-32	13.54 (344)	**97-50-475**
-33	14.06 (357)	**97-50-475**
-35	14.53 (369)	**97-50-500**
-36	15.04 (382)	**97-50-500**
-37	15.51 (394)	**97-50-525**
-38	16.02 (407)	**97-50-525**
-40	16.50 (419)	**97-50-550**
-41	17.01 (432)	**97-50-550**
-42	17.48 (444)	**97-50-575**
-43	17.99 (457)	**97-50-575**
-45	18.46 (469)	**97-50-600**
-46	18.98 (482)	**97-50-600**
-47	19.45 (494)	**97-50-625**
-48	19.96 (507)	**97-50-625**
-50	20.43 (519)	**97-50-650**
-51	20.94 (532)	**97-50-650**
-52	21.42 (544)	**97-50-675**
-53	21.93 (557)	**97-50-675**
-55	22.40 (569)	**97-50-700**
-60	24.37 (619)	**97-50-750**

Standard length profile rail

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 97-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 97-50-XX

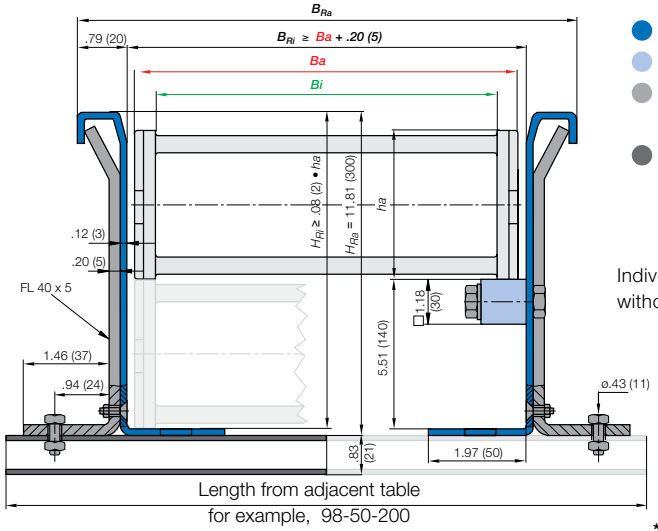
-XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center-mounted

Required guide troughs:
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 97-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **97-50-XXX**
Example:
97-50-400 for 15.75 (400 mm) long profile rail

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

Installation sets as section connectors



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

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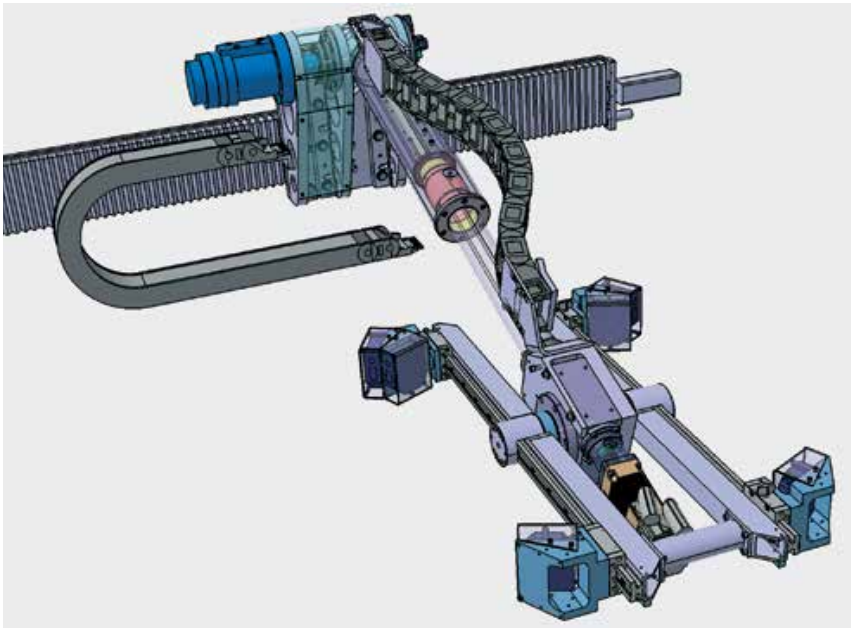
E-Chain System® E4/100
Series 640
Applications



Friction welding machine - Special E4/00 version bend in two directions

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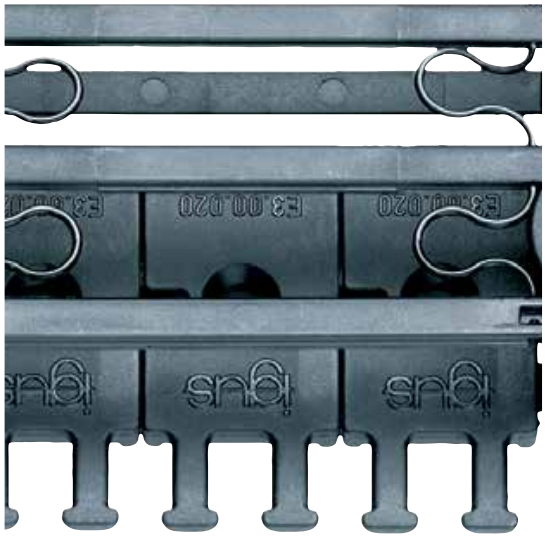
igus®

System E3...
E6...
T3...

E-Chain System® E3, E6 and T3

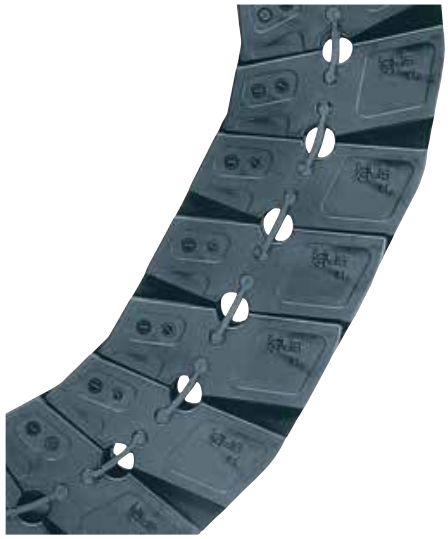


System E3 - Elastic, dampening connector strip replaces pins and bores

- Extremely low noise E-Chain® for small spaces with modular 3-piece link design
- 3 sizes available
- Inner heights: .39” (10 mm), .59” (15 mm), .87” (22 mm)

System E3 ➤

E3

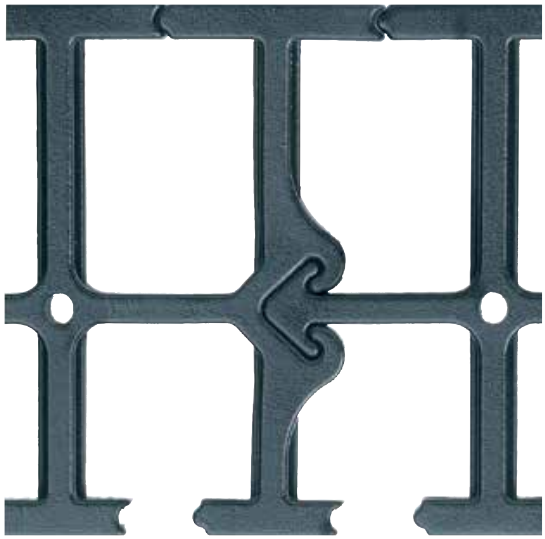


System E6 - Connector replaces pins and bores

- Extremely low noise E-Chain® with high stability and tensile strength
- Modular 6-piece link design
- 5 sizes available
- 3 types available (E-Chain®, E-Tube, Light version
- Inner heights: 1.14” (29 mm), 1.57” (40 mm), 2.05” (52 mm), 2.44” (62 mm), 3.15” (80 mm)

System E6 ➤

E6



System T3 - Highly flexible, low vibration band chain without pin and bore connection

- For short strokes with extreme demands in low noise and dynamics
- For high speed and high accelerations
- Very low weight
- Hardly any abrasion
- Cost efficient, 3-piece E-Chain®

System T3 ➤

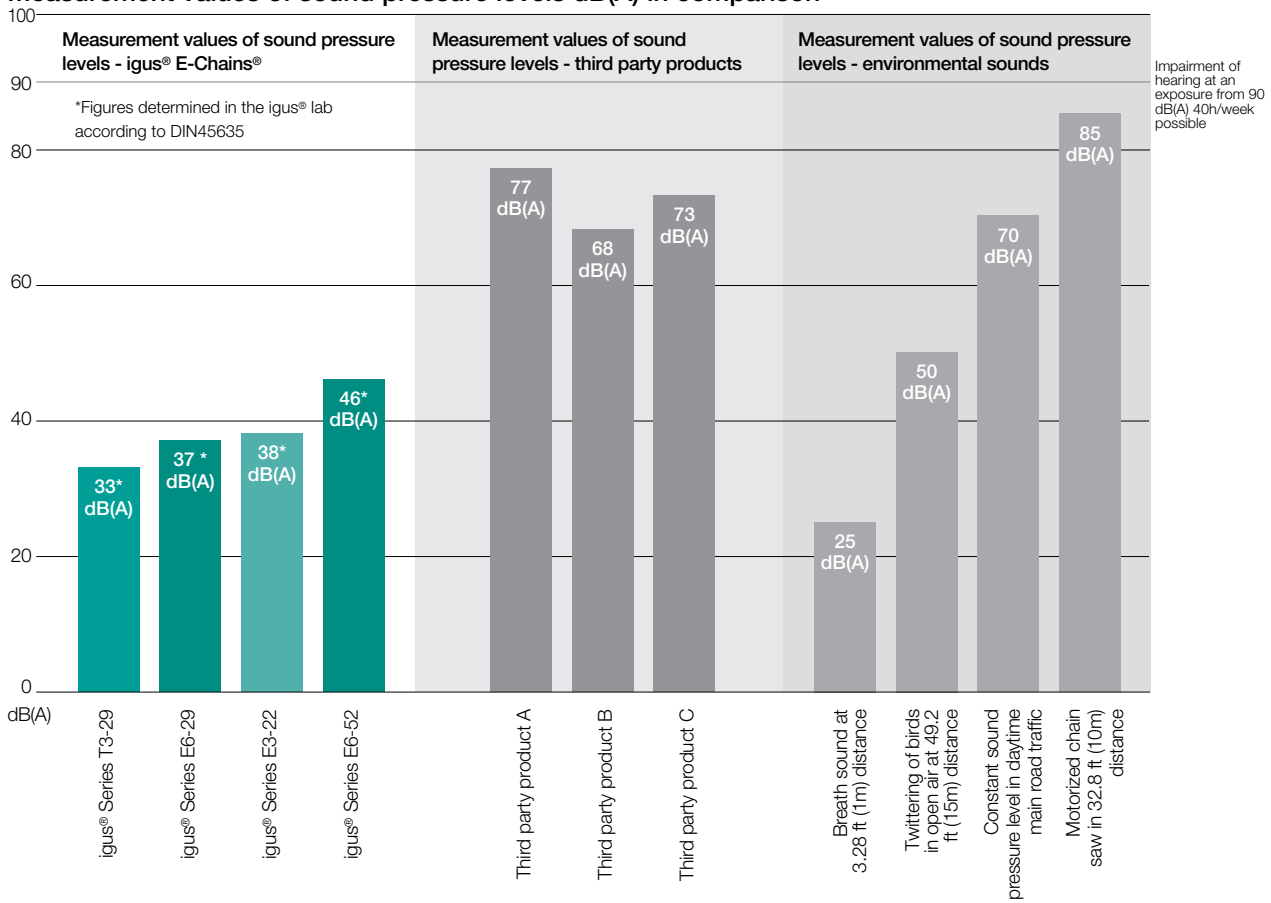
T3

E-Chain System® E3, E6 and T3

The extremely low noise igus® E-Chain® - System E3, System E6 and System T3

The E-Chain® of the E3, E6 and T3 Series have extremely good low noise and vibration performance. The special, abrasion-resistant spring elements replace the conventional pin and bore connection of the chain links enabling the low noise and low vibration operation of the E-Chain®. Due to the special fastening system, these E-Chains® have minimal wear and abrasions and are therefore suitable for cleanroom applications. Another advantage of the connector is that in the application of an electrically conductive material (igumid ESD on request) it can guarantee constant conductivity value. The E-Chain® Series E3, E6 and T3 offer an extensive accessories package and are available in many sizes off the shelf.

Measurement values of sound pressure levels dB(A) in comparison



Results of measurement

Particle generation measurement:
For a total of 100 minutes, the air around the moving test object is analyzed for particles.
Result: NO particles larger ≥ 0.2 µm were measured.

Result according to DIN EN ISO 14644-1	E-Chain® Series	Report No.	Speed ft/s (m/s)
ISO Class 1	E3-15-040-075-0	IG0704-400	1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0)
ISO Class 1	E6-29-060-150-CR	IG0704-400	1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0)
ISO Class 1	E61-29-050-075-0	IG1303-640-1	1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0)
ISO Class 2	T3-29-050-038-0	IG1303-640-1	1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0)
ISO Class 3	E6-29-060-150-0	IG0704-400	1.64 / 6.56 (0.5 / 2.0)

Fraunhofer IPA TESTED DEVICE

E-Chain Systems® E6.1, E3, E6.29.CR certified according to **DIN EN ISO 14644-1 Class 1**, by the Fraunhofer IPA Institute.

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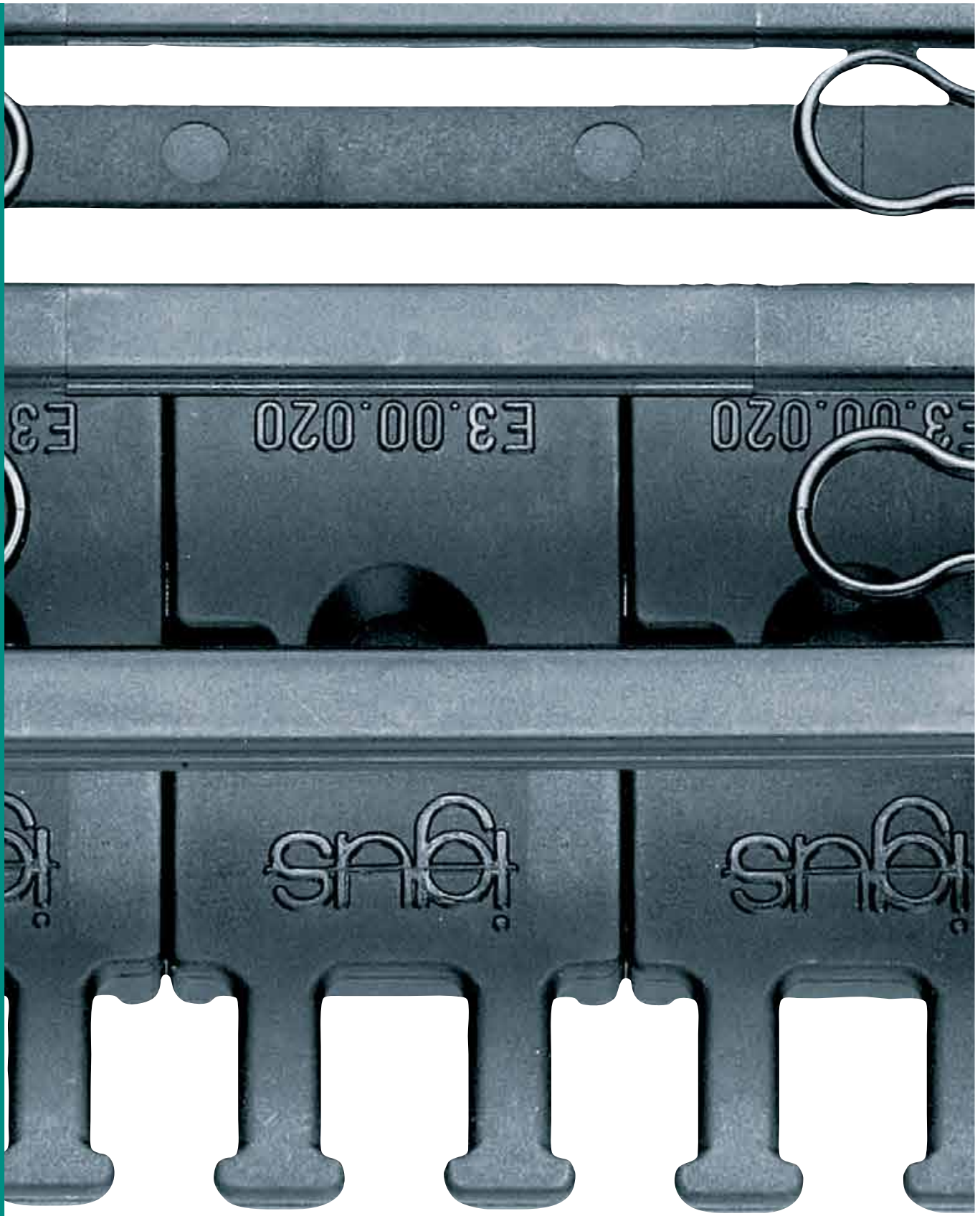
942 25 27 50
edf@edfluidos.com



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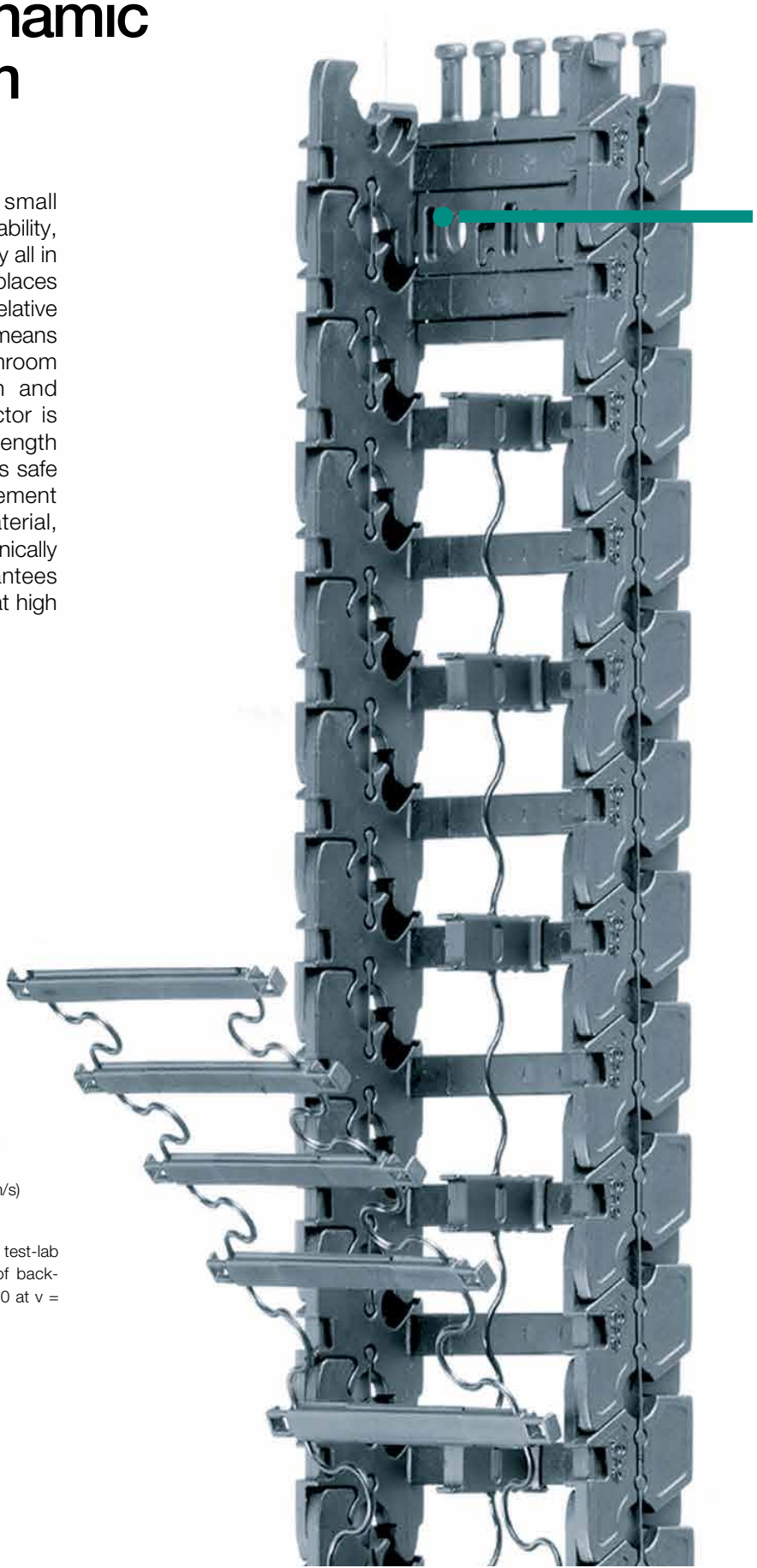
igus®
System E3
Highly dynamic & cleanroom compatible

E3 - Highly dynamic and cleanroom compatible

The igus® System E3 combines small pitches, smooth running, low noise, stability, easy assembly and economic efficiency all in one. The spring connector element replaces the pin and bore design and avoids relative movements between the joints. This means virtually no wear or abrasion for cleanroom applications. To reduce production and assembling costs, the spring connector is not mounted individually, but on a length of ten chain links. Another E3 option is safe performance. A modified spring element made of electrically conductive material, which connects the chain links mechanically and electrically, permanently guarantees constant electrical conductivity, even at high bending stress and in any position.



Typical industries and applications

- Semi-conductor manufacturing and handling
- Pick and place robots
- Optics
- Materials handling technology
- Measuring technology
- Printers and plotters
- Cleanroom environments
- General mechanical engineering

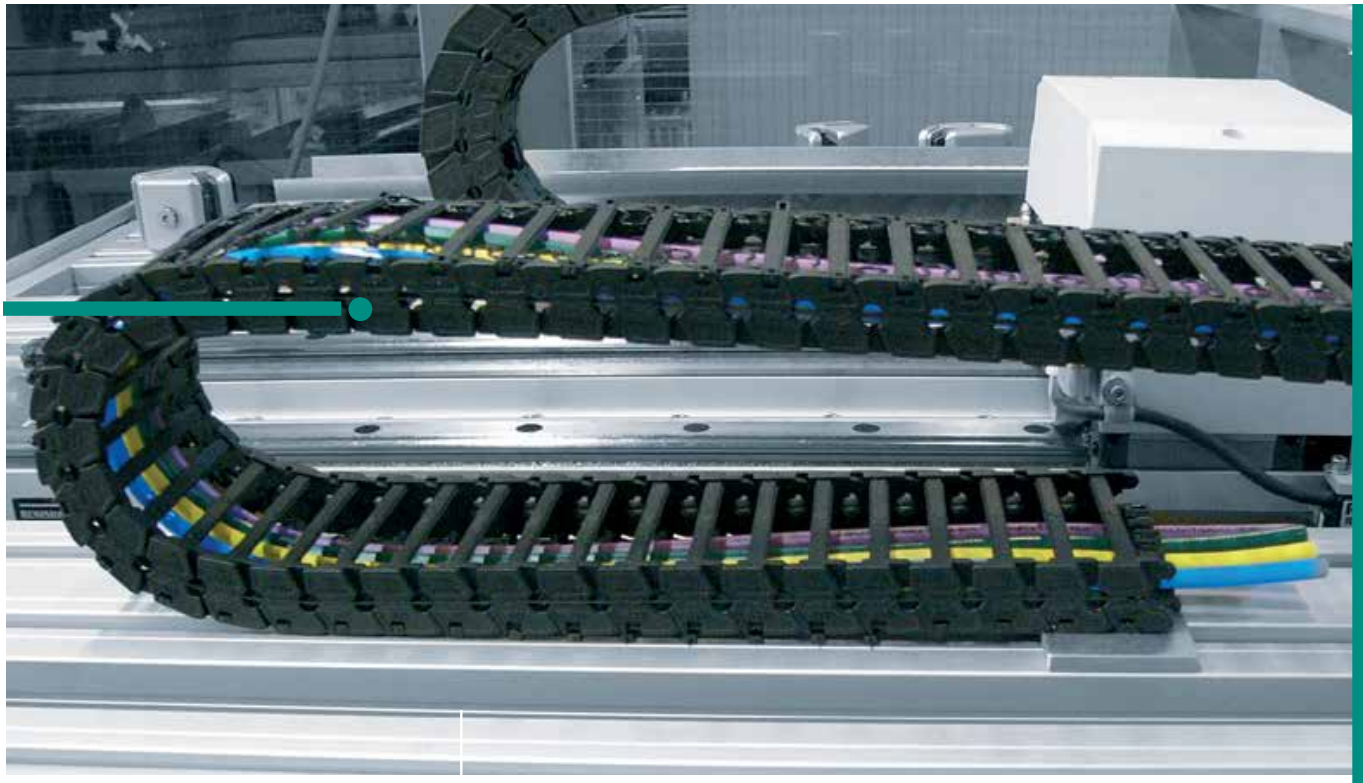
Fraunhofer IPA TESTED® DEVICE igus GmbH Energy chain/Cable systems Report No. IG 0704-400

IPA Qualification Certificate - Report IG0704-400:
ISO Class 1, according to Norm DIN EN ISO 14644-1
for System E3, Series E3-15-040-075-0 at
v = 1.64 ft/s (0.5 m/s), 3.28 ft/s (1 m/s), 6.56 ft/s (2 m/s)

38 dB(A) - Value determined at the igus® test-lab acc. to DIN 45635, with consideration of background noises, for Series E3-22-060-044-0 at v = 5.91 ft/s (1.8 m/s)

iF-Design Award 2005

Special equipment: Electrically conductive ESD/ATEX version upon request



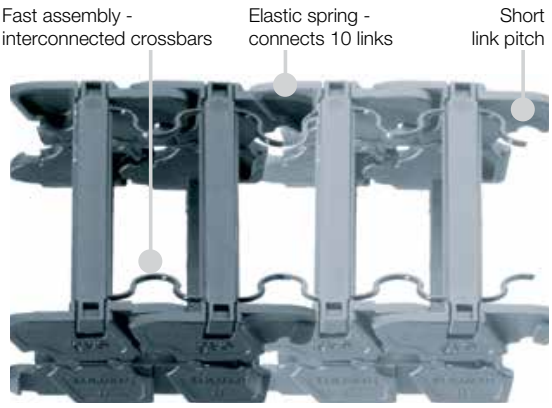
Long-term tests in our acoustics laboratory at a speed of 5.91 ft/s (1.8 m/s) and an acceleration of 9.84 ft/s² (3 m/s²) showed reductions of 19-20 dB(A) compared to conventional E-Chains®.

Light-weight and super-silent in small spaces - System E3

During long-term tests the System E3 with the spring band connector easily passes 15 million cycles at a bending radius of 1.73" (44 mm) and an acceleration of 4 g

Next Page ➤ Find selection table and assembly instructions

E-Chain System® E3
Selection Guide



E3 = E-Chains® with 3 different elements in one link:

- U-shaped link body
- Spring element
- Interconnected crossbars

E3: System for highly dynamic applications

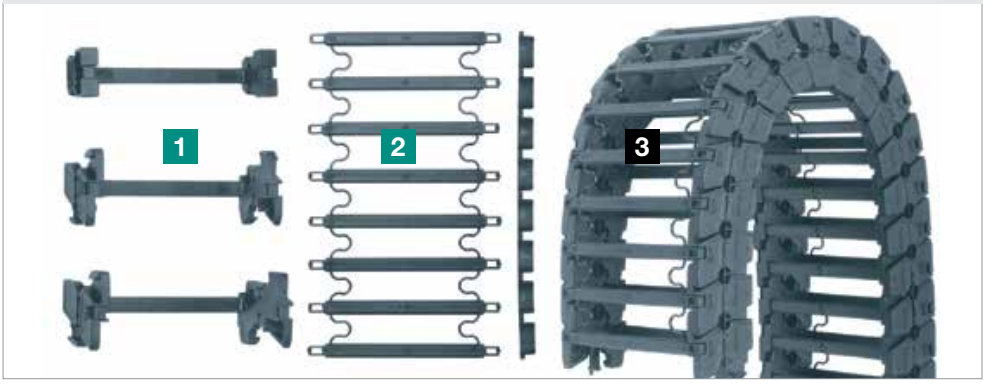
Cycle times in automation get shorter, while demands for low noise and low vibration levels are increasing. For the broad range of small size E-Chain® applications, igus® now introduces the System E3, that fully meets those requirements:

- Extremely low-noise operation - max. 38 dB(A)
- Elastic, dampening connector strip replaces pins and bores
- Modular 3-piece link design
- Cost effective cross bar, separator and connector modules
- Fast and easy cable access due to zipper opening mechanism
- Good unsupported strength due to solid, interlocking side links
- Easy lengthening and shortening
- Also suits flat cables
- Accessories: Separators, integrated strain relief, mounting brackets
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	*in.*	(mm)
E3-10	.39	(10)	.79-2.36	(20-60)	1.26-2.83	(32-72)	.59	(15)	.59-1.89	(15-48)
E3-15	.59	(15)	.79-2.36	(20-60)	1.26-2.83	(32-72)	.79	(20)	1.26-2.95	(32-75)
E3-22	.87	(22)	.79-2.36	(20-60)	1.26-2.83	(32-72)	1.06	(27)	1.75-2.95	(44-75)

E-Chain System® E3
Assembly Instructions

System E3 - 3-piece E-Chain®

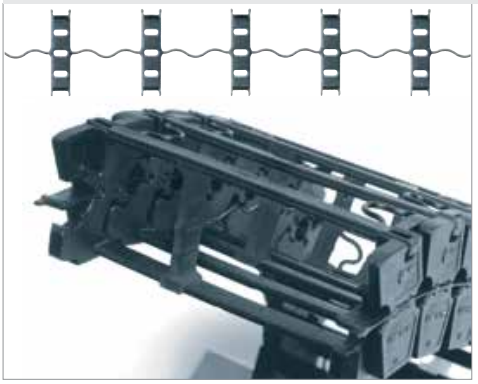


The abbreviation “E3” stands for an E-Chain® consisting of three basic elements:
❶ E-Chain® link body ❷ Interconnected crossbars ❸ Separator module

System E3 - Opening and Closing

Interconnected crossbars for quick and easy installation - This E-Chain System®
allows faster assembling times. Opening and closing the E-Chain® is made easy by Interconnected crossbars

System E3 - Interior Separation and Strain Relief



Vertical separators on a band divide carrier space - Five separators on one thread are simultaneously mounted on the crossbars

The universal strain relief can be individually matched to the chain width. You can fix the E-Chain® on the fixed end with brackets (option)

E3-10

E-Chain System® E3
Series E3-10

.39

Price Index

Series E3-10

Special Features / Options

*Noise test values: max. 38dB(A) - Values determined at the igus® test lab according to DIN 45635 (v = 5.91 ft/s

IPA Classification: Report IG0704-400: ISO Class 1, according to standard DIN EN ISO 14644-1 for E3, Series E3-15-040-075-0 (at v = 1.64 ft/s, 3.28 ft/s, 6.56 ft/s)

Special equipment: Electrically conductive ESD/ATEX version upon request

Assembly Tips

Rapid assembly time with interconnected crossbars

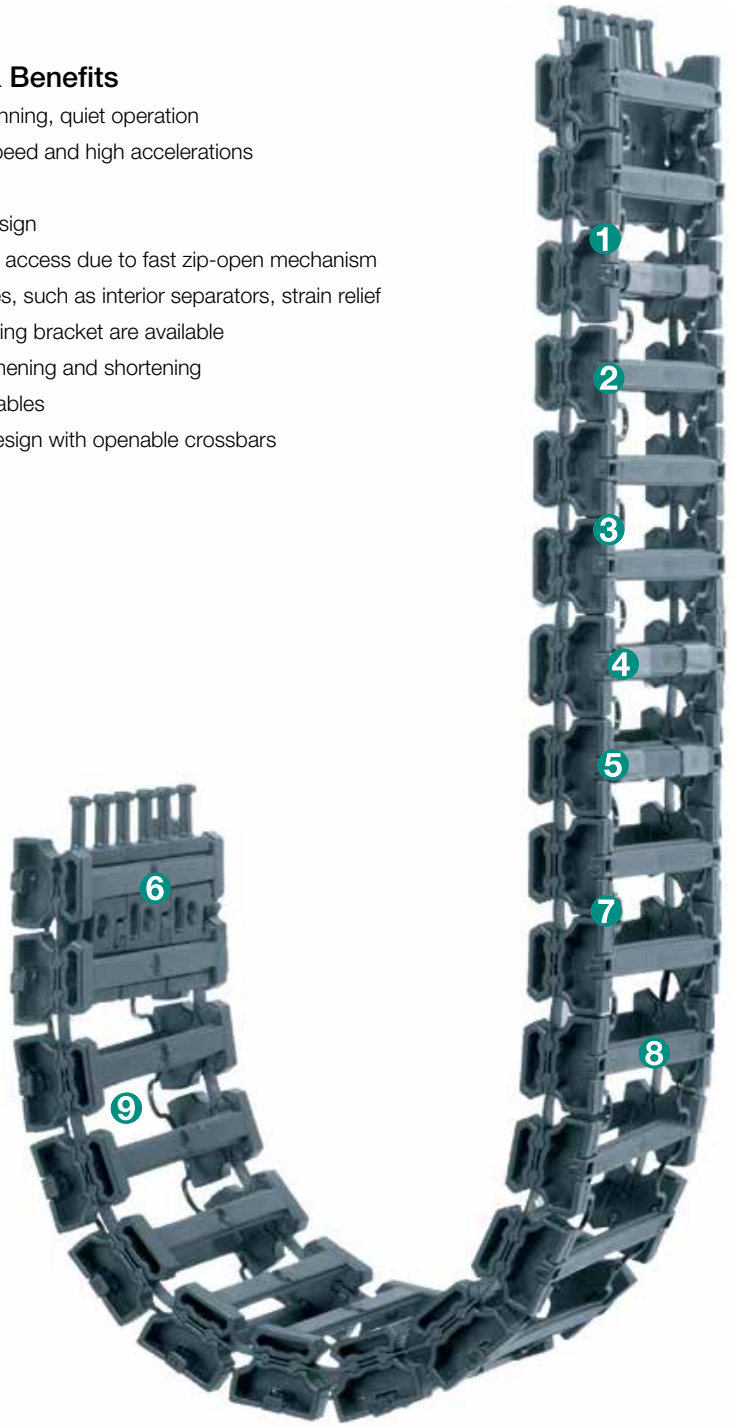
Usage Guidelines

- If a low noise, vibration-free version is required
- For very high speeds and/or accelerations (theoretically up to 100G or 3,281 ft/s (1000 m/s)
- Hard-wearing E-Chain® (more than 50 million cycles with minimal abrasion)
- If a very light E-Chain® is required (up to 40% lighter than comparable E2 E-Chain®
- For the use of flat cables
- For small bending radii and small spaces
- If easy filling and assembly is required
- Minimal abrasion (e.g. cleanroom applications)

- If a particularly low-cost snap-open solution is required
  ➤ **Series E06/Z06 E-Z Chain**
- If a simple, non snap-open E-Chain® is required
  ➤ **Series 05 E2 micro**

Features & Benefits

1. Smooth running, quiet operation
2. For high speed and high accelerations
3. Small pitch
4. 3-piece design
5. Easy cable access due to fast zip-open mechanism
6. Accessories, such as interior separators, strain relief
6. and mounting bracket are available
7. Easy lengthening and shortening
8. Suits flat cables
9. Modular design with openable crossbars



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **E3-10-060-015-0**	**E-Chain®**
With 2 separators **E3-10-11** assembled every 2nd link	**Interior Separation**
1 Set **E3-10-060-12**	**Mounting Bracket**

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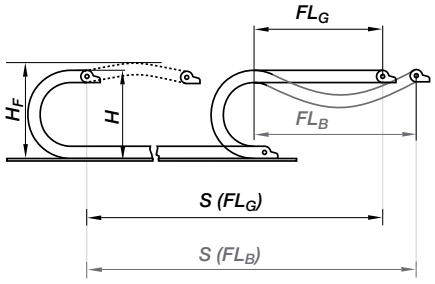
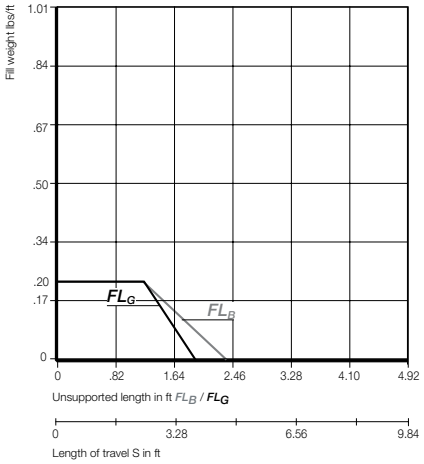
E-Chain System® E3
Series E3-10

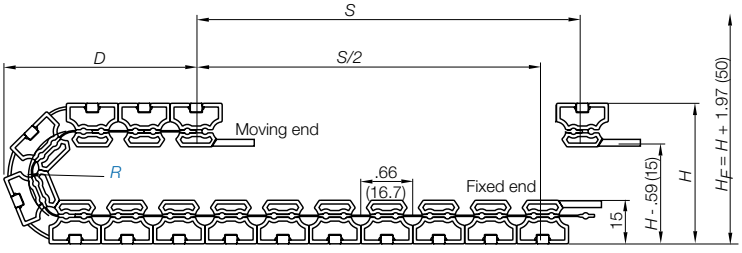
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .66" (16.7 mm)
Links per ft (m): = 18.29 (60)
For center mount applications:
Chain length = $^{S}/_{2}$ + K

The required clearance height: ***HF* = *H* + 1.97 in. (50 mm)** (with 0.7 lbs/ft (0.1 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.59 (015)	1.10 (028)	1.50 (038)	1.89 (048)
H	2.36 (60)	3.39 (86)	4.17 (106)	4.96 (126)
D	1.97 (50)	2.48 (63)	2.87 (73)	3.27 (83)
K	3.35 (85)	4.92 (125)	6.10 (155)	7.28 (185)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Design, Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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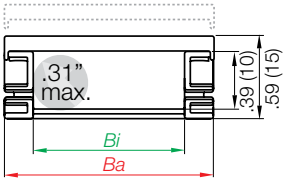
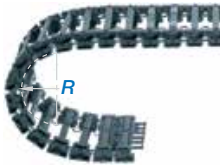
igus®

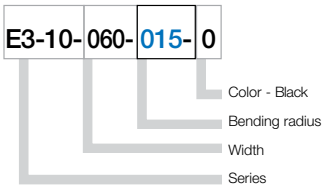
E-Chain System® E3
Series E3-10

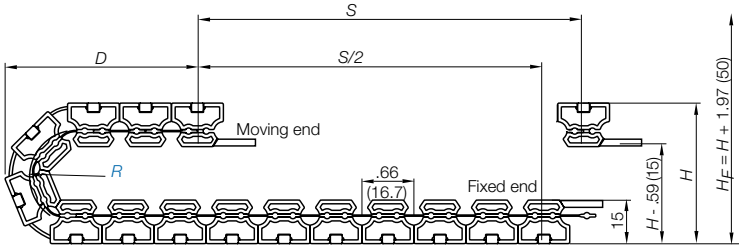
Series E3-10 - Snap-open along the outer radius





Part Number Structure





Supplement part number with required radius. Example: E3-10-060-[015]-0
Pitch: .66 in. (16.7 mm) per link links/ft (m) = 18.29 (60)

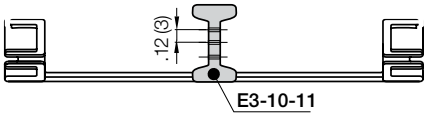
Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E3-10-020-[ ]-0	.79 (20)	1.26 (32)	≈ 0.08 (0.12)
E3-10-040-[ ]-0	1.57 (40)	2.05 (52)	≈ 0.10 (0.15)
E3-10-060-[ ]-0	2.36 (60)	2.83 (72)	≈ 0.13 (0.20)

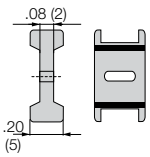
Choose from the radii below for all of the above sizes
Radius (mm) Example: E3-10-060-[015]-0

	015	028	038	048
R	.59 (015)	1.10 (028)	1.50 (038)	1.89 (048)
H	2.36 (60)	3.39 (86)	4.17 (106)	4.96 (126)
D	1.97 (50)	2.48 (63)	2.87 (73)	3.27 (83)
K	3.35 (85)	4.92 (125)	6.10 (155)	7.28 (185)

NOTE: E3-10-020-038, E3-10-020-048, E3-10-040-028, E3-10-060-028 and E3-10-060-048 are available upon request

Interior Separation





Separator, narrow head

Unassembled	Part No. E3-10-01
Assembled	Part No. E3-10-11

- **Separator 45-2**
  Vertical separators are used if a vertical subdivision of the E-Chain® interior is required.

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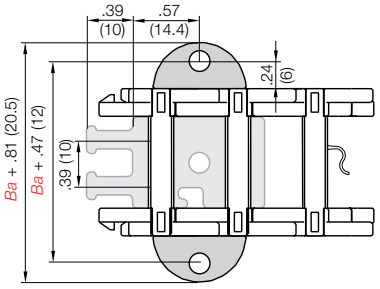
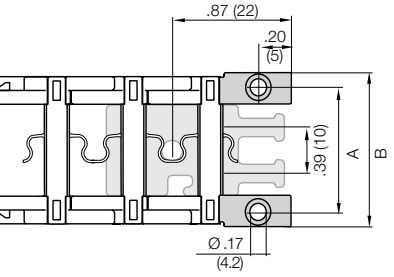
E-Chain System® E3
Series E3-10
KMA Mounting Bracket, Mounting Angle, Plastic

Fixed end
E3-10-...-2



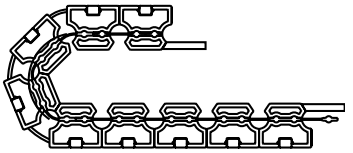
View Mounting angle

Moving end
E3-10-...-1



View KMA mounting bracket

E3-100-XXX-12 - Space-saving KMA mounting brackets



For Series	KMA Mounting bracket	Dimension A in. (mm)	Dimension B in. (mm)	Part No. Full Set strain relief both sides + 2 mounting angles	Part No. strain relief both sides	Part No. mounting angle* (single part)
E3-10-020	**E3-100-020-12**	1.10 (28)	1.42 (36)	**E3-10-020-12**	**E3-020-12**	**E3-10-00**
E3-10-040	**E3-100-040-12**	1.89 (48)	2.20 (56)	**E3-10-040-12**	**E3-040-12**	**E3-10-00**
E3-10-060	**E3-100-060-12**	2.68 (68)	2.99 (76)	**E3-10-060-12**	**E3-060-12**	**E3-10-00**

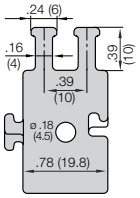
*Note: If the mounting brackets are used, two links each side must be added to the E-Chain® length calculation, because the first to links are fixed by the mounting brackets.

E3-10-XXX-12

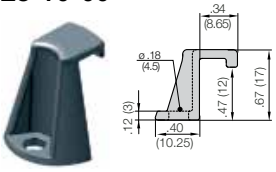
E3 with strain relief for both sides and mounting angles

E3-00-020

Strain relief for both sides as single parts

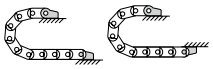


E3-10-00



Mounting angle as single part

Full set, for both ends:
E3-10- 060- 12 Full set, **both fixed and moving end**
Single-part order:
E3-10 - 060- 1 Mounting bracket **moving end**
E3-10 - 060- 2 Mounting bracket **fixed end**



Possible installation configurations -

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E3-15

E-Chain System® E3
Series E3-15

.59

Price Index

Series E3-15

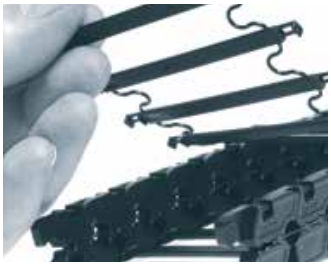
Special Features / Options

*Noise test values: max. 38dB(A) - Values determined at the igus® test lab according to DIN 45635 (v = 5.91 ft/s

IPA Classification: Report IG0704-400: ISO Class 1, according to standard DIN EN ISO 14644-1 for E3, Series E3-15-040-075-0 (at v = 1.64 ft/s, 3.28 ft/s, 6.56 ft/s)

Special equipment: Electrically conductive ESD/ATEX version upon request

Assembly Tips



Rapid assembly time with interconnected crossbars

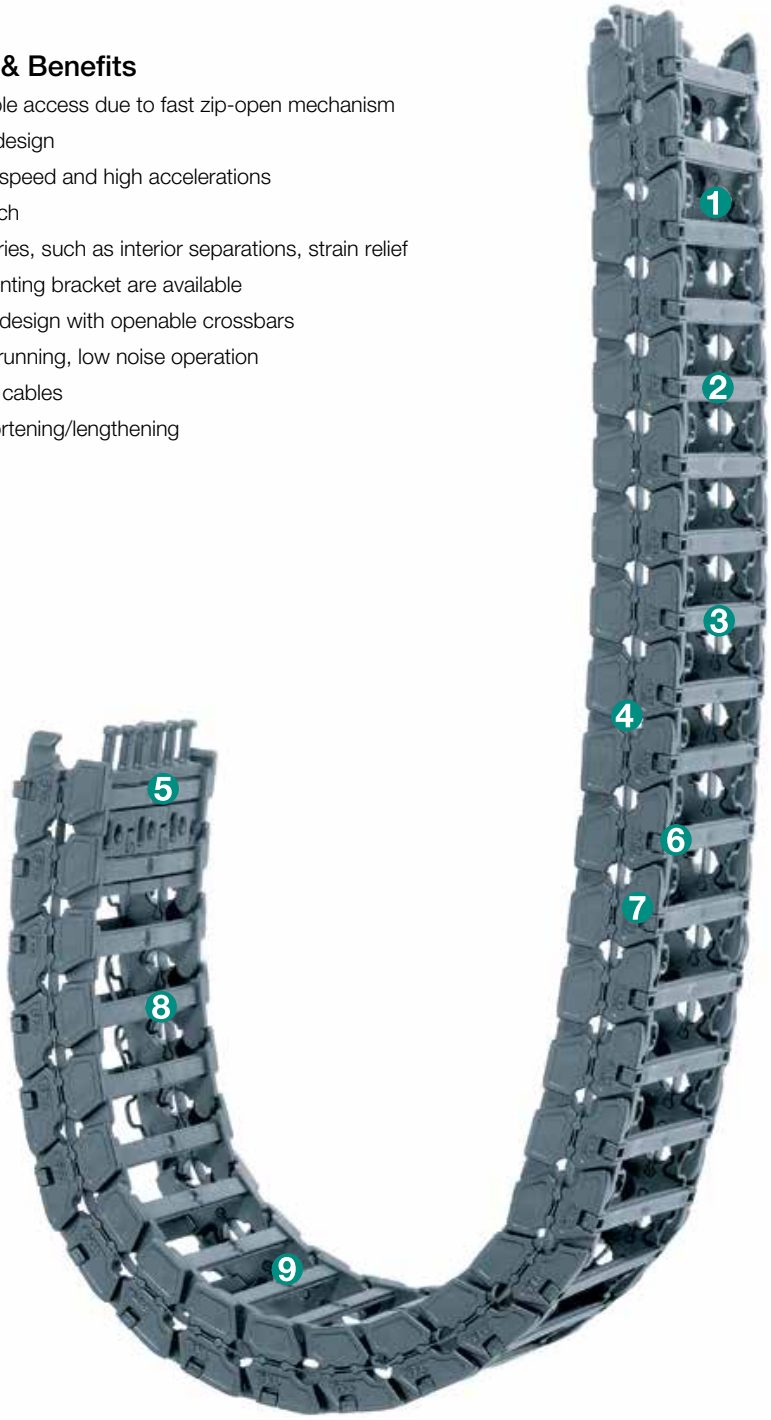
Usage Guidelines

- If a low noise, vibration-free version is required
- For very high speeds and/or accelerations (theoretically up to 100G or 3,281 ft/s (1000 m/s)
- Hard-wearing E-Chain® (more than 50 million cycles with minimal abrasion)
- If a very light E-Chain® is required (up to 40% lighter than comparable E2 E-Chain®
- For the use of flat cables
- For small bending radii and small spaces
- If easy filling and assembly is required
- Minimal abrasion (e.g. cleanroom applications)

- If a particularly low-cost snap-open solution is required
  ➤ **Series E08/Z08 E-Z Chain**
- If a simple, non snap-open E-Chain® is required
  ➤ **Series 08 E2 Micro**

Features & Benefits

1. Easy cable access due to fast zip-open mechanism
2. 3-piece design
3. For high speed and high accelerations
4. Small pitch
5. Accessories, such as interior separations, strain relief and mounting bracket are available
6. Modular design with openable crossbars
7. Smooth running, low noise operation
8. Suits flat cables
9. Easy shortening/lengthening



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **E3-15-060-032-0**	**E-Chain®**
With 2 separators **E3-15-11** assembled every 2nd link	**Interior Separation**
1 Set **E3-15-060-12**	**Mounting Bracket**

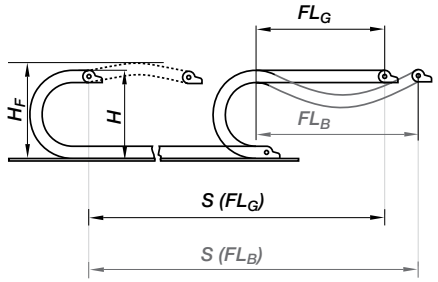
E-Chain System® E3
Series E3-15

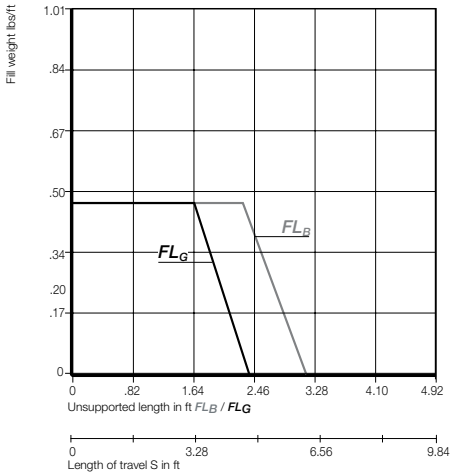
Short travel, unsupported length

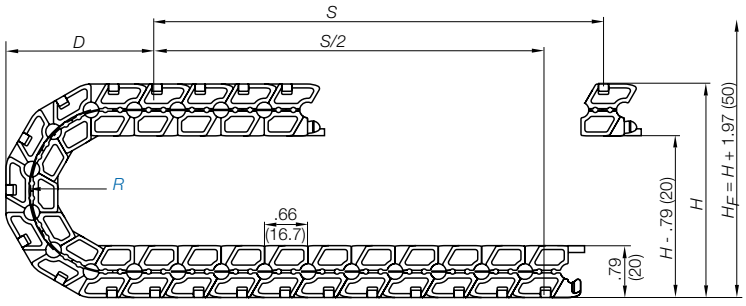
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .66" (16.7 mm)
Links per ft (m): = 18.29 (60)
For center mount applications:
Chain length = $_{S}/_{2}$ + K

The required clearance height: H_F = **H + 1.97 in. (50 mm)** (with 0.13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.26 (032)	1.50 (038)	1.89 (048)	2.95 (075)
H	3.90 (99)	4.37 (111)	5.16 (131)	7.28 (185)
D	2.64 (67)	2.87 (73)	3.27 (83)	4.33 (110)
K	5.31 (135)	6.10 (155)	7.28 (185)	10.63 (270)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Design, Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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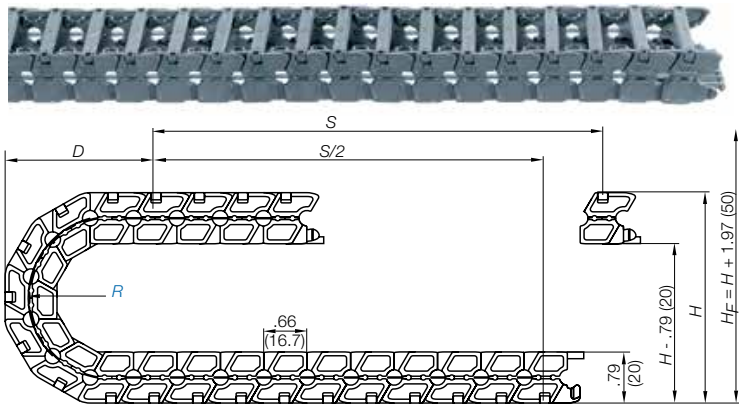
igus®

E-Chain System® E3
Series E3-15
Interior Separation

Series E3-15 - Snap-open along the outer radius



Part Number Structure

E3-15-060-032-0

- Color - Black
- Bending radius
- Width
- Series

Supplement part number with required radius. Example: E3-15-060-[032]-0
Pitch: .66 in. (16.7 mm) per link links/ft (m) = 18.29 (60)

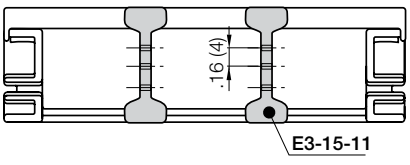
Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E3-15-020-[ ]-0*	.79 (20)	1.26 (32)	≈ 0.15 (0.22)
E3-15-040-[ ]-0	1.57 (40)	2.05 (52)	≈ 0.17 (0.25)
E3-15-060-[ ]-0	2.36 (60)	2.83 (72)	≈ 0.22 (0.32)

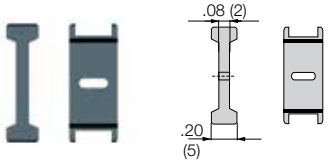
Choose from the radii below for all of the above sizes
Radius (mm) Example: E3-15-060-[032]-0

	032	038	048	075
R	1.26 (032)	1.50 (038)	1.89 (048)	2.95 (075)
H	3.90 (99)	4.37 (111)	5.16 (131)	7.28 (185)
D	2.64 (67)	2.87 (73)	3.27 (83)	4.33 (110)
K	5.31 (135)	6.10 (155)	7.28 (185)	10.63 (270)

*Radii 038 and 075 are not available for the E3-15-020
NOTE: E3-15-020-048 is available upon request

Interior Separation





Slotted separator for E-Chains®

Unassembled	Part No. E3-15-01
Assembled	Part No. E3-15-11

- **Separator E3-15-01**
  Vertical separators are used if a vertical subdivision of the E-Chain® interior is required.

Separator, narrow base

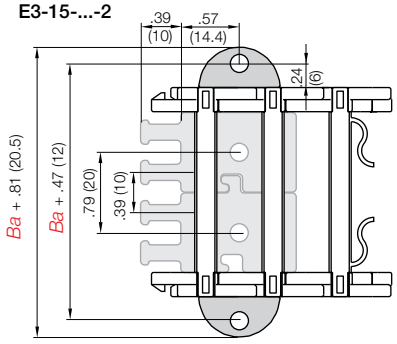
Unassembled	Part No. E3-15-01-10
Assembled	Part No. E3-15-11-10

- **Slotted separator on a strip E3-15-01-10**
  Five vertical separators connected on one strip span ten E-Chain® links and are mounted on the opening crossbars. This creates separate chambers, protecting the cables. The dimensions are the same as the E3-22-01 slotted separator

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

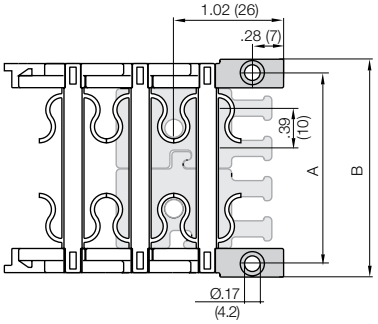
E-Chain System® E3
Series E3-15
KMA Mounting Bracket, Mounting Angle, Plastic

Fixed end
E3-15-...-2



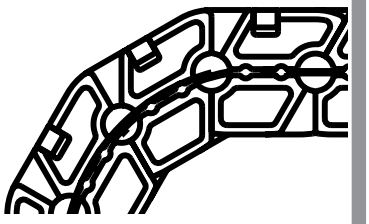
View Mounting angle

Moving end
E3-15-...-1



View KMA mounting bracket

E3-150-XXX-12 - Space-saving KMA mounting brackets



For Series	KMA Mounting bracket	Dimension A in. (mm)	Dimension B in. (mm)	Part No. Full Set strain relief both sides + 2 mounting angles	Part No. strain relief both sides	Part No. mounting angle* (single part)
E3-15-020	**E3-150-020-12**	.10 (28)	1.42 (36)	**E3-15-020-12**	E3-020-12	E3-15-00
E3-15-040	**E3-150-040-12**	1.89 (48)	2.20 (56)	**E3-15-040-12**	E3-040-12	E3-15-00
E3-15-060	**E3-150-060-12**	2.68 (68)	2.99 (76)	**E3-15-060-12**	E3-060-12	E3-15-00

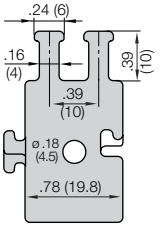
*Note: If the mounting brackets are used, two links each side must be added to the E-Chain® length calculation, because the first to links are fixed by the mounting brackets.

E3-15-XXX-12

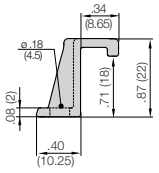
E3 with strain relief for both sides and mounting angles

E3-00-020

Strain relief for both sides as single parts



E3-15-00



Mounting angle as single part

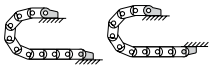
Full set, for both ends:

E3-15- 020- 12 Full set, **both fixed and moving end**

Single-part order:

E3-15 - 020- 1 Mounting bracket **moving end**

E3-15 - 020- 2 Mounting bracket **fixed end**



Possible installation configurations -

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E3-22

igus®

E-Chain System® E3
Series E3-22

.87

Price Index

Series E3-22

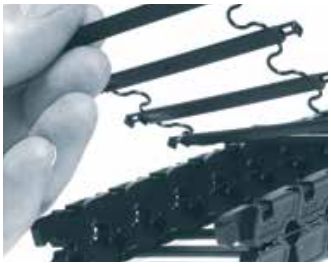
Special Features / Options

*Noise test values: max. 38dB(A) - Values determined at the igus® test lab according to DIN 45635 (v = 5.91 ft/s

IPA Classification: Report IG0704-400: ISO Class 1, according to standard DIN EN ISO 14644-1 for E3, Series E3-15-040-075-0 (at v = 1.64 ft/s, 3.28 ft/s, 6.56 ft/s)

Special equipment: Electrically conductive ESD/ATEX version upon request

Assembly Tips



Rapid assembly time with interconnected crossbars

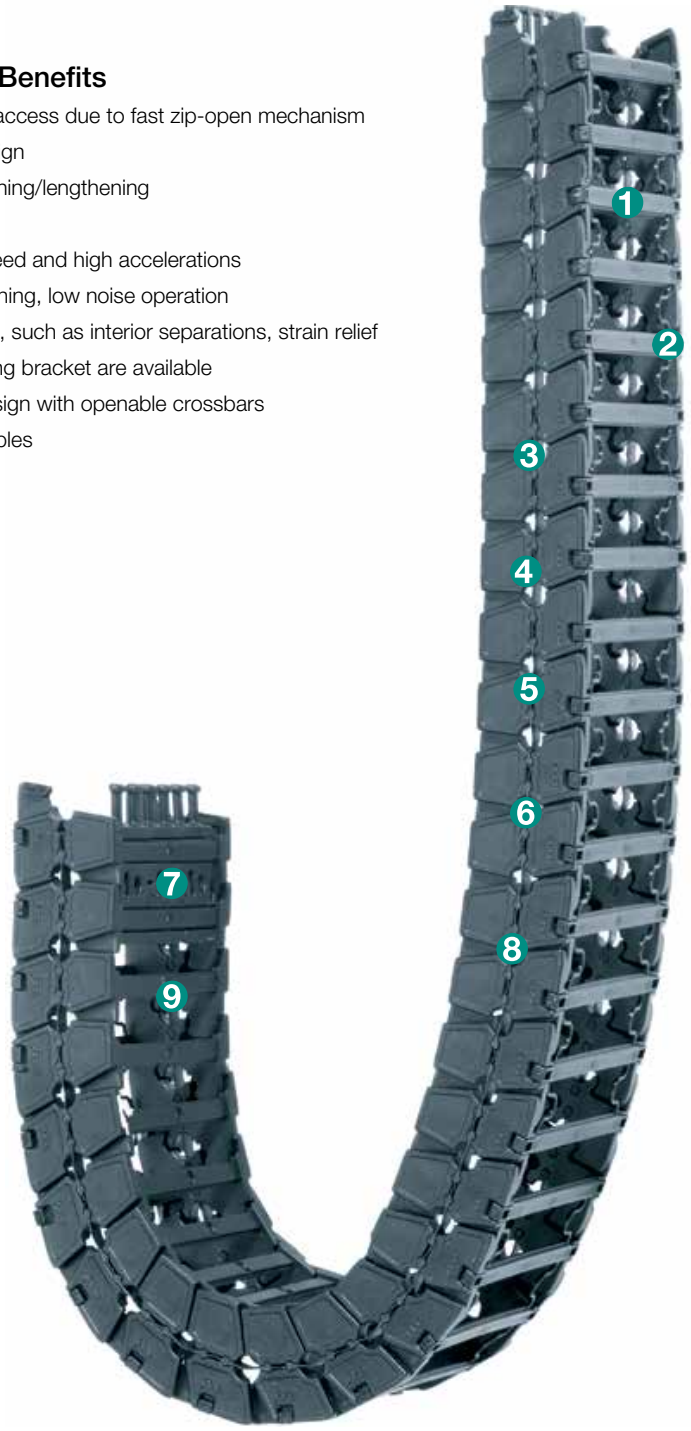
Usage Guidelines

- If a low noise, vibration-free version is required
- For very high speeds and/or accelerations (theoretically up to 100G or 3,281 ft/s (1000 m/s)
- Hard-wearing E-Chain® (more than 50 million cycles with minimal abrasion)
- If a very light E-Chain® is required (up to 40% lighter than comparable E2 E-Chain®
- For the use of flat cables
- For small bending radii and small spaces
- If easy filling and assembly is required
- Minimal abrasion (e.g. cleanroom applications)

- If a particularly low-cost snap-open solution is required
  ➤ **Series E14/Z14 E-Z Chain**
- If a simple, non snap-open E-Chain® is required
  ➤ **Series 1400/1450/1500 E2 Medium**

Features & Benefits

1. Easy cable access due to fast zip-open mechanism
2. 3-piece design
3. Easy shortening/lengthening
4. Small pitch
5. For high speed and high accelerations
5. Smooth running, low noise operation
7. Accessories, such as interior separations, strain relief and mounting bracket are available
8. Modular design with openable crossbars
9. Suits flat cables



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **E3-22-060-044-0**	**E-Chain®**
With 2 separators **E2-22-11** assembled every 2nd link	**Interior Separation**
1 Set **E3-22-060-12**	**Mounting Bracket**

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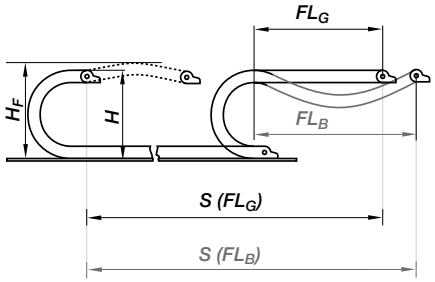
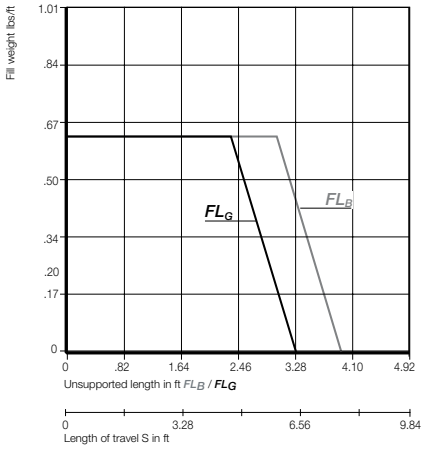
E-Chain System® E3
Series E3-22

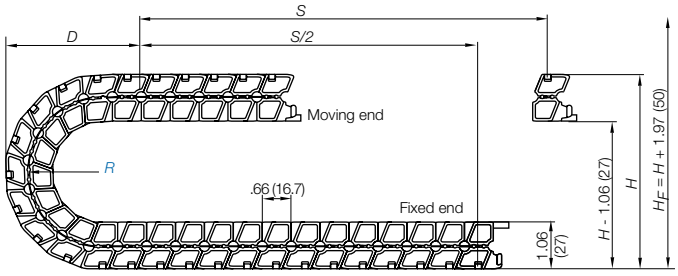
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: H_F = **H + 1.97 in. (50 mm)** (with 0.20 lbs/ft (0.3 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	1.73 (044)	1.97 (050)	2.95 (075)
H	5.28 (134)	5.75 (146)	6.93 (176)
D	3.23 (82)	3.15 (80)	4.13 (105)
K	6.89 (175)	7.68 (195)	10.63 (270)

Pitch per link: = .66" (16.7 mm)
Links per ft (m): = 18.29 (60)
For center mount applications:
Chain length = $\frac{S}{2}$ + K

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Design, Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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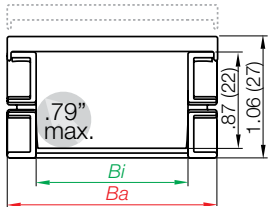
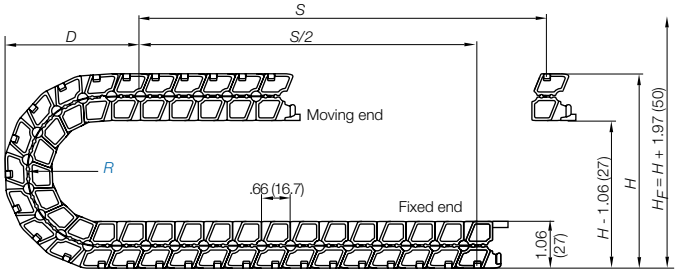
igus®

E-Chain System® E3
Series E3-22
Installation Dimensions, Interior Separation

Series E3-22 - Snap-open along the outer radius





Part Number Structure

E3-22-060-044-0

- Color - Black
- Bending radius
- Width
- Series

Supplement part number with required radius. Example: E3-22-060-044-0
Pitch: .66 in. (16.7 mm) per link links/ft (m) = 18.29 (60)

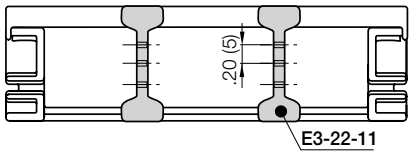
Part Number	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
E3-22-020-□-0	.79 (20)	1.26 (32)	≈ 0.20 (0.30)
E3-22-040-□-0	1.57 (40)	2.05 (52)	≈ 0.22 (0.32)
E3-22-060-□-0	2.36 (60)	2.83 (72)	≈ 0.28 (0.41)

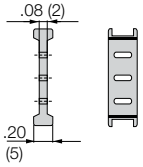
Choose from the radii below for all of the above sizes
Radius (mm) Example: E3-22-060-044-0

	044	050*	075
R	1.73 (044)	1.97 (050)	2.95 (075)
H	5.28 (134)	5.75 (146)	6.93 (176)
D	3.23 (82)	3.15 (80)	4.13 (105)
K	6.89 (175)	7.68 (195)	10.63 (270)

* Radius 050 is not available for the E3-22-060

Interior Separation





Slotted separator for E-Chains®

Unassembled	Part No. E3-22-01
Assembled	Part No. E3-22-11

- **Slotted separator E3-22-01**
  Vertical separators are used if a vertical subdivision of the E-Chain® interior is required.

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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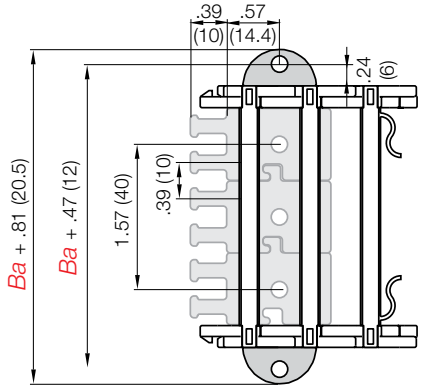
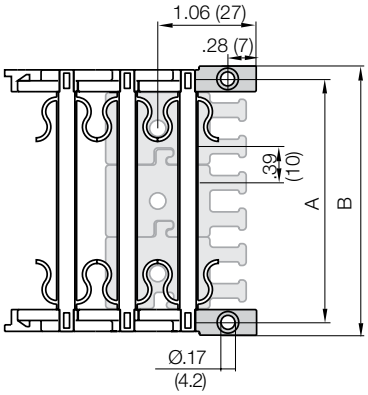
E-Chain System® E3
Series E3-22
KMA Mounting Bracket, Mounting Angle, Plastic

Fixed end
E3-22-...-2



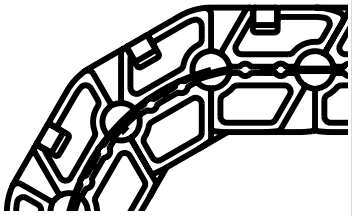
View Mounting angle

Moving end
E3-22-...-1



View KMA mounting bracket

E3-220-XXX-12 - Space-saving KMA mounting brackets



For Series	KMA Mounting bracket	Dimension A in. (mm)	Dimension B in. (mm)	Part No. Full Set strain relief both sides + 2 mounting angles	Part No. strain relief both sides	Part No. mounting angle (single part)
E3-22-020	**E3-220-020-12**	.10 (28)	1.42 (36)	**E3-22-020-12**	**E3-020-12**	**E3-22-00**
E3-22-040	**E3-220-040-12**	1.89 (48)	2.20 (56)	**E3-22-040-12**	**E3-040-12**	**E3-22-00**
E3-22-060	**E3-220-060-12**	2.68 (68)	2.99 (76)	**E3-22-060-12**	**E3-060-12**	**E3-22-00**

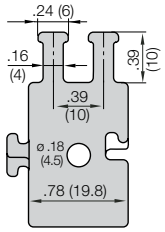
*Note: If the mounting brackets are used, two links each side must be added to the E-Chain® length calculation, because the first to links are fixed by the mounting brackets.

E3-22-XXX-12

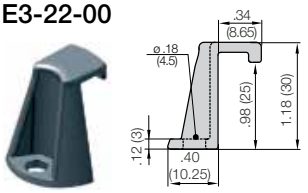
E3 with strain relief for both sides and mounting angles

E3-00-020

Strain relief for both sides as single parts

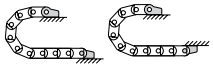


E3-22-00



Mounting angle as single part

Full set, for both ends:
E3-22- 060- 12 Full set, **both fixed and moving end**
Single-part order:
E3-22 - 060- 1 Mounting bracket **moving end**
E3-22 - 060- 2 Mounting bracket **fixed end**



Possible installation configurations -

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®
System E6

E6 - 6-piece E-Chains®- Extremely low-noise, minimum vibrations

The E6 Series offers numerous advantages in addition to long life cycles. It provides extremely quiet, low-vibration operation. It minimizes the polygon effect which can occur during the rolling motion of an E-Chain®. The ultra-low noise levels have been confirmed in a recent report by the Rheinland Technical Inspection Agency. Our extensive delivery program offers the right chain size for any application; a wide range of interior separators are also available. The same applies to the mounting brackets. .

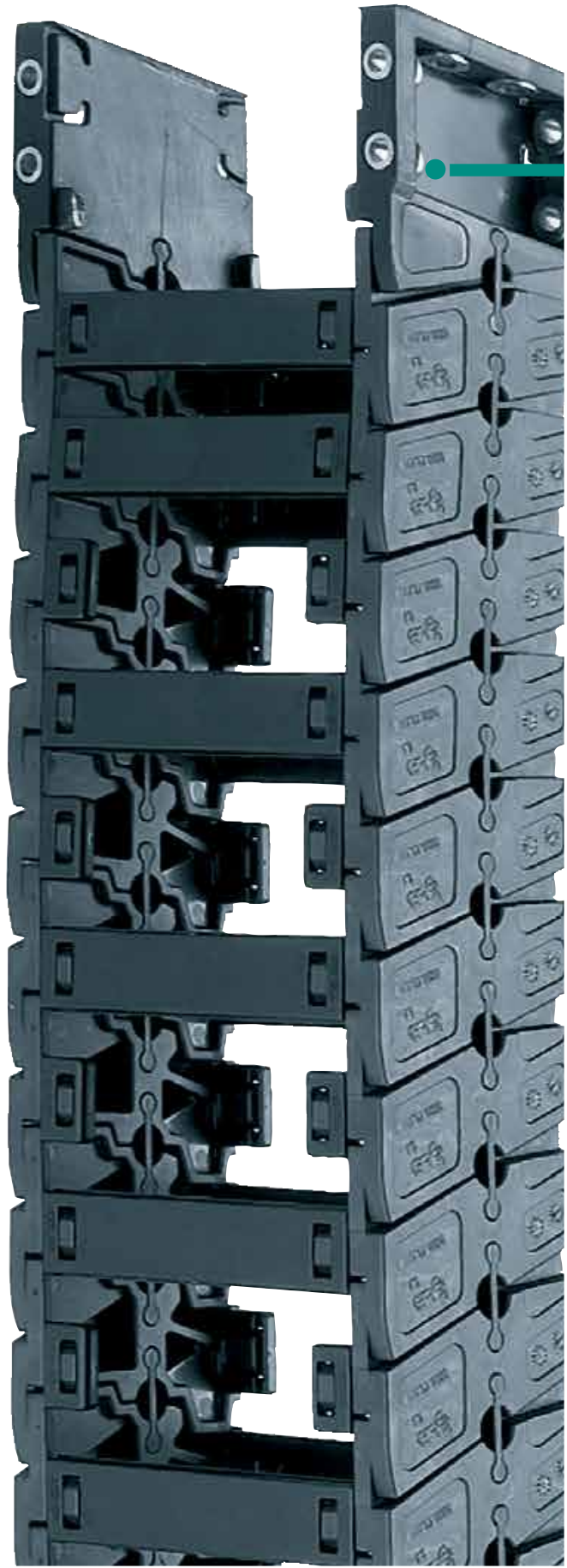
Typical industries and applications

- Cleanroom
- Printing machines
- Handling & robot
- Machine Tools
- Measuring machines
- Semiconductor industries
- Medical industries
- Electronic industries
- General machinery

System E6 - Extremely low noise - TÜV certified

System E6 - 6-piece link-design

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institut according to SEMI E78-0998 for the E6 standard material. Special material “igumid ESD” for ESD/ATEX applications available on request. Continuously constant conductance value as there are no pin-bore connection (no air gaps).



A linear drive provides for highly dynamic feed of PCBs. This system is twice as fast as handling units with a toothed-belt drive; designed to withstand high dynamic loads, the E6 E-Chains® ensure a supply of power, coolant and control data with ultra-low noise and vibration

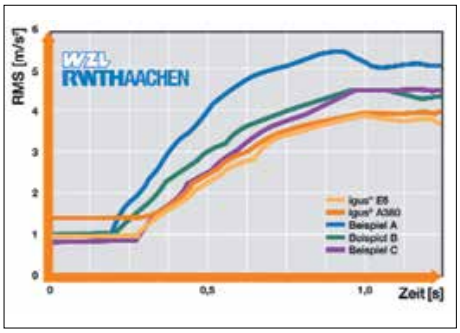
Selected noise tests - External noise corrected measurement values

E-Chain® Series	Averaging of the corrected sound pressure levels	Test method
igus® Series E6-29*	**≈ 37 dB(A)**	unsupported v = 3.28 ft/s (1.0 m/s)
igus® Series E6-52*	**≈ 41 dB(A)**	unsupported, side mounted v = 1.64 ft/s (0.5 m/s)
igus® Series E6-52	**≈ 46 dB(A)**	unsupported v = 6.56 ft/s (2.0 m/s)
Chain 1 Third-party product	≈ 77 dB(A)	unsupported v = 6.56 ft/s (2.0 m/s)
Chain 2 Third-party product	≈ 68 dB(A)	unsupported v = 6.56 ft/s (2.0 m/s)
Chain 3 Third-party product	≈ 73 dB(A)	unsupported v = 6.56 ft/s (2.0 m/s)

Source: TÜV Rheinland *Source: igus® laboratory

Noise level ≤ 46 dB(A)

A measurement conducted by the Rhineland Technical Inspection Authority (TÜV Rheinland) in May 2002 indicates a value of ≤ 46 dB(A) at 6.56 ft/s (2 m/s) and with an unsupported length of 4..92 ft (1.5 m) with **Series E6-52-100-100-0**, and all this with at least 10 dB(A) sound pressure level generated by external noise. **We have received an official noise certificate from the Rhineland Technical Inspection Authority (TÜV Rheinland Berlin Brandenburg) and we are happy to provide you with a copy upon request.**



Study of the Laboratory of Machine Tools and Production Engineering (WZL) of the RWTH Aachen on “Vibration tests in energy supply chains”.
Result: The E6 energy supply system of the company of igus® GmbH, Cologne, is characterized by extreme low vibration and smooth running.

E-Chain System® E6
Selection Guide

Crossbars every 2nd link
for almost all applications - Standard

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
E6-29	1.14	(29)	1.18-5.51	(30-140)	1.81-5.35	(46-136)	1.38	(35)	2.17-5.91	(55-150)
E6-35	1.38	(35)	1.18-5.51	(30-140)	1.97-6.30	(50-160)	1.65	(42)	2.17-5.91	(55-100)
E6-40	1.57	(40)	1.57-11.81	(40-300)	2.36-12.60	(60-320)	2.12	(54)	2.48-7.87	(63-200)
E6-52	2.05	(52)	1.57-11.81	(40-300)	2.52-12.76	(64-324)	2.56	(65)	2.95-9.84	(75-250)
E6-62	2.44	(62)	1.97-15.75	(50-400)	3.39-17.17	(86-436)	3.31	(84)	4.53-13.78	(115-350)
E6-80L	3.15	(80)	3.53-21.65	(87-550)	4.53-22.76	(115-578)	4.25	(108)	5.91-11.81	(150-300)
E6-80	3.15	(80)	1.97-23.62	(50-600)	3.94-25.59	(100-650)	4.25	(108)	5.91-17.72	(150-450)

E-Tubes
fully enclosed, for complete cable protection

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
R6-29	1.10	(28)	1.18-4.72	(30-120)	1.81-5.35	(46-136)	1.38	(35)	2.17-5.91	(55-150)
R6-40	1.57	(40)	2.44-2.95	(62-75)	3.23-3.74	(82-95)	2.12	(54)	2.48-7.87	(63-200)
R6-52	2.05	(52)	1.97-6.89	(50-175)	2.91-7.83	(74-199)	2.56	(65)	2.95-9.84	(75-250)

Cleanroom qualification of E6 E-Chains®

By eliminating the pin/bore connection, the unsupported E6 has very low abrasion and is suitable for cleanrooms

In many applications where cumbersome special solutions are used, a simple standard E-Chain® can be used instead. A comprehensive test program was devised and performed for both gliding use and unsupported use. For many applications, the E-Chains® in special materials are practically abrasion-free. Detailed tests results are available upon request. IPA tests confirm that standard igus® E-Chains® meet cleanroom requirements. “Tested and certified as very good!” In cleanrooms a very high resistance to wear of moving parts is required. Therefore, E-Chains® must be very resistant to wear In order to meet the standard requirements for such a sensitive environment.

Fraunhofer IPA TESTED DEVICE igus GmbH Energy chain / Cable systems Report No. IG 0704-400

IPA classification - Report IG0704-400:

- Special material “cleanroom” - **Class 1 according to standard DIN EN ISO 14644-1** - Note: None of the classes corresponding to the DIN EN ISO 14644-1 Class 1 is included in the US standard at v =(0.5 m/s), a = (1.0 m/s²) - Series E6-29-060-150-0-CR
- Standard material - **Class 3 according to standard DIN EN ISO 14644-1** (according to US Fed. Stand. 209E, Class 1) at v = (0.5 m/s), a = (1.0 m/s²) Series E6-29-060-150-0 and v= 1m/s, a = 2m/s² Series E6-29-050-055-0 with inserted cables CF34-15-04, CF9-05-12, CF11-02-01-02-PBA-LC-D

E-Chain System® E6
Assembly Instructions

System E6 E-Chains® - Assembling

Position side links ...

... gently twist and snap in

Gently insert connector by using a hammer

Position crossbars.
Push down and snap in

E-Tubes - Assembling Lids

Insert lid ...

... push down and snap in

E-Tubes - Separating Lids

Lever with screwdriver ...

... and remove lids by hand

System E6 E-Chains® - Separating

Lever crossbars with screwdriver

Tap gently to remove connectors

Twist and ...

... separate side links

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E-Chain System® E6
Series E6-29

Price Index

Series E6-29

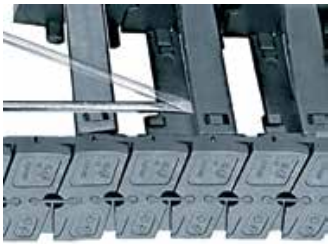
Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

Assembly Tips



To close, push and click shut

Other Installation Methods

Vertical, hanging ≤ 98.4 ft (30 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupp. = possible to a limited extent
Unsupported length of upper run upon request

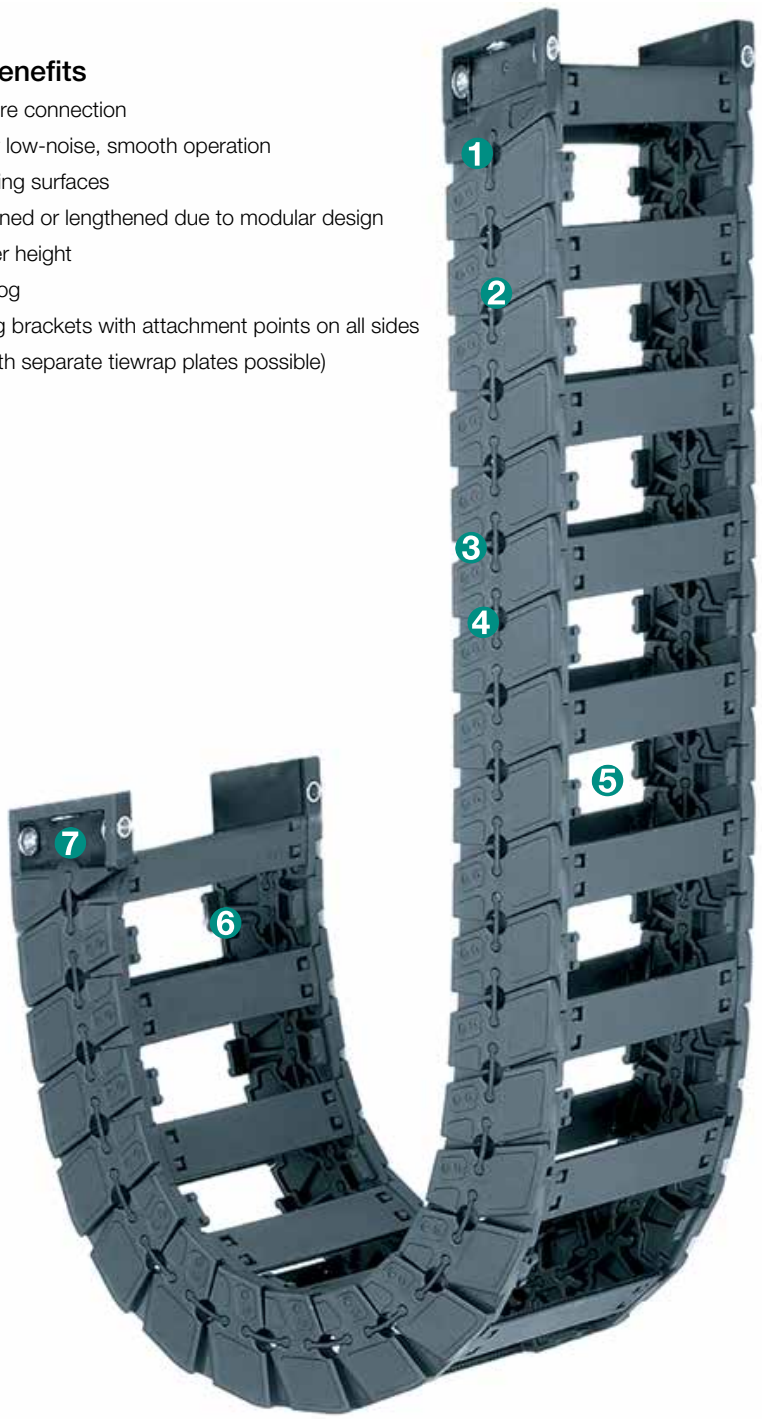
Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side-mounted applications
  ➤ **Series 200/240/250 E2 Medium**
- For RBR (reverse bending radii)
  ➤ **Series 200/240/250 E2 Medium**
- For high additional loads
  ➤ **Series 200/240/250 E2 Medium**
- For very dirty environments
  ➤ **Series R6-29**

Features & Benefits

1. No pin and bore connection
2. Small pitch for low-noise, smooth operation
3. Very large gliding surfaces
4. Can be shortened or lengthened due to modular design
5. Increased inner height
6. Interior stop dog
7. KMA mounting brackets with attachment points on all sides (strain relief with separate tiewrap plates possible)



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

6.56 ft (2 m) **E6-29-100-075-0**	**E-Chain®**
With 2 separators **E6-29-11** assembled every 2nd link	**Interior Separation**
1 Set **E6-290-100-12**	**Mounting Bracket**

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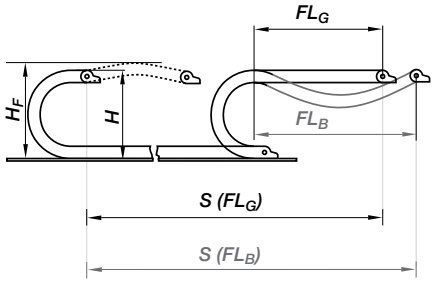
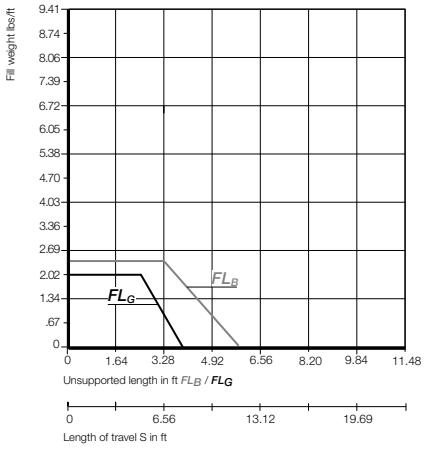
E-Chain System® E6
Series E6-29
Installation Dimensions

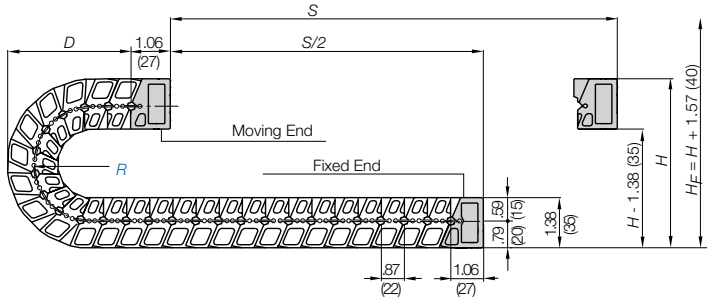
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .87" (22 mm)
Links per ft (m): = 13.79 (46)
For center mount applications:
Chain length = $^{S}/_{2}$ + K

The required clearance height: H_F = **H + 1.57 in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	2.17 (055)	2.95 (075)	3.94 (100)	5.91 (150)
H	7.09 (180)	8.66 (220)	10.63 (270)	14.57 (370)
D	4.25 (108)	5.04 (128)	6.02 (153)	7.99 (203)
K	8.66 (220)	11.02 (280)	14.17 (360)	20.47 (520)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Design, Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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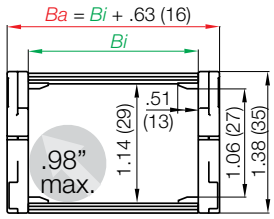
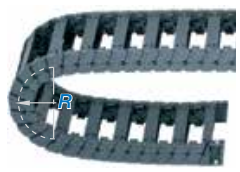
igus®

E-Chain System® E6
Series E6-29

Series E6-29 - E-Chain® with crossbars every link

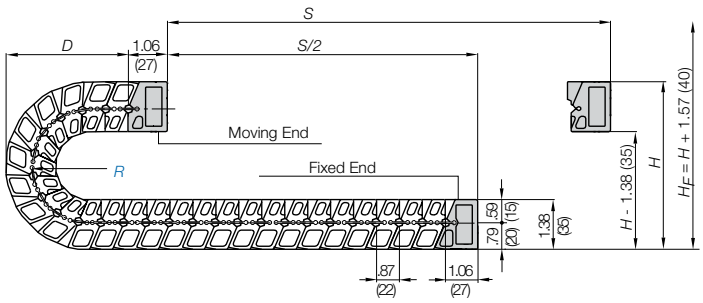




Part Number Structure

E6-29-100-100-0

- Color - Black
- Bending radius
- Width
- Series



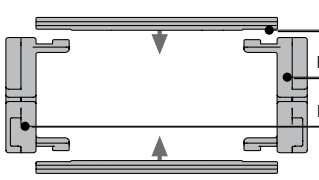
Supplement part number with required radius. Example: E6-29-100-100-0
Pitch: .87 in. (22 mm) per link links/ft (m) = 13.79 (46)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E6-29-030- ☐ -0	1.18 (30)	1.81 (46)	≈ 0.49 (0.73)
E6-29-040- ☐ -0	1.57 (40)	2.20 (56)	≈ 0.50 (0.75)
E6-29-050- ☐ -0	1.97 (50)	2.60 (66)	≈ 0.52 (0.78)
E6-29-060- ☐ -0	2.36 (60)	2.99 (76)	≈ 0.54 (0.80)
E6-29-070- ☐ -0	2.76 (70)	3.39 (86)	≈ 0.56 (0.83)
E6-29-080- ☐ -0	3.15 (80)	3.78 (96)	≈ 0.57 (0.85)
E6-29-090- ☐ -0	3.54 (90)	4.17 (106)	≈ 0.59 (0.88)
E6-29-100- ☐ -0	3.94 (100)	4.57 (116)	≈ 0.60 (0.90)
E6-29-110- ☐ -0	4.33 (110)	4.96 (126)	≈ 0.62 (0.93)
E6-29-120- ☐ -0	4.72 (120)	5.35 (136)	≈ 0.64 (0.95)
E6-29-140- ☐ -0	5.51 (140)	6.14 (156)	≈ 0.67 (1.00)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E6-29-100-100-0

	055	075	100	150
R	2.17 (055)	2.95 (075)	3.94 (100)	5.91 (150)
H	7.09 (180)	8.66 (220)	10.63 (270)	14.57 (370)
D	4.25 (108)	5.04 (128)	6.02 (153)	7.99 (203)
K	8.66 (220)	11.02 (280)	14.17 (360)	20.47 (520)

E-Chain® as separate parts, links and side plates



Single crossbar, E-Chain® - Part No. 2105-Bi
Right side link*, single part - Part No. E6-29-02-R
Left side link*, single part - Part No. E6-29-01-R

*View from the fixed point of the E-Chain®/E-Tube

Polymer spring as single part - Part No. E6-29-140

igus® E-Chain System®
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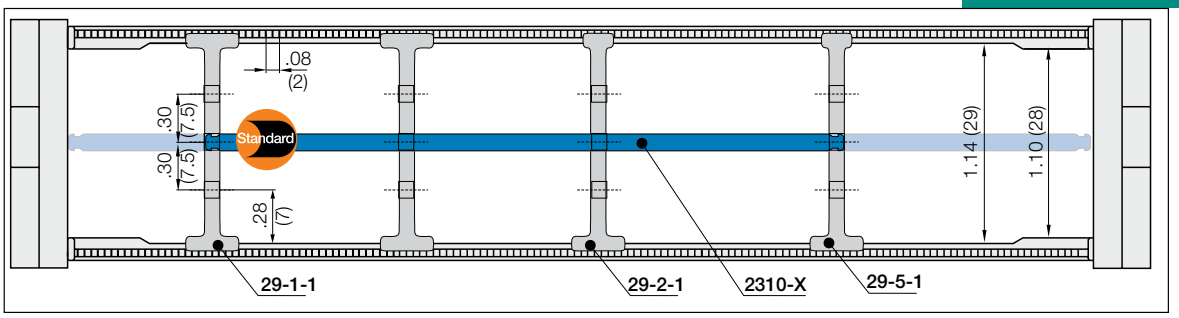
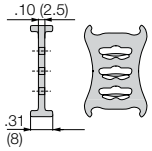
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E6
Series E6-29
Interior Separation - New Generation



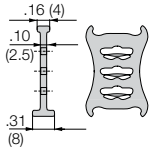
Note: Please maintain a lateral spacing of .51" (13 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 29-1**
Assembled	**Part No. 29-1-1**

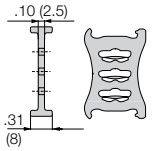
- **Standard separator 29-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator, narrow head

Unassembled	**Part No. 29-2**
Assembled	**Part No. 29-2-1**

- **Separator 29-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

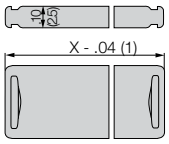


Notch separator, for notch crossbar

Unassembled	**Part No. 29-5**
Assembled	**Part No. 29-5-1**

- **Separator 29-5**
  Locks safely in .08 (2 mm) increments
  For exact positioning in E-Chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
0.59 (015)	**2300-15**	**2310-15**	2.36 (060)	**2300-60**	**2310-60**	3.43 (087)	**2300-87**	**2310-87**
0.98 (025)	**2300-25**	**2310-25**	2.44 (062)	**2300-62**	**2310-62**	3.54 (090)	**2300-90**	**2310-90**
1.18 (030)	**2300-30**	**2310-30**	2.56 (065)	**2300-65**	**2310-65**	3.94 (100)	**2300-100**	**2310-100**
1.50 (038)	**2300-38**	**2310-38**	2.76 (070)	**2300-70**	**2310-70**	4.06 (103)	**2300-103**	**2310-103**
1.57 (040)	**2300-40**	**2310-40**	2.95 (075)	**2300-75**	**2310-75**	4.33 (110)	**2300-110**	**2310-110**
1.97 (050)	**2300-50**	**2310-50**	3.03 (077)	**2300-77**	**2310-77**	4.72 (120)	**2300-120**	**2310-120**
2.24 (057)	**2300-57**	**2310-57**	3.15 (080)	**2300-80**	**2310-80**	4.92 (125)	**2300-125**	**2310-125**

Separator with integrated strain relief

Strain relief separator Part No. E6-29-02-Z can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

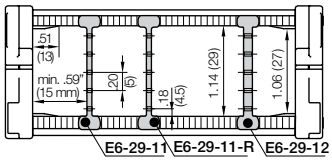
E-Chain System® E6
Series E6-29
Interior Separation - Previous Generation

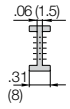
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Vertical separators

Vertical separators are used if a vertical subdivision of the E-Chain® interior is re-quired. By standard, vertical separators are assembled every other E-Chain® link.

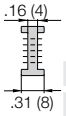




Vertical Separator

Unassembled	**E6-29-01**
Assembled	**E6-29-11**

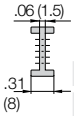
- **Slotted vertical separator E6-29-01**
  This separator is used for general subdivision of E-Chains®. Can be used in combination with full-width shelf 111-X



Vertical Separator

Unassembled	**E6-29-02**
Assembled	**E6-29-12**

- **Vertical separator E6-29-02**
  For use with side plate E6-29-13, full-width shelf 221-X and shelf 2210-X



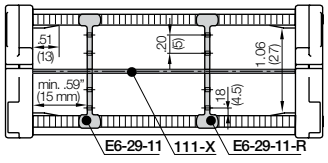
Vertical Separator

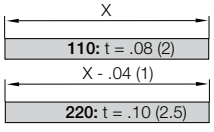
Unassembled	**E6-29-01R**
Assembled	**E6-29-11R**

- **Locking separator E6-29-01R**
  Can be locked onto crossbars in .08" (2mm) increments. For side-mounted applications use with full-width shelf 111-X

Full-width shelf

For applications involving many thin cables with similar or identical diameters.
Full-width shelf **111-X** can be used with vertical separator **E6-29-11** and locking separator **E6-29-11-R.**
Full-width shelf **221-X** can be used with vertical separator **E6-29-12**, side plate **E6-29-13**





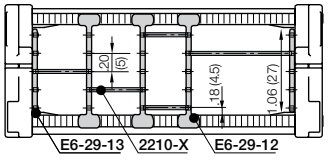
Shelves 110-X/220-XX
Shelves can be inserted at 5 different heights in .20" (5mm) increments

Width X in.	(mm)	Part No. Unassembled 110-X	Part No. Unassembled 220-X	Part No. Assembled 111-X	Part No. Assembled 221-X
1.18	(030)	**110-30**	**220-30**	**111-30**	**221-30**
1.57	(040)	**110-40**	**220-40**	**111-40**	**221-40**
1.97	(050)	**110-50**	**220-50**	**111-50**	**221-50**
2.36	(060)	**110-60**	**220-60**	**111-60**	**221-60**
2.76	(070)	**110-70**	**220-70**	**111-70**	**221-70**

Width X in.	(mm)	Part No. Unassembled 110-X	Part No. Unassembled 220-X	Part No. Assembled 111-X	Part No. Assembled 221-X
3.15	(080)	**110-80**	**220-80**	**111-80**	**221-80**
3.54	(090)	**110-90**	**220-90**	**111-90**	**221-90**
3.94	(100)	**110-100**	**220-100**	**111-100**	**221-100**
4.33	(110)	**110-110**	**220-110**	**111-110**	**221-110**
4.72	(120)	**110-120**	**220-120**	**111-120**	**221-120**

Shelves

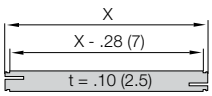
These components form the basic pattern of a shelf system.
Shelves of various widths can be arranged at 5 different heights in .20" (5mm) increments

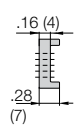


Shelves 2200-XX
Shelf 2210-X can be used with **vertical separator E6-29-12** and **side plate E6-29-13**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	**2200-18**	**2210-18**
.91	(23)	**2200-23**	**2210-23**
1.10	(28)	**2200-28**	**2210-28**
1.30	(33)	**2200-33**	**2210-33**
1.50	(38)	**2200-38**	**2210-38**
1.69	(43)	**2200-43**	**2210-43**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.89	(48)	**2200-48**	**2210-48**
2.28	(58)	**2200-58**	**2210-58**
2.68	(68)	**2200-68**	**2210-68**
2.87	(73)	**2200-73**	**2210-73**
3.46	(88)	**2200-88**	**2210-88**
3.90	(99)	**2200-99**	**2210-99**





Slotted Separator

Unassembled	**E6-29-03**
Assembled	**E6-29-13**

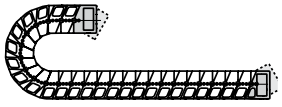
- **Side plate, slotted**
  This separator is used for general subdivision of E-Chains®.

E-Chain System® E6
Series E6-29
Mounting Brackets - KMA / Strain Relief

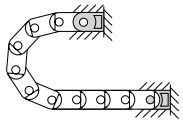
KMA - Pivoting

- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides

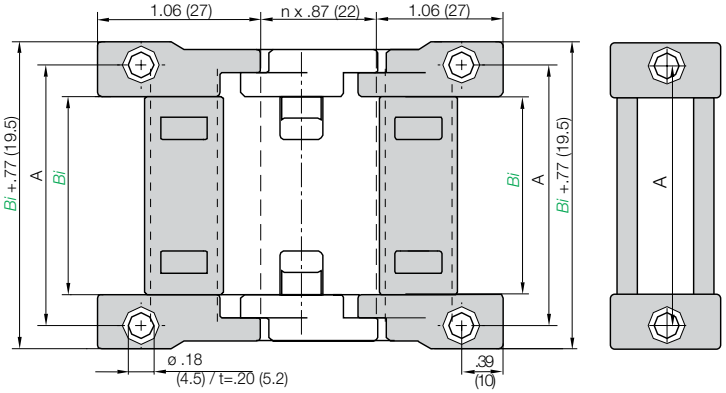
Moving end
E6-290...2



Fixed end
E6-290...1



Possible installation configurations -



Part Number Structure

E6-290- 030- 12

- 12 — Complete Set
- 030- — Width
- E6-290- — Mounting brackets for selected chain type

Full set, for both ends:

E6-290- 030- 12 Full set, **both fixed and moving end**

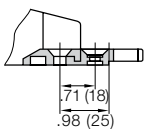
Single-part order:

E6-290 - 030- 1 Mounting bracket **fixed end**

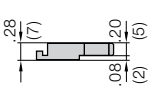
E6-290 - 030- 2 Mounting bracket **moving end**

For Series	Part No. Full Set	Dimension A in.	(mm)	For Series	Part No. Full Set	Dimension A in.	(mm)
E6-29-030	**E6-290-030-12**	1.57	(40)	E6-29-090	**E6-290-090-12**	3.94	(100)
E6-29-040	**E6-290-040-12**	1.97	(50)	E6-29-100	**E6-290-100-12**	4.33	(110)
E6-29-050	**E6-290-050-12**	2.36	(60)	E6-29-110	**E6-290-110-12**	4.72	(120)
E6-29-060	**E6-290-060-12**	2.76	(70)	E6-29-120	**E6-290-120-12**	5.12	(130)
E6-29-070	**E6-290-070-12**	3.15	(80)	E6-29-140	**E6-290-140-12**	5.91	(150)
E6-29-080	**E6-290-080-12**	3.54	(90)				

Tiewrap Plates



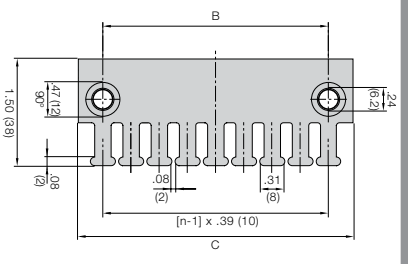
Shown assembled



Single tiewrap plate

Tiewrap plates as an individual part

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2120-ZB	12	4.72 (120)	3.94 (100)



Other strain relief elements - optional

➤ **Strain Relief, Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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R6-29

igus®

E-Chain System® E6
Series R6-29

1.10

Features & Benefits

1. Fully enclosed E-Tube
2. No pin and bore connection
3. Interior stop dog
4. Very large gliding surfaces
5. KMA mounting brackets with attachment points on all sides (strain relief with separate tiewrap plates possible)
6. Can be shortened or lengthened due to modular design
7. Small pitch for low-noise, smooth operation

Price Index

Series R6-29

Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

Assembly Tips

Lever and remove lids

Other Installation Methods

Vertical, hanging ≤ 98.4 ft (30 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupp. = possible to a limited extent
Unsupported length of upper run upon request

Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- Protection against dirt and chips
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side-mounted applications
  ➤ **Series 2480 E2 Tubes**
- For RBR (reverse bending radii)
  ➤ **Series 2480 E2 Tubes**
- For high additional loads
  ➤ **Series 2480 E2 Tubes**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

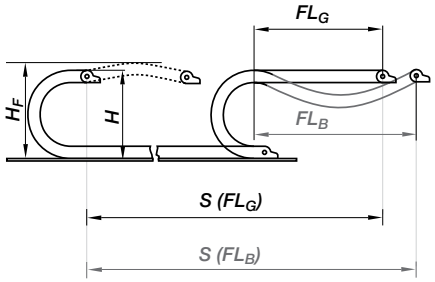
6.56 ft (2 m) **R6-29-080-100-0**	**E-Tube**
With 2 separators **R6-29-11** assembled every 2nd link	**Interior Separation**
1 Set **R6-290-080-12**	**Mounting Bracket**

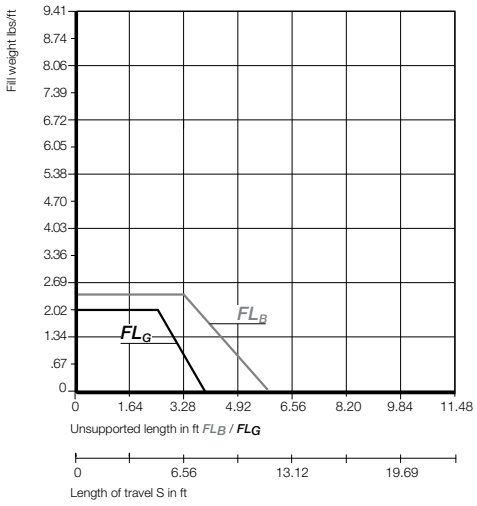
E-Chain System® E6
Series R6-29
Installation Dimensions

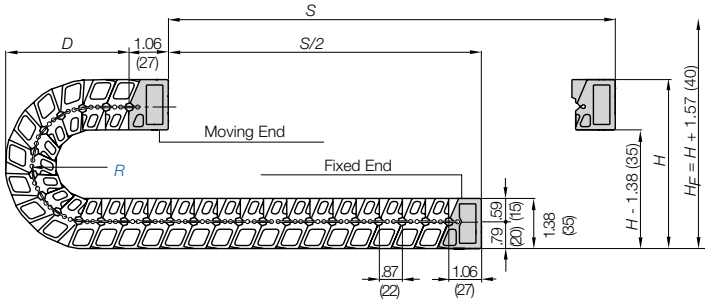
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .87" (22 mm)
Links per ft (m): = 13.79 (46)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.17 (055)	2.95 (075)	3.94 (100)	5.91 (150)
H	7.09 (180)	8.66 (220)	10.63 (270)	14.57 (370)
D	4.25 (108)	5.04 (128)	6.02 (153)	7.99 (203)
K	8.66 (220)	11.02 (280)	14.17 (360)	20.47 (520)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ **Design, Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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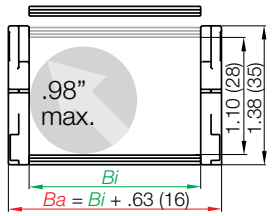
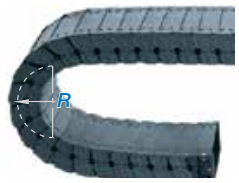
igus®

E-Chain System® E6
Series R6-29
Interior Separation

Series R6-29 - E-Tube, removable lids along the inner and outer radius

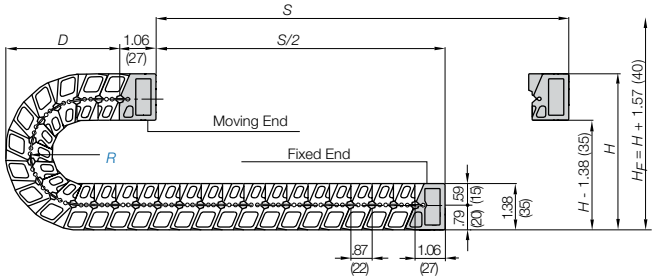




Part Number Structure

R6-29- 080- 100- 0

- 100 → Color - Black
- 080 → Bending radius
- R6-29 → Width
- Series



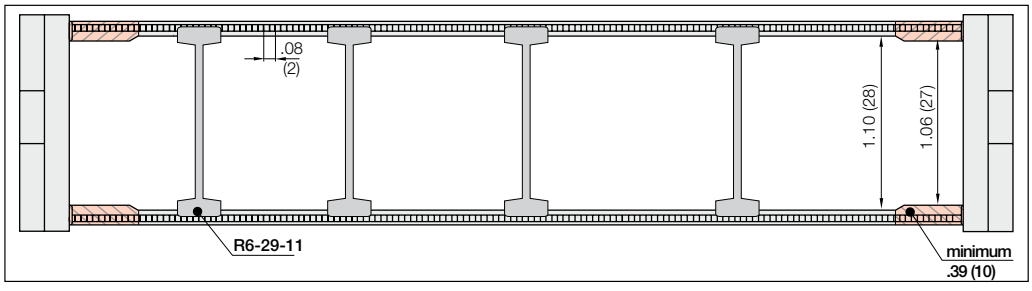
Supplement part number with required radius.
Example: R6-29-080- 100 -0
Pitch: .87 in. (22 mm) per link links/ft (m) = 13.79 (46)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
R6-29-030- ☐ -0	1.18 (30)	1.81 (46)	≈ 0.54 (0.80)
R6-29-040- ☐ -0	1.57 (40)	2.20 (56)	≈ 0.57 (0.85)
R6-29-050- ☐ -0	1.97 (50)	2.60 (66)	≈ 0.60 (0.89)
R6-29-060- ☐ -0	2.36 (60)	2.99 (76)	≈ 0.63 (0.94)
R6-29-080- ☐ -0	3.15 (80)	3.78 (96)	≈ 0.69 (1.03)
R6-29-110- ☐ -0	4.33 (110)	4.96 (126)	≈ 0.79 (1.18)
R6-29-120- ☐ -0	4.72 (120)	5.35 (136)	≈ 0.82 (1.22)

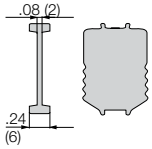
Choose from the radii below for all of the above sizes
Radius (mm) Example: R6-29-080- 100 -0

	055	075	100	150
R	2.17 (055)	2.95 (075)	3.94 (100)	5.91 (150)
H	7.09 (180)	8.66 (220)	10.63 (270)	14.57 (370)
D	4.25 (108)	5.04 (128)	6.02 (153)	7.99 (203)
K	8.66 (220)	11.02 (280)	14.17 (360)	20.47 (520)

Vertical separators



Note: Please maintain a lateral spacing of .39" (10 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator for E-Tubes

Unassembled	**Part No. R6-29-01**
Assembled	**Part No. R6-29-11**

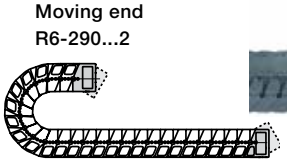
- **Vertical separator R6-29-01**
  This separator is used for general subdivision of E-Tubes. Separator snaps onto either the bottom of the carrier or the lid. Stays attached to that side. Opposite side can be removed.

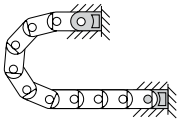
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E6
Series R6-29
Mounting Bracket - KMA / Strain Relief

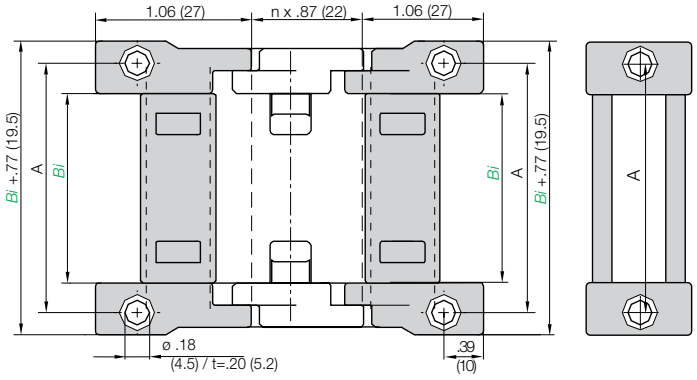
Option 1: KMA - Pivoting

- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides





Possible installation configurations -



Part Number Structure

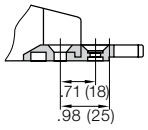
R6-290- 030- 12

- 12 — Complete Set
- 030 — Width
- R6-290 — Mounting brackets for selected chain type

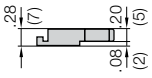
For Series	Part No. Full Set	Dimension A in.	(mm)
R6-290-030	**R6-290-030-12**	1.57	(40)
R6-290-040	**R6-290-040-12**	1.97	(50)
R6-290-050	**R6-290-050-12**	2.36	(60)
R6-290-060	**R6-290-060-12**	2.76	(70)
R6-290-080	**R6-290-080-12**	3.54	(90)
R6-290-110	**R6-290-110-12**	4.72	(120)
R6-290-120	**R6-290-120-12**	5.12	(130)

Full set, for both ends:
R6-290- 030- 12 Full set, **both fixed and moving end**
Single-part order:
R6-290 - 025- 1 Mounting bracket **fixed end**
R6-290 - 025- 2 Mounting bracket **moving end**

Tiewrap Plates



Shown assembled

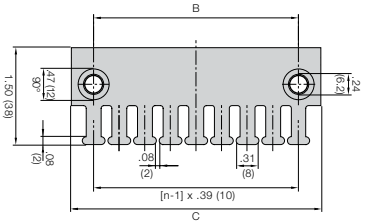


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2120-ZB	12	4.72 (120)	3.94 (100)



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 2020-ZBKMA

Other strain relief elements
➤ **Strain Relief, Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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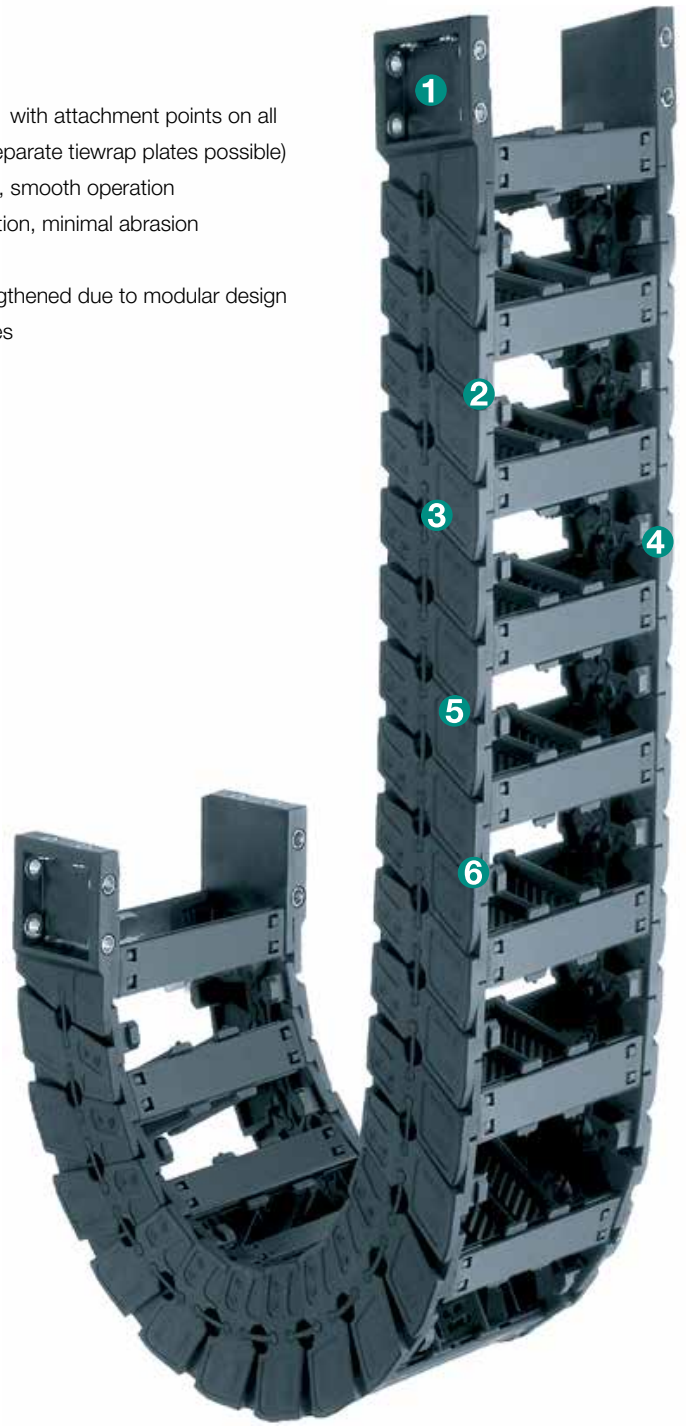
E6-35

E-Chain System® E6
Series E6-35

1.38

Features & Benefits

1. KMA mounting brackets with attachment points on all sides (strain relief with separate tiewrap plates possible)
2. Small pitch for low-noise, smooth operation
3. No pin and bore connection, minimal abrasion
4. Interior stop dog
5. Can be shortened or lengthened due to modular design
6. Very large gliding surfaces



Price Index

Series E6-35

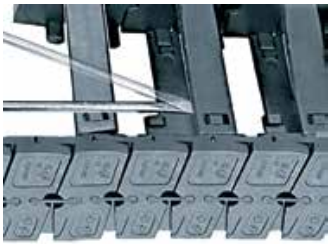
Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

Assembly Tips



To close, push and click shut

Other Installation Methods

Vertical, hanging ≤ 98.4 ft (30 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupp. = possible to a limited extent
Unsupported length of upper run upon request

Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- If a fully enclosed tube is required
  ➤ **Series R58 E2 Tubes**
- For side mounted applications
  ➤ **Series 2828 E4/4**
- For RBR (Reverse Bending Radius)
  ➤ **Series 280 E4/100**
- For high additional loads
  ➤ **Series 2828 E4/4**
- For dirty environments
  ➤ **Series 2828 E4/4**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

6.56 ft (2 m) **E6-35-100-055-0**	**E-Chain®**
With 2 separators **E6-35-11** assembled every 2nd link	**Interior Separation**
1 Set **E6-350-100-12**	**Mounting Bracket**

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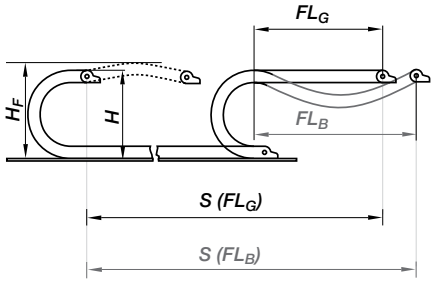
E-Chain System® E6
Series E6-35
Installation Dimensions

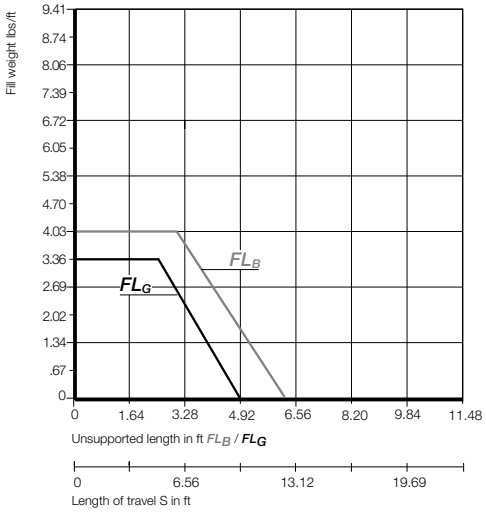
Short travel, unsupported length

● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1



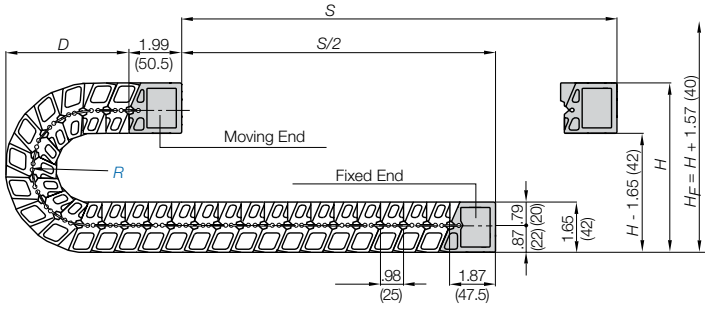


Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + safety buffer
H_F = Required clearance height



Pitch per link: = .98" (25 mm)
Links per ft (m): = 12.19 (40)
For center mount applications:
Chain length = $_{-}{}^{S}/_{2} + K$

The required clearance height: ***H_F = H* + 1.57 in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.17 (055)	2.95 (075)	3.94 (100)	5.91 (150)
H	7.44 (189)	9.01 (229)	10.98 (279)	14.92 (379)
D	4.53 (115)	5.31 (135)	6.30 (160)	8.27 (210)
K	8.86 (225)	11.42 (290)	14.37 (365)	20.67 (525)

Technical Data

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

Details of material properties
➤ Design, Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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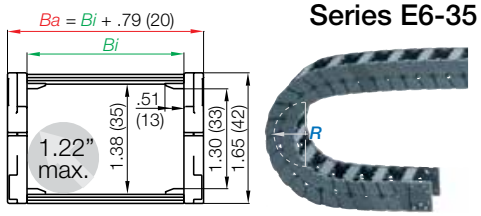
igus®

E-Chain System® E6
Series E6-35

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

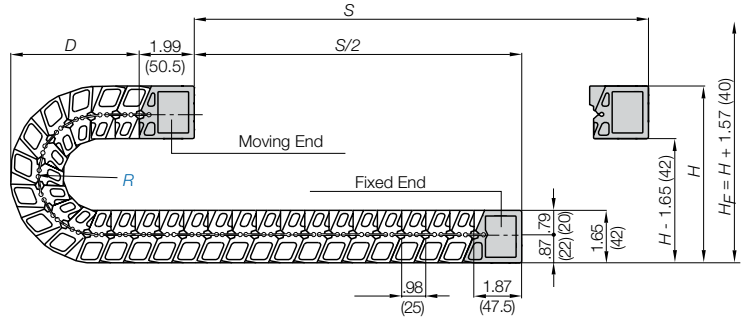
Series E6-35 - E-Chain® with crossbars every other link



Part Number Structure

E6-35-100-055-0

- Color - Black
- Bending radius
- Width
- Series



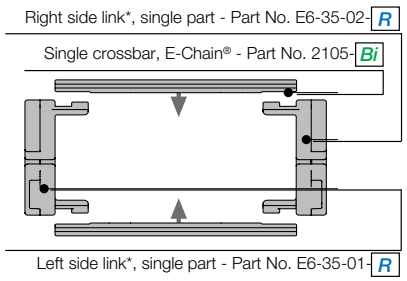
Supplement part number with required radius.
Example: E6-35-100-055-0
Pitch: .98 in. (25 mm) per link links/ft (m) = 12.19 (40)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E6-35-030-☐-0	1.18 (30)	1.97 (50)	≈ 0.59 (0.88)
E6-35-040-☐-0	1.57 (40)	2.36 (60)	≈ 0.54 (0.90)
E6-35-050-☐-0	1.97 (50)	2.76 (70)	≈ 0.90 (0.92)
E6-35-060-☐-0	2.36 (60)	3.15 (80)	≈ 0.63 (0.94)
E6-35-070-☐-0	2.76 (70)	3.54 (90)	≈ 0.65 (0.96)
E6-35-080-☐-0	3.15 (80)	3.94 (100)	≈ 0.66 (0.99)
E6-35-090-☐-0	3.54 (90)	4.33 (110)	≈ 0.68 (1.01)
E6-35-100-☐-0	3.94 (100)	4.72 (120)	≈ 0.69 (1.03)
E6-35-110-☐-0	4.33 (110)	5.12 (130)	≈ 0.76 (1.05)
E6-35-120-☐-0	4.72 (120)	5.51 (140)	≈ 0.72 (1.07)
E6-35-140-☐-0	5.51 (140)	6.30 (160)	≈ 0.75 (1.11)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E6-35-100-055-0

	055	075	100	150
R	2.17 (055)	2.95 (075)	3.94 (100)	5.91 (150)
H	7.44 (189)	9.01 (229)	10.98 (279)	14.92 (379)
D	4.53 (115)	5.31 (135)	6.30 (160)	8.27 (210)
K	8.86 (225)	11.42 (290)	14.37 (365)	20.67 (525)

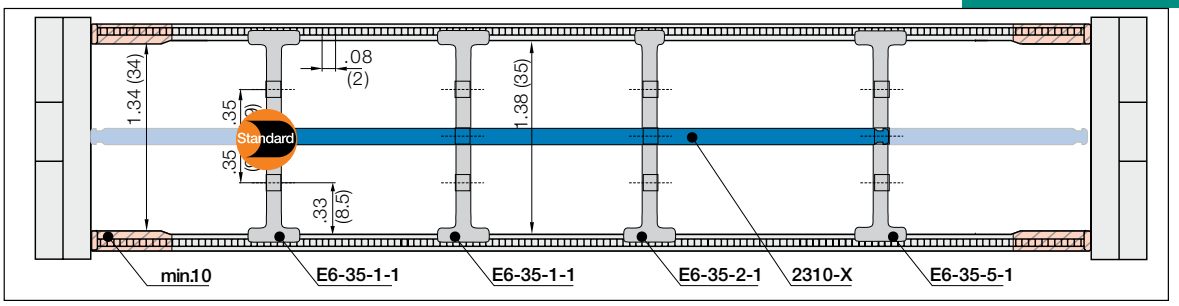
E-Chain® as separate parts, links and side plates



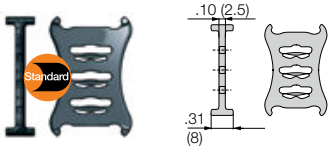
Polymer spring as single part -
Part No. E6-35-150

*View from the fixed point of the E-Chain®/E-Tube

E-Chain System® E6
Series E6-35
Interior Separation - New Generation



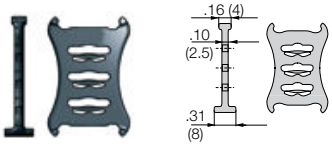
Note: Please maintain a lateral spacing of .39" (10 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. E6-35-1**
Assembled	**Part No. E6-35-1-1**

- **Standard separator E6-35-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.

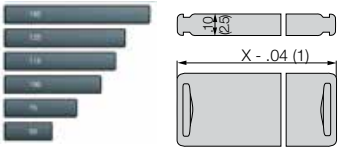


Separator, narrow head

Unassembled	**Part No. E6-35-2**
Assembled	**Part No. E6-35-2-1**

- **Separator E6-35-2**
  For even faster installation
  Firmly holds to one side with a wide base, narrow on opposite side for easy cable assembly (slight grip).

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally. Can be arranged at three different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
0.59 (015)	**2300-15**	**2310-15**	2.36 (060)	**2300-60**	**2310-60**	3.43 (087)	**2300-87**	**2310-87**
0.98 (025)	**2300-25**	**2310-25**	2.44 (062)	**2300-62**	**2310-62**	3.54 (090)	**2300-90**	**2310-90**
1.18 (030)	**2300-30**	**2310-30**	2.56 (065)	**2300-65**	**2310-65**	3.94 (100)	**2300-100**	**2310-100**
1.50 (038)	**2300-38**	**2310-38**	2.76 (070)	**2300-70**	**2310-70**	4.06 (103)	**2300-103**	**2310-103**
1.57 (040)	**2300-40**	**2310-40**	2.95 (075)	**2300-75**	**2310-75**	4.33 (110)	**2300-110**	**2310-110**
1.97 (050)	**2300-50**	**2310-50**	3.03 (077)	**2300-77**	**2310-77**	4.72 (120)	**2300-120**	**2310-120**
2.24 (057)	**2300-57**	**2310-57**	3.15 (080)	**2300-80**	**2310-80**	4.92 (125)	**2300-125**	**2310-125**

Separator with integrated strain relief

Strain relief separator Part No. E6-35-02-Z can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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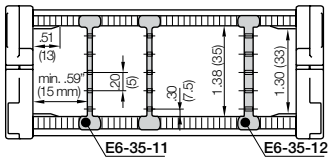
igus®

E-Chain System® E6
Series E6-35
Interior Separation - Previous Generation

Telephone 1-800-521-2747
Fax 1-401-438-7270

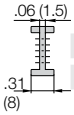
Vertical separators

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.



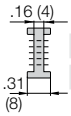
- **Slotted vertical separator E6-35-01**
  This separator is used for general subdivision of E-Chains®. Can be used in combination with full-width shelf 111-X.

- **Vertical separator E6-35-02**
  For use with side plate E6-35-13, full-width shelf 221-X and shelf 2210-X



Vertical Separator, Slotted

Unassembled	**Part No. E6-35-01**
Assembled	**Part No. E6-35-11**

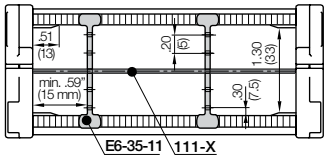


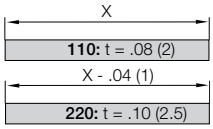
Vertical Separator

Unassembled	**Part No. E6-35-02**
Assembled	**Part No. E6-35-12**

Full-width shelf

For applications involving many thin cables with similar or identical diameters.
Full-width shelf **111-X** can be used with vertical separator **E6-35-11**
Full-width shelf **221-X** can be used with vertical separator **E6-35-12**





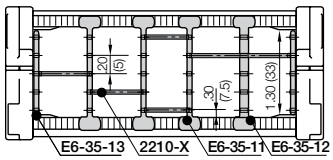
Shelves 110-X/220-XX
Shelves can be inserted at 5 different heights in .20" (5mm) increments

Width X in. (mm)	Part No. Unassembled 110-X	220-X	Part No. Assembled 111-X	221-X
1.18 (030)	**110-30**	**220-30**	**111-30**	**221-30**
1.57 (040)	**110-40**	**220-40**	**111-40**	**221-40**
1.97 (050)	**110-50**	**220-50**	**111-50**	**221-50**
2.36 (060)	**110-60**	**220-60**	**111-60**	**221-60**
2.76 (070)	**110-70**	**220-70**	**111-70**	**221-70**

Width X in. (mm)	Part No. Unassembled 110-X	220-X	Part No. Assembled 111-X	221-X
3.15 (080)	**110-80**	**220-80**	**111-80**	**221-80**
3.54 (090)	**110-90**	**220-90**	**111-90**	**221-90**
3.94 (100)	**110-100**	**220-100**	**111-100**	**221-100**
4.33 (110)	**110-110**	**220-110**	**111-110**	**221-110**
4.72 (120)	**110-120**	**220-120**	**111-120**	**221-120**

Shelves

These components form the basic pattern of a shelf system.
Shelves of various widths can be arranged at 5 different heights in .20" (5mm) increments

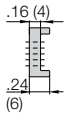


Shelves 2200-XX
Shelf 2210-X can be used with **vertical separator E6-35-12** and **side plate E6-35-13**

Width X in. (mm)	Part No. Unassembled 2200-XX	Part No. Assembled 2210-XX
.71 (18)	**2200-18**	**2210-18**
.91 (23)	**2200-23**	**2210-23**
1.10 (28)	**2200-28**	**2210-28**
1.30 (33)	**2200-33**	**2210-33**
1.50 (38)	**2200-38**	**2210-38**
1.69 (43)	**2200-43**	**2210-43**

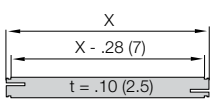
Width X in. (mm)	Part No. Unassembled 2200-XX	Part No. Assembled 2210-XX
1.89 (48)	**2200-48**	**2210-48**
2.28 (58)	**2200-58**	**2210-58**
2.68 (68)	**2200-68**	**2210-68**
2.87 (73)	**2200-73**	**2210-73**
3.46 (88)	**2200-88**	**2210-88**
3.90 (99)	**2200-99**	**2210-99**

- **Side plate**
  This separator is used for general subdivision of E-Chains®.



Side Plate

Unassembled	**Part No. E6-35-03**
Assembled	**Part No. E6-35-13**

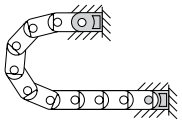


E-Chain System® E6
Series E6-35
Mounting Bracket - KMA / Strain Relief

KMA - Pivoting

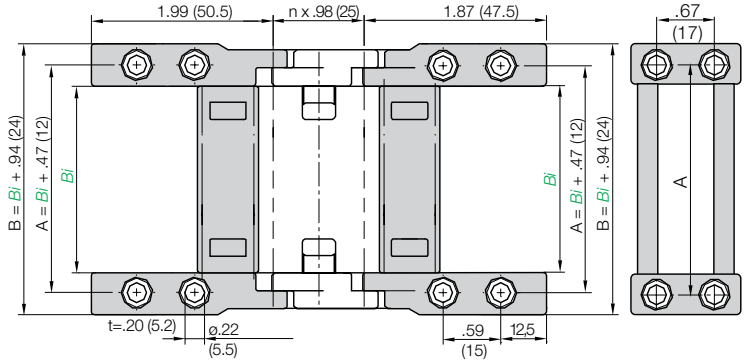
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides

Moving end
E6-350...2



Possible installation configurations -

Fixed end
E6-350...1



Part Number Structure

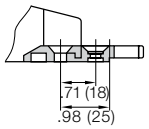
E6-350-	040-	12

12 → Complete Set
040 → Width
E6-350 → Mounting brackets for selected chain type

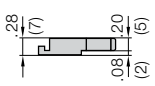
For Series	Part No. Full Set	Dimension B in.	(mm)	Dimension A in.	(mm)	Bi (mm)
E6-35-030	**E6-350-030-12**	2.13	(54)	1.65	(42)	30
E6-35-040	**E6-350-040-12**	2.52	(64)	2.05	(52)	40
E6-35-050	**E6-350-050-12**	2.91	(74)	2.44	(62)	50
E6-35-060	**E6-350-060-12**	3.31	(84)	2.83	(72)	60
E6-35-070	**E6-350-070-12**	3.70	(94)	3.23	(82)	70
E6-35-080	**E6-350-080-12**	4.09	(104)	3.62	(92)	80
E6-35-090	**E6-350-090-12**	4.49	(114)	4.02	(102)	90
E6-35-100	**E6-350-100-12**	4.88	(124)	4.41	(112)	100
E6-35-110	**E6-350-110-12**	5.28	(134)	4.80	(122)	110
E6-35-120	**E6-350-120-12**	5.67	(144)	5.20	(132)	120
E6-35-140	**E6-350-140-12**	6.46	(164)	5.98	(152)	140

Full set, for both ends:
E6-350- 040- 12 Full set, **both fixed and moving end**
Single-part order:
E6-350 - 040- 1 Mounting bracket **fixed end**
E6-350 - 040- 2 Mounting bracket **moving end**

Tiewrap Plates



Shown assembled

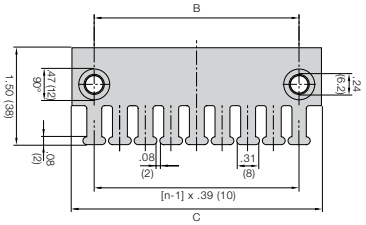


Single tiewrap plate

Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2120-ZB	12	4.72 (120)	3.94 (100)



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 2020-ZBKMA

Other strain relief elements
➤ **Strain Relief, Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E6-40

igus®

E-Chain System® E6
Series E6-40

1.57

Features & Benefits

1. KMA mounting brackets with attachment points on all sides (strain relief with separate tiewrap plates possible)
2. Small pitch for low-noise, smooth operation
3. No pin and bore connection, minimal abrasion
4. Interior stop dog
5. Can be shortened or lengthened due to modular design
6. Available with or without integrated profile rail
7. Very large gliding surfaces

● Also available:
Separator with integrated strain relief for use in the first or last chain link
(Part No. E6-40-02-Z)
➤ **Strain Relief, Chapter 10**

Price Index

●●●
Series E6-40

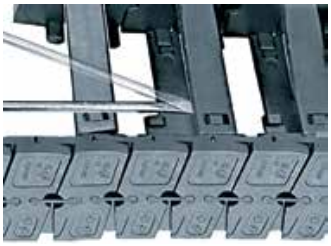
Special Options Available

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

Assembly Tips



To close, push and click shut

Other Installation Methods

Vertical, hanging ≤ 98.4 ft (30 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupp. = possible to a limited extent
Unsupported length of upper run upon request

Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side mounted applications
  ➤ **Series 2828 E4/4**
- For RBR (Reverse Bending Radius)
  ➤ **Series 280 E4/100**
- For high additional loads
  ➤ **Series 2828 E4/4**
- For dirty environments
  ➤ **Series 2828 E4/4**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

6.56 ft (2 m) **E6-40-100-075-0**	**E-Chain®**
With 2 separators **28222** assembled every 2nd link	**Interior Separation**
1 Set **E6-400-100-12**	**Mounting Bracket**

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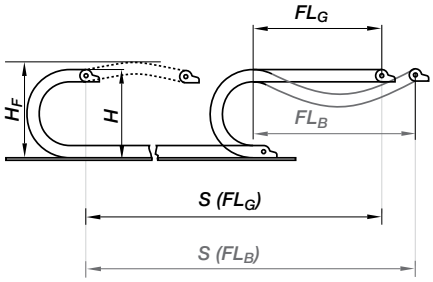
www.edfluidos.com

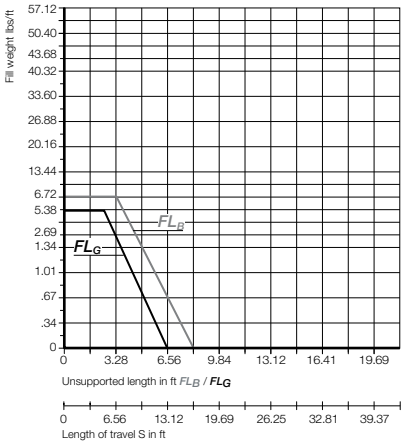
E-Chain System® E6
Series E6-40
Installation Dimensions

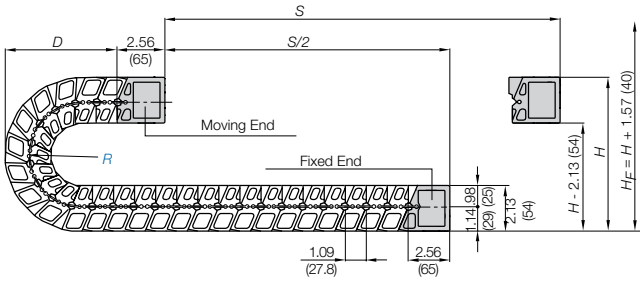
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.09" (27.8 mm)
Links per ft (m): = 10.97 (36)
For center mount applications:
Chain length = $_{S}/_{2}$ + K

The required clearance height: H_F = **H + 1.57 in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)
H	8.82 (224)	9.76 (248)	11.73 (298)	13.71 (348)	15.67 (398)	19.61 (498)
D	5.28 (134)	5.75 (146)	6.73 (171)	7.72 (196)	8.70 (221)	10.67 (271)
K	10.04 (255)	11.61 (295)	14.57 (370)	17.72 (450)	20.87 (530)	26.97 (685)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Design, Chapter 1

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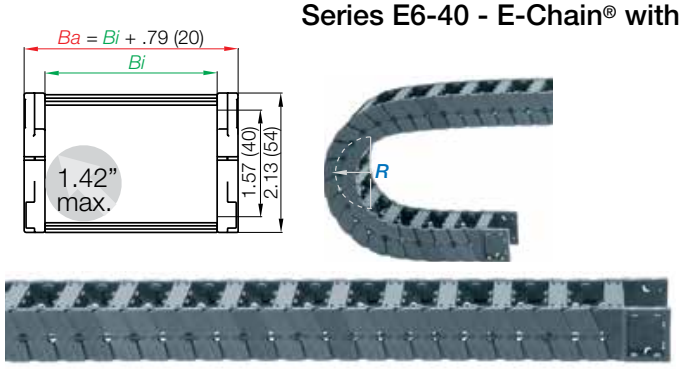
igus®

E-Chain System® E6
Series E6-40

Telephone 1-800-521-2747
Fax 1-401-438-7270

Series E6-40 - E-Chain® with crossbars every other link

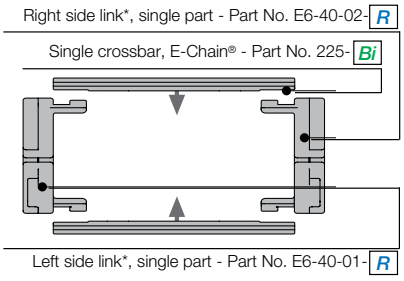


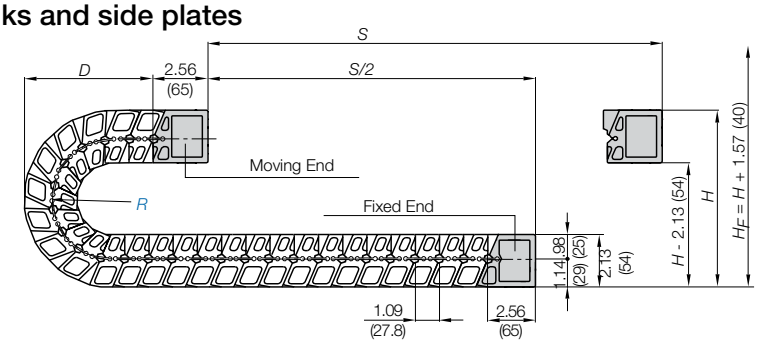
Part Number Structure

E6-40-100-100-0

- Color - Black
- Bending radius
- Width
- Series

E-Chain® as separate parts, links and side plates





Polymer spring as single part - Part No. E6-40-177

*View from the fixed point of the E-Chain®/E-Tube

Supplement part number with required radius. Example: E6-40-100-100-0
Pitch: 1.09 in. (27.8 mm) per link links/ft (m) = 10.97 (36)

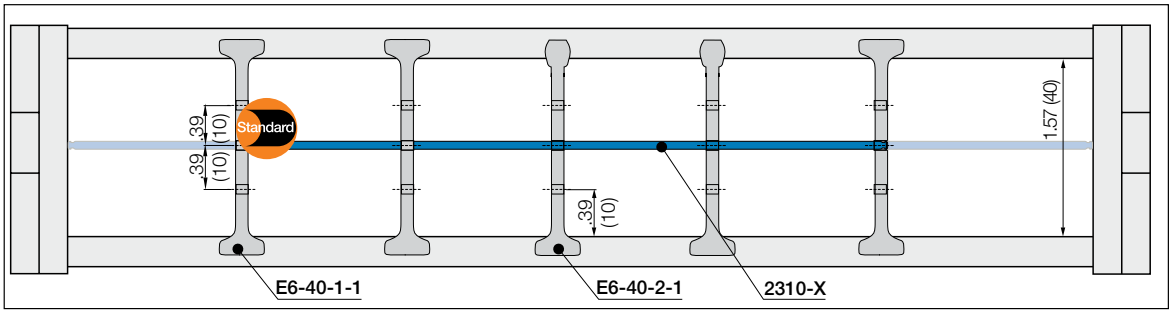
Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E6-40-040-□-0	1.57 (40)	2.36 (60)	≈ 0.87 (1.29)
E6-40-050-□-0	1.97 (50)	2.76 (70)	≈ 0.89 (1.33)
E6-40-052-□-0	2.05 (52)	2.83 (72)	≈ 0.90 (1.34)
E6-40-062-□-0	2.44 (62)	3.23 (82)	≈ 0.93 (1.38)
E6-40-070-□-0	2.76 (70)	3.54 (90)	≈ 0.95 (1.41)
E6-40-075-□-0	2.95 (75)	3.74 (95)	≈ 0.96 (1.43)
E6-40-087-□-0	3.42 (87)	4.21 (107)	≈ 0.99 (1.48)
E6-40-100-□-0	3.94 (100)	4.72 (120)	≈ 1.02 (1.53)
E6-40-125-□-0	4.92 (125)	5.71 (145)	≈ 1.10 (1.63)
E6-40-150-□-0	5.91 (150)	6.69 (170)	≈ 1.16 (1.73)
E6-40-175-□-0	6.89 (175)	7.68 (195)	≈ 1.23 (1.83)
E6-40-200-□-0	7.87 (200)	8.66 (220)	≈ 2.50 (1.93)
E6-40-225-□-0	8.86 (225)	9.65 (245)	≈ 1.36 (2.02)
E6-40-250-□-0	9.84 (250)	10.63 (270)	≈ 1.42 (2.12)
E6-40-275-□-0	10.83 (275)	11.61 (295)	≈ 1.49 (2.22)
E6-40-300-□-0	11.81 (300)	12.60 (320)	≈ 1.56 (2.32)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E6-40-100-100-0

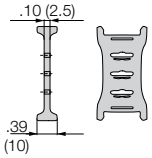
	063	075	100	125	150	200
R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)
H	8.82 (224)	9.76 (248)	11.73 (298)	13.71 (348)	15.67 (398)	19.61 (498)
D	5.28 (134)	5.75 (146)	6.73 (171)	7.72 (196)	8.70 (221)	10.67 (271)
K	10.04 (255)	11.61 (295)	14.57 (370)	17.72 (450)	20.87 (530)	26.97 (685)

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E6
Series E6-40
Interior Separation - New Generation



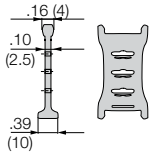
No lateral spacing between the separators and the side links is necessary.
In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. E6-40-1**
Assembled	**Part No. E6-40-1-1**

- **Standard separator E6-40-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.

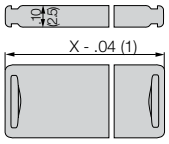


Separator, narrow head

Unassembled	**Part No. E6-40-2**
Assembled	**Part No. E6-40-2-1**

- **Separator E6-40-2 For even faster installation**
  Firmly holds to one side with a wide base, narrow on opposite side for easy cable assembly (slight grip).

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally. Can be arranged at three different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
0.59 (015)	**2300-15**	**2310-15**	2.36 (060)	**2300-60**	**2310-60**	3.43 (087)	**2300-87**	**2310-87**
0.98 (025)	**2300-25**	**2310-25**	2.44 (062)	**2300-62**	**2310-62**	3.54 (090)	**2300-90**	**2310-90**
1.18 (030)	**2300-30**	**2310-30**	2.56 (065)	**2300-65**	**2310-65**	3.94 (100)	**2300-100**	**2310-100**
1.50 (038)	**2300-38**	**2310-38**	2.76 (070)	**2300-70**	**2310-70**	4.06 (103)	**2300-103**	**2310-103**
1.57 (040)	**2300-40**	**2310-40**	2.95 (075)	**2300-75**	**2310-75**	4.33 (110)	**2300-110**	**2310-110**
1.97 (050)	**2300-50**	**2310-50**	3.03 (077)	**2300-77**	**2310-77**	4.72 (120)	**2300-120**	**2310-120**
2.24 (057)	**2300-57**	**2310-57**	3.15 (080)	**2300-80**	**2310-80**	4.92 (125)	**2300-125**	**2310-125**

Separator with integrated strain relief

Strain relief separator Part No. E6-40-02-Z can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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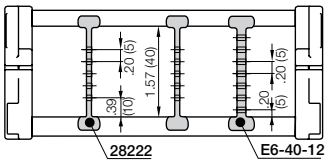
igus®

E-Chain System® E6
Series E6-40
Interior Separation - Previous Generation

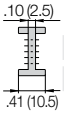
Telephone 1-800-521-2747
Fax 1-401-438-7270

Vertical separators

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

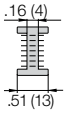


- **Slotted vertical separator**
  This separator is used for general subdivision of E-Chains®. Can be used in combination with full-width shelf 221-X.
- **Locking vertical separator**
  For use with shelf 2210-X



Vertical Separator, Slotted

Unassembled	**Part No. 28221**
Assembled	**Part No. 28222**

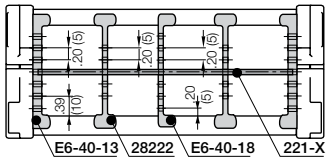


Locking Vertical Separator

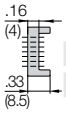
Unassembled	**Part No. E6-40-02**
Assembled	**Part No. E6-40-12**

Full-width shelf

For applications involving many thin cables with similar or identical diameters.
Full-width shelf **221-X** can be used with vertical separator **28222, side plate E6-40-13 and asymmetrical separator E6-40-18**

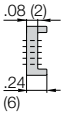


- **Side plate**
  This separator is used for general subdivision of E-Chains®.
- **Asymmetrical separator**
  This separator is used for general subdivision of E-Chains®.



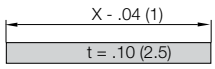
Side Plate

Unassembled	**Part No. E6-40-03**
Assembled	**Part No. E6-40-13**



Asymmetrical Separator

Unassembled	**Part No. E6-40-08**
Assembled	**Part No. E6-40-18**

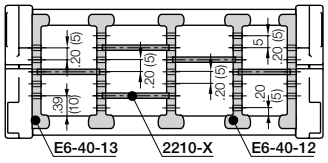


Shelves 220-XX
Shelves can be inserted at 5 different heights in .20" (5mm) increments

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.57 (040)	**220-40**	**221-40**	3.94 (100)	**220-100**	**221-100**
1.97 (050)	**220-50**	**221-50**	4.92 (125)	**220-125**	**221-125**
2.44 (062)	**220-62**	**221-62**	5.91 (150)	**220-150**	**221-150**
2.76 (070)	**220-70**	**221-70**	6.89 (175)	**220-175**	**221-175**
2.95 (075)	**220-75**	**221-75**	7.87 (200)	**220-200**	**221-200**
3.43 (087)	**220-87**	**221-87**			

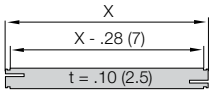
Shelves

These components form the basic pattern of a shelf system.
Shelves of various widths can be arranged at 7 different heights in .20" (5mm) increments



Shelves 2200-XX
Shelf 2210-X can be used with **locking vertical separator E6-40-12** and **side plate E6-40-13**

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
.71 (18)	**2200-18**	**2210-18**	2.28 (58)	**2200-58**	**2210-58**
.91 (23)	**2200-23**	**2210-23**	2.28 (63)	**2200-65**	**2210-65**
1.10 (28)	**2200-28**	**2210-28**	2.68 (68)	**2200-68**	**2210-68**
1.30 (33)	**2200-33**	**2210-33**	2.87 (73)	**2200-73**	**2210-73**
1.50 (38)	**2200-38**	**2210-38**	3.46 (88)	**2200-88**	**2210-88**
1.69 (43)	**2200-43**	**2210-43**	3.90 (99)	**2200-99**	**2210-99**
1.89 (48)	**2200-48**	**2210-48**			



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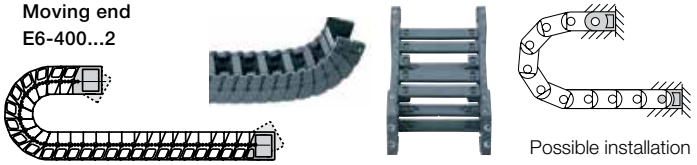
E-Chain System® E6
Series E6-40
Mounting Bracket - KMA

Option 1: KMA - Pivoting

- Option - profile rail with integrated strain relief chainfix clip or tiewrap plates
- Profile rail can be mounted in the inner or outer radius of the E-Chain®
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides

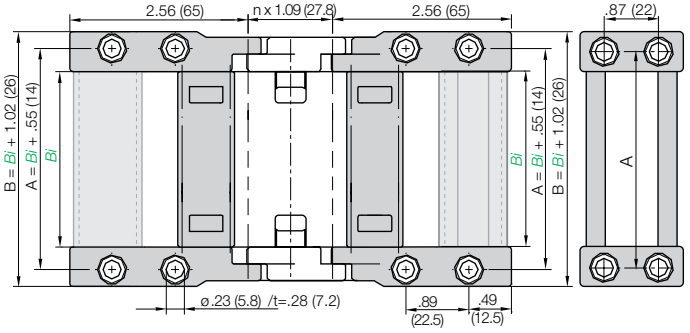
Adapters for gliding applications available upon request

Moving end
E6-400...2



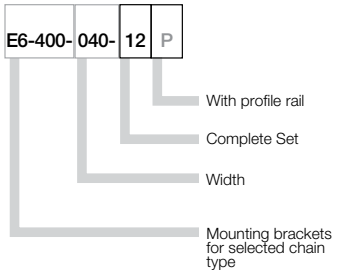
Fixed end
E6-400...1

Possible installation configurations -



For Series	Part No. Full Set Without Profile Rail	Part No. Full Set With Profile Rail	Dimension A in.	(mm)	Dimension B in.	(mm)
E6-40-040	**E6-400-040-12**	**E6-400-040-12P**	2.13	(54)	2.60	(66)
E6-40-050	**E6-400-050-12**	**E6-400-050-12P**	2.52	(64)	2.99	(76)
E6-40-052	E6-400-052-12	E6-400-052-12P	2.66	(66)	3.07	(78)
E6-40-062	**E6-400-062-12**	**E6-400-062-12P**	2.99	(76)	3.46	(88)
E6-40-070	**E6-400-070-12**	**E6-400-070-12P**	3.31	(84)	3.78	(96)
E6-40-075	**E6-400-075-12**	**E6-400-075-12P**	3.50	(89)	3.98	(101)
E6-40-087	**E6-400-087-12**	**E6-400-087-12P**	3.98	(101)	4.45	(113)
E6-40-100	**E6-400-100-12**	**E6-400-100-12P**	4.49	(114)	4.96	(126)
E6-40-125	**E6-400-125-12**	**E6-400-125-12P**	5.47	(139)	5.94	(151)
E6-40-150	**E6-400-150-12**	**E6-400-150-12P**	6.46	(164)	6.93	(176)
E6-40-175	**E6-400-175-12**	**E6-400-175-12P**	7.44	(189)	7.91	(201)
E6-40-200	**E6-400-200-12**	**E6-400-200-12P**	8.43	(214)	8.90	(226)
E6-40-225	**E6-400-225-12**	**E6-400-225-12P**	9.41	(239)	9.88	(251)
E6-40-250	**E6-400-250-12**	**E6-400-250-12P**	10.39	(264)	10.87	(276)
E6-40-275	**E6-400-275-12**	**E6-400-275-12P**	11.38	(289)	11.85	(301)
E6-40-300	**E6-400-300-12**	**E6-400-300-12P**	12.36	(314)	12.83	(326)

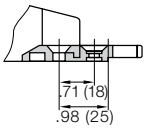
Part Number Structure



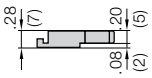
Full set, for both ends:
E6-400- 040- 12 Full set, **both fixed and moving end**

Single-part order:
E6-400 - 040- 1 Mounting bracket **fixed end**
E6-400 - 040- 2 Mounting bracket **moving end**

Tiewrap Plates



Shown assembled

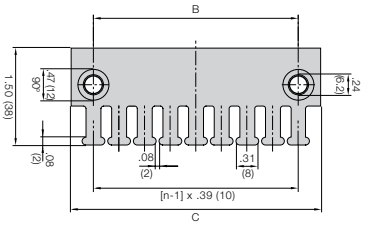


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2120-ZB	12	4.72 (120)	3.94 (100)



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 2020-ZBKMA

Other strain relief elements
➤ **Strain Relief, Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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R6-40

igus®

E-Chain System® E6
Series R6-40

1.57

Price Index

Series R6-40

Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system
(Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

Assembly Tips

Lever and remove lids

Other Installation Methods

Vertical, hanging ≤ 98.4 ft (30 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupp. = possible to a limited extent
Unsupported length of upper run upon request

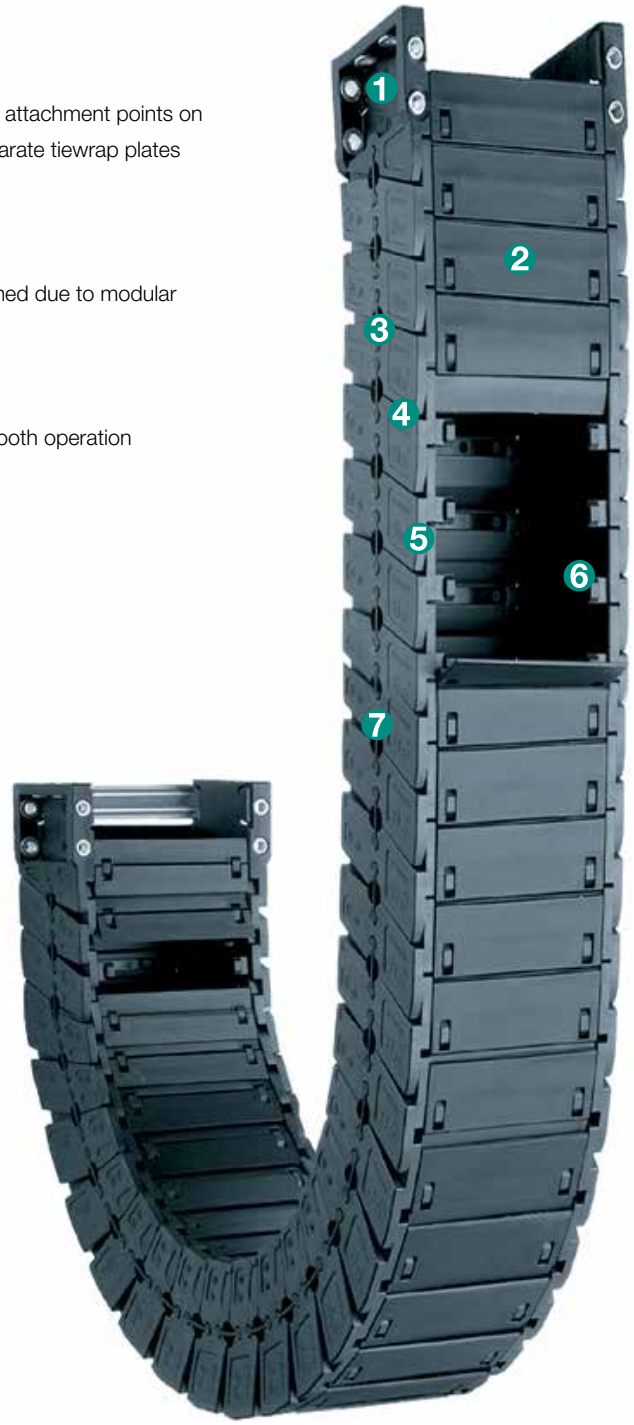
Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- Protection against hot chips
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side mounted applications
  ➤ **Series R7728 E4/4**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides (strain relief with separate tiewrap plates possible)
2. Fully enclosed E-Tube
3. No pin and bore connection
4. Can be shortened or lengthened due to modular design
5. Very large gliding surfaces
6. Interior stop dog
7. Small pitch for low-noise, smooth operation



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

6.56 ft (2 m) **R6-40-062-075-0**	**E-Chain®**
With 2 separators **R6-40-11** assembled every 2nd link	**Interior Separation**
1 Set **R6-400-062-12**	**Mounting Bracket**

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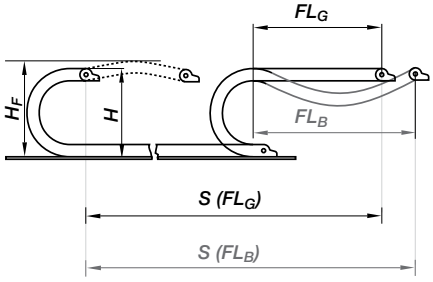
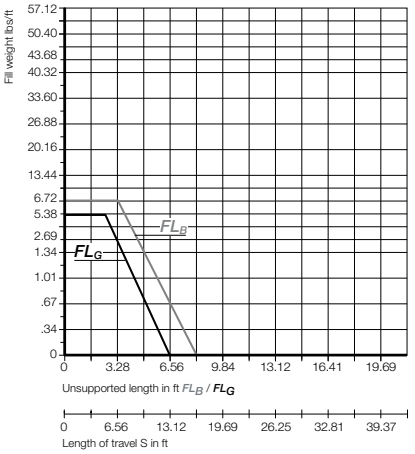
E-Chain System® E6
Series R6-40
Installation Dimensions

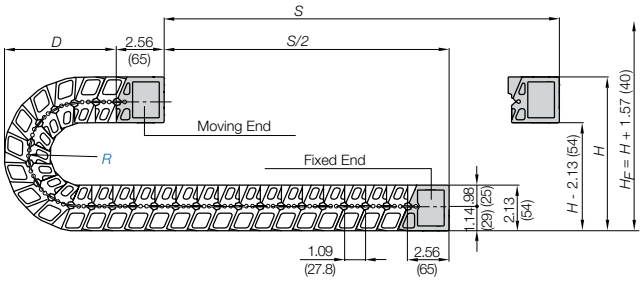
Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.09" (27.8 mm)
Links per ft (m): = 10.97 (36)
For center mount applications:
Chain length = $\frac{S}{2}$ + K

The required clearance height: ***H_F = H* + 1.57 in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)
H	8.82 (224)	9.76 (248)	11.73 (298)	13.71 (348)	15.67 (398)	19.61 (498)
D	5.28 (134)	5.75 (146)	6.73 (171)	7.72 (196)	8.70 (221)	10.67 (271)
K	10.04 (255)	11.61 (295)	13.50 (343)	16.65 (423)	20.87 (530)	26.97 (685)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Design, Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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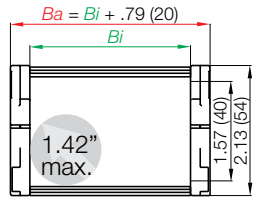
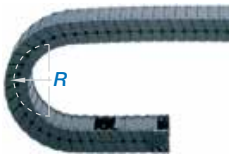
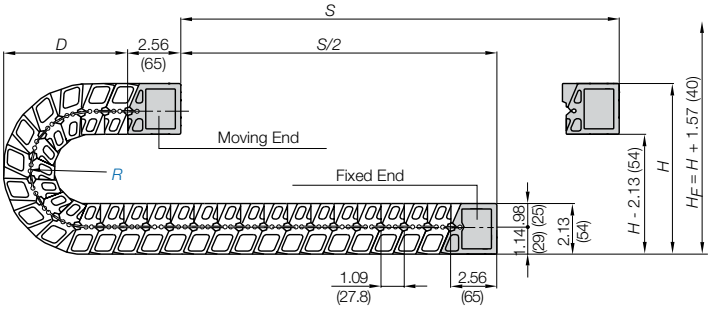
igus®

E-Chain System® E6
Series R6-40

Series R6-40 - E-Tube, removable lids along the inner and outer radius







Part Number Structure

R6-40- 062- 100- 0

- Color - Black
- Bending radius
- Width
- Series

Supplement part number with required radius. Example: R6-40-062- 100 -0
Pitch: 1.09 in. (27.8 mm) per link links/ft (m) = 10.97 (36)

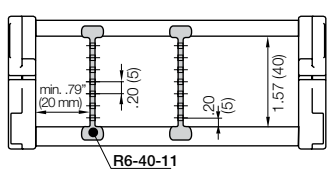
Part Number	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
R6-40-062- ☐ -0	2.44 (62)	3.23 (82)	≈ 1.07 (1.59)
R6-40-075- ☐ -0	2.95 (75)	3.74 (95)	≈ 1.11 (1.65)

Choose from the radii below for all of the above sizes
Radius (mm) Example: R6-40-062- 100 -0

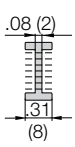
	063	075	100	125	150	200
R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)
H	8.82 (224)	9.76 (248)	11.73 (298)	13.71 (348)	15.67 (398)	19.61 (498)
D	5.28 (134)	5.75 (146)	6.73 (171)	7.72 (196)	8.70 (221)	10.67 (271)
K	10.04 (255)	11.61 (295)	13.50 (343)	16.65 (423)	20.87 (530)	26.97 (685)

Vertical separators

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Tube link.



Vertical separator R6-40-01



Vertical Separator	
Unassembled	**Part No. R6-40-01**
Assembled	**Part No. R6-40-11**

- **Vertical separator R6-40-01**
  This separator is used for general subdivision of E-Tubes.
- Separator snaps onto either the bottom of the carrier or the lid. Stays attached to that side. Opposite side can be removed.

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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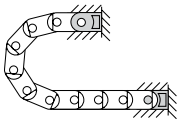
E-Chain System® E6
Series R6-40
Mounting Bracket - KMA / Strain Relief

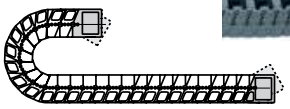
KMA - Pivoting

- Option - profile rail with integrated strain relief chainfix clip or tiewrap plates
- Profile rail can be mounted in the inner or outer radius of the E-Chain®
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides

Moving end
R6-400...2

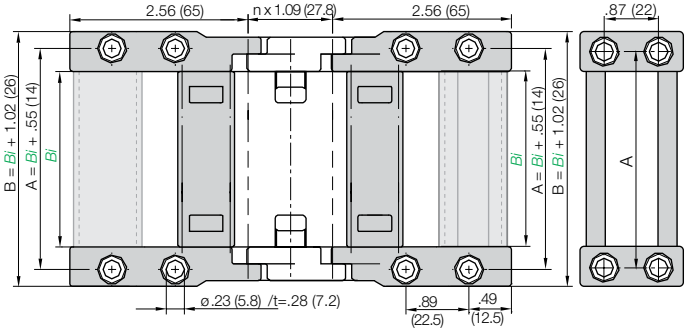


Possible installation configurations -



Fixed end
R6-400...1

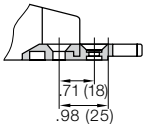
Adapters for gliding applications available upon request



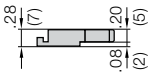
For Series	Part No. Full Set Without Profile Rail	Part No. Full Set With Profile Rail	Dimension A in.	(mm)	Dimension B in.	(mm)
R6-40-062	**R6-400-062-12**	**R6-400-062-12P**	2.99	(76)	3.46	(88)
R6-40-075	R6-400-075-12	R6-400-075-12P	3.50	(89)	3.98	(101)

Full set, for both ends:
R6-400- 062- 12 Full set, **both fixed and moving end**
Single-part order:
R6-400 - 062- 1 Mounting bracket **fixed end**
R6-400 - 062- 2 Mounting bracket **moving end**

Tiewrap Plates



Shown assembled

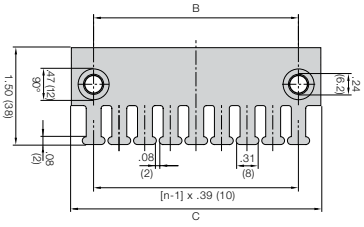


Single tiewrap plate

Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2120-ZB	12	4.72 (120)	3.94 (100)



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 2020-ZBKMA

Other strain relief elements
➤ **Strain Relief, Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E6-52

igus®

E-Chain System® E6
Series E6-52

2.05

Price Index

Series E6-52

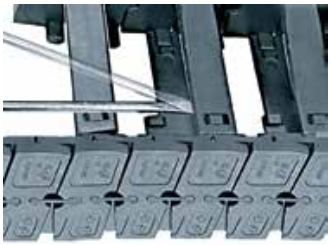
Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

Assembly Tips



To close, push and click shut

Other Installation Methods

Vertical, hanging ≤ 164 ft (50 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupp. = possible to a limited extent
Unsupported length of upper run upon request

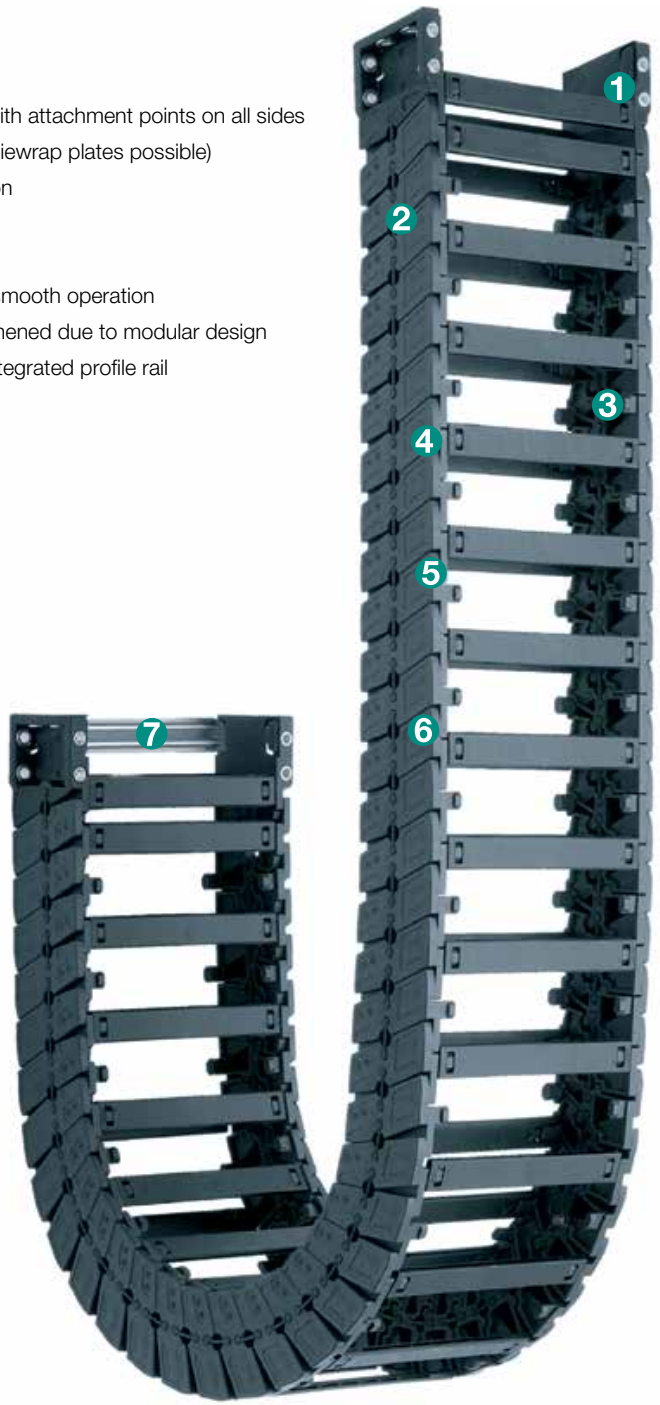
Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side mounted applications
  ➤ **Series 4040 E4/4**
- For RBR (Reverse Bending Radius)
  ➤ **Series 400 E4/4**
- For high additional loads
  ➤ **Series 4040 E4/100**
- For dirty environments
  ➤ **Series 4040 E4/4**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides (strain relief with separate tiewrap plates possible)
2. No pin and bore connection
3. Interior stop dog
4. Very large gliding surfaces
5. Small pitch for low-noise, smooth operation
6. Can be shortened or lengthened due to modular design
7. Available with or without integrated profile rail



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

6.56 ft (2 m) **E6-52-100-175-0**	**E-Chain®**
With 2 separators **38222** assembled every 2nd link	**Interior Separation**
1 Set **E6-520-100-12**	**Mounting Bracket**

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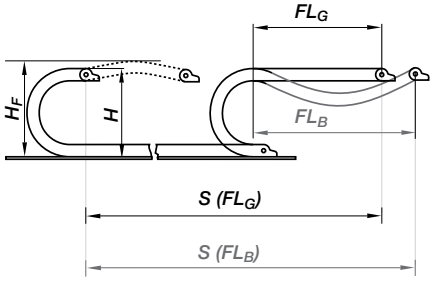
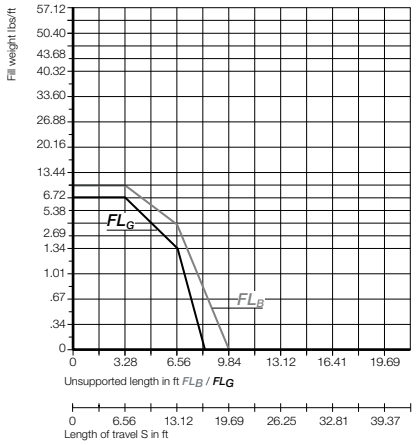
E-Chain System® E6
Series E6-52
Installation Dimensions

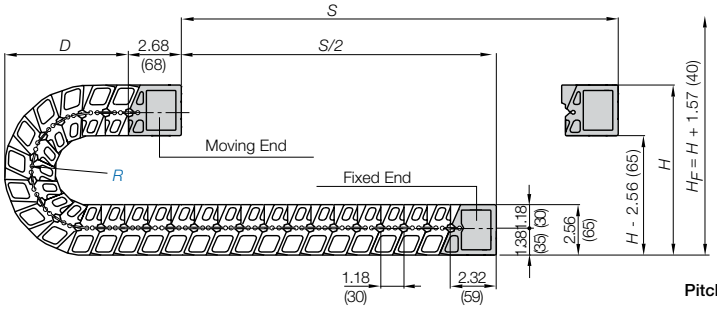
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: ***HF = H + 1.57 in. (40 mm)*** (with 1.34 lbs/ft (2.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	2.95 (075)	3.94 (100)	5.91 (150)	7.87 (200)	9.84 (250)
H	10.63 (270)	12.60 (320)	16.54 (420)	20.47 (520)	24.41 (620)
D	6.10 (155)	7.09 (180)	9.06 (230)	11.02 (280)	12.99 (330)
K	11.81 (300)	14.76 (375)	21.06 (535)	27.17 (690)	33.46 (850)

Pitch per link: = 1.18" (30 mm)
Links per ft (m): = 10.17 (34)
For center mount applications:
Chain length = $^{S}/_{2} + K$

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + safety buffer
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Technical Data

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

Details of material properties
➤ Design, Chapter 1

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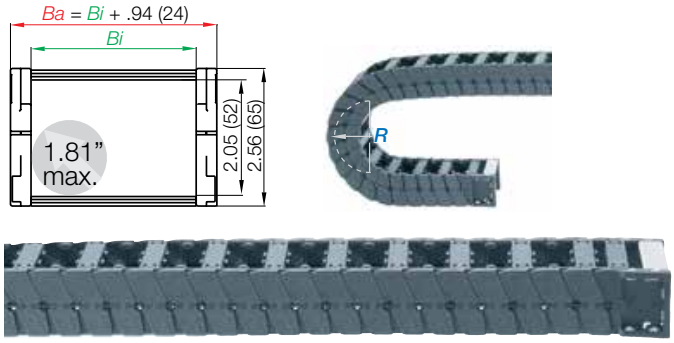
igus®

E-Chain System® E6
Series E6-52

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Series E6-52 - E-Chain® with crossbars every other link

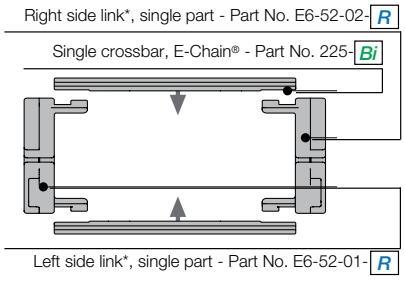


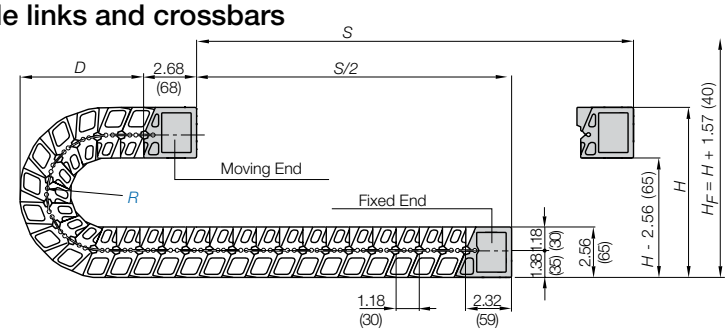
Part Number Structure

E6-52-100-075-0

- Color - Black
- Bending radius
- Width
- Series

E-Chain® as separate parts, side links and crossbars





Polymer spring as single part - Part No. E6-52-195

*View from the fixed point of the E-Chain®/E-Tube

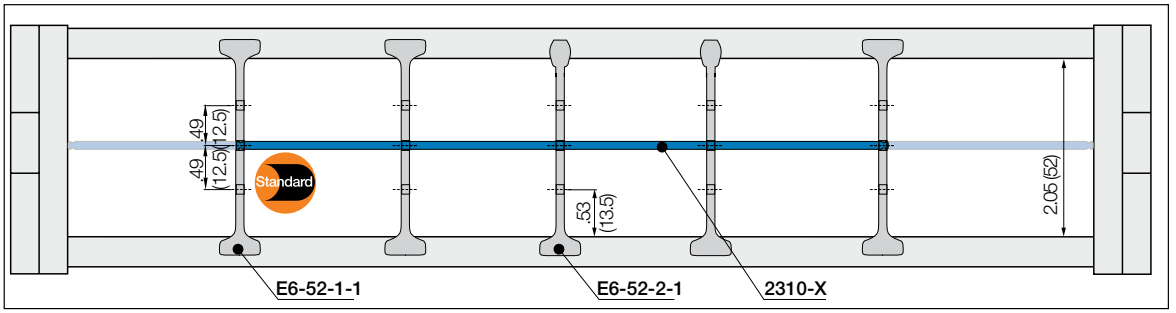
Supplement part number with required radius. Example: E6-52-100-075-0
Pitch: 1.18 in. (30 mm) per link links/ft (m) = 10.36 (34)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E6-52-040-□-0	1.57 (40)	2.51 (64)	≈1.18 (1.76)
E6-52-050-□-0	1.97 (50)	2.91 (74)	≈1.21 (1.80)
E6-52-052-□-0	2.05 (52)	2.60 (66)	≈1.22 (1.81)
E6-52-062-□-0	2.44 (62)	3.39 (86)	≈1.24 (1.84)
E6-52-070-□-0	2.76 (70)	3.70 (94)	≈1.26 (1.87)
E6-52-075-□-0	2.95 (75)	3.90 (99)	≈1.27 (1.89)
E6-52-087-□-0	3.42 (87)	4.37 (111)	≈1.30 (1.94)
E6-52-100-□-0	3.94 (100)	4.88 (124)	≈1.33 (1.98)
E6-52-125-□-0	4.92 (125)	5.87 (149)	≈1.39 (2.07)
E6-52-150-□-0	5.91 (150)	6.85 (174)	≈1.46 (2.17)
E6-52-175-□-0	6.89 (175)	7.83 (199)	≈1.52 (2.26)
E6-52-200-□-0	7.87 (200)	8.82 (224)	≈1.59 (2.36)
E6-52-225-□-0	8.86 (225)	9.80 (249)	≈1.65 (2.45)
E6-52-250-□-0	9.84 (250)	10.79 (274)	≈1.71 (2.54)
E6-52-275-□-0	10.83 (275)	11.77 (299)	≈1.77 (2.64)
E6-52-300-□-0	11.81 (300)	12.76 (324)	≈1.83 (2.73)

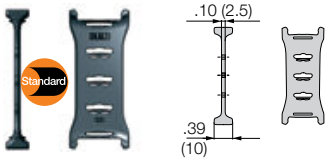
Choose from the radii below for all of the above sizes
Radius (mm)Example: E6-52-100-075-0

	075	100	150	200	250
R	2.95 (075)	3.94 (100)	5.91 (150)	7.87 (200)	9.84 (250)
H	10.63 (270)	12.60 (320)	16.54 (420)	20.47 (520)	24.41 (620)
D	6.10 (155)	7.09 (180)	9.06 (230)	11.02 (280)	12.99 (330)
K	11.81 (300)	14.76 (375)	21.06 (535)	27.17 (690)	33.46 (850)

E-Chain System® E6
Series E6-52
Interior Separation - New Generation



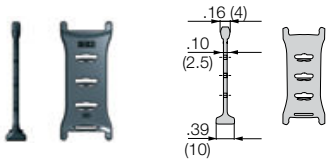
No lateral spacing between the separators and the side links is necessary.
In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. E6-52-1**
Assembled	**Part No. E6-52-1-1**

- **Standard separator E6-52-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.

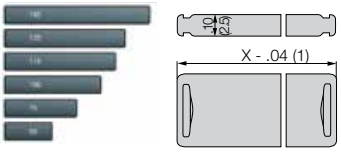


Separator, narrow head

Unassembled	**Part No. E6-52-2**
Assembled	**Part No. E6-52-2-1**

- **Separator E6-52-2 For even faster installation**
  Firmly holds to one side with a wide base, narrow on opposite side for easy cable assembly (slight grip).

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally. Can be arranged at three different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
0.59 (015)	**2300-15**	**2310-15**	2.36 (060)	**2300-60**	**2310-60**	3.43 (087)	**2300-87**	**2310-87**
0.98 (025)	**2300-25**	**2310-25**	2.44 (062)	**2300-62**	**2310-62**	3.54 (090)	**2300-90**	**2310-90**
1.18 (030)	**2300-30**	**2310-30**	2.56 (065)	**2300-65**	**2310-65**	3.94 (100)	**2300-100**	**2310-100**
1.50 (038)	**2300-38**	**2310-38**	2.76 (070)	**2300-70**	**2310-70**	4.06 (103)	**2300-103**	**2310-103**
1.57 (040)	**2300-40**	**2310-40**	2.95 (075)	**2300-75**	**2310-75**	4.33 (110)	**2300-110**	**2310-110**
1.97 (050)	**2300-50**	**2310-50**	3.03 (077)	**2300-77**	**2310-77**	4.72 (120)	**2300-120**	**2310-120**
2.24 (057)	**2300-57**	**2310-57**	3.15 (080)	**2300-80**	**2310-80**	4.92 (125)	**2300-125**	**2310-125**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E6
Series E6-52
Interior Separation Previous Generation

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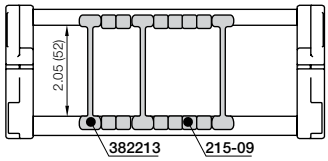
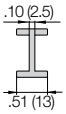
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.



- **Vertical separator**
  This separator is used for general subdivision of E-Chains®.



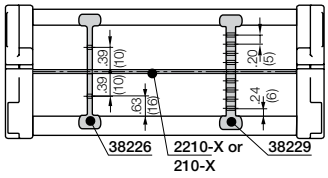
Vertical Separator	
Unassembled	**Part No. 382212**
Assembled	**Part No. 382213**

- **Spacer**
  Used when a broad distance needs to be maintained between the separators. Generally used in side-mounted applications

Spacer	
Unassembled	**Part No. 205-09**
Assembled	**Part No. 215-09**

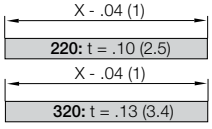
Full-width shelf

For applications involving many thin cables with similar or identical diameters. Slotted separator **38226** and **38229** can be used in combination with full-width shelf **321-X**. Locking vertical separator **382215** can also be used with full-width shelf **221-X**.

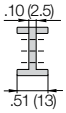


Width X in. (mm)	Part No. Unassembled 220-X	320-X	Part No. Assembled 221-X	321-X
1.57 (040)	220-40	320-40	221-40	321-40
1.97 (050)	220-50	320-50	221-50	321-50
2.44 (062)	220-62	320-62	221-62	321-62
2.76 (070)	220-70	320-70	221-70	321-70
2.95 (075)	220-75	320-75	221-75	321-75
3.43 (087)	220-87	320-87	221-87	321-87
3.94 (100)	220-100	320-100	221-100	321-100
4.92 (125)	220-125	320-125	221-125	321-125
5.91 (150)	220-150	320-150	221-150	321-150
6.89 (175)	220-175	320-175	221-175	321-175
7.87 (200)	220-200	320-200	221-200	321-200

Shelves 220-X/320-XX
Shelves can be inserted at 9 different heights in .20" (5mm) increments

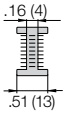


- **Vertical separator, slotted**
  This separator is used for general sub-division of E-Chains®. Can be used in combination with full-width shelf 321-X.



Vertical Separator, slotted	
Unassembled	**Part No. 38225**
Assembled	**Part No. 38226**

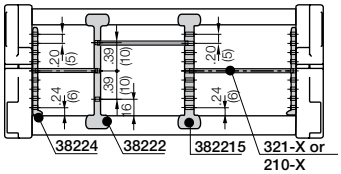
- **Locking vertical separator**
  This separator is used for general subdivision of E-Chains®.



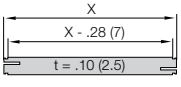
Locking Vertical Separator	
Unassembled	**Part No. 38228**
Assembled	**Part No. 38229**

Shelves

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 9 different heights in .20" (5mm) increments



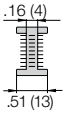
Shelves 2200-XX
Shelf 2210-X can be used with **vertical separator 38222, locking separator 382215** and **side plate 38224.**
Locking vertical separator **382215** can also be used with full-width shelf **221-X.**



Width X in. (mm)	Part No. Unassembled	Part No. Assembled
.71 (18)	2200-18	2210-18
.91 (23)	2200-23	2210-23
1.10 (28)	2200-28	2210-28
1.30 (33)	2200-33	2210-33
1.50 (38)	2200-38	2210-38
1.69 (43)	2200-43	2210-43
1.89 (48)	2200-48	2210-48

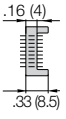
Width X in. (mm)	Part No. Unassembled	Part No. Assembled
2.28 (58)	2200-58	2210-58
2.28 (63)	2200-65	2210-65
2.68 (68)	2200-68	2210-68
2.87 (73)	2200-73	2210-73
3.46 (88)	2200-88	2210-88
3.90 (99)	2200-99	2210-99

- **Locking vertical separator**
  This separator is used when higher retention force is needed.



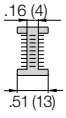
Locking Vertical Separator	
Unassembled	**Part No. 382214**
Assembled	**Part No. 382215**

- **Side plate**
  This separator is used for general subdivision of E-Chains®.



Side Plate	
Unassembled	**Part No. 38223**
Assembled	**Part No. 38224**

- **Vertical separator, slotted**
  Can be used in combination with full-width shelf 321-X.



Vertical Separator, Slotted	
Unassembled	**Part No. 38221**
Assembled	**Part No. 38222**

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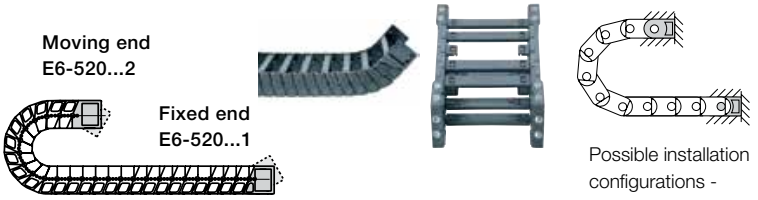
E-Chain System® E6
Series E6-52
Mounting Brackets - KMA / Strain Relief

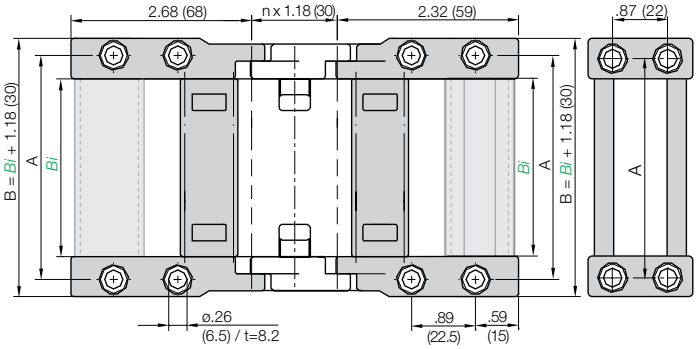
Option 1: KMA - Pivoting

- Option - profile rail with integrated strain relief chainfix clip or tiewrap plates
- Profile rail can be mounted in the inner or outer radius of the E-Chain®
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides

Adapters for gliding applications available upon request

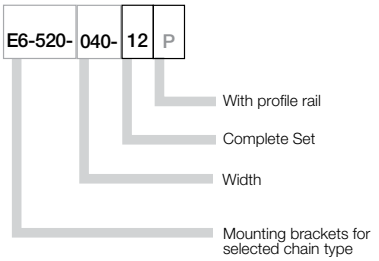


Possible installation configurations -



For Series	Part No. Full Set Without Profile Rail	Part No. Full Set With Profile Rail	Dimension A in.	Dimension A (mm)	Dimension B in.	Dimension B (mm)
E6-52-040	**E6-520-040-12**	**E6-520-040-12P**	2.20	(56)	2.76	(70)
E6-52-050	**E6-520-050-12**	**E6-520-050-12P**	2.60	(66)	3.15	(80)
E6-52-052	**E6-520-052-12**	**E6-520-052-12P**	2.68	(68)	3.23	(82)
E6-52-062	**E6-520-062-12**	**E6-520-062-12P**	3.07	(78)	3.62	(92)
E6-52-070	**E6-520-070-12**	**E6-520-070-12P**	3.39	(86)	3.94	(100)
E6-52-075	**E6-520-075-12**	**E6-520-075-12P**	3.58	(91)	4.13	(105)
E6-52-087	**E6-520-087-12**	**E6-520-087-12P**	4.06	(103)	4.61	(117)
E6-52-100	**E6-520-100-12**	**E6-520-100-12P**	4.57	(116)	5.12	(130)
E6-52-125	**E6-520-125-12**	**E6-520-125-12P**	5.55	(141)	6.10	(155)
E6-52-150	**E6-520-150-12**	**E6-520-150-12P**	6.54	(166)	7.09	(180)
E6-52-175	**E6-520-175-12**	**E6-520-175-12P**	7.52	(191)	8.07	(205)
E6-52-200	**E6-520-200-12**	**E6-520-200-12P**	8.50	(216)	9.06	(230)
E6-52-225	**E6-520-225-12**	**E6-520-225-12P**	9.49	(241)	10.04	(255)
E6-52-250	**E6-520-250-12**	**E6-520-250-12P**	10.47	(266)	11.02	(280)
E6-52-275	**E6-520-275-12**	**E6-520-275-12P**	11.46	(291)	11.81	(300)
E6-52-300	**E6-520-300-12**	**E6-520-300-12P**	12.44	(316)	12.99	(330)

Part Number Structure

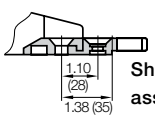


Full set, for both ends:
E6-520- 040- 12 Full set, **both fixed and moving end**

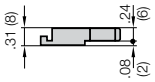
Single-part order:
E6-520 - 040- 1
Mounting bracket **fixed end**

E6-520 - 040- 2
Mounting bracket **moving end**

Tiewrap Plates



Shown assembled

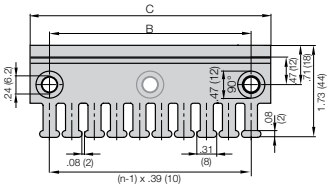


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 3050-ZBKMA

Other strain relief elements
➤ **Strain Relief, Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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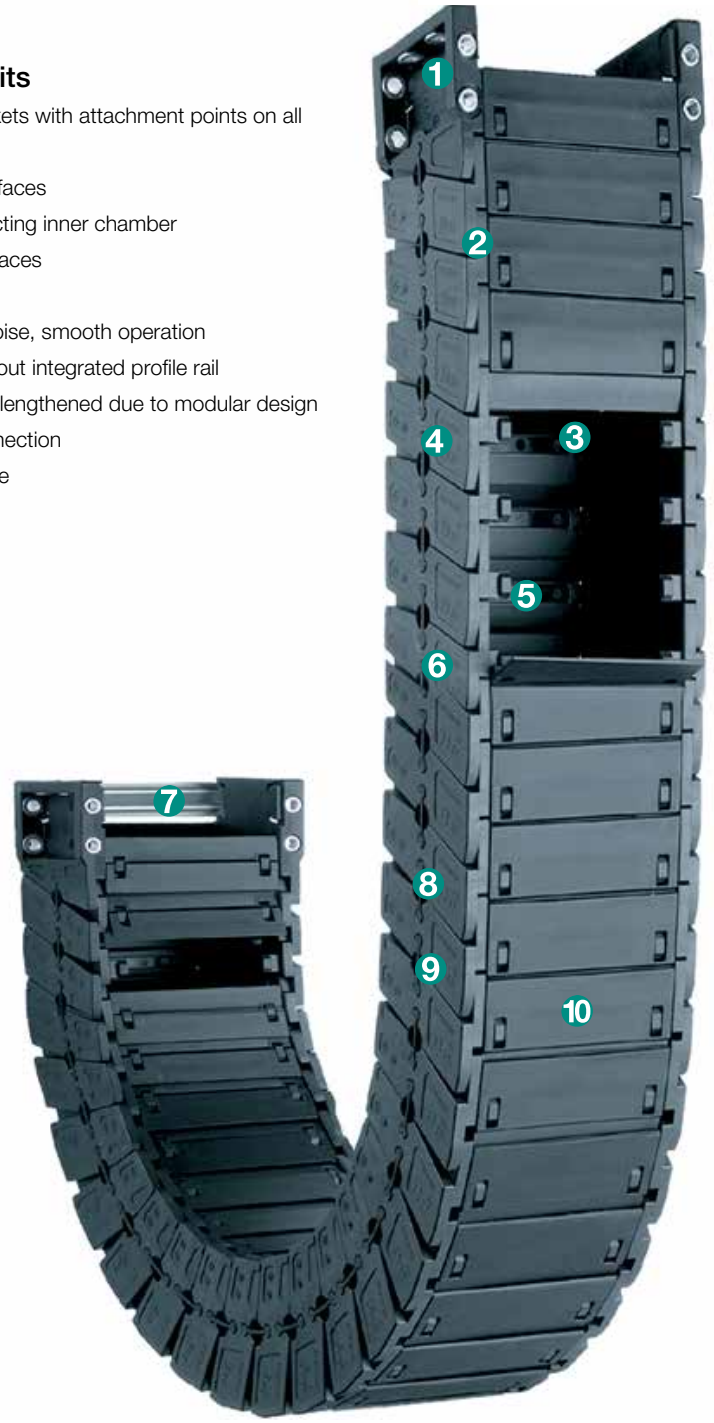
R6-52

igus®

E-Chain System® E6
Series R6-52

2.05



Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Very large gliding surfaces
3. Smooth, cable protecting inner chamber
4. Continuous glide surfaces
5. Interior stop dog
6. Small pitch for low-noise, smooth operation
7. Available with or without integrated profile rail
8. Can be shortened or lengthened due to modular design
9. No pin and bore connection
10. Fully enclosed E-Tube

Price Index

●●●
Series R6-52

Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

Assembly Tips

Lever and remove lids

Other Installation Methods

Vertical, hanging ≤ 164 ft (50 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupp. = possible to a limited extent
Unsupported length of upper run upon request

Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- Protection against dirt and chips
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side mounted applications
  ➤ **Series R6-52**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

6.56 ft (2 m) **R6-52-100-075-0**	**E-Chain®**
With 2 separators **R6-52-11** assembled every 2nd link	**Interior Separation**
1 Set **R6-520-100-12**	**Mounting Bracket**

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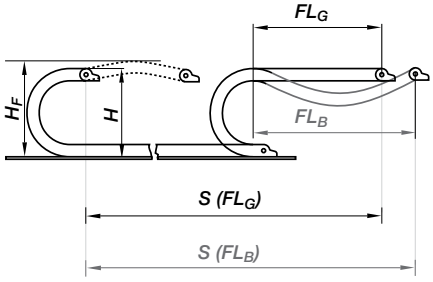
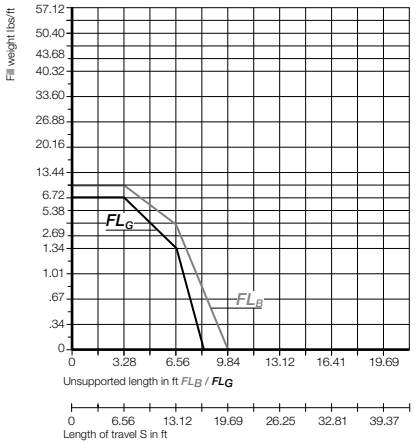
E-Chain System® E6
Series R6-52
Installation Dimensions

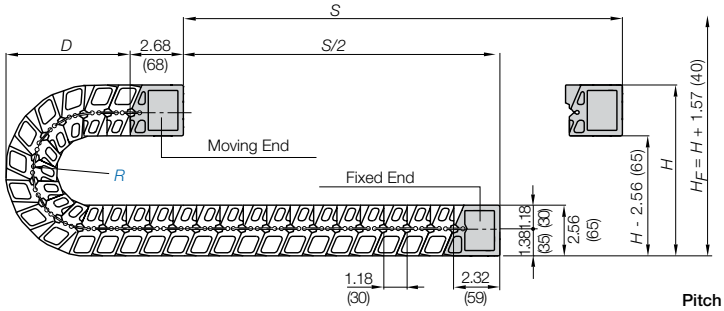
Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: $H_F = H + 1.57$ in. (40 mm) (with 1.34 lbs/ft (2.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	2.95 (075)	3.94 (100)	5.91 (150)	7.87 (200)	9.84 (250)
H	10.63 (270)	12.60 (320)	16.54 (420)	20.47 (520)	24.41 (620)
D	6.10 (155)	7.09 (180)	9.06 (230)	11.02 (280)	12.99 (330)
K	11.81 (300)	14.76 (375)	21.06 (535)	27.17 (690)	33.46 (850)

Pitch per link: = 1.18" (30 mm)
Links per ft (m): = 10.17 (34)
For center mount applications:
Chain length = $\frac{S}{2} + K$

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Design, Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E6
Series R6-52

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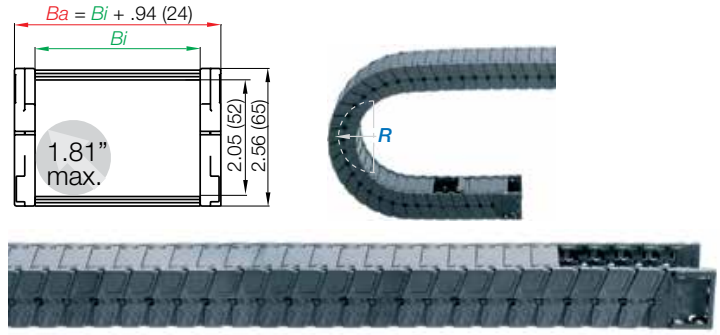
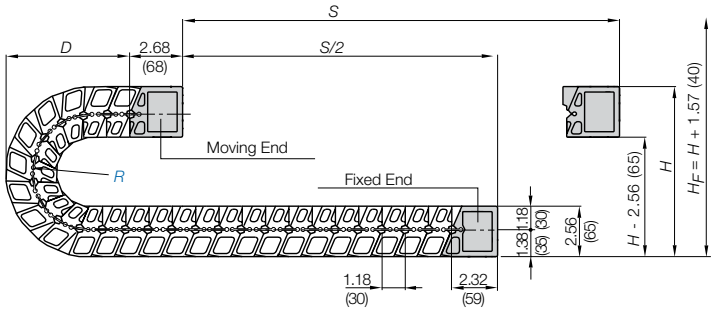
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Series R6-52 - E-Chain® with lids



Part Number Structure

R6-52-100-075-0
- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: R6-52-100-075-0
Pitch: 1.18 in. (30 mm) per link links/ft (m) = 10.36 (34)

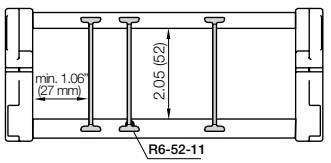
Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
R6-52-050-☐-0	1.97 (50)	2.91 (74)	≈1.27 (1.89)
R6-52-075-☐-0	2.95 (75)	3.90 (99)	≈1.42 (2.12)
R6-52-100-☐-0	3.94 (100)	4.88 (124)	≈1.58 (2.35)
R6-52-125-☐-0	4.92 (125)	5.87 (149)	≈1.73 (2.57)
R6-52-150-☐-0	5.91 (150)	6.85 (174)	≈1.88 (2.80)
R6-52-175-☐-0	6.89 (175)	7.83 (199)	≈2.04 (3.03)

Choose from the radii below for all of the above sizes
Radius (mm) Example: R6-52-100-075-0

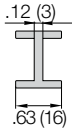
	075	100	150	200	250
R	2.95 (075)	3.94 (100)	5.91 (150)	7.87 (200)	9.84 (250)
H	10.63 (270)	12.60 (320)	16.54 (420)	20.47 (520)	24.41 (620)
D	6.10 (155)	7.09 (180)	9.06 (230)	11.02 (280)	12.99 (330)
K	11.81 (300)	14.76 (375)	21.06 (535)	27.17 (690)	33.46 (850)

Option 1: Vertical separators

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.



Vertical separator R6-52-01



Vertical Separator

Unassembled	Part No. R6-52-01
Assembled	Part No. R6-52-11

- **Vertical separator R6-52-01**
  This separator is used for general subdivision of E-Tubes.
- Separator snaps onto either the bottom of the carrier or the lid. Stays attached to that side. Opposite side can be removed.

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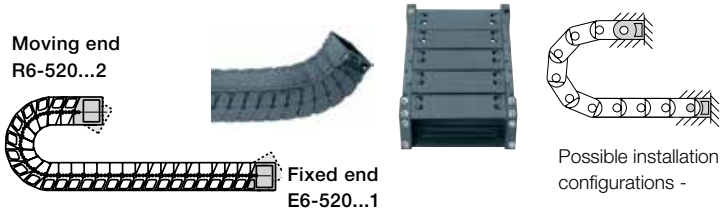
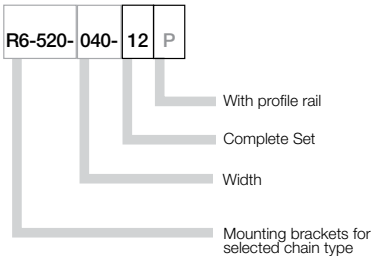
E-Chain System® E6
Series R6-52
Mounting Bracket

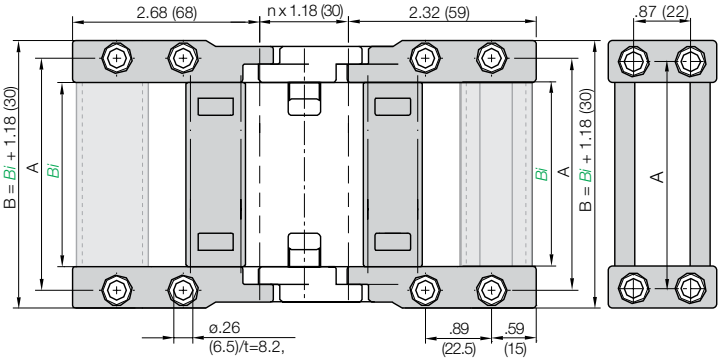
Option 1: KMA - Pivoting

- Option - profile rail with integrated strain relief chainfix clip or tiewrap plates
- Profile rail can be mounted in the inner or outer radius of the E-Chain®
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides



Part Number Structure

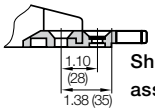




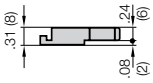
For Series	Part No. Full Set Without Profile Rail	Part No. Full Set With Profile Rail	Dimension A in.	(mm)	Dimension B in.	(mm)
R6-52-050	**R6-520-050-12**	**R6-520-050-12P**	2.60	(66)	3.15	(80)
R6-52-075	**R6-520-075-12**	**R6-520-075-12P**	3.58	(91)	4.13	(105)
R6-52-100	**R6-520-100-12**	**R6-520-100-12P**	4.57	(116)	5.12	(130)
R6-52-125	**R6-520-125-12**	**R6-520-125-12P**	5.55	(141)	6.10	(155)
R6-52-150	**R6-520-150-12**	**R6-520-150-12P**	6.54	(166)	7.09	(180)
R6-52-175	**R6-520-175-12**	**R6-520-175-12P**	7.52	(191)	8.07	(205)

Full set, for both ends:
R6-520- 040- 12 Full set, **both fixed and moving end**
Single-part order:
R6-520 - 040- 1
Mounting bracket **fixed end**
R6-520 - 040- 2
Mounting bracket **moving end**

Tiewrap Plates



Shown assembled

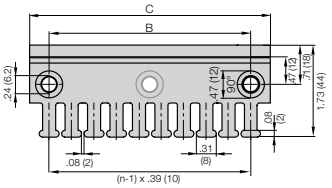


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 3050-ZBKMA

Other strain relief elements
➤ **Strain Relief, Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E6-62

igus®

E-Chain System® E6
Series E6-62

2.44

Price Index

Series E6-62

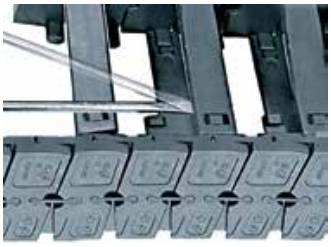
Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

Assembly Tips



To close, push and click shut

Other Installation Methods

Vertical, hanging ≤ 196.8 ft (60 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. = possible to a limited extent
Unsupported length of upper run upon request

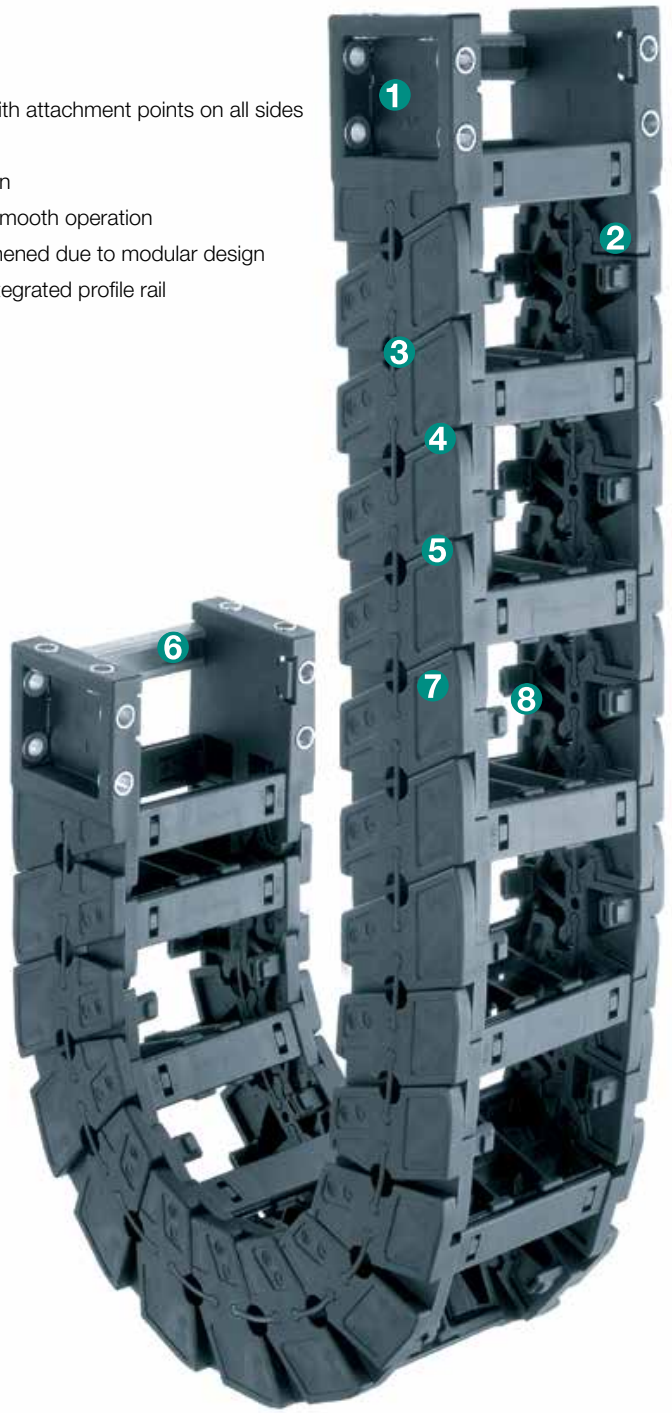
Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side mounted applications
  ➤ **Series 4040 E4/4**
- For RBR (Reverse Bending Radius)
  ➤ **Series 400 E4/100**
- For high additional loads
  ➤ **Series 4040 E4/4**
- For dirty environments
  ➤ **Series 4040 E4/4**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Interior stop dog
3. No pin and bore connection
4. Small pitch for low-noise, smooth operation
5. Can be shortened or lengthened due to modular design
6. Available with or without integrated profile rail
7. Very large gliding surfaces
8. Increased inner height



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

6.56 ft (2 m) **E6-62-10-200-0**	**E-Chain®**
With 2 separators **E6-62-11** assembled every 2nd link	**Interior Separation**
1 Set **E6-620-10-12P**	**Mounting Bracket**

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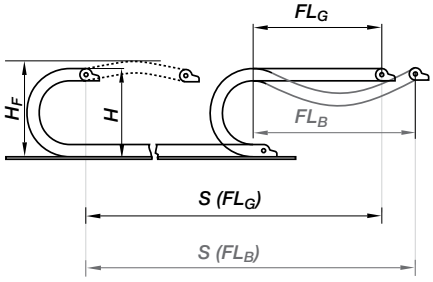
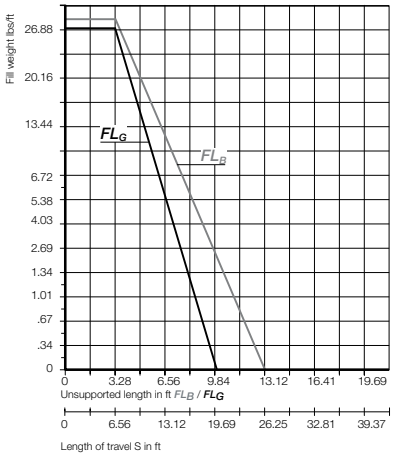
E-Chain System® E6
Series E6-62
Installation Dimensions

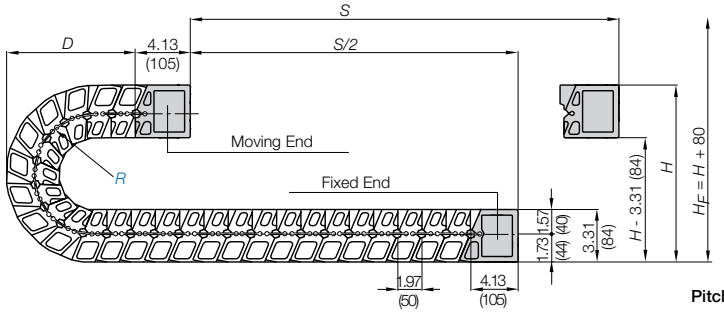
Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: H_F = H + 3.15 in. (80 mm) (with 1.34 lbs/ft (2.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	4.53 (115)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H	15.28 (388)	18.03 (458)	21.97 (558)	25.91 (658)	29.84 (758)	33.78 (858)
D	9.21 (234)	10.59 (269)	12.56 (319)	14.53 (369)	16.50 (419)	18.46 (469)
K	18.31 (465)	22.64 (575)	28.74 (730)	35.04 (890)	41.14 (1045)	47.24 (1200)

Pitch per link: = 1.97" (50 mm)
Links per ft (m): = 6.1 (20)
For center mount applications:
Chain length = $_{S}/_{2}$ + K

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Design, Chapter 1

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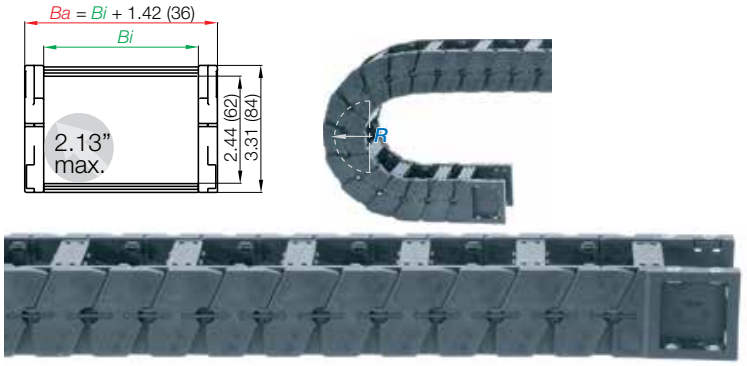
igus®

E-Chain System® E6
Series E6-62

Telephone 1-800-521-2747
Fax 1-401-438-7270

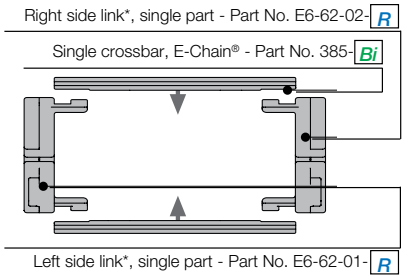
Series E6-62 - E-Chain® with crossbars every other link

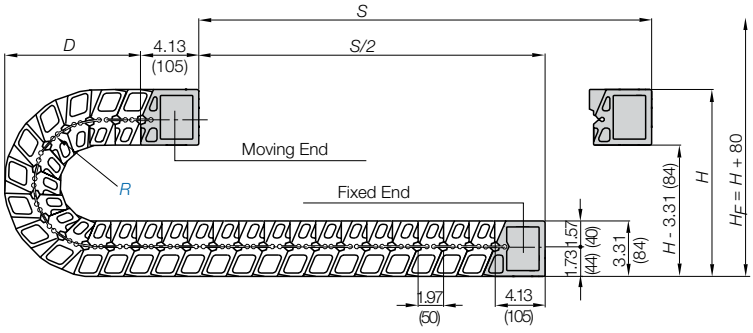


Part Number Structure

E6-62-	10-	200-	0
			Color - Black
		Bending radius	
	Width		
Series			

E-Chain® as separate parts, links and side plates





*View from the fixed point of the E-Chain®/E-Tube

Polymer spring as single part - Part No. E6-62-340

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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E-Chain System® E6
Series E6-62

Supplement part number with required radius. Example: E6-62-10-[200]-0
Pitch: 1.97 in. (50 mm) per link links/ft (m) = 6.1 (20)

Part Number	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
E6-62-05-[ ]-0	1.97 (50)	3.39 (86)	≈ 2.16 (3.22)
E6-62-06-[ ]-0	2.67 (68)	4.09 (104)	≈ 2.20 (3.28)
E6-62-07-[ ]-0	2.95 (75)	4.37 (111)	≈ 2.22 (3.31)
E6-62-087-[ ]-0	3.43 (87)	4.84 (123)	≈ 2.25 (3.35)
E6-62-097-[ ]-0	3.82 (97)	5.24 (133)	≈ 2.27 (3.38)
E6-62-10-[ ]-0	3.94 (100)	5.35 (136)	≈ 2.28 (3.39)
E6-62-11-[ ]-0	4.25 (108)	5.67 (144)	≈ 2.30 (3.42)
E6-62-112-[ ]-0	4.41 (112)	5.83 (148)	≈ 2.30 (3.43)
E6-62-12-[ ]-0	4.92 (125)	6.34 (161)	≈ 2.34 (3.48)
E6-62-137-[ ]-0	5.39 (137)	6.81 (173)	≈ 2.37 (3.52)
E6-62-15-[ ]-0	5.91 (150)	7.32 (186)	≈ 2.40 (3.57)
E6-62-162-[ ]-0	6.38 (162)	7.80 (198)	≈ 2.43 (3.61)
E6-62-17-[ ]-0	6.61 (168)	8.03 (204)	≈ 2.44 (3.63)
E6-62-18-[ ]-0	6.89 (175)	8.31 (211)	≈ 2.45 (3.65)
E6-62-187-[ ]-0	7.36 (187)	8.78 (223)	≈ 2.48 (3.69)
E6-62-20-[ ]-0	7.87 (200)	9.29 (236)	≈ 2.51 (3.74)
E6-62-212-[ ]-0	8.35 (212)	9.76 (248)	≈ 2.54 (3.78)
E6-62-23-[ ]-0	8.86 (225)	10.28 (261)	≈ 2.57 (3.83)
E6-62-237-[ ]-0	9.33 (237)	10.75 (273)	≈ 2.60 (3.87)
E6-62-25-[ ]-0	9.84 (250)	11.26 (286)	≈ 2.63 (3.91)
E6-62-262-[ ]-0	10.31 (262)	11.73 (298)	≈ 2.65 (3.95)
E6-62-28-[ ]-0	10.83 (275)	12.24 (311)	≈ 2.69 (4.00)
E6-62-29-[ ]-0	11.30 (287)	12.72 (323)	≈ 2.71 (4.04)
E6-62-30-[ ]-0	11.81 (300)	13.23 (336)	≈ 2.75 (4.09)
E6-62-312-[ ]-0	12.28 (312)	13.70 (348)	≈ 2.78 (4.13)
E6-62-325-[ ]-0	12.80 (325)	14.21 (361)	≈ 2.80 (4.17)
E6-62-337-[ ]-0	13.27 (337)	14.69 (373)	≈ 2.83 (4.21)
E6-62-350-[ ]-0	13.78 (350)	15.20 (386)	≈ 2.86 (4.26)
E6-62-362-[ ]-0	14.25 (362)	15.67 (398)	≈ 2.89 (4.30)
E6-62-375-[ ]-0	14.76 (375)	16.18 (411)	≈ 2.92 (4.35)
E6-62-387-[ ]-0	15.24 (387)	16.65 (423)	≈ 2.95 (4.39)
E6-62-400-[ ]-0	15.75 (400)	17.16 (436)	≈ 2.98 (4.43)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E6-62-10-[200]-0

	[115]	[150]	[200]	[250]	[300]	[350]
R	4.53 (115)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H	15.28 (388)	18.03 (458)	21.97 (558)	25.91 (658)	29.84 (758)	33.78 (858)
D	9.21 (234)	10.59 (269)	12.56 (319)	14.53 (369)	16.50 (419)	18.46 (469)
K	18.31 (465)	22.64 (575)	28.74 (730)	35.04 (890)	41.14 (1045)	47.24 (1200)

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igus®

E-Chain System® E6
Series E6-62
Interior Separation - New Generation

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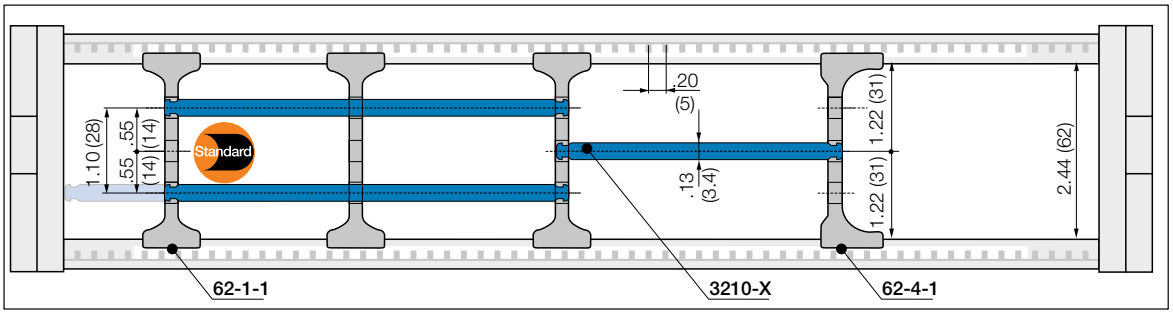
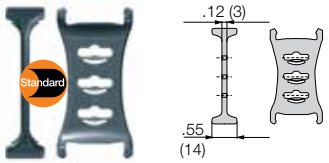
Fax 1-401-438-7270



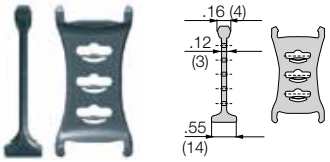
No lateral spacing between the separators and the side links is necessary.
In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 62-1**
Assembled	**Part No. 62-1-1**

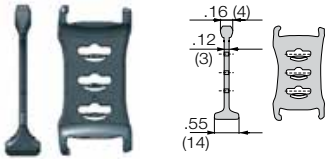
- **Standard separator 62-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator for QuickLock crossbar

Unassembled	**Part No. 62-2**
Assembled	**Part No. 62-2-1**

- **Separator 62-2**
  For even faster installation
  Separator for QuickLock crossbar 385-X-Q. Firmly holds to one side with a wide base, narrow on opposite side for easy cable assembly (slight grip).

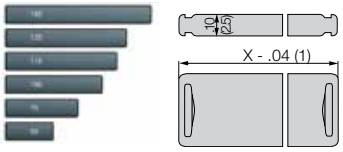


Notch separator for Notch crossbar

Unassembled	**Part No. 62-5**
Assembled	**Part No. 62-5-1**

- **Separator 62-5**
  Locks safely in .20" (5mm) increments
  Notch separator for exact positioning in E-Chains®. Recommended for side mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally. Can be arranged at three different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	5.91 (150)	**3200-150**	**3210-150**
2.95 (075)	**3200-75**	**3210-75**	6.89 (175)	**3200-175**	**3210-175**
3.94 (100)	**3200-100**	**3210-100**	7.87 (200)	**3200-200**	**3210-200**
4.53 (115)	**3200-115**	**3210-115**	8.86 (225)	**3200-225**	**3210-225**
4.92 (125)	**3200-125**	**3210-125**	9.84 (250)	**3200-250**	**3210-250**

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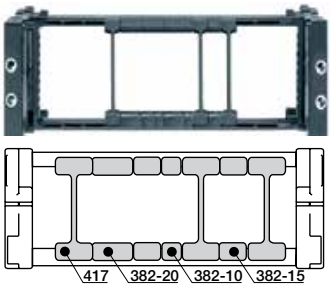
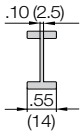
E-Chain System® E6
Series E6-62
Interior Separation - Previous Generation

Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.



- **Vertical separator**
  This separator is used for general subdivision of E-Chains®.



Vertical Separator	
Unassembled	**Part No. 407**
Assembled	**Part No. 417**

Spacer*

*For side-mounted applications

Unassembled	**Part No. 381-XX**
Assembled	**Part No. 382-XX**

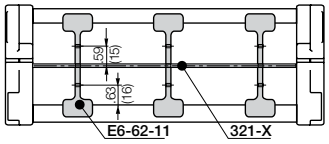
XX = width of the spacer

Spacers available in the following sizes:

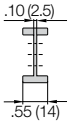
Part No. Unassembled	Part No. Assembled	in.	(mm)
381 -10	**382 -10**	.39”	(10)
381 -15	**382 -15**	.59”	(15)
381 -20	**382 -20**	.79”	(20)

Option 2: Full-width shelf

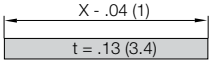
For applications involving many thin cables with similar or identical diameters. Vertical separator **E6-62-11** can be used in combination with full-width shelf **321-X**.



- **Vertical separator, slotted**
  This separator is used for general sub-division of E-Chains®.



Vertical Separator	
Unassembled	**Part No. E6-62-01**
Assembled	**Part No. E6-62-11**

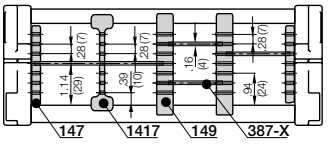


Width X in.	(mm)	Part No. Unassem.	Part No. Assem.
1.97	(050)	**320-50**	**321-50**
2.68	(068)	**320-68**	**321-68**
2.95	(075)	**320-75**	**321-75**
3.43	(087)	**320-87**	**321-87**
3.94	(100)	**320-100**	**321-100**
4.25	(108)	**320-108**	**321-108**
4.41	(112)	**320-112**	**321-112**
4.92	(125)	**320-125**	**321-125**
5.39	(137)	**320-137**	**321-137**
5.91	(150)	**320-150**	**321-150**

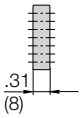
Width X in.	(mm)	Part No. Unassem.	Part No. Assem.
6.38	(162)	**320-162**	**321-162**
6.61	(168)	**320-168**	**321-168**
2.95	(175)	**320-175**	**321-175**
7.36	(187)	**320-187**	**321-187**
7.87	(200)	**320-200**	**321-200**
8.35	(212)	**320-212**	**321-212**
8.86	(225)	**320-225**	**321-225**
9.33	(237)	**320-237**	**321-237**
9.84	(250)	**320-250**	**321-250**

Option 3: Shelves

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28” (7mm) increments



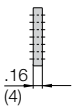
- **Vertical separator**
  This separator is used when higher retention force is needed.



Vertical Separator	
Unassembled	**Part No. 148**
Assembled	**Part No. 149**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	**386-18**	**387-18**
.91	(23)	**386-23**	**387-23**
.98	(25)	**386-25**	**387-25**
1.10	(28)	**386-28**	**387-28**
1.30	(33)	**386-33**	**387-33**
1.69	(43)	**386-43**	**387-43**
1.97	(50)	**386-50**	**387-50**
2.13	(54)	**386-54**	**387-54**
2.44	(62)	**386-62**	**387-62**

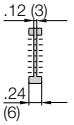
- **Side plate**
  This separator is used for general subdivision of E-Chains®.



Side Plate	
Unassembled	**Part No. 146**
Assembled	**Part No. 147**

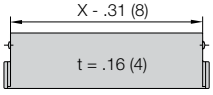
Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
2.95	(75)	**386-75**	**387-75**
3.43	(87)	**386-87**	**387-87**
3.94	(100)	**386-100**	**387-100**
4.25	(108)	**386-108**	**387-108**
4.92	(125)	**386-125**	**387-125**
5.91	(150)	**386-150**	**387-150**
6.89	(175)	**386-175**	**387-175**
7.87	(200)	**386-200**	**387-200**
8.19	(208)	**386-208**	**387-208**

- **Vertical separator , slotted**
  This separator is used for general subdivision of E-Chains®.



Vertical Separator, Slotted	
Unassembled	**Part No. 1407**
Assembled	**Part No. 1417**

Shelves 387-XX
Shelf 387-XX can be used with **vertical separator 149** and **side plate 147**



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

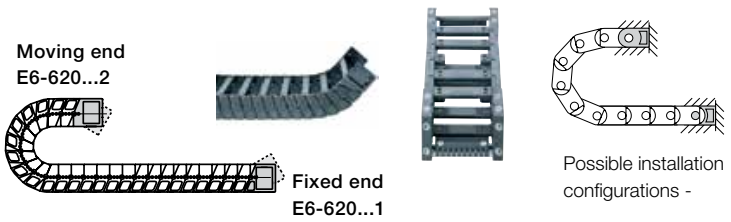
E-Chain System® E6
Series E6-62
Mounting Brackets - KMA

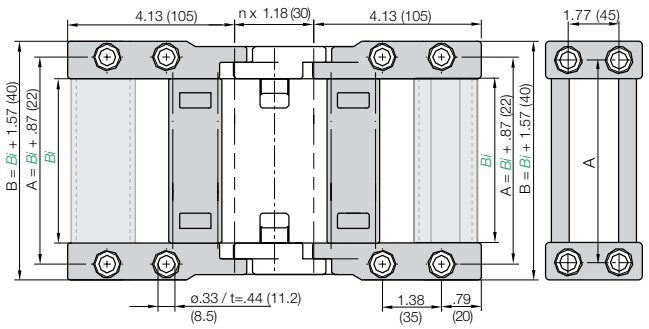
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Option 1: KMA - Pivoting

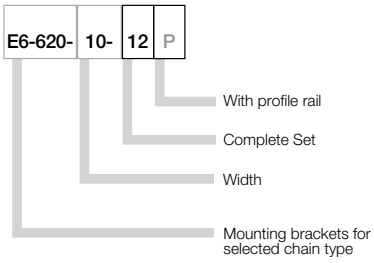
- Option - profile rail with integrated strain relief chainfix clip or tiewrap plates
- Profile rail can be mounted in the inner or outer radius of the E-Chain®
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides





For Series	Part No. Full Set Without Profile Rail	Part No. Full Set With Profile Rail	Bi in.	Bi (mm)
E6-62-05	**E6-620-05-12**	**E6-620-05-12P**	1.97	(50)
E6-62-06	**E6-620-06-12**	**E6-620-06-12P**	2.67	(68)
E6-62-07	**E6-620-07-12**	**E6-620-07-12P**	2.95	(75)
E6-62-087	**E6-620-087-12**	**E6-620-087-12P**	3.43	(87)
E6-62-097	**E6-620-097-12**	**E6-620-097-12P**	3.82	(97)
E6-62-10	**E6-620-10-12**	**E6-620-10-12P**	3.94	(100)
E6-62-11	**E6-620-11-12**	**E6-620-11-12P**	4.25	(108)
E6-62-112	**E6-620-112-12**	**E6-620-112-12P**	4.41	(112)
E6-62-12	**E6-620-12-12**	**E6-620-12-12P**	4.92	(125)
E6-62-137	**E6-620-137-12**	**E6-620-137-12P**	5.39	(137)
E6-62-15	**E6-620-15-12**	**E6-620-15-12P**	5.91	(150)
E6-62-162	**E6-620-162-12**	**E6-620-162-12P**	6.38	(162)
E6-62-17	**E6-620-17-12**	**E6-620-17-12P**	6.61	(168)
E6-62-18	**E6-620-18-12**	**E6-620-18-12P**	6.89	(175)
E6-62-187	**E6-620-187-12**	**E6-620-187-12P**	7.36	(187)
E6-62-20	**E6-620-20-12**	**E6-620-20-12P**	7.87	(200)
E6-62-212	**E6-620-212-12**	**E6-620-212-12P**	8.35	(212)
E6-62-23	**E6-620-23-12**	**E6-620-23-12P**	8.86	(225)
E6-62-237	**E6-620-237-12**	**E6-620-237-12P**	9.33	(237)
E6-62-25	**E6-620-25-12**	**E6-620-25-12P**	9.84	(250)
E6-62-262	**E6-620-262-12**	**E6-620-262-12P**	10.31	(262)
E6-62-28	**E6-620-28-12**	**E6-620-28-12P**	10.83	(275)
E6-62-29	**E6-620-29-12**	**E6-620-29-12P**	11.30	(287)
E6-62-30	**E6-620-30-12**	**E6-620-30-12P**	11.81	(300)
E6-62-312	**E6-620-312-12**	**E6-620-312-12P**	12.28	(312)
E6-62-325	**E6-620-325-12**	**E6-620-325-12P**	12.80	(325)
E6-62-337	**E6-620-337-12**	**E6-620-337-12P**	13.27	(337)
E6-62-350	**E6-620-350-12**	**E6-620-350-12P**	13.78	(350)
E6-62-362	**E6-620-362-12**	**E6-620-362-12P**	14.25	(362)
E6-62-375	**E6-620-375-12**	**E6-620-375-12P**	14.76	(375)
E6-62-387	**E6-620-387-12**	**E6-620-387-12P**	15.24	(387)
E6-62-400	**E6-620-400-12**	**E6-620-400-12P**	15.75	(400)

Part Number Structure



Full set, for both ends:
E6-620- 10- 12 Full set, **both fixed and moving end**

Single-part order:
E6-620 - 10- 1
Mounting bracket **fixed end**
E6-620 - 10- 2
Mounting bracket **moving end**

Adapters for gliding applications available upon request

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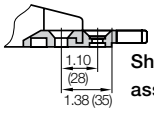
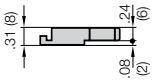
E-Chain System® E6
Series E6-62
Strain Relief

Tiewrap Plates



Shown assembled

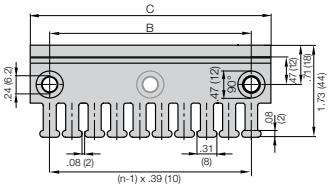


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 3050-ZBKMA

Other strain relief elements
➤ **Strain Relief, Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E6-80

igus®

E-Chain System® E6
Series E6-80

3.15

Price Index

Series E6-80

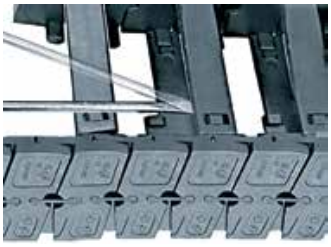
Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system
(Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

Assembly Tips



To close, push and click shut

Other Installation Methods

Vertical, hanging ≤ 196.9 ft (60 m)
Vertical, standing ≤ 13.12 ft (4 m)
Side-mounted, unsupp. = possible to a limited extent
Unsupported length of upper run upon request

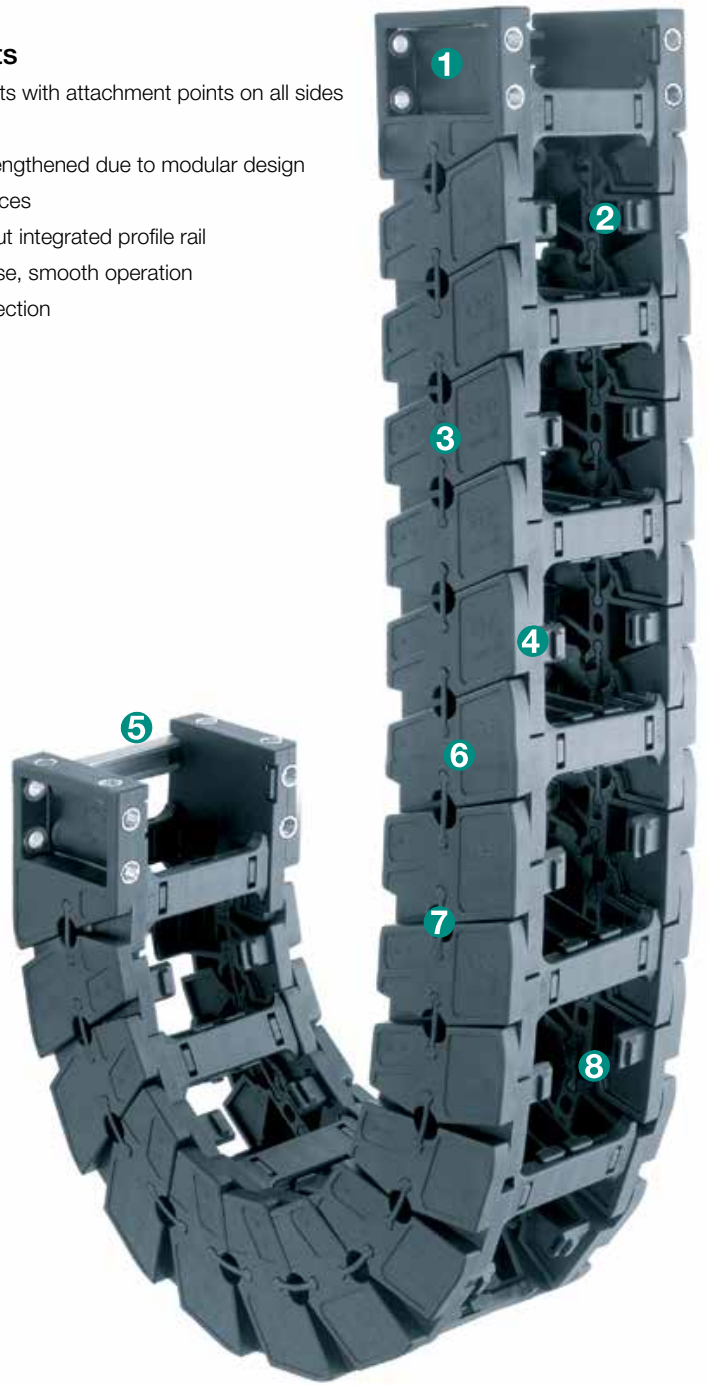
Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side mounted applications
  ➤ **Series 5050 E4/4**
- For RBR (Reverse Bending Radius)
  ➤ **Series 5050 E4/4**
- For high additional loads
  ➤ **Series 5050 E4/4**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Increased inner height
3. Can be shortened or lengthened due to modular design
4. Very large gliding surfaces
5. Available with or without integrated profile rail
6. Small pitch for low-noise, smooth operation
7. No pin and bore connection
8. Interior stop dog



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

16.4 ft (5 m) **E6-80-10-200-0**	**E-Chain®**
With 2 separators **511** assembled every 2nd link	**Interior Separation**
1 Set **E6-800-10-12**	**Mounting Bracket**

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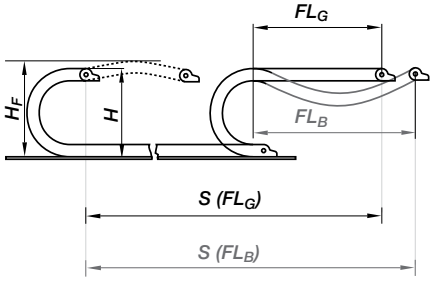
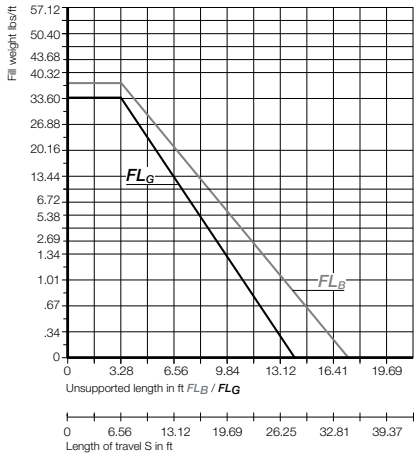
E-Chain System® E6
Series E6-80
Installation Dimensions

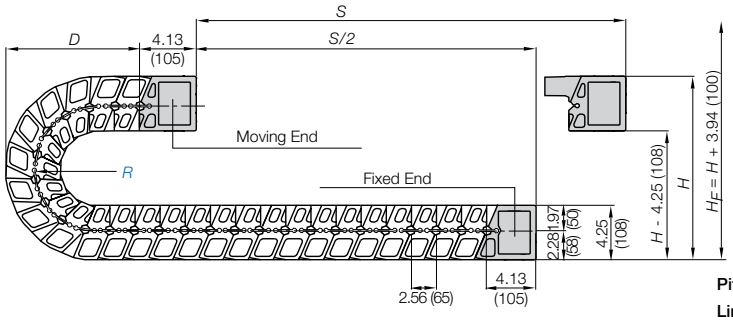
Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: ***HF = H* + 3.94 in. (100 mm)** (with 3.36 lbs/ft (5.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

Pitch per link: = 2.56" (65 mm)
Links per ft (m): = 4.68 (16)
Chain length: = $_{-}^{s}/_{2} + K$

R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.71 (450)
H*	20.31 (516)	24.25 (616)	28.19 (716)	32.13 (816)	36.06 (916)	40.00 (1016)	43.94 (1116)
D	12.05 (306)	14.02 (356)	15.98 (406)	17.95 (456)	19.92 (506)	21.89 (556)	23.86 (606)
K	23.82 (605)	29.92 (760)	36.22 (920)	42.32 (1075)	48.43 (1230)	54.72 (1390)	60.83 (1545)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Design, Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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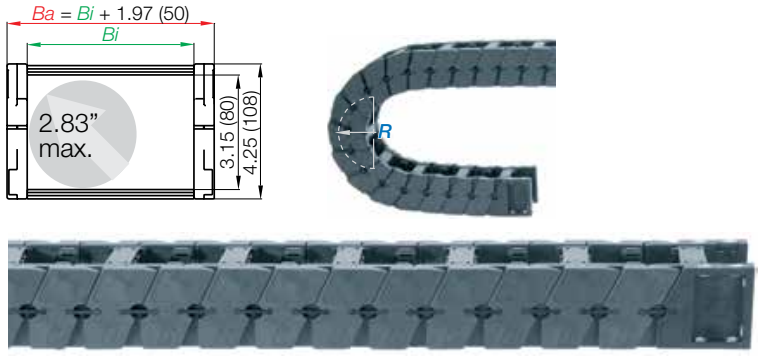
igus®

E-Chain System® E6
Series E6-80

Telephone 1-800-521-2747
Fax 1-401-438-7270

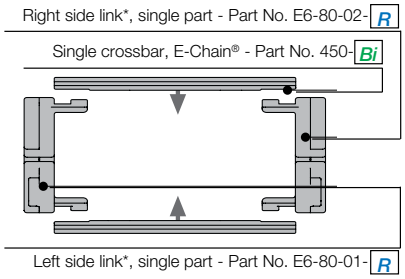
Series E6-80 - E-Chain® with crossbars every other link

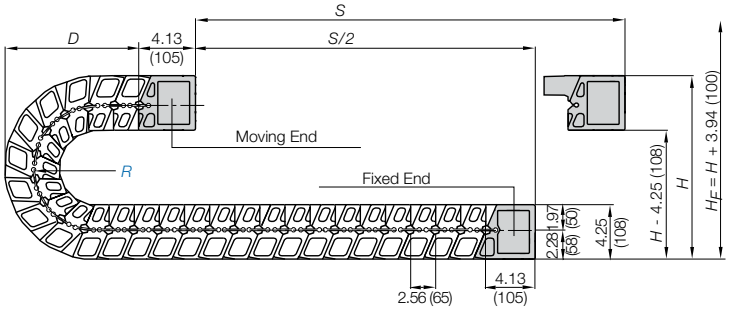


Part Number Structure

E6-80-	15-	175-	0
			Color - Black
		Bending radius	
	Width		
Series			

E-Chain® as separate parts, side links and crossbars





*View from the fixed point of the E-Chain®/E-Tube

Polymer spring as single part -
Part No. E6-80-350

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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E-Chain System® E6
Series E6-80

Supplement part number with required radius. Example: E6-80-10-[200]-0
Pitch: 2.56 in. (65 mm) per link links/ft (m) = 4.68 (16)

Part Number	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
E6-80-05-[ ]-0	1.97 (50)	3.94 (100)	≈3.50 (5.21)
E6-80-06-[ ]-0	2.56 (65)	4.53 (115)	≈3.55 (5.28)
E6-80-07-[ ]-0	2.95 (75)	4.92 (125)	≈3.58 (5.33)
E6-80-08-[ ]-0	3.43 (87)	5.91 (137)	≈3.62 (5.38)
E6-80-10-[ ]-0	3.94 (100)	5.91 (150)	≈3.66 (5.45)
E6-80-11-[ ]-0	4.41 (112)	6.38 (162)	≈3.70 (5.50)
E6-80-12-[ ]-0	4.92 (125)	6.89 (175)	≈3.74 (5.57)
E6-80-13-[ ]-0	5.39 (137)	7.36 (187)	≈3.78 (5.62)
E6-80-15-[ ]-0	5.91 (150)	7.87 (200)	≈3.82 (5.68)
E6-80-16-[ ]-0	6.38 (162)	8.35 (212)	≈3.86 (5.74)
E6-80-17-[ ]-0	6.89 (175)	8.86 (225)	≈3.90 (5.80)
E6-80-18-[ ]-0	7.36 (187)	9.33 (237)	≈3.94 (5.86)
E6-80-20-[ ]-0	7.87 (200)	9.84 (250)	≈3.98 (5.92)
E6-80-21-[ ]-0	8.35 (212)	10.31 (262)	≈4.02 (5.98)
E6-80-22-[ ]-0	8.86 (225)	10.83 (275)	≈4.06 (6.04)
E6-80-23-[ ]-0	9.33 (237)	11.30 (287)	≈4.10 (6.10)
E6-80-25-[ ]-0	9.84 (250)	11.81 (300)	≈4.14 (6.16)
E6-80-26-[ ]-0	10.31 (262)	12.28 (312)	≈4.17 (6.21)
E6-80-27-[ ]-0	10.83 (275)	12.80 (325)	≈4.22 (6.28)
E6-80-28-[ ]-0	11.30 (287)	13.27 (337)	≈4.25 (6.33)
E6-80-30-[ ]-0	11.81 (300)	13.78 (350)	≈4.29 (6.39)
E6-80-31-[ ]-0	12.28 (312)	14.25 (362)	≈4.33 (6.45)
E6-80-32-[ ]-0	12.80 (325)	14.76 (375)	≈4.37 (6.51)
E6-80-33-[ ]-0	13.27 (337)	15.24 (387)	≈4.41 (6.57)
E6-80-35-[ ]-0	13.78 (350)	15.75 (400)	≈4.46 (6.63)
E6-80-36-[ ]-0	14.25 (362)	16.22 (412)	≈4.50 (6.69)
E6-80-37-[ ]-0	14.76 (375)	16.73 (425)	≈4.54 (6.75)
E6-80-38-[ ]-0	15.24 (387)	17.20 (437)	≈4.57 (6.80)
E6-80-40-[ ]-0	15.75 (400)	17.72 (450)	≈4.62 (6.88)
E6-80-41-[ ]-0	16.22 (412)	18.19 (462)	≈4.65 (6.92)
E6-80-42-[ ]-0	16.73 (425)	18.70 (475)	≈4.70 (6.99)
E6-80-43-[ ]-0	17.20 (437)	19.17 (487)	≈4.73 (7.04)
E6-80-45-[ ]-0	17.72 (450)	19.69 (500)	≈4.77 (7.10)
E6-80-46-[ ]-0	18.19 (462)	20.16 (512)	≈4.81 (7.16)
E6-80-47-[ ]-0	18.70 (475)	20.67 (525)	≈4.85 (7.22)
E6-80-48-[ ]-0	19.17 (487)	21.14 (537)	≈4.89 (7.28)
E6-80-50-[ ]-0	19.69 (500)	21.65 (550)	≈4.93 (7.34)
E6-80-51-[ ]-0	20.16 (512)	22.13 (562)	≈4.97 (7.40)
E6-80-52-[ ]-0	20.67 (525)	22.64 (575)	≈5.01 (7.46)
E6-80-53-[ ]-0	21.14 (537)	23.11 (587)	≈5.05 (7.52)
E6-80-55-[ ]-0	21.65 (550)	23.62 (600)	≈5.09 (7.58)
E6-80-60-[ ]-0	23.62 (600)	25.59 (650)	≈5.25 (7.81)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E6-80-10-[200]-0

	150	200	250	300	350	400	450
R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.71 (450)
H*	20.31 (516)	24.25 (616)	28.19 (716)	32.13 (816)	36.06 (916)	40.00 (1016)	43.94 (1116)
D	12.05 (306)	14.02 (356)	15.98 (406)	17.95 (456)	19.92 (506)	21.89 (556)	23.86 (606)
K	23.82 (605)	29.92 (760)	36.22 (920)	42.32 (1075)	48.43 (1230)	54.72 (1390)	60.82 (1545)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® E6
Series E6-80
Interior Separation - New Generation

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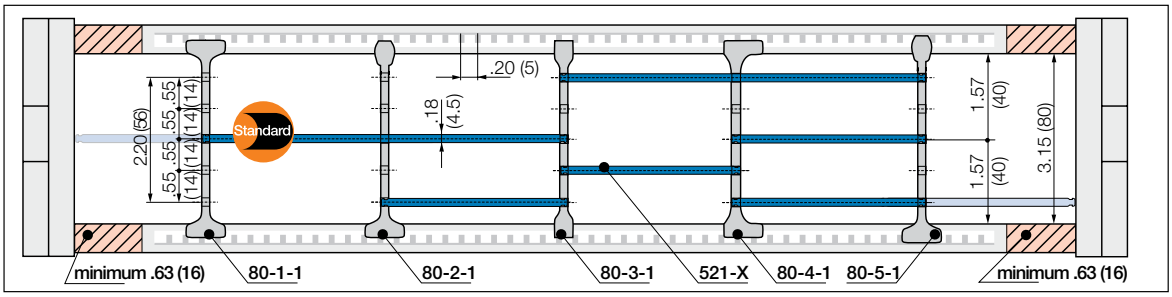
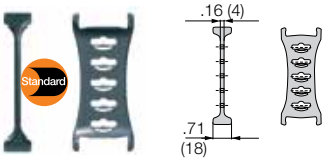


Note: Please maintain a lateral spacing of .63" (16 mm) between the separators and the side links.

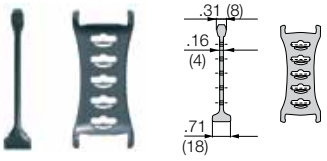
In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 80-1**
Assembled	**Part No. 80-1-1**

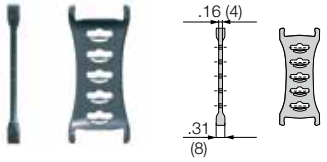
- **Standard separator 80-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator for QuickLock crossbar

Unassembled	**Part No. 80-2**
Assembled	**Part No. 80-2-1**

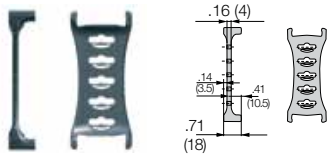
- **Separator 80-2**
  For even faster installation
  Separator for QuickLock crossbar 385-X-Q. Firmly holds to one side with a wide base, narrow on opposite side for easy cable assembly (slight grip).



Separator, narrow base

Unassembled	**Part No. 80-3**
Assembled	**Part No. 80-3-1**

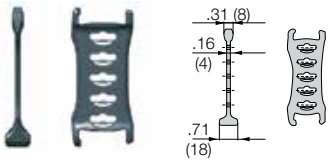
- **Separator 80-3**
  For many thin cables
  Separator with a narrow base for a large number of thin cables side by side. Save space in E-Chains®.



Separator, asymmetrical

Unassembled	**Part No. 80-4**
Assembled	**Part No. 80-4-1**

- **Separator 80-4**
  For side-mounted applications
  Asymmetrical separator, for defined distance. No additional spacers necessary.

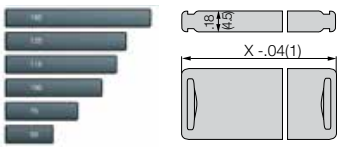


Notch separator for Notch crossbar

Unassembled	**Part No. 80-5**
Assembled	**Part No. 80-5-1**

- **Separator 80-5**
  Locks safely in .20" (5mm) increments
  Notch separator for exact positioning in E-Chains®. Recommended for side mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 520-X**
Assembled	**Part No. 521-X**

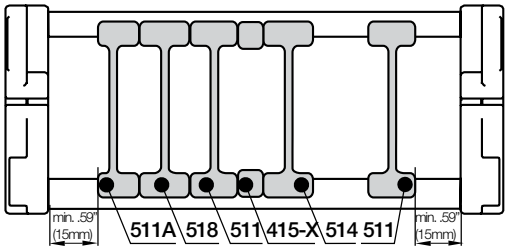
- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally. Can be arranged at three different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**520-050**	**521-050**	5.91 (150)	**520-150**	**521-150**	11.81 (300)	**520-300**	**521-300**
2.55 (065)	**520-065**	**521-065**	6.89 (175)	**520-175**	**521-175**	13.78 (350)	**520-350**	**521-350**
2.95 (075)	**520-075**	**521-075**	7.87 (200)	**520-200**	**521-200**	14.76 (375)	**520-375**	**521-375**
3.94 (100)	**520-100**	**521-100**	8.86 (225)	**520-225**	**521-225**	15.24 (387)	**520-387**	**521-387**
4.92 (125)	**520-125**	**521-125**	9.84 (250)	**520-250**	**521-250**	17.72 (450)	**520-450**	**521-450**

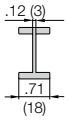
E-Chain System® E6
Series E6-80
Interior Separation - Previous Generation

Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.
NOTE: Observe a lateral spacing of at least 1.30 in. (33mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates



Vertical separator 501



Vertical separator

Unassembled	**Part No. 501**
Assembled	**Part No. 511**

- **Standard separator 501**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

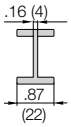
Locking separator 504

Locking separator

Unassembled	**Part No. 504**
Assembled	**Part No. 514**

- **Locking separator 504**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. If locking separators are used, the E-Chain® is more difficult to open.

Locking separator 508

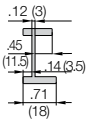


Locking separator

Unassembled	**Part No. 508**
Assembled	**Part No. 518**

- **Locking separator 508**
  This separator is used for applications that are exposed to extremely high humidity. The clamp at the side serves to uniformly align the separators. In order to avoid destroying the separators when opening the E-Chain®, make sure all separators are identically aligned.

Asymmetric separator 501A



Asymmetrical separator

Unassembled	**Part No. 501A**
Assembled	**Part No. 511A**

- **Asymmetrical separator 501A**
  This separator features an (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

Spacers 405-XX

Spacer

Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	415 -10	.39"	(10)
405 -15	415 -15	.59"	(15)
405 -20	415 -20	79"	(20)
405 -30	415 -30	1.18"	(30)
405 -40	415 -40	1.57"	(40)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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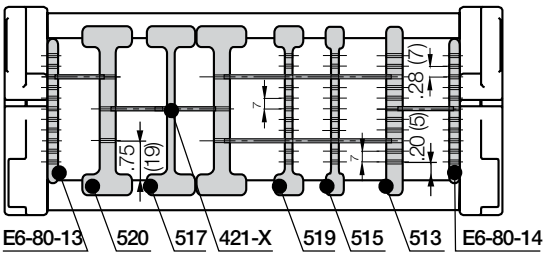
igus®

E-Chain System® E6
Series E6-80
Interior Separation - Previous Generation

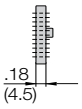
Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.



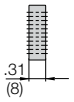
- **Side plates E6-80-03/E6-80-04**
  This component is used to form the basic pattern of a shelf system.



Side plate (left)	
Unassembled	**Part No. E6-80-03**
Assembled	**Part No. E6-80-13**
Side plate (right)	
Unassembled	**Part No. E6-80-04**
Assembled	**Part No. E6-80-14**

Side plate
E6-80-03 (left)
E6-80-04 (right)

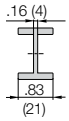
- **Vertical separator 503**
  This component is used to form the basic pattern of a shelf system.



Vertical separator	
Unassembled	**Part No. 503**
Assembled	**Part No. 513**

Vertical separator
503

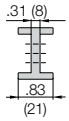
- **Locking separator, slotted 507**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.



Locking separator, slotted	
Unassembled	**Part No. 507**
Assembled	**Part No. 517**

Locking separator, slotted
507

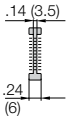
- **Locking vertical separator 510**
  This separator is slotted and able to be combined with shelves.



Locking vertical separator	
Unassembled	**Part No. 510**
Assembled	**Part No. 520**

Locking vertical separator
510

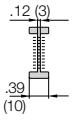
- **Slotted separators 505**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.



Slotted separators, closed	
Unassembled	**Part No. 505**
Assembled	**Part No. 515**

Closed slotted separator
505

- **Slotted separator 509**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 7 middle slots



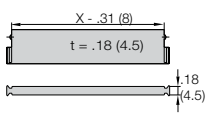
Slotted separators, open	
Unassembled	**Part No. 509**
Assembled	**Part No. 519**

Open slotted separator
509

Shelves 420-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 11 different heights in .28" (7mm) increments

Width X in.(mm)	Usable Width in.	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled
.71 (18)	.39 (10)	**420-18**	**421-18**	2.95 (75)	2.64 (67)	**420-75**	**421-75**
.91 (23)	.59 (15)	**420-23**	**421-23**	3.46 (88)	3.15 (80)	**420-88**	**421-88**
.98 (25)	.67 (17)	**420-25**	**421-25**	3.94 (100)	3.62 (92)	**420-100**	**421-100**
1.10 (28)	.79 (20)	**420-28**	**421-28**	4.92 (125)	4.61 (117)	**420-125**	**421-125**
1.30 (33)	.98 (25)	**420-33**	**421-33**	5.91 (150)	5.59 (142)	**420-150**	**421-150**
1.69 (43)	1.38 (35)	**420-43**	**421-43**	6.89 (175)	6.57 (167)	**420-175**	**421-175**
1.97 (50)	1.65 (42)	**420-50**	**421-50**	7.36 (187)	7.05 (179)	**420-187**	**421-187**
2.44 (62)	2.13 (54)	**420-62**	**421-62**	7.87 (200)	7.56 (192)	**420-200**	**421-200**



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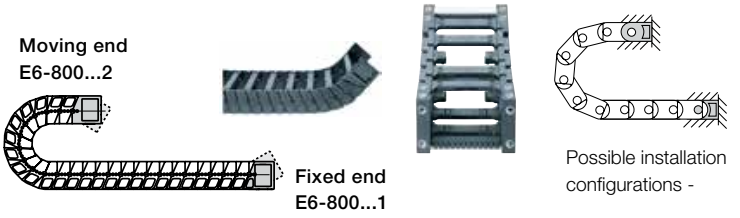
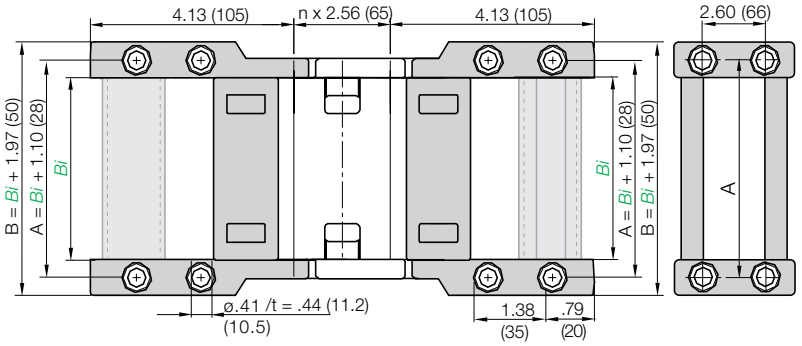
E-Chain System® E6
Series E6-80
Mounting Brackets - KMA

Option 1: KMA - Pivoting

- Option - profile rail with integrated strain relief chainfix clip or tiewrap plates
- Profile rail can be mounted in the inner or outer radius of the E-Chain®
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications
- Confined installation conditions
- Attachment capability on all sides



Possible installation configurations -



Part Number Structure

E6-800-	05-	12	P

- P: With profile rail
- 12: Complete Set
- 05-: Width
- E6-800-: Mounting brackets for selected chain type

Full set, for both ends:
E6-800- 05- 12 Full set, **both fixed and moving end**

Single-part order:
E6-800- 05- 1 Mounting bracket **fixed end**
E6-800- 05- 2 Mounting bracket **moving end**

Adapters for gliding applications available upon request

For Series	Part No. Full Set W/O Profile Rail	Part No. Full Set With Profile Rail	*Bi* in.	*Bi* (mm)
E6-80-05	**E6-800-05-12**	**E6-800-05-12P**	1.97	(50)
E6-80-06	**E6-800-06-12**	**E6-800-06-12P**	2.56	(65)
E6-80-07	**E6-800-07-12**	**E6-800-07-12P**	2.95	(75)
E6-80-08	**E6-800-08-12**	**E6-800-08-12P**	3.43	(87)
E6-80-10	**E6-800-10-12**	**E6-800-10-12P**	3.94	(100)
E6-80-11	**E6-800-11-12**	**E6-800-11-12P**	4.41	(112)
E6-80-12	**E6-800-12-12**	**E6-800-12-12P**	4.92	(125)
E6-80-13	**E6-800-13-12**	**E6-800-13-12P**	5.39	(137)
E6-80-15	**E6-800-15-12**	**E6-800-15-12P**	5.91	(150)
E6-80-16	**E6-800-16-12**	**E6-800-16-12P**	6.38	(162)
E6-80-17	**E6-800-17-12**	**E6-800-17-12P**	6.89	(175)
E6-80-18	**E6-800-18-12**	**E6-800-18-12P**	7.36	(187)
E6-80-20	**E6-800-20-12**	**E6-800-20-12P**	7.87	(200)
E6-80-21	**E6-800-21-12**	**E6-800-21-12P**	8.35	(212)
E6-80-22	**E6-800-22-12**	**E6-800-22-12P**	8.86	(225)
E6-80-23	**E6-800-23-12**	**E6-800-23-12P**	9.33	(237)
E6-80-25	**E6-800-25-12**	**E6-800-25-12P**	9.84	(250)
E6-80-26	**E6-800-26-12**	**E6-800-26-12P**	10.31	(262)
E6-80-27	**E6-800-27-12**	**E6-800-27-12P**	10.83	(275)
E6-80-28	**E6-800-28-12**	**E6-800-28-12P**	11.30	(287)
E6-80-30	**E6-800-30-12**	**E6-800-30-12P**	11.81	(300)

For Series	Part No. Full Set W/O Profile Rail	Part No. Full Set With Profile Rail	*Bi* in.	*Bi* (mm)
E6-80-31	**E6-800-31-12**	**E6-800-31-12P**	12.28	(312)
E6-80-32	**E6-800-32-12**	**E6-800-32-12P**	12.80	(325)
E6-80-33	**E6-800-33-12**	**E6-800-33-12P**	13.27	(337)
E6-80-35	**E6-800-35-12**	**E6-800-35-12P**	13.78	(350)
E6-80-36	**E6-800-36-12**	**E6-800-36-12P**	14.25	(362)
E6-80-37	**E6-800-37-12**	**E6-800-37-12P**	14.76	(375)
E6-80-38	**E6-800-38-12**	**E6-800-38-12P**	15.24	(387)
E6-80-40	**E6-800-40-12**	**E6-800-40-12P**	15.75	(400)
E6-80-41	**E6-800-41-12**	**E6-800-41-12P**	16.72	(412)
E6-80-42	**E6-800-42-12**	**E6-800-42-12P**	16.73	(425)
E6-80-43	**E6-800-43-12**	**E6-800-43-12P**	17.20	(437)
E6-80-45	**E6-800-45-12**	**E6-800-45-12P**	17.72	(450)
E6-80-46	**E6-800-46-12**	**E6-800-46-12P**	18.19	(462)
E6-80-47	**E6-800-47-12**	**E6-800-47-12P**	18.70	(475)
E6-80-48	**E6-800-48-12**	**E6-800-48-12P**	19.17	(487)
E6-80-50	**E6-800-50-12**	**E6-800-50-12P**	19.69	(500)
E6-80-51	**E6-800-51-12**	**E6-800-51-12P**	20.16	(512)
E6-80-52	**E6-800-52-12**	**E6-800-52-12P**	20.67	(525)
E6-80-53	**E6-800-53-12**	**E6-800-53-12P**	21.14	(537)
E6-80-55	**E6-800-55-12**	**E6-800-55-12P**	21.65	(550)
E6-80-60	**E6-800-60-12**	**E6-800-60-12P**	25.59	(600)

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RoHS info: www.igus.com/RoHS

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Series E6-80
Strain Relief

Telephone 1-800-521-2747
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email: sales@igus.com
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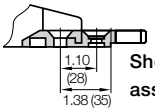
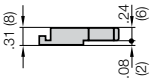
Tiewrap Plates



Shown assembled

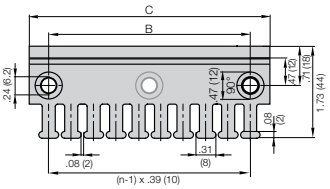


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 3050-ZBKMA

Other strain relief elements
➤ **Strain Relief, Chapter 10**

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E-Chain System® E6
Series E6-80

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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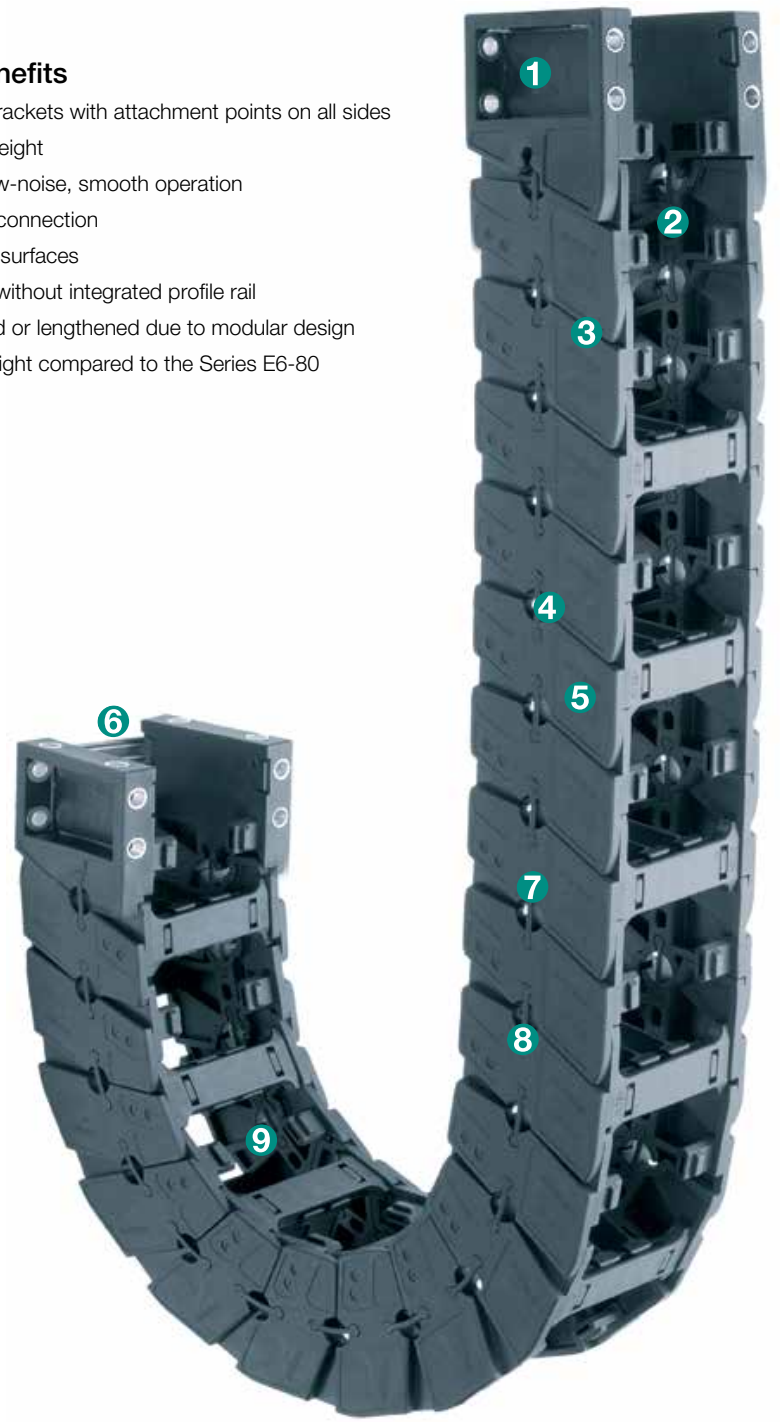
E6-80L igus®

E-Chain System® E6
Series E6-80L

3.15

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Increased inner height
3. Small pitch for low-noise, smooth operation
4. No pin and bore connection
5. Continuous glide surfaces
6. Available with or without integrated profile rail
7. Can be shortened or lengthened due to modular design
8. 45% lighter in weight compared to the Series E6-80
9. Interior stop dog



Price Index

Series E6-80L

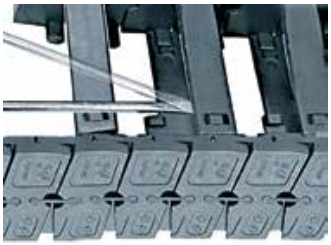
Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

Assembly Tips



To close, push and click shut

Other Installation Methods

Vertical, hanging ≤ 196.8 ft (60 m)
Vertical, standing ≤ 13.12 ft (4 m)
Side-mounted, unsupp. = possible to a limited extent
Unsupported length of upper run upon request

Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side mounted applications
  ➤ **Series 15050 E4/Light**
- For RBR (Reverse Bending Radius)
  ➤ **Series 15050 E4/Light**
- For high additional loads
  ➤ **Series 15050 E4/Light**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

16.4 ft (5 m) **E6-80L-15-175-0**	**E-Chain®**
With 2 separators **511** assembled every 2nd link	**Interior Separation**
1 Set **E6-800L-15-12**	**Mounting Bracket**

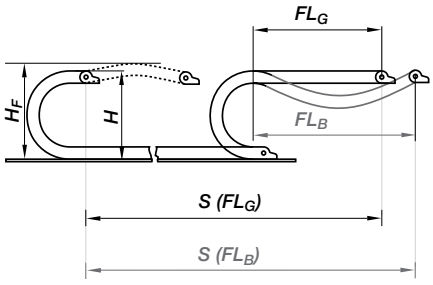
E-Chain System® E6
Series E6-80L
Installation Dimensions

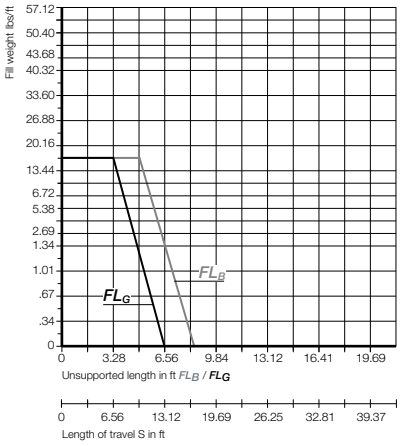
Short travel, unsupported length

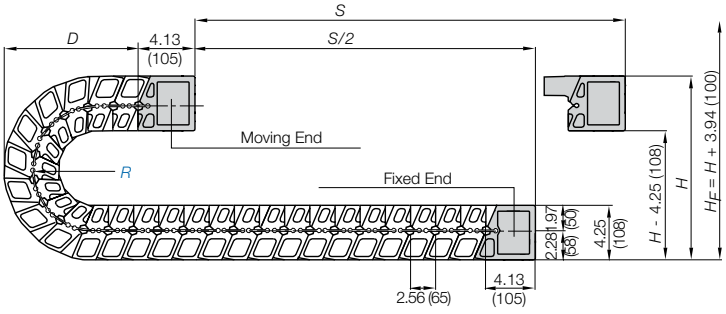
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: $H_F = H + 3.94$ in. (100 mm) (with 3.36 lbs/ft (5.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)
H*	20.31 (516)	22.28 (566)	24.25 (616)	28.19 (716)	32.13 (816)
D	12.05 (306)	13.03 (331)	14.02 (356)	15.98 (406)	17.95 (456)
K	23.82 (605)	26.77 (680)	29.92 (760)	36.02 (915)	42.32 (1075)

Pitch per link: = 2.56" (65 mm)
Links per ft (m): = 4.68 (16)
For center mount applications:
Chain length = $^{S}/_{2} + K$

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ **Design, Chapter 1**

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + safety buffer
H_F = Required clearance height

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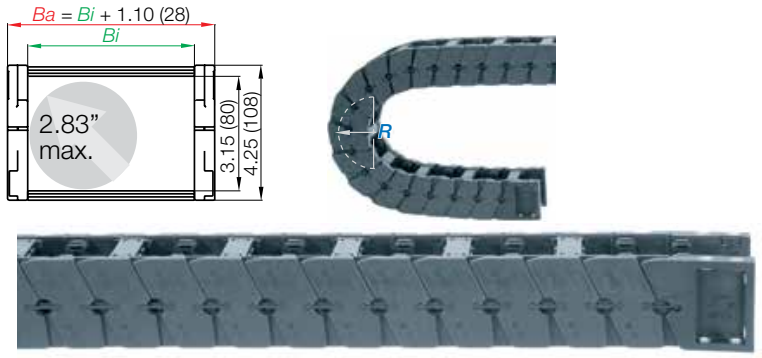
Series E6-80L - E-Chain® with crossbars every other link

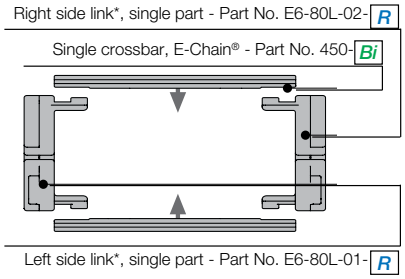


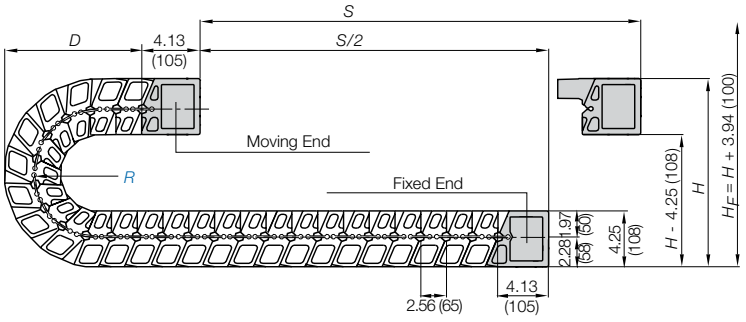
Part Number Structure

E6-80L- 15- 175- 0

- Color - Black
- Bending radius
- Width
- Series

E-Chain® as separate parts, side links and crossbars





*View from the fixed point of the E-Chain®/E-Tube

Polymer spring as single part -
Part No. E6-80-350

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E-Chain System® E6
Series E6-80L

Supplement part number with required radius. Example: E6-80L-15-175-0
Pitch: 2.56 in. (65 mm) per link links/ft (m) = 4.68 (16)

Part Number	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
E6-80L-08-□-0	3.43 (87)	4.53 (115)	≈ 2.20 (3.28)
E6-80L-10-□-0	3.94 (100)	5.04 (128)	≈ 2.24 (3.33)
E6-80L-11-□-0	4.41 (112)	5.51 (140)	≈ 2.26 (3.38)
E6-80L-12-□-0	4.92 (125)	6.02 (153)	≈ 2.30 (3.43)
E6-80L-13-□-0	5.39 (137)	6.50 (165)	≈ 2.35 (3.49)
E6-80L-15-□-0	5.91 (150)	7.01 (178)	≈ 2.39 (3.55)
E6-80L-16-□-0	6.38 (162)	7.48 (190)	≈ 2.43 (3.61)
E6-80L-17-□-0	6.89 (175)	7.99 (203)	≈ 2.47 (3.67)
E6-80L-18-□-0	7.36 (187)	8.46 (215)	≈ 2.51 (3.73)
E6-80L-20-□-0	7.87 (200)	8.98 (228)	≈ 2.55 (3.79)
E6-80L-21-□-0	8.35 (212)	9.45 (240)	≈ 2.59 (3.85)
E6-80L-22-□-0	8.86 (225)	9.96 (253)	≈ 2.63 (3.91)
E6-80L-23-□-0	9.33 (237)	10.43 (265)	≈ 2.67 (3.97)
E6-80L-25-□-0	9.84 (250)	10.94 (278)	≈ 2.70 (4.02)
E6-80L-26-□-0	10.31 (262)	11.42 (290)	≈ 2.75 (4.09)
E6-80L-27-□-0	10.83 (275)	11.93 (303)	≈ 2.78 (4.14)
E6-80L-28-□-0	11.30 (287)	12.40 (315)	≈ 2.82 (4.20)
E6-80L-30-□-0	11.81 (300)	12.91 (328)	≈ 2.86 (4.26)
E6-80L-31-□-0	12.28 (312)	13.39 (340)	≈ 2.90 (4.32)
E6-80L-32-□-0	12.80 (325)	13.90 (353)	≈ 2.94 (4.38)
E6-80L-33-□-0	13.27 (337)	14.37 (365)	≈ 2.98 (4.44)
E6-80L-35-□-0	13.78 (350)	14.88 (378)	≈ 3.02 (4.50)
E6-80L-36-□-0	14.25 (362)	15.35 (390)	≈ 3.06 (4.56)
E6-80L-37-□-0	14.76 (375)	15.87 (403)	≈ 3.10 (4.62)
E6-80L-38-□-0	15.24 (387)	16.34 (415)	≈ 3.14 (4.68)
E6-80L-40-□-0	15.75 (400)	16.85 (428)	≈ 3.19 (4.74)
E6-80L-41-□-0	16.22 (412)	17.32 (440)	≈ 3.23 (4.80)
E6-80L-42-□-0	16.73 (425)	17.83 (453)	≈ 3.26 (4.85)
E6-80L-43-□-0	17.20 (437)	18.31 (465)	≈ 3.31 (4.92)
E6-80L-45-□-0	17.72 (450)	18.82 (478)	≈ 3.38 (5.03)
E6-80L-46-□-0	18.19 (462)	19.29 (490)	≈ 3.42 (5.09)
E6-80L-47-□-0	18.70 (475)	19.80 (503)	≈ 3.46 (5.15)
E6-80L-48-□-0	19.17 (487)	20.28 (515)	≈ 3.50 (5.21)
E6-80L-50-□-0	19.69 (500)	20.79 (528)	≈ 3.54 (5.27)
E6-80L-51-□-0	20.16 (512)	21.26 (540)	≈ 3.58 (5.33)
E6-80L-52-□-0	20.67 (525)	21.77 (553)	≈ 3.62 (5.39)
E6-80L-53-□-0	21.14 (537)	22.24 (565)	≈ 3.66 (5.45)
E6-80L-55-□-0	21.65 (550)	22.76 (578)	≈ 3.70 (5.51)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E6-80L-15-175-0

	150	175	200	250	300
R	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)
H*	20.31 (516)	22.28 (566)	24.25 (616)	28.19 (716)	32.13 (816)
D	12.05 (306)	13.03 (331)	14.02 (356)	15.98 (406)	17.95 (456)
K	23.82 (605)	26.77 (680)	29.92 (760)	36.02 (915)	42.32 (1075)

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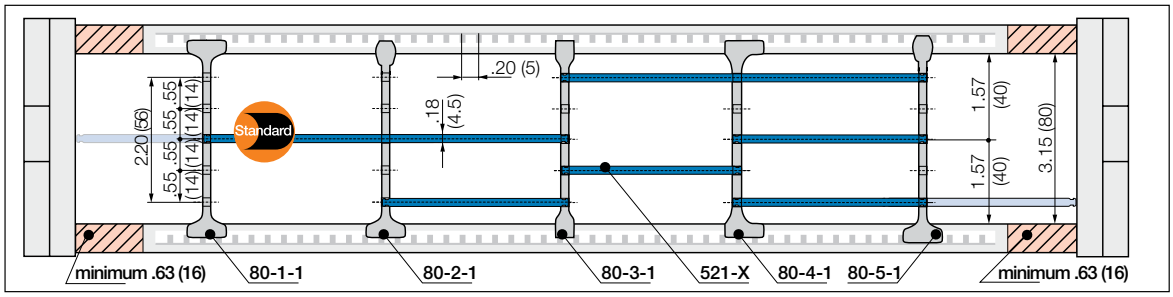
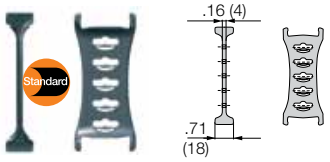


Note: Please maintain a lateral spacing of .63" (16 mm) between the separators and the side links.

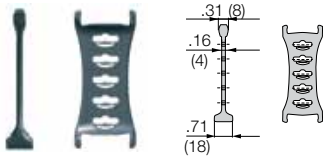
In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 80-1**
Assembled	**Part No. 80-1-1**

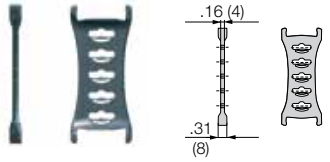
- **Standard separator 80-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator for QuickLock crossbar

Unassembled	**Part No. 80-2**
Assembled	**Part No. 80-2-1**

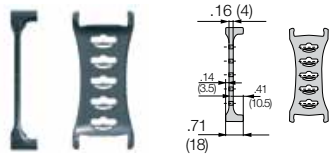
- **Separator 80-2**
  For even faster installation
  Separator for QuickLock crossbar 385-X-Q. Firmly holds to one side with a wide base, narrow on opposite side for easy cable assembly (slight grip).



Separator, narrow base

Unassembled	**Part No. 80-3**
Assembled	**Part No. 80-3-1**

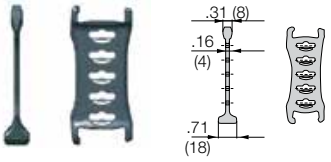
- **Separator 80-3**
  For many thin cables
  Separator with a narrow base for a large number of thin cables side by side. Save space in E-Chains®.



Separator, asymmetrical

Unassembled	**Part No. 80-4**
Assembled	**Part No. 80-4-1**

- **Separator 80-4**
  For side-mounted applications
  Asymmetrical separator, for defined distance. No additional spacers necessary.

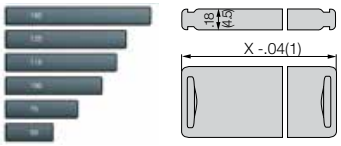


Notch separator for Notch crossbar

Unassembled	**Part No. 80-5**
Assembled	**Part No. 80-5-1**

- **Separator 80-5**
  Locks safely in .20" (5mm) increments
  Notch separator for exact positioning in E-Chains®. Recommended for side mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 520-X**
Assembled	**Part No. 521-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally. Can be arranged at three different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**520-050**	**521-050**	5.91 (150)	**520-150**	**521-150**	11.81 (300)	**520-300**	**521-300**
2.55 (065)	**520-065**	**521-065**	6.89 (175)	**520-175**	**521-175**	13.78 (350)	**520-350**	**521-350**
2.95 (075)	**520-075**	**521-075**	7.87 (200)	**520-200**	**521-200**	14.76 (375)	**520-375**	**521-375**
3.94 (100)	**520-100**	**521-100**	8.86 (225)	**520-225**	**521-225**	15.24 (387)	**520-387**	**521-387**
4.92 (125)	**520-125**	**521-125**	9.84 (250)	**520-250**	**521-250**	17.72 (450)	**520-450**	**521-450**

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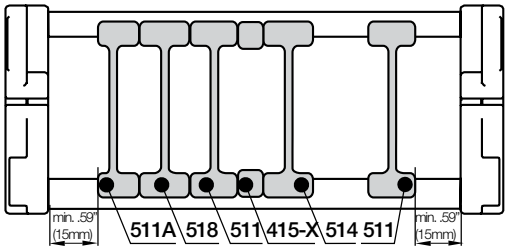
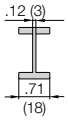
E-Chain System® E6
Series E6-80L
Interior Separation - Previous Generation

Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.
NOTE: Observe a lateral spacing of at least 1.30 in. (33mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates



Vertical separator 501



Vertical separator

Unassembled	**Part No. 501**
Assembled	**Part No. 511**

- **Standard separator 501**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

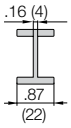
Locking separator 504

Locking separator

Unassembled	**Part No. 504**
Assembled	**Part No. 514**

- **Locking separator 504**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. If locking separators are used, the E-Chain® is more difficult to open.

Locking separator 508

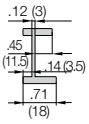


Locking separator

Unassembled	**Part No. 508**
Assembled	**Part No. 518**

- **Locking separator 508**
  This separator is used for applications that are exposed to extremely high humidity. The clamp at the side serves to uniformly align the separators. In order to avoid destroying the separators when opening the E-Chain®, make sure all separators are identically aligned.

Asymmetric separator 501A



Asymmetrical separator

Unassembled	**Part No. 501A**
Assembled	**Part No. 511A**

- **Asymmetrical separator 501A**
  This separator features an (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

Spacers 405-XX

Spacer

Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	415 -10	.39"	(10)
405 -15	415 -15	.59"	(15)
405 -20	415 -20	79"	(20)
405 -30	415 -30	1.18"	(30)
405 -40	415 -40	1.57"	(40)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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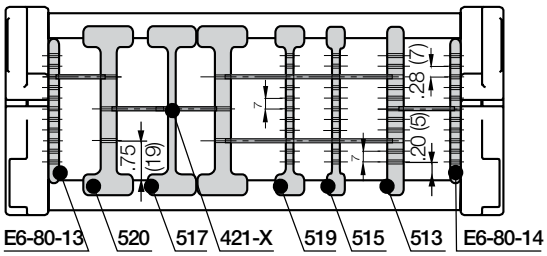
E-Chain System® E6
Series E6-80L
Interior Separation - Previous Generation

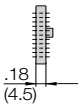
Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.



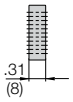
- **Side plates E6-80-03/E6-80-04**
  This component is used to form the basic pattern of a shelf system.



Side plate (left)	
Unassembled	**Part No. E6-80-03**
Assembled	**Part No. E6-80-13**
Side plate (right)	
Unassembled	**Part No. E6-80-04**
Assembled	**Part No. E6-80-14**

Side plate
E6-80-03 (left)
E6-80-04 (right)

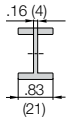
- **Vertical separator 503**
  This component is used to form the basic pattern of a shelf system.



Vertical separator	
Unassembled	**Part No. 503**
Assembled	**Part No. 513**

Vertical separator
503

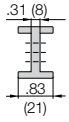
- **Locking separator, slotted 507**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.



Locking separator, slotted	
Unassembled	**Part No. 507**
Assembled	**Part No. 517**

Locking separator, slotted
507

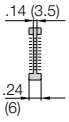
- **Locking vertical separator 510**
  This separator is slotted and able to be combined with shelves.



Locking vertical separator	
Unassembled	**Part No. 510**
Assembled	**Part No. 520**

Locking vertical separator
510

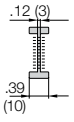
- **Slotted separators 505**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.



Slotted separators, closed	
Unassembled	**Part No. 505**
Assembled	**Part No. 515**

Closed slotted separator
505

- **Slotted separator 509**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 7 middle slots



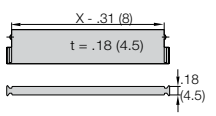
Slotted separators, open	
Unassembled	**Part No. 509**
Assembled	**Part No. 519**

Open slotted separator
509

Shelves 420-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 11 different heights in .28" (7mm) increments

Width X in.(mm)	Usable Width in.	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled
.71 (18)	.39 (10)	**420-18**	**421-18**	2.95 (75)	2.64 (67)	**420-75**	**421-75**
.91 (23)	.59 (15)	**420-23**	**421-23**	3.46 (88)	3.15 (80)	**420-88**	**421-88**
.98 (25)	.67 (17)	**420-25**	**421-25**	3.94 (100)	3.62 (92)	**420-100**	**421-100**
1.10 (28)	.79 (20)	**420-28**	**421-28**	4.92 (125)	4.61 (117)	**420-125**	**421-125**
1.30 (33)	.98 (25)	**420-33**	**421-33**	5.91 (150)	5.59 (142)	**420-150**	**421-150**
1.69 (43)	1.38 (35)	**420-43**	**421-43**	6.89 (175)	6.57 (167)	**420-175**	**421-175**
1.97 (50)	1.65 (42)	**420-50**	**421-50**	7.36 (187)	7.05 (179)	**420-187**	**421-187**
2.44 (62)	2.13 (54)	**420-62**	**421-62**	7.87 (200)	7.56 (192)	**420-200**	**421-200**



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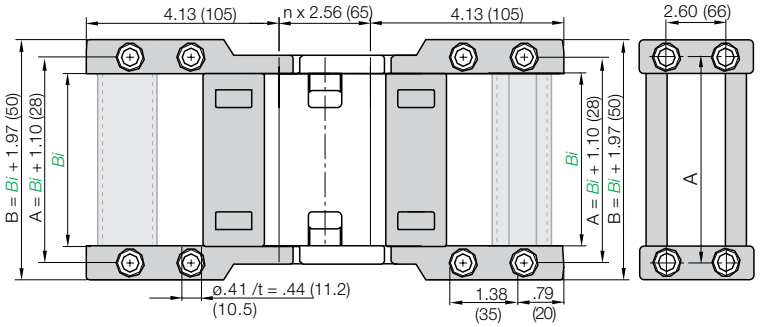
E-Chain System® E6
Series E6-80L
Mounting Brackets - KMA

Option 1: KMA - Pivoting

- Option - profile rail with integrated strain relief chainfix clip or tiewrap plates
- Profile rail can be mounted in the inner or outer radius of the E-Chain®
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications
- Confined installation conditions
- Attachment capability on all sides

Possible installation configurations -



Part Number Structure

E6-800L-	10-	12	P

- P: With profile rail
- 12: Complete Set
- 10-: Width
- E6-800L-: Mounting brackets for selected chain type

Full set, for both ends:
E6-800L- 10- 12 Full set, **both fixed and moving end**

Single-part order:
E6-800L- 10- 1 Mounting bracket **fixed end**
E6-800L- 10- 2 Mounting bracket **moving end**

For Series	Part No. Full Set W/O Profile Rail	Part No. Full Set With Profile Rail	Bi in.	Bi (mm)
E6-80L-08	**E6-800L-08-12**	**E6-800L-08-12P**	3.43	(87)
E6-80L-10	**E6-800L-10-12**	**E6-800L-10-12P**	3.94	(100)
E6-80L-11	**E6-800L-11-12**	**E6-800L-11-12P**	4.41	(112)
E6-80L-12	**E6-800L-12-12**	**E6-800L-12-12P**	4.92	(125)
E6-80L-13	**E6-800L-13-12**	**E6-800L-13-12P**	5.39	(137)
E6-80L-15	**E6-800L-15-12**	**E6-800L-15-12P**	5.91	(150)
E6-80L-16	**E6-800L-16-12**	**E6-800L-16-12P**	6.38	(162)
E6-80L-17	**E6-800L-18-12**	**E6-800L-18-12P**	6.89	(175)
E6-80L-18	**E6-800L-18-12**	**E6-800L-18-12P**	7.36	(187)
E6-80L-20	**E6-800L-20-12**	**E6-800L-20-12P**	7.87	(200)
E6-80L-21	**E6-800L-21-12**	**E6-800L-21-12P**	8.35	(212)
E6-80L-22	**E6-800L-23-12**	**E6-800L-23-12P**	8.86	(225)
E6-80L-23	**E6-800L-23-12**	**E6-800L-23-12P**	9.33	(237)
E6-80L-25	**E6-800L-25-12**	**E6-800L-25-12P**	9.84	(250)
E6-80L-26	**E6-800L-26-12**	**E6-800L-26-12P**	10.31	(262)
E6-80L-27	**E6-800L-28-12**	**E6-800L-28-12P**	10.83	(275)
E6-80L-28	**E6-800L-29-12**	**E6-800L-29-12P**	11.30	(287)
E6-80L-30	**E6-800L-30-12**	**E6-800L-30-12P**	11.81	(300)
E6-80L-31	**E6-800L-31-12**	**E6-800L-31-12P**	12.28	(312)

For Series	Part No. Full Set W/O Profile Rail	Part No. Full Set With Profile Rail	Bi in.	Bi (mm)
E6-80L-32	**E6-800L-32-12**	**E6-800L-32-12P**	12.80	(325)
E6-80L-33	**E6-800L-33-12**	**E6-800L-33-12P**	13.27	(337)
E6-80L-35	**E6-800L-35-12**	**E6-800L-35-12P**	13.78	(350)
E6-80L-36	**E6-800L-36-12**	**E6-800L-36-12P**	14.25	(362)
E6-80L-37	**E6-800L-37-12**	**E6-800L-37-12P**	14.76	(375)
E6-80L-38	**E6-800L-38-12**	**E6-800L-38-12P**	15.24	(387)
E6-80L-40	**E6-800L-40-12**	**E6-800L-40-12P**	15.75	(400)
E6-80L-41	**E6-800L-41-12**	**E6-800L-41-12P**	16.72	(412)
E6-80L-42	**E6-800L-42-12**	**E6-800L-42-12P**	16.73	(425)
E6-80L-43	**E6-800L-43-12**	**E6-800L-43-12P**	17.20	(437)
E6-80L-45	**E6-800L-45-12**	**E6-800L-45-12P**	17.72	(450)
E6-80L-46	**E6-800L-46-12**	**E6-800L-46-12P**	18.19	(462)
E6-80L-47	**E6-800L-47-12**	**E6-800L-47-12P**	18.70	(475)
E6-80L-48	**E6-800L-48-12**	**E6-800L-48-12P**	19.17	(487)
E6-80L-50	**E6-800L-50-12**	**E6-800L-50-12P**	19.69	(500)
E6-80L-51	**E6-800L-51-12**	**E6-800L-51-12P**	20.16	(512)
E6-80L-52	**E6-800L-52-12**	**E6-800L-52-12P**	20.67	(525)
E6-80L-53	**E6-800L-53-12**	**E6-800L-53-12P**	21.14	(537)
E6-80L-55	**E6-800L-55-12**	**E6-800L-55-12P**	21.65	(550)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E-Chain System® E6
Series E6-80L
Strain Relief

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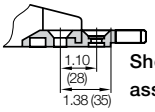
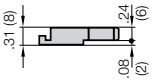
Tiewrap Plates



Shown assembled

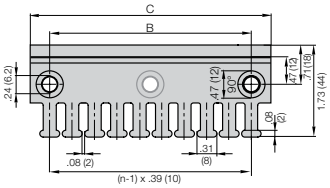


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 3050-ZBKMA

Other strain relief elements
➤ **Strain Relief, Chapter 10**

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RoHS info: www.igus.com/RoHS

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igus®
System E6-1

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More dynamics, smoother running, easier to open, 2nd generation

The E6-1 series is an advancement of the E6 series. While having all its advantages, like the stability and cleanroom suitability, it is even lighter, faster and quieter. In addition, its accessibility to the interior and the assembly and handling have been improved.

- Crossbars can be opened on both sides and removable along the inner and outer radius
- Option without camber NC by turning the inner link
- Extremely quiet through small pitch and brake in the stop-dog system
- Extremely low vibration
- Low-abrasion link system (no pin/hole connection)
- Virtually no polygon effect, thereby “smooth rolling” operation
- Faster lengthening and shortening through optimized connection design
- Smooth and obstacle free interior design for a long lifetime for cables and hoses
- Weight savings approx. 30% compared to the System E6
- Cost-effective

System E6-1 -
Extremely low noise

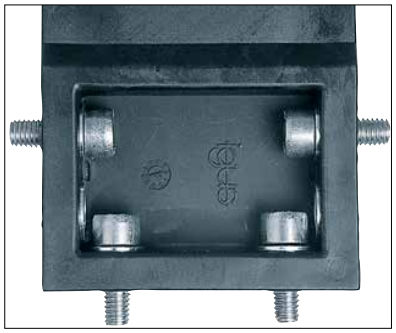
System E6 -
6-piece link-design

Clean-Room

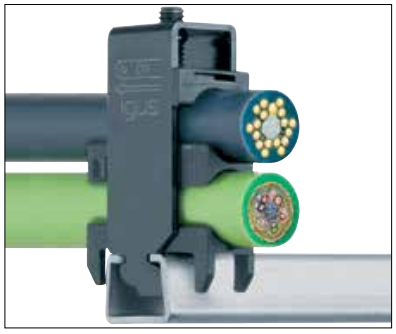
IPA Qualification Certificate - Report IG 1303-640-1:
ISO Class 1, according to DIN EN ISO 14644-1 for System E6-1, Series E61-29-50-075-0 and E61-29-50-075-0-CR
at v = 1.64 ft/s (0.5 m/s), 3.28 ft/s (1 m/s), 6.56 ft/s (2 m/s)

New generation interior separation - even more cable-friendly

Snap-open mechanism, Series E61-29 choice of snap-open on left or right



KMA mounting brackets with attachment options on all sides

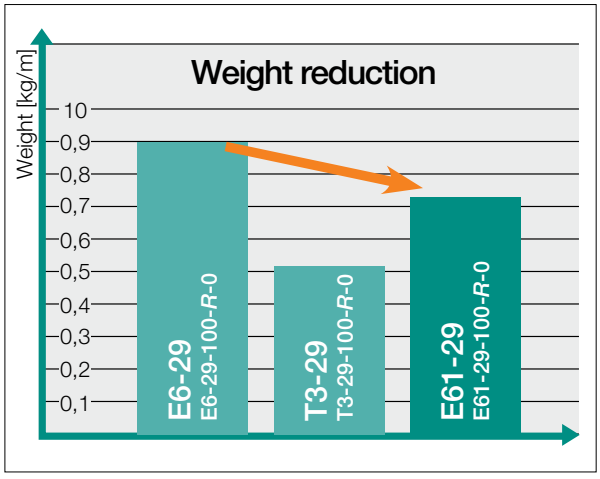


Strain relief clamps, tiewrap plates, nuggets and plug-in clips ►**Section 10**

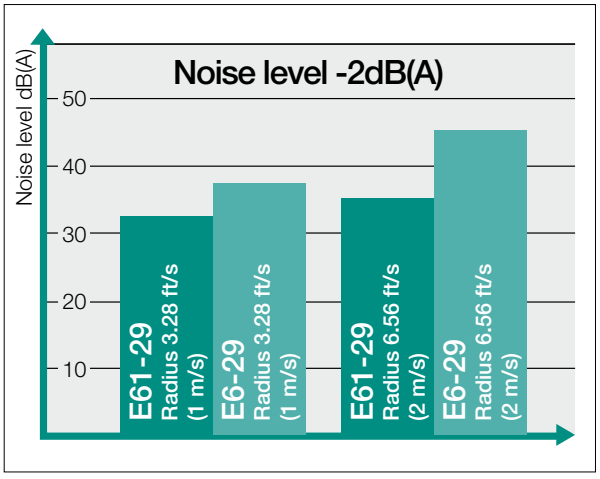
Pivoting and locking KMA mounting brackets are available

Support tray tool kit. For support of the lower run ►**Section 9**

System E6-1 internal tests in the igus® lab



The E6-1 generation can take up higher accelerations, due to a weight reduction, making it a highly dynamic yet still extremely quiet E-Chain®



Series E61-29 tests in the igus® test lab show noise levels, which are 2 dB(A) below the already class-leading noise-levels of the igus® E6-29 series

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www.edfluidos.com

E61-29

E-Chain System® E6
Series E61-29

Price Index

Series E61-29

Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system
(Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

Assembly Tips

snap-open mechanism

Other Installation Methods

Vertical, hanging ≤ 82 ft (25 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupp. = possible to a limited extent
Unsupported length of upper run upon request

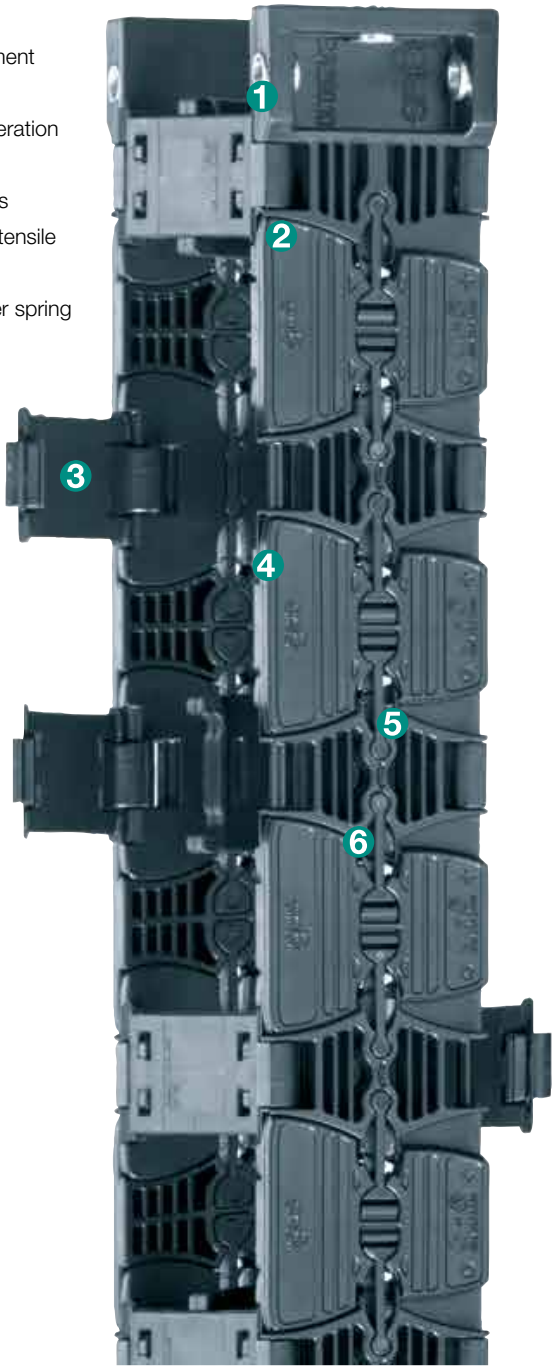
Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side-mounted applications
  ➤ **Series 200/240/250 E2 Medium**
- For RBR (reverse bending radii)
  ➤ **Series 200/240/250 E2 Medium**
- For high additional loads
  ➤ **Series 200/240/250 E2 Medium**
- For very dirty environments
  ➤ **Series R6-29**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Small pitch for low-noise, smooth operation
3. Crossbars open on either side
4. For high speed and high accelerations
5. Minimum vibration, high stability and tensile strength
6. No pin and bore connection - polymer spring



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **E61-29-100-075-0**	**E-Chain®**
With 2 separators **29-1-1** assembled every 2nd link	**Interior Separation**
1 Set **E61-290-100-12**	**Mounting Bracket**

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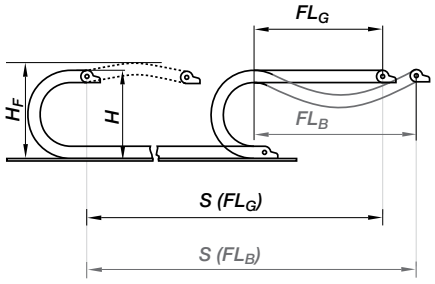
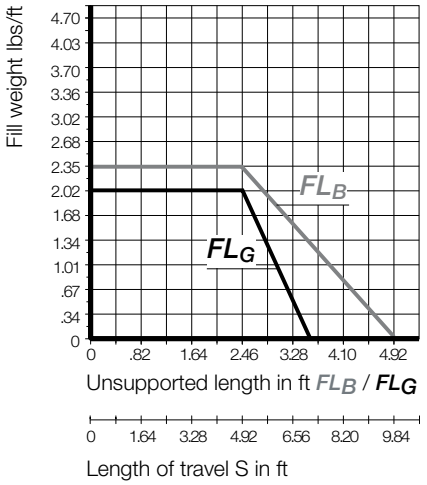
E-Chain System® E6
Series E61-29
Installation Dimensions

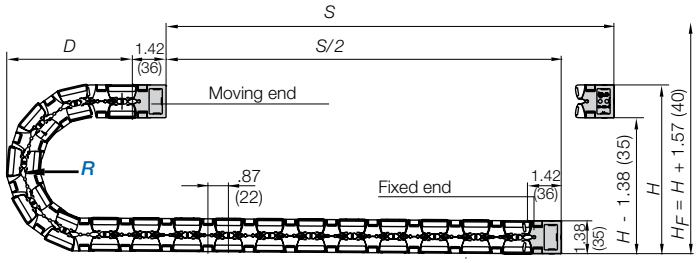
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .87" (22 mm)
Links per ft (m): = 13.79 (46)
For center mount applications:
Chain length = $^{S}/_{2}$ + K

The required clearance height: H_F = **H + 1.57 in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.17 (055)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)
H	6.89 (175)	8.46 (215)	10.43 (265)	12.40 (315)	14.37 (365)
D	4.15 (105.5)	4.94 (125.5)	5.93 (150.5)	6.91 (175.5)	7.89 (200.5)
K	8.66 (220)	11.02 (280)	14.17 (360)	17.32 (440)	20.47 (520)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Design, Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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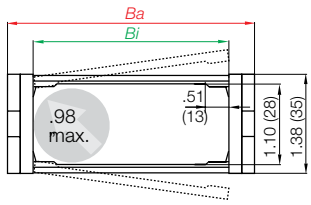
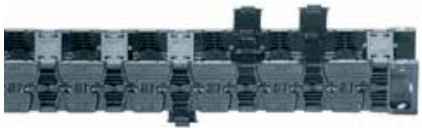
igus®

E-Chain System® E6
Series E61-29

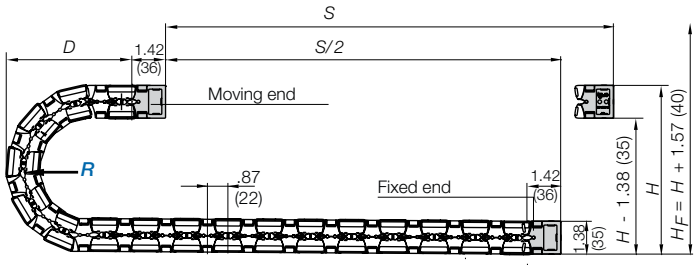
Series E61-29 - E-Chain® with crossbars every link removable along both radii





Part Number Structure

E61-29-100-100-0
- Color - Black
- Bending radius
- Width
- Series



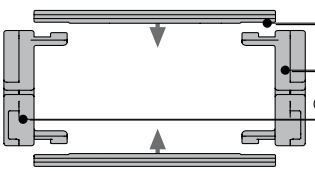
Supplement part number with required radius. Example: E61-29-100-100-0
Pitch: .87 in. (22 mm) per link links/ft (m) = 13.79 (46)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E61-29-030-□-0	1.18 (30)	1.73 (44)	≈ 0.37 (0.558)
E61-29-040-□-0	1.57 (40)	2.13 (54)	≈ 0.39 (0.583)
E61-29-050-□-0	1.97 (50)	2.52 (64)	≈ 0.41 (0.608)
E61-29-060-□-0	2.36 (60)	2.91 (74)	≈ 0.43 (0.633)
E61-29-070-□-0	2.76 (70)	3.31 (84)	≈ 0.44 (0.657)
E61-29-080-□-0	3.15 (80)	3.70 (94)	≈ 0.46 (0.682)
E61-29-090-□-0	3.54 (90)	4.09 (104)	≈ 0.48 (0.707)
E61-29-100-□-0	3.94 (100)	4.49 (114)	≈ 0.49 (0.732)
E61-29-110-□-0	4.33 (110)	4.88 (124)	≈ 0.51 (0.757)
E61-29-120-□-0	4.72 (120)	5.27 (134)	≈ 0.53 (0.782)
E61-29-140-□-0	5.51 (140)	6.06 (154)	≈ 0.54 (0.807)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E61-29-100-100-0

	055	075	100	125	150
R	2.17 (055)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)
H	6.89 (175)	8.46 (215)	10.43 (265)	12.40 (315)	14.37 (365)
D	4.15 (105.5)	4.94 (125.5)	5.93 (150.5)	6.91 (175.5)	7.89 (200.5)
K	8.66 (220)	11.02 (280)	14.17 (360)	17.32 (440)	20.47 (520)

E-Chain® as separate parts, links and side plates



Single crossbar, E-Chain® - Part No. 2105-Bi

Radius side link*, single part - Part No. E61-29-01

Common side link*, single part - Part No. E61-29-02-R

*View from the fixed point of the E-Chain®/E-Tube

Polymer spring as single part - Part No. E61-29-155

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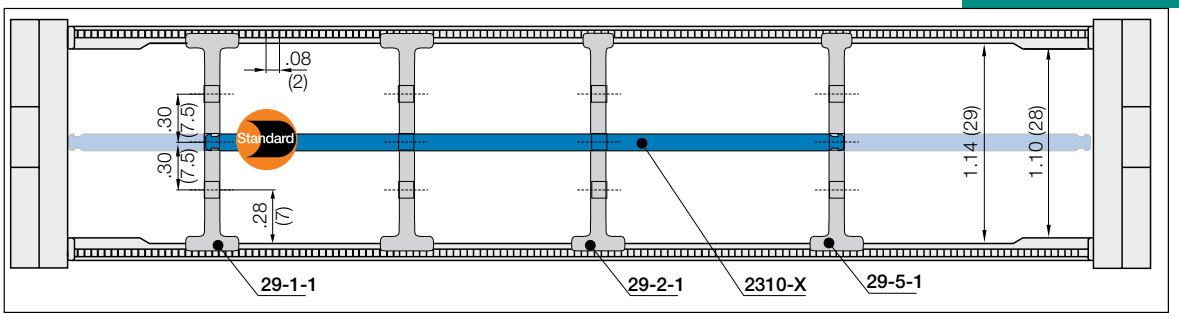
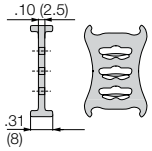
E-Chain System® E6
Series E61-29
Interior Separation - New Generation



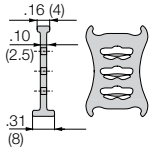
Note: Please maintain a lateral spacing of .51" (13 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 29-1**
Assembled	**Part No. 29-1-1**

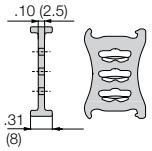
- **Standard separator 29-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator, narrow head

Unassembled	**Part No. 29-2**
Assembled	**Part No. 29-2-1**

- **Separator 29-2 For even faster installation**
  Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip)

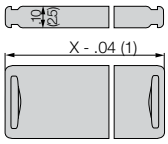


Notch separator, for notch crossbar

Unassembled	**Part No. 29-5**
Assembled	**Part No. 29-5-1**

- **Separator 29-5 Locks safely in .08 (2 mm) increments**
  For exact positioning in E-Chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
0.59 (015)	**2300-015**	**2310-015**	2.36 (060)	**2300-060**	**2310-060**	3.43 (087)	**2300-087**	**2310-087**
0.98 (025)	**2300-025**	**2310-025**	2.44 (062)	**2300-062**	**2310-062**	3.54 (090)	**2300-090**	**2310-090**
1.18 (030)	**2300-030**	**2310-030**	2.56 (065)	**2300-065**	**2310-065**	3.94 (100)	**2300-100**	**2310-100**
1.50 (038)	**2300-038**	**2310-038**	2.76 (070)	**2300-070**	**2310-070**	4.06 (103)	**2300-103**	**2310-103**
1.57 (040)	**2300-040**	**2310-040**	2.95 (075)	**2300-075**	**2310-075**	4.33 (110)	**2300-110**	**2310-110**
1.97 (050)	**2300-050**	**2310-050**	3.03 (077)	**2300-077**	**2310-077**	4.72 (120)	**2300-120**	**2310-120**
2.24 (057)	**2300-057**	**2310-057**	3.15 (080)	**2300-080**	**2310-080**	4.92 (125)	**2300-125**	**2310-125**

Separator with integrated strain relief

Strain relief separator Part No. E6-29-02-Z can be integrated into the mounting bracket and can be placed at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

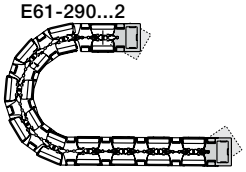
E-Chain System® E6
Series E61-29
Mounting Brackets - KMA / Strain Relief

Telephone 1-800-521-2747
Fax 1-401-438-7270

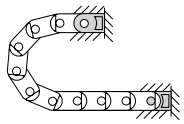
KMA - Pivoting

- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides

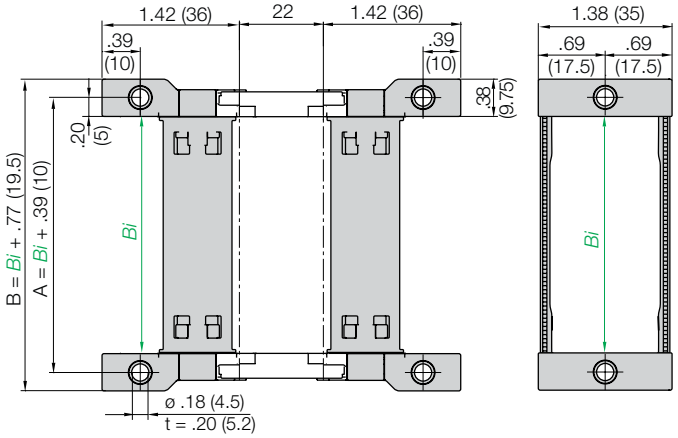
Moving end
E61-290...2



Fixed end
E61-290...1



Possible installation configurations -



Part Number Structure

E61-290- 030- 12

- 12 — Complete Set
- 030- — Width
- E61-290- — Mounting brackets for selected chain type

Full set, for both ends:
E61-290- 030- 12 Full set, **both fixed and moving end**

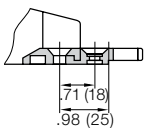
Single-part order:
E61-290- 030- 1 Mounting bracket **fixed end**
E61-290- 030- 2 Mounting bracket **moving end**

Due to the design of the E6-1 mounting brackets, chain length must be an odd number of links.

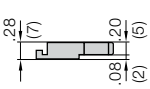
For Series	Part No. Full Set	Dimension A in.	(mm)	Bi in.	(mm)
E61-29-030	**E61-290-030-12**	1.57	(40)	1.18	(30)
E61-29-040	**E61-290-040-12**	1.97	(50)	1.57	(40)
E61-29-050	**E61-290-050-12**	2.36	(60)	1.97	(50)
E61-29-060	**E61-290-060-12**	2.76	(70)	2.36	(60)
E61-29-070	**E61-290-070-12**	3.15	(80)	2.76	(70)
E61-29-080	**E61-290-080-12**	3.54	(90)	3.15	(80)

For Series	Part No. Full Set	Dimension A in.	(mm)	Bi in.	(mm)
E61-29-090	**E61-290-090-12**	3.94	(100)	3.54	(90)
E61-29-100	**E61-290-100-12**	4.33	(110)	3.94	(100)
E61-29-110	**E61-290-110-12**	4.72	(120)	4.33	(110)
E61-29-120	**E61-290-120-12**	5.12	(130)	4.72	(120)
E61-29-140	**E61-290-140-12**	5.91	(150)	5.51	(140)

Tiewrap Plates



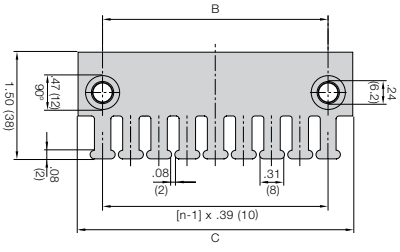
Shown assembled



Single tiewrap plate

Tiewrap plates as an individual part

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2120-ZB	12	4.72 (120)	3.94 (100)



Other strain relief elements - optional
➤ Strain Relief, Chapter 10

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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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E-Chain System® E6
Series E61-29

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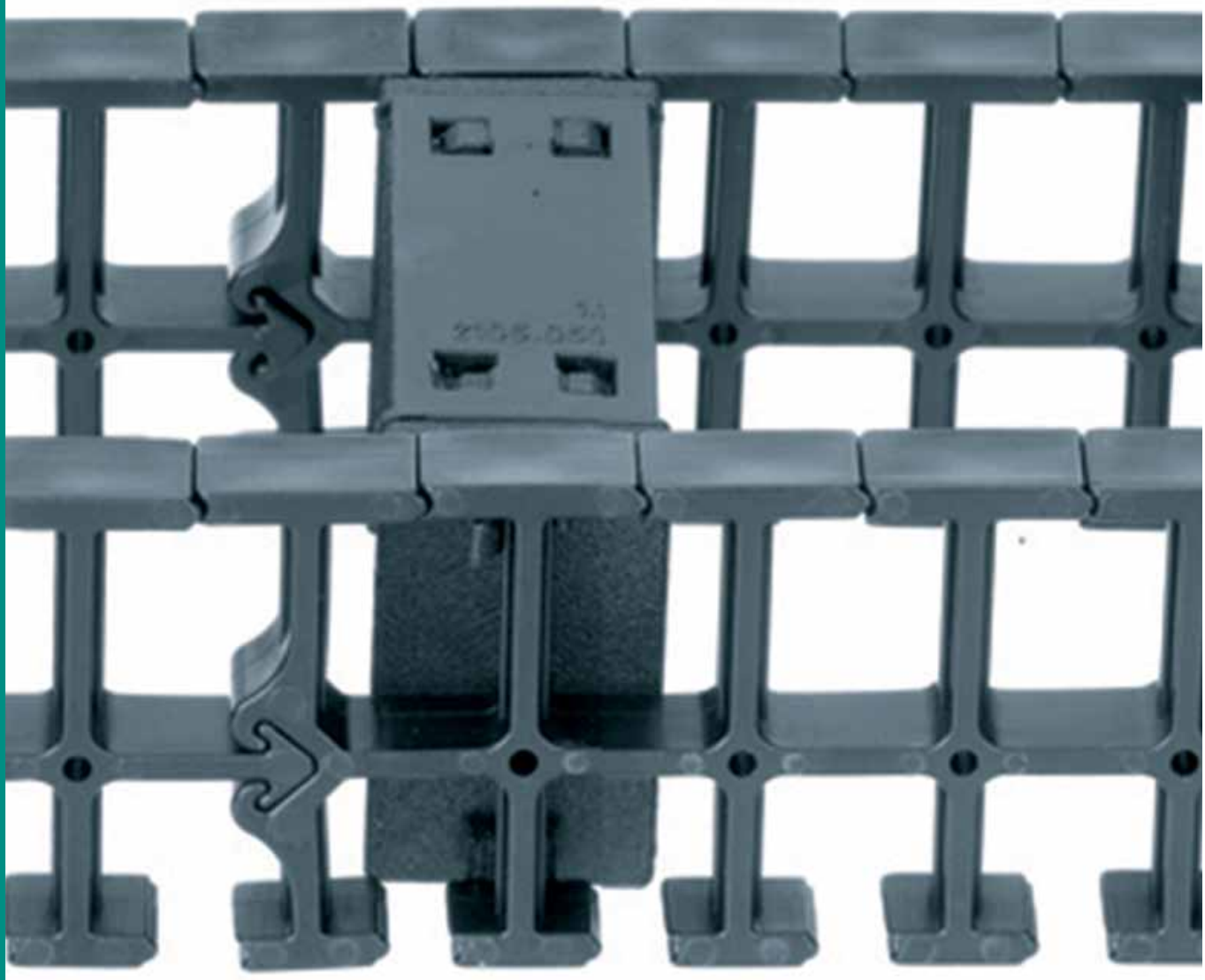

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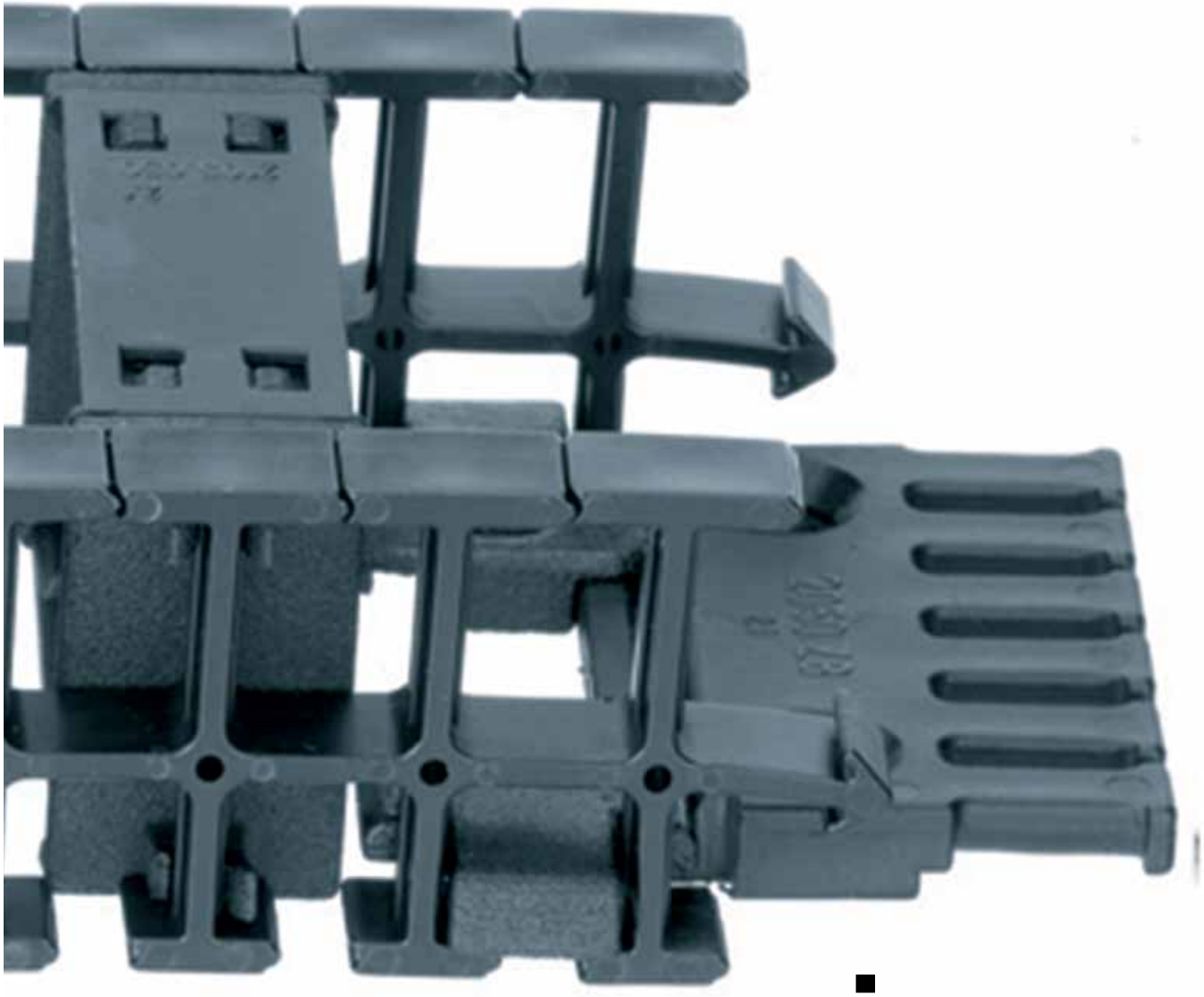

igus®
System T3
Highly flexible & low-vibration

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System T3 - Highly flexible, low vibration band chain

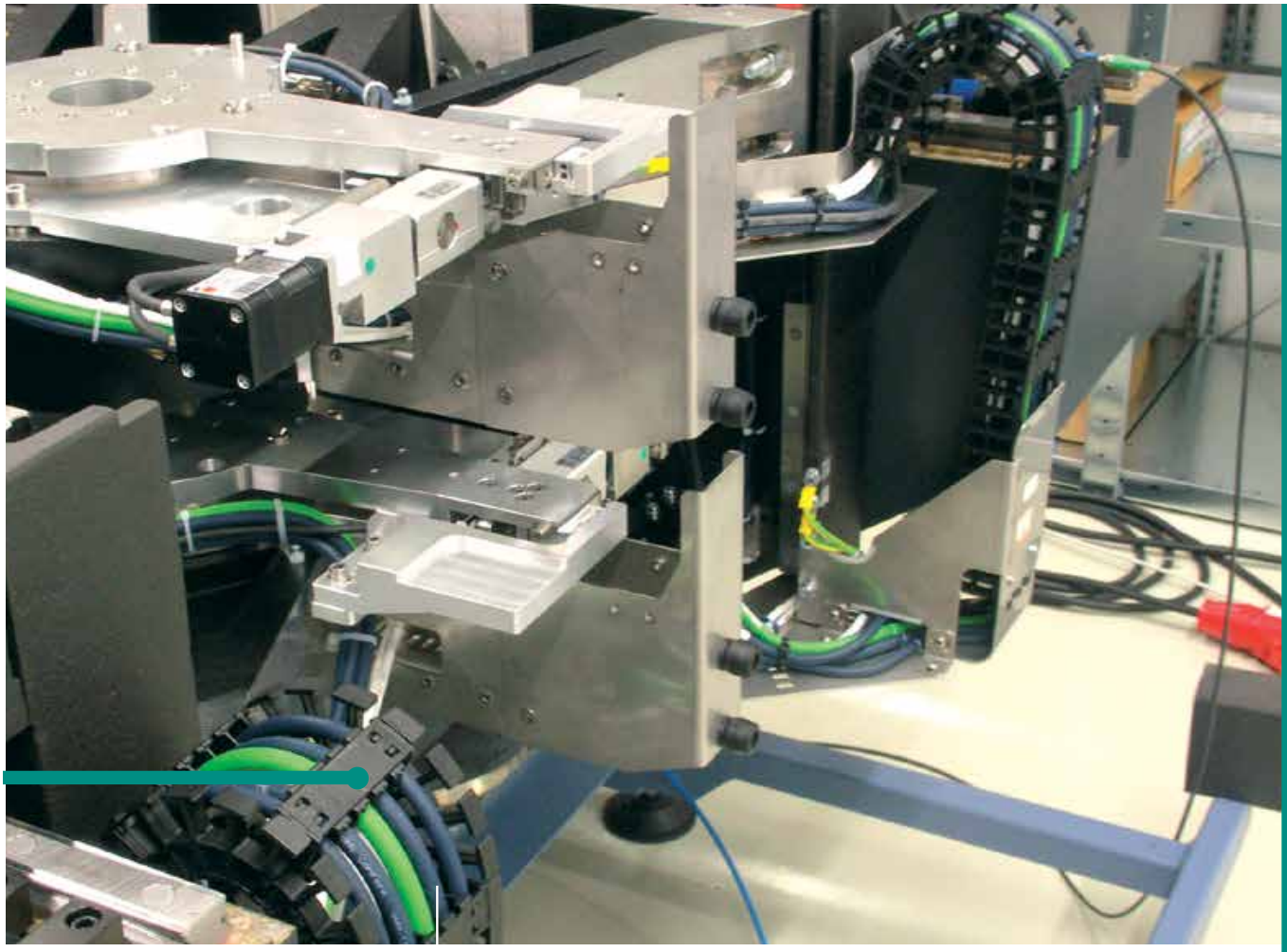
The T3-System combines low-noise operation, low sound level, simple installation and economy. The side plates that can be plugged into each other replace the conventional pin and bore connection and prevent relative movements between the joints, giving an almost complete freedom from wear. By the unique geometrical shape of the T-band, hardly any polygon effect is generated in operation. The T-band operates in a very smooth arc giving extremely low vibration and noise. In order to reduce the manufacturing and installation costs, the T-band is mounted in a length of 8 chain links. Due to its low mass, the igus® T-band, combined with high speeds and accelerations, is suitable for applications with low fill weights and short strokes.

Typical industries and applications

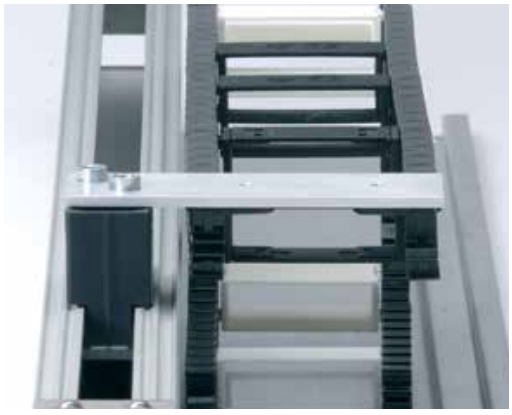
- Printer and plotter
- Cleanroom applications
- Production and processing of semiconductors
- Optics
- Automatic insertion machines
- Measuring technology

igus® tests at 3.28 ft (1 m) measuring distance: = 33 dB(A) for T3-29-050-038-0 at v = 3.28 ft/s (1 m/s and 26.5 dB(A) basic sound level

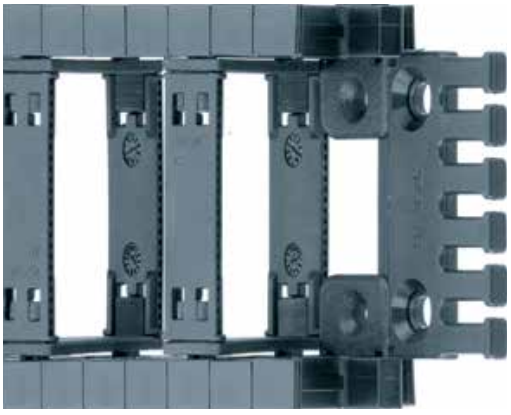
Clean-Room Cleanroom test upon request



T3 system on the Z-axis in the positioning system. It has very low vibration and is quiet.



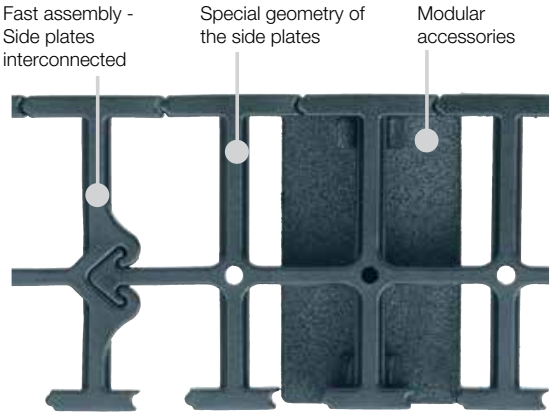
Testing facility at the igus® laboratory System T3 - ideal for high accelerations and short strokes



igus® System T3 T band chain - Inner height 1.14" (29 mm)

Next Page ➤ Find selection table and assembly instructions

E-Chain System® T3
Selection Guide



T3: E-Chain® band for highly dynamic applications

In the development of the 3-piece, T-shaped band chain "T3", the main focus was on minimum operational noise with lowest cost. This is achieved by the side-plate band consisting of 8 chain links in one piece, as well as the use of existing components of the popular E6 range. Due to the short pitch of the links, the curve section of the E-Chain remains fairly round. The omission of a pin and bore connection means the T3 band chain features extremely low abrasion and wear and hence is good for cleanroom applications.

- Extremely low noise and low vibration
- Low-priced E-Chain® for simple applications
- For high speeds and accelerations
- Very low weight
- Hardly any abrasion
- For short strokes
- Accessories: Separators, integrated strain relief, mounting brackets
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Section 1**

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	*in.*	(mm)
T3-29	1.14	(29)	1.18-5.51	(30-140)	2.17-6.50	(55-165)	1.38	(35)	1.50	(038)

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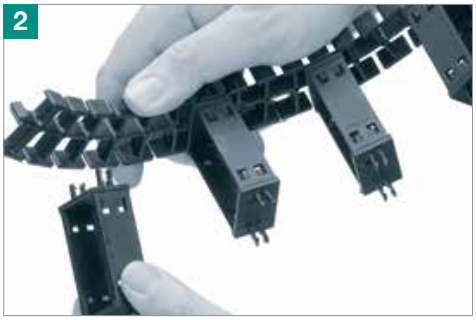
E-Chain System® T3
Assembly Instructions

System T3 - 3-piece E-Chain®

The abbreviation “T3” stands for a T-shaped E band, which consists of three basic elements:
❶ 2 side-plate bands (left/right) ❷ Separator element including separators

System T3 - Assembling

Side plates to be plugged into each other

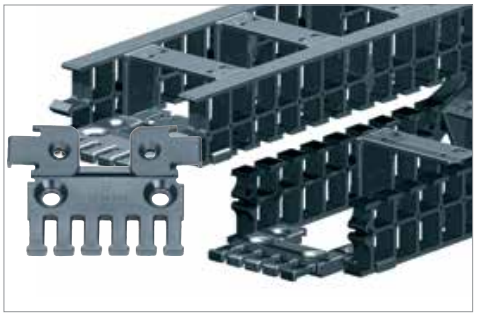


Clip-on “interior separation clips”

System T3 enables quick installation times. The side plates can be simply plugged in

System T3 - Interior Separation and Strain Relief

Separators for dividing the chain cross section
from the proven and tested E6 range (E6-29)



Universal strain relief through optional mounting angle.
You can attach the E-Chain® at the fixed end, if necessary

T3-29 igus®

E-Chain System® T3
Series T3-29

Price Index

Series T3-29

Special Features / Options

Extremely low noise
Test results upon request

Clean-Room

Cleanroom test upon request

Assembly Tips

Fast assembly due to side link strip

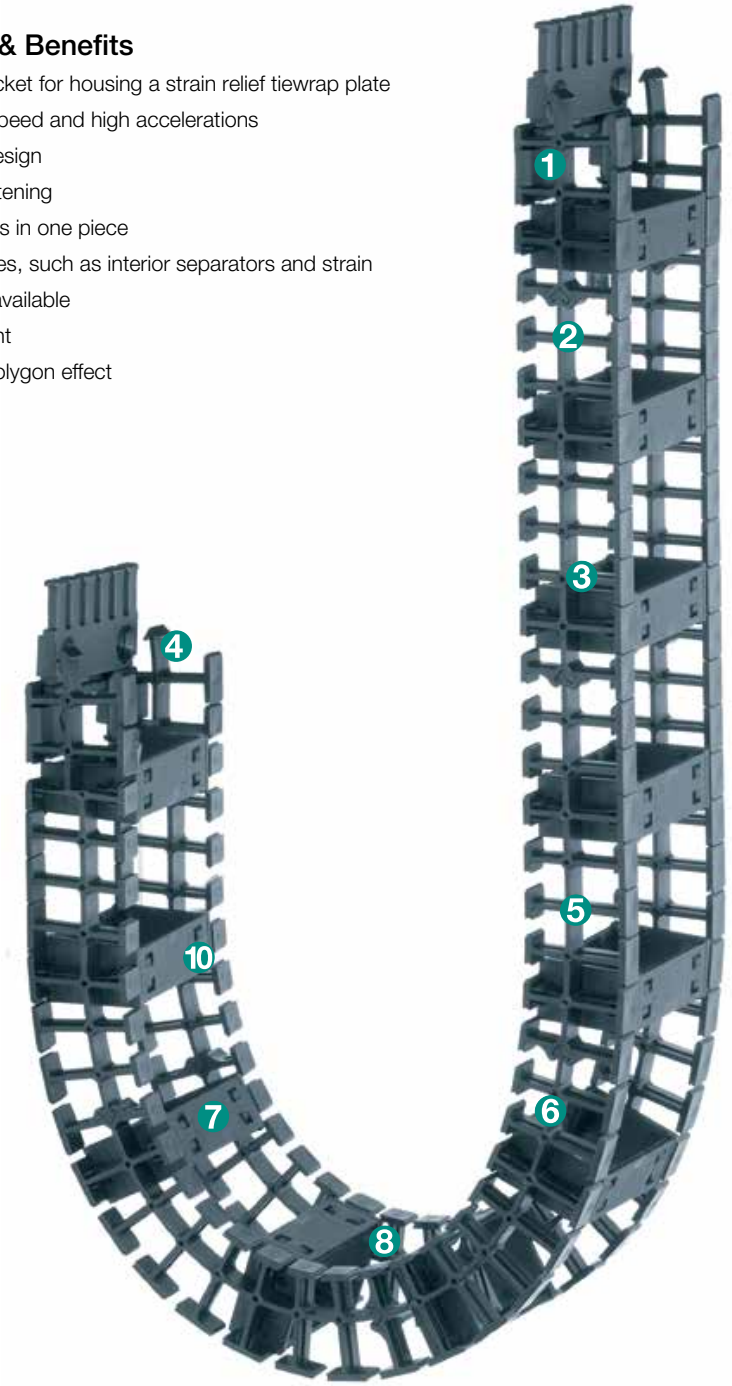
Usage Guidelines

- At very high speeds and/or accelerations
- If a very light E-Chain® is required
- If a particularly low-cost E-Chain® is required
- For small bending radii and small spaces
- If easy filling and assembly is required
- Minimal abrasion (e.g. cleanroom applications)

- When an E-Chain® is required for more fill weight
  ➤ **Series E6-29**
- When an enclosed E-Chain® is required for low noise operation
  ➤ **Series R6-29**

Features & Benefits

1. Angle bracket for housing a strain relief tiewrap plate
2. For high speed and high accelerations
3. 3-piece design
4. Easy shortening
5. Side plates in one piece
6. Accessories, such as interior separators and strain relief are available
7. Low weight
8. Minimal polygon effect



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **T3-29-050-038-0**	**E-Chain®**
With 2 separators **E6-29-11** assembled every 2nd link	**Interior Separation**
1 Set **T3-29-050-12**	**Mounting Bracket**

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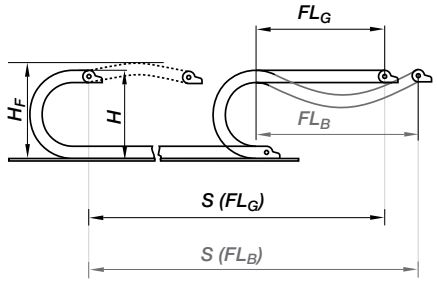
E-Chain System® T3
Series T3-29
Installation Dimensions

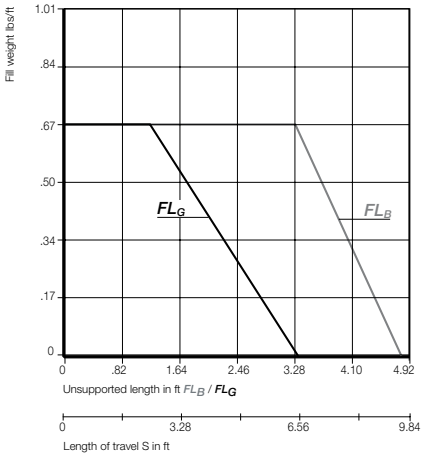
Short travel, unsupported length

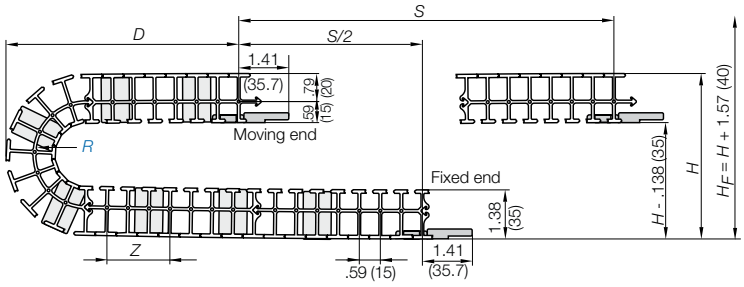
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .59" (15 mm)
Links per ft (m): = 20 (67)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 0.67 lbs/ft (1.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	**1.50 (038)**
H	8.50 (216)
D	4.57 (111)
K	8.27 (210)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ **Design, Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® T3
Series T3-29
Installation Dimensions

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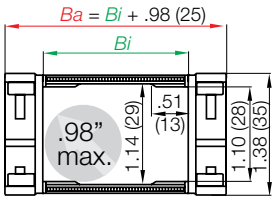
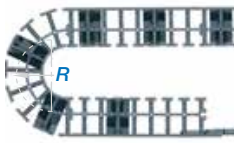
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Series T3-29 - E-Chain® with crossbars every other link

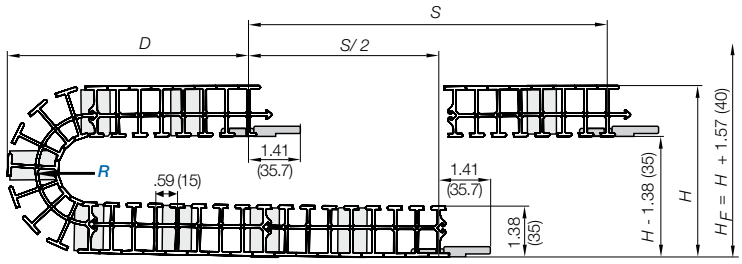




Part Number Structure

T3-29-100-038-0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: T3-29-100-[038]-0
Pitch: .59 in. (15 mm) per link links/ft (m) = 20 (67)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
T3-29-030-[ ]-0	1.18 (30)	2.16 (55)	≈ 0.27 (0.40)
T3-29-040-[ ]-0	1.57 (40)	2.56 (65)	≈ 0.28 (0.42)
T3-29-050-[ ]-0	1.97 (50)	2.95 (75)	≈ 0.30 (0.44)
T3-29-060-[ ]-0	2.36 (60)	3.35 (85)	≈ 0.31 (0.46)
T3-29-070-[ ]-0	2.76 (70)	3.74 (95)	≈ 0.32 (0.48)
T3-29-080-[ ]-0	3.15 (80)	4.13 (105)	≈ 0.34 (0.50)
T3-29-090-[ ]-0	3.54 (90)	4.53 (115)	≈ 0.34 (0.51)
T3-29-100-[ ]-0	3.94 (100)	4.92 (125)	≈ 0.36 (0.53)
T3-29-110-[ ]-0	4.33 (110)	5.31 (135)	≈ 0.37 (0.55)
T3-29-120-[ ]-0	4.72 (120)	5.71 (145)	≈ 0.38 (0.57)
T3-29-140-[ ]-0	5.51 (140)	6.50 (165)	≈ 0.40 (0.59)

Choose from the radii below for all of the above sizes
Radius (mm) Example: T3-29-100-[038]-0

038	
R	1.50 (038)
H	8.50 (216)
D	4.57 (111)
K	8.27 (210)

Interior separation elements

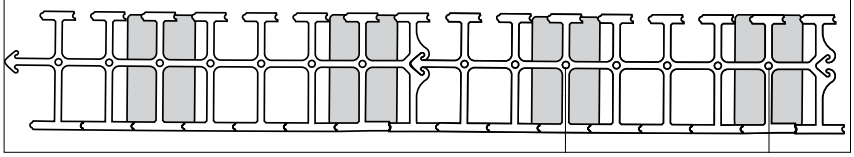
Distance "Z" for the interior separation elements of the T3 E-Chain®

Note: The first and last chain links should not have interior separation elements! As a standard, crossbars are mounted on every 4th chain link!

Part No. T3-29-100-038-0

For other distances, e.g. every 6th chain link, change the part number as follows:

Part No. T3-29-100-038-Z6-0



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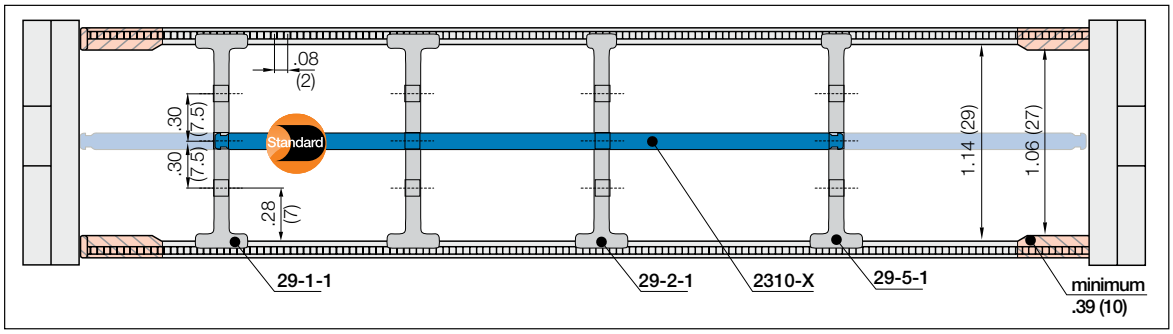
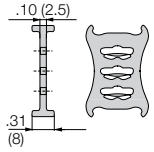
E-Chain System® T3
Series T3-29
Interior Separation - New Generation



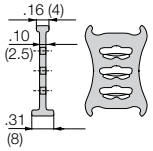
Note: Please maintain a lateral spacing of .39" (10 mm) between the separators and the side links.
In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 29-1**
Assembled	**Part No. 29-1-1**

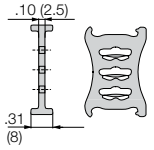
- **Standard separator 29-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator, narrow head

Unassembled	**Part No. 29-2**
Assembled	**Part No. 29-2-1**

- **Separator 29-2**
  For even faster installation
  Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip)

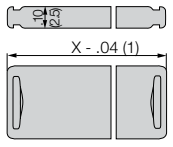


Separator, narrow base

Unassembled	**Part No. 29-5**
Assembled	**Part No. 29-5-1**

- **Notch separator 29-5**
  Notch separator for exact positioning in E-Chains®. Recommended for side mounted applications

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  Full-width shelf locks safely into the separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Shelves can be arranged at 3 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
0.59 (015)	**2300-015**	**2310-015**	2.36 (060)	**2300-060**	**2310-060**	3.43 (087)	**2300-807**	**2310-087**
0.98 (025)	**2300-025**	**2310-025**	2.44 (062)	**2300-062**	**2310-062**	3.54 (090)	**2300-090**	**2310-090**
1.18 (030)	**2300-030**	**2310-030**	2.56 (065)	**2300-065**	**2310-065**	3.94 (100)	**2300-100**	**2310-100**
1.50 (038)	**2300-038**	**2310-038**	2.76 (070)	**2300-070**	**2310-070**	4.06 (103)	**2300-103**	**2310-103**
1.57 (040)	**2300-040**	**2310-040**	2.95 (075)	**2300-075**	**2310-075**	4.33 (110)	**2300-110**	**2310-110**
1.97 (050)	**2300-050**	**2310-050**	3.03 (077)	**2300-077**	**2310-077**	4.72 (120)	**2300-120**	**2310-120**
2.24 (057)	**2300-057**	**2310-057**	3.15 (080)	**2300-080**	**2310-080**	4.92 (125)	**2300-125**	**2310-125**

Separator with integrated strain relief

Strain relief separator Part No. E6-29-02-Z can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® T3
Series T3-29
Mounting Angle

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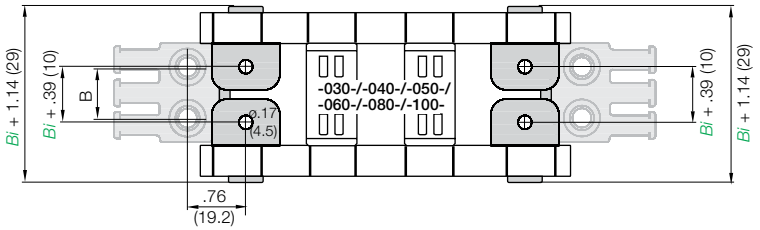
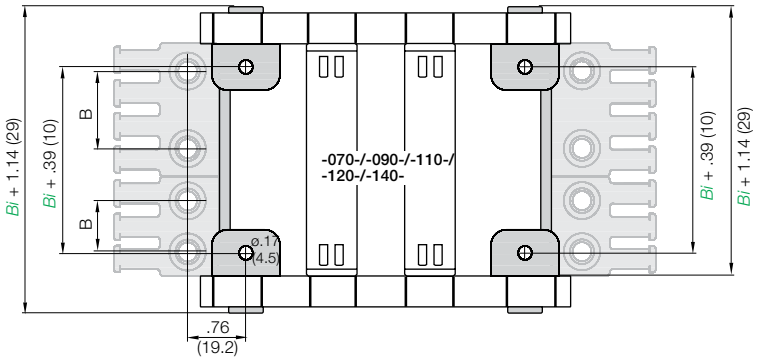
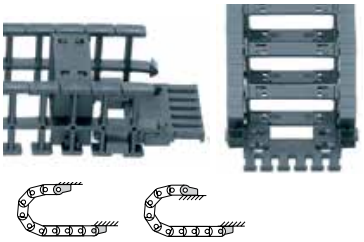
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Moving end
T3-29...2

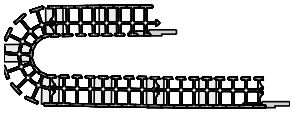
Fixed end
T3-29...1







Possible installation configurations -



Mounting angle with strain relief

Mounting angle, single

For Series	Part No. Full Set with tiewrap plate	Part No. Full Set without tiewrap plate	*Bi* in. (mm)	Dimension in. (mm)	Number of teeth
T3-29-030	**T3-29-030-12PZ**	**T3-29-030-12**	1.18 (30)	.59 (15)	3
T3-29-040	**T3-29-040-12PZ**	**T3-29-040-12**	1.57 (40)	.79 (20)	4
T3-29-050	**T3-29-050-12PZ**	**T3-29-050-12**	1.97 (50)	1.18 (30)	5
T3-29-060	**T3-29-060-12PZ**	**T3-29-060-12**	2.36 (60)	1.57 (40)	6
T3-29-070	**T3-29-070-12PZ**	**T3-29-070-12**	2.76 (70)	1.38 (15+20)	7
T3-29-080	**T3-29-080-12PZ**	**T3-29-080-12**	3.15 (80)	2.36 (60)	8
T3-29-090	**T3-29-090-12PZ**	**T3-29-090-12**	3.54 (90)	1.97 (20+30)	9
T3-29-100	**T3-29-100-12PZ**	**T3-29-100-12**	3.94 (100)	3.15 (80)	10
T3-29-110	**T3-29-110-12PZ**	**T3-29-110-12**	4.33 (110)	2.75 (30+40)	11
T3-29-120	**T3-29-120-12PZ**	**T3-29-120-12**	4.72 (120)	3.14 (40+40)	12
T3-29-140	**T3-29-140-12PZ**	**T3-29-140-12**	5.51(140)	3.93 (60+40)	14

Part Number Structure

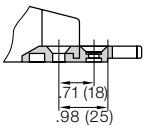
T3-29-	030-	12
		Complete Set
	Width	
Series		

Full set, for both ends:
T3-29- 030- 12 Full set, **both fixed and moving end**

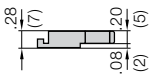
Single-part order:
T3-29 - 030- 1 Mounting bracket **fixed end**
T3-29 - 030- 2 Mounting bracket **moving end**

E-Chain System® T3
Series T3-29
Strain Relief, Additional installation options

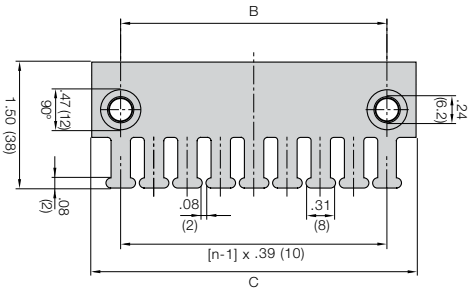
Strain Relief



Shown assembled



Single tiewrap plate



igus® chainfix tiewrap plate as individual part

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B	
2020-ZB	3	1.18 (30)	.59 (15)	
2030-ZB	4	1.57 (40)	.79 (20)	
2040-ZB	5	1.97 (50)	1.18 (30)	
2050-ZB	6	2.36 (60)	1.57 (40)	
2070-ZB	8	3.15 (80)	2.36 (60)	
2090-ZB	9	3.54 (90)	2.76 (70)	Use (2030-ZB + 2040-ZB)
2100-ZB	10	3.94 (100)	3.15 (80)	
2125-ZB	12	4.72 (120)	3.94 (100)	Use (2050-ZB + 2050-ZB)

● Also available:
Separator with integrated strain relief for use in the first or last chain link
(Part No. E6-29-02-Z)
➤ **Strain Relief, Chapter 10**

T3 E-Chains® and modules for circular movement

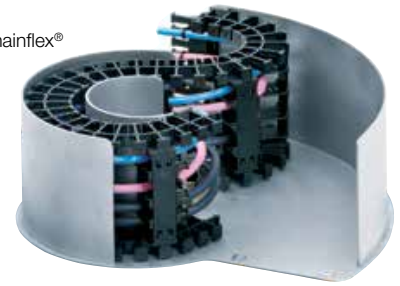
T3 E-Chains® for reverse bending radii (RBR)
Part No. T3-29-050-38/55, T3-29-050-38-75, T3-29-050-38-100, T3-29-050-38-150

- Several reverse bending radii available in 55, 75, 100, and 150
- Quiet
- Low wear
- Several mounting positions
- Complete line of interior separation for Series T3-29

T3 RBR modules for reverse bending radii

Consists of 4 elements: T3 RBR E-Chain®, guiding system, Chainflex® motion cables, iglide® PRT slewing ring bearing
Part No. T3-29-070-038/055

- Compact guiding module
- Able to turn in inner and outer radius
- For high speeds
- Quiet
- Compact dimensions
- Several mounting positions
- Delivery upon request



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Internet: http://www.igus.com
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QuickSpec: http://www.igus.com/quickspec

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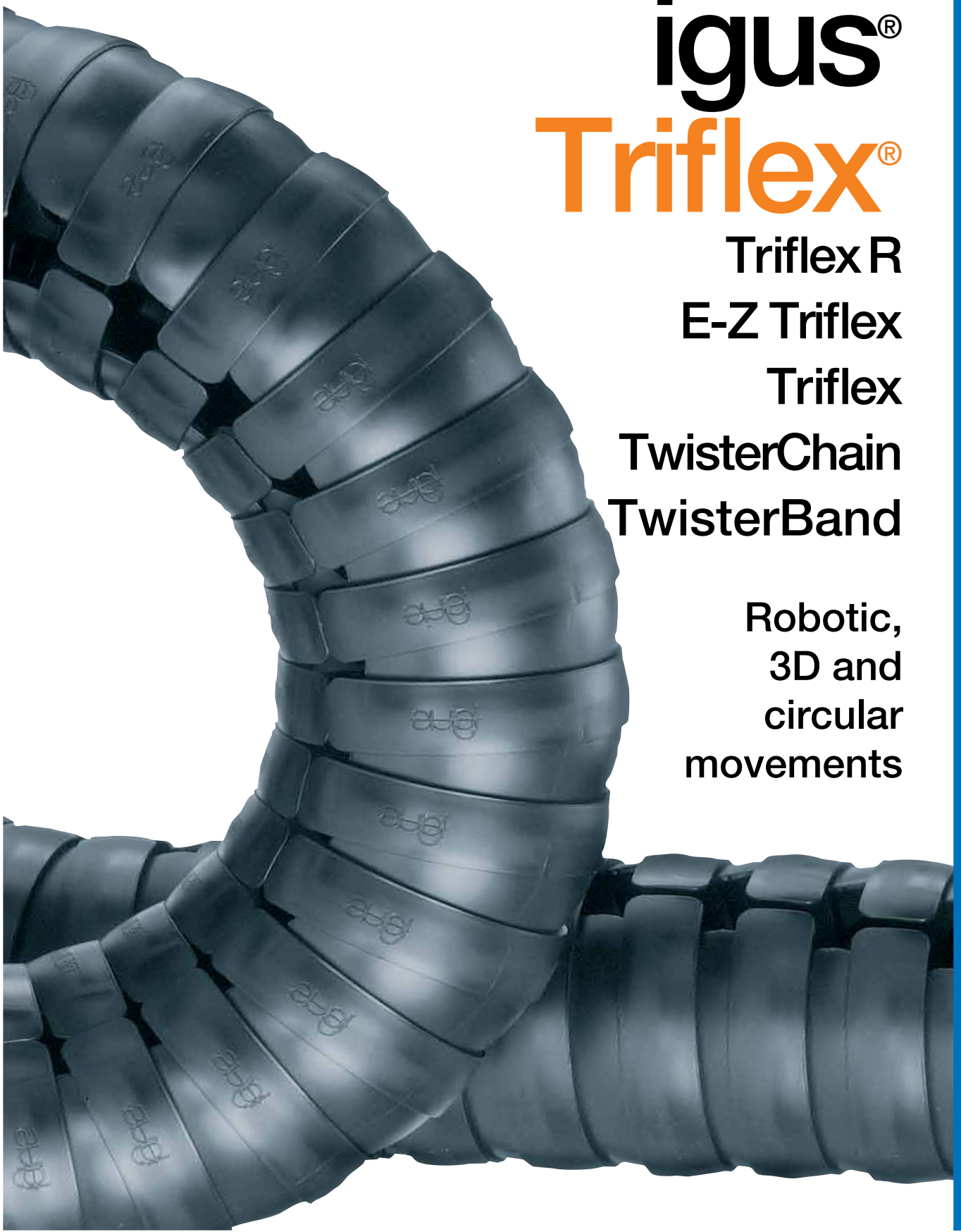

igus®
Triflex®

Triflex R
E-Z Triflex
Triflex
TwisterChain
TwisterBand

Robotic,
3D and
circular
movements

E-Chain System®
Triflex® R, E-Z Triflex® and Triflex®
E-Chains® for robotic and 3D applications

Triflex® R - 3D-robotic E-Chains®

- The first choice for multiaxis-robots
- **TRC version** - closed design with smooth and robust exterior
- **TRCF version** - closed design with snap-open mechanism
- **TRE version** - “easy” design, easy to fill from outside
- **TRL version** - light weight, cost-efficient and very easy to fill, for non robotic applications
- **TRLF version** - light weight, snap-open mechanism
- Torsion approximately ± 10° per link possible
- High torsional stability (TRC/TRE)
- Easy shortening and lengthening
- Small bending radius, small pitch

➤ **See page 8.5**

E-Z Triflex® - easy filling

- Easy filling from two sides and complex movements
- For reparations or supplements of existing Triflex® Systems
- For simple robotic- and 3D-applications
- Fast cable assembly with “easy” design
- Where rectangular shapes fit better
- Combination of different bending radii and movement directions possible
- Shortening and lengthening anywhere
- 3D E-Chain® for non robotic applications

➤ **See page 8.57**

Triflex® - enclosed version

- 3-axis motions in machinery of all kinds (combined circle- and stroke-movements)
- Completely enclosed - protection against dirt and chips
- For simple 3D-applications
- High tensile strength
- Where rectangular shapes fit better
- Modular, robust
- Combinations of varying bending radii and moving axes possible
- 3D E-Chain® for non robotic applications
- Connecting, separating possible at every link

➤ **See page 8.69**

E-Chain System®
TwisterChain® New, TwisterChain® Classic and TwisterBand E-Chains® for Circular movements and rotary motions in a small space

TwisterChain® New - new generation circular E-Chains®

We recommend for new constructions!

- Sturdier through intermediate link - heavier loads possible
- Rotary/Spiral movements up to 540°
- Highly dynamic and smoother running (with a new guide trough)
- Modular, variable width, height and radius
- Cable-friendly, smooth interior
- Crossbars snap-open along inner radius
- Rotary speeds up to 2 m/s and more

➤ **See page 8.83**

TwisterChain® Classic - first generation

- For new constructions we recommend: TC32, TC42, TC56 ➤ **See page 8.131**
- Fast cable change
- Modular design - variable widths
- Crossbars can be opened on both sides
- For circular motions up to 540° (with special attachments)
- Variable interior separation
- Electrically conductive steel mounting brackets

➤ **See page 8.107**

TwisterBand - rotary motions

- Rotary motions in a small spaces
- 4 sizes available
- Rotary movements up to 7000°
  (Installation position, vertical: up to 3.000°, horizontal 7.000° and more possible)
- Rotary speeds up to 360°/s possible
- Compact, modular and lightweight
- Ribbons can be shortened easily
- Minimum installation space
- Can be used in various installation positions
- Cost-effective

➤ **See page 8.131**

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igus®
Triflex® R

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Triflex® R - multi-axis E-Chains® for robots

Triflex® R is the third generation of multi-axis E-Chains®. Design features include:

- Approximately ±10° twist per chain link
- High tensile strength of the ball-and-socket joint
- Easy assembly and modification due to single molded link design. No support elements (steel cables, spring suspensions etc.) are necessary
- Optional fiber rod for spring loading of the Triflex® R

The Triflex® R product family is available in 4 styles:

- TRC - closed design with a smooth and robust exterior
- TRCF - closed design with snap-open mechanism
- TRE - “easy” design, simply press the cables in
- TRL - lightweight, also features “easy design”
- TRLF - Light version with snap lock mechanism

Typical industries and applications

- Robotics/Automation
- Machine tools
- Handling machines - 6-axis
- Packaging machines
- General mechanical engineering, etc.

IF-Design awards for TRC, TRL and TRLF design

Series TRC - Electrically conductive ESD/ATEX version upon request

Cleanroom suitability upon request

UL94-V2 classification

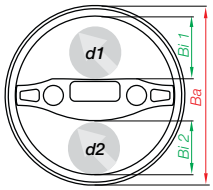
Triflex® TRLF - Lightweight version, easy to open by hand or with a screwdriver

Triflex® TRCF - Closed 3D E-Tube. Easy to open with a screwdriver

Triflex® RS - Universal modular retraction system

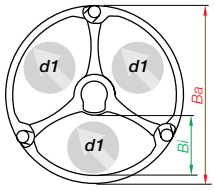
Triflex® RSP - pneumatic retraction system prevents loops from forming on the robot

E-Chain System® - Series Triflex® R
Selection Guide



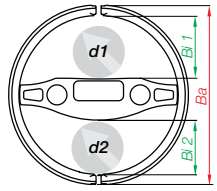
"TRC" - Triflex® R closed design, dirt-resistant

Series	Inner height				max. cable ø				Outer width		Bending radii		Pitch	
	Bi 1		Bi 2		d1		d2		Ba		R			
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
TRC-30	.47	(12)	.39	(10)	.39	(10)	.31	(8)	1.36	(34.5)	1.97	(50)	.44	(11.3)
TRC-40	.59	(15)	.51	(13)	.51	(13)	.43	(11)	1.69	(43)	2.28	(58)	.55	(13.9)
TRC-60	.88	(22.5)	.77	(19.5)	.81	(20.5)	.69	(17.5)	2.56	(65)	3.43	(87)	.80	(20.4)
TRC-70	1.10	(28)	.94	(24)	1.02	(26)	.87	(22)	3.19	(81)	4.33	(110)	1.01	(25.6)
TRC-85	1.30	(33)	1.10	(28)	1.22	(31)	1.02	(26)	3.72	(94.5)	5.31	(135)	1.20	(30.6)
TRC-100	1.48	(37.5)	1.28	(32.5)	1.40	(35.5)	1.20	(30.5)	4.25	(108)	5.71	(145)	1.36	(34.5)
TRC-125**	1.70	(43.3)	1.70	(43.3)	1.61	(41)	1.61	(41)	5.31	(135)	7.17	(182)	1.76	(44.6)



"TRCF" - a light version with snap-open mechanism

Series	Inner height		max. cable ø		Outer width		Bending radii		Pitch	
	Bi 1		d1		Ba		R			
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
TRCF-85	1.18	(30)	1.10	(28)	3.72	(94.5)	5.31	(135)	1.20	(30.6)
TRCF-100	1.35	(34.3)	1.27	(32.3)	4.25	(108)	5.71	(145)	1.35	(34.4)



"TRE" - Triflex® R "E-Z" design for fast installation of cables

Series	Inner height				max. cable ø				Outer width		Bending radii		Pitch	
	Bi 1		Bi 2		d1		d2		Ba		R			
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
TRE-30	.47	(12)	.39	(10)	.39	(10*)	.31	(8*)	1.36	(34.5)	1.97	(50)	.44	(11.3)
TRE-40	.59	(15)	.51	(13)	.51	(13*)	.43	(11*)	1.69	(43)	2.28	(58)	.55	(13.9)
TRE-60	.88	(22.5)	.77	(19.5)	.81	(20.5*)	.69	(17.5*)	2.56	(65)	3.43	(87)	.80	(20.4)
TRE-70	1.10	(28)	.94	(24)	1.02	(26*)	.87	(22*)	3.19	(81)	4.33	(110)	1.01	(25.6)
TRE-85	1.30	(33)	1.10	(28)	1.22	(31*)	1.02	(26*)	3.72	(94.5)	5.31	(135)	1.20	(30.6)
TRE-100	1.48	(37.5)	1.28	(32.5)	1.40	(35.5*)	1.20	(30.5*)	4.25	(108)	5.71	(145)	1.36	(34.5)
TRE-125**	1.70	(43.3)	1.70	(43.3)	1.61	(41*)	1.61	(41*)	5.31	(135)	7.17	(182)	1.76	(44.6)

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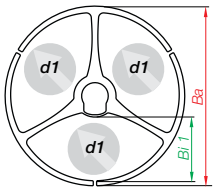
E-Chain System® - Series Triflex® R
Selection Guide

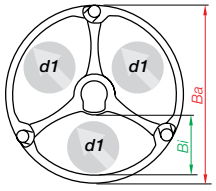


"TRL" - a light and economical alternative with an "E-Z" design

Series	Inner height				max. cable ø				Outer width		Bending radii		Pitch	
	Bi 1		Bi 2		d1		d2		Ba		R			
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
TRL-30	.47	(12)	.39	(10)	.39	(10*)	.31	(8*)	1.36	(34.5)	1.97	(50)	.44	(11.3)
TRL-40	.59	(15)		–	.51	(13*)		–	1.69	(43)	2.28	(58)	.55	(13.9)
TRL-60	.91	(23)		–	.81	(20.5*)		–	2.56	(65)	3.43	(87)	.80	(20.4)
TRL-70	1.10	(28)		–	1.02	(26*)		–	3.19	(81)	4.33	(110)	1.01	(25.6)
TRL-100	1.50	(38)		–	1.40	(35.5*)		–	4.25	(108)	5.31	(145)	1.36	(34.5)

* For quick and easy insertion / removal of cables using the E-Z Chain® design, we recommend a maximum cable diameter of 70% of the specified value.

** If shortening/lengthening of a "filled" Triflex® TRC/TRE-125 is required, cable diameter changes to Ø 1.42" (36 mm).



"TRLF" - a light version with snap-open mechanism

Series	Inner height				max. cable ø				Outer width		Bending radii		Pitch	
	Bi 1		Bi 2		d1		d2		Ba		R			
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
TRLF-65	.96	(24.4)	–	–	.87	(22)	–	–	2.76	(70.2)	3.94	(100)	.91	(23.1)
TRLF-85	1.29	(32.8)	–	–	1.18	(30)	–	–	3.72	(94.5)	5.31	(135)	1.20	(30.6)
TRLF-100	1.48	(37.5)	–	–	1.40	(35.5)	–	–	4.25	(108)	5.71	(145)	1.35	(34.4)

for TRC·TRE

RS - modular retraction system

for ø diameter index 40 to 100 mm

for TRC·TRE

RSP pneumatic retraction system

for ø diameter index 60 to 125 mm

for TRC·TRE

RSE - cost-effective retraction system for small-scale robotics

for ø diameter index 40 mm

E-Chain System® - Series Triflex® R
Assembly Instructions - TRC Series

Assembly | TRC-30 · TRC-40 · TRC-60 · TRC-70 · TRC-85 · TRC-100

Hold two pieces together at inner radius and move socket up against the ball's wedged end

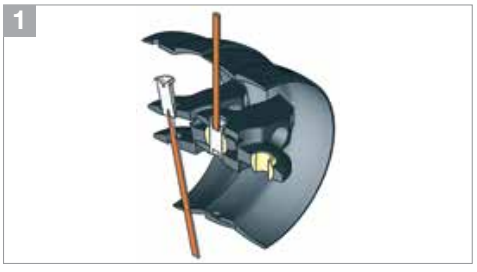
Separating | TRC-30 · TRC-40 · TRC-60

Bend Triflex® R into its radius and twist apart, counter-clockwise

Separating | TRC-70 · TRC-85 · TRC-100

Insert screwdriver into the opening of the socket from the top. Then twist apart, counter-clockwise

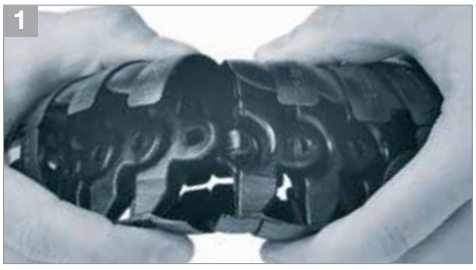
Assembly | **Separating** | TRC-125

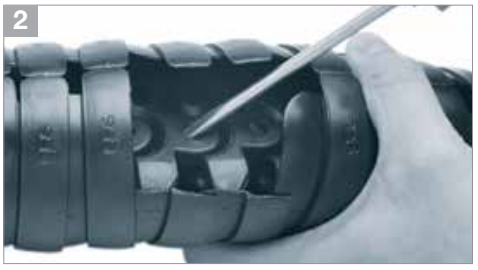


Connector design = Ball head clevis joint (similar to the proven trailer hitch design)
Improved assembly/disassembly for large sizes. Faster assembly with less effort

E-Chain System® - Series Triflex® R
Assembly Instructions - TRE Series

Assembly | TRE-30 · TRE-40 · TRE-60 · TRE-70 · TRE-85 · TRE-100





Hold two pieces together at inner radius and move socket up against the ball's wedged end.
Push until a klicking sound indicates a secure fit of socket onto the ball (E-Chain® section exposed for the purpose of demonstration)

Separating | TRE-30 · TRE-40 · TRE-60

Bend Triflex® R into its radius and twist apart, counter-clockwise

Separating | TRE-70 · TRE-85 · TRE-100

Insert screwdriver into the opening of the socket from the top. Then twist apart, counter-clockwise

Filling | TRE-30 · TRE-40 · TRE-60 · TRE-70 · TRE-85 ·TRE-100

Easy to fill - simply press cables in...

...and easy to take the cables out

E-Chain System® - Series Triflex® R
Assembly Instructions - TRL Series

Assembly | TRL-30 · TRL-40 · TRL-60 · TRL-70 · TRL-100

igus® Triflex® R TRL - very easy to assemble - simply press the ball into the socket, ready!

Separating | TRL-30 · TRL-40 · TRL-60 · TRL-70 · TRL-100

Just twist the ball slightly to remove it from its socket

Filling | TRL-40 · TRL-30 · TRL-60 · TRL-70 · TRL-100

Easy to fill - simply press cables in...

...and easy to take the cables out

Installation | Mounting bracket in this case, a “light” bracket with an intermediate connection

Easy assembly - open the mounting bracket, install the chain and snap the mounting bracket shut again.
To open, push a screwdriver against one side or manually pry apart

E-Chain System® - Series Triflex® R
Assembly Instructions - TRLF Series

Assembly | TRLF-65 · TRCF-85/TRLF-85 · TRCF-100/TRLF-100

igus® Triflex® R TRLF - very easy to assemble - simply press the ball into the socket, ready!
TRLF shown

Separating | TRLF-65 · TRCF-85/TRLF-85 · TRCF-100/TRLF-100

Just twist the ball slightly to remove it from its socket
TRLF shown

Filling | TRLF-65 · TRCF-85/TRLF-85 · TRCF-100/TRLF-100

Simply snap open the chain links and insert cables
TRLF shown

Installation | Mounting bracket in this case, a “light” bracket with an intermediate connection

Easy assembly - open the mounting bracket, install the chain and snap the mounting bracket shut again.
To open, push a screwdriver against one side or manually pry apart

Triflex® R TRC

igus®

E-Chain System® - Series Triflex® R TRC - Fully enclosed

.39"-1.70"

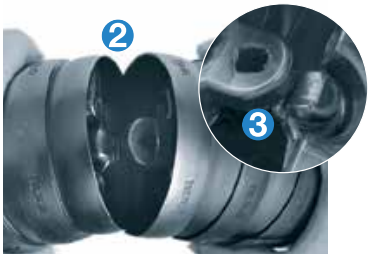
Price Index

Series Triflex® TRC

Special Options Available

- Cleanroom suitability upon request
- iF-Design Award Winner Triflex® R Series
- ESD classification: Electrically conductive ESD/ ATEX version upon request
- Flammability Class VDE 0304 IIC UL94 V2

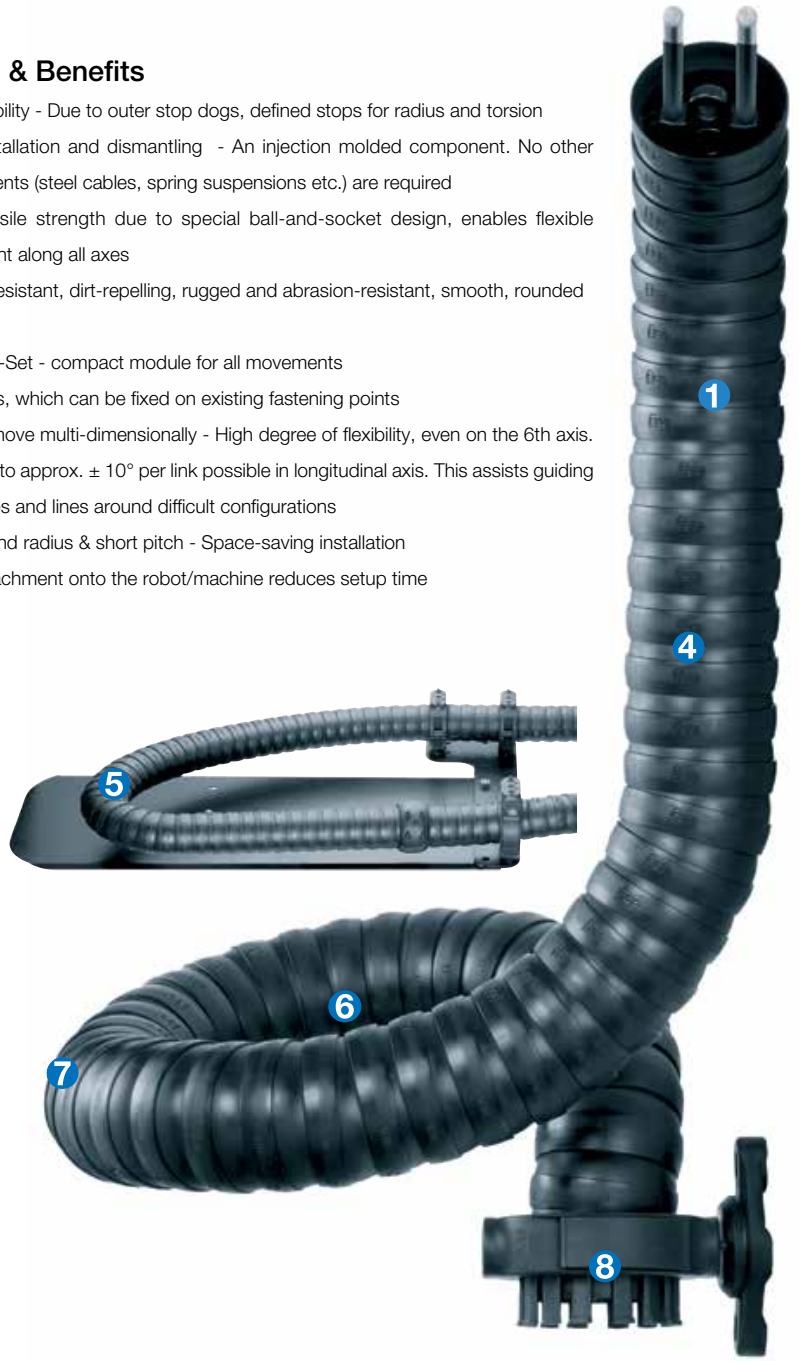
Assembly Tips



Easy assembly and quick access to cables and hoses thanks to a unique ball-and-socket design.

Features & Benefits

1. High stability - Due to outer stop dogs, defined stops for radius and torsion
2. Easy installation and dismantling - An injection molded component. No other components (steel cables, spring suspensions etc.) are required
3. High tensile strength due to special ball-and-socket design, enables flexible movement along all axes
4. Impact-resistant, dirt-repelling, rugged and abrasion-resistant, smooth, rounded exterior
5. Triflex® R-Set - compact module for all movements on robots, which can be fixed on existing fastening points
6. Able to move multi-dimensionally - High degree of flexibility, even on the 6th axis. Twist up to approx. ± 10° per link possible in longitudinal axis. This assists guiding the cables and lines around difficult configurations
7. Small bend radius & short pitch - Space-saving installation
8. Easy attachment onto the robot/machine reduces setup time



Usage Guidelines

- If a secure cable guide is required for multi-dimensional (3D-) movements
- If high torsional stability is required
- If the system has to be shortened or lengthened easily
- If a small bending radius is required
- If high tensile strength is important

- For circular movements with high loads
  ➤ **TwisterChain System**
- If simple filling is required
  ➤ **Triflex® R, TRE**
- If a simpler and cost effective solution is required
  ➤ **Triflex® R, TRL**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. **Example: 6.56 ft (2m) or 144 links**

6.56 ft (2 m) **TRC-40-058-0**	**E-Chain®**
1 set mounting bracket with strain relief **TR-40-01**	**Mounting Bracket**
2 intermediate links without strain relief **TR-40-02**	**Mounting Bracket**
+23.6" (600 mm) fiber rods **TRCF-40-0600-1**	**Fiber Rods**

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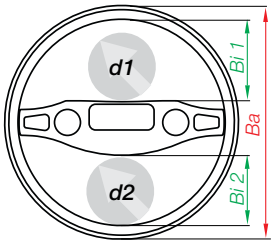
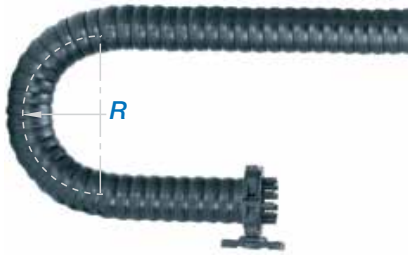
942 25 27 50
edf@edfluidos.com
www.edfluidos.com

E-Chain System® - Series Triflex® R
TRC - Fully enclosed





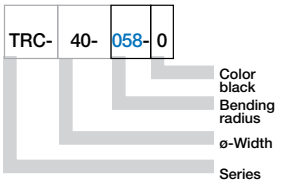
"TRC" - Triflex® R closed design, dirt-resistant

Series	Inner height				max. cable ø				Outer width		Bending radii	
	Bi 1		Bi 2		d1		d2		Ba		R	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
TRC-30-050-0	.47	(12)	.39	(10)	.39	(10)	.31	(8)	1.36	(34.5)	1.97	(50)
TRC-40-058-0	.59	(15)	.51	(13)	.51	(13)	.43	(11)	1.69	(43)	2.28	(58)
TRC-60-087-0	.88	(22.5)	.77	(19.5)	.81	(20.5)	.69	(17.5)	2.56	(65)	3.43	(87)
TRC-70-110-0	1.10	(28)	.94	(24)	1.02	(26)	.87	(22)	3.19	(81)	4.33	(110)
TRC-85-135-0	1.30	(33)	1.10	(28)	1.22	(31)	1.02	(26)	3.72	(94.5)	5.31	(135)
TRC-100-145-0	1.48	(37.5)	1.28	(32.5)	1.40	(35.5)	1.20	(30.5)	4.25	(108)	5.71	(145)
TRC-125-182-0**	1.70	(43.3)	1.70	(43.3)	1.61	(41)	1.61	(41)	5.31	(135)	7.17	(182)

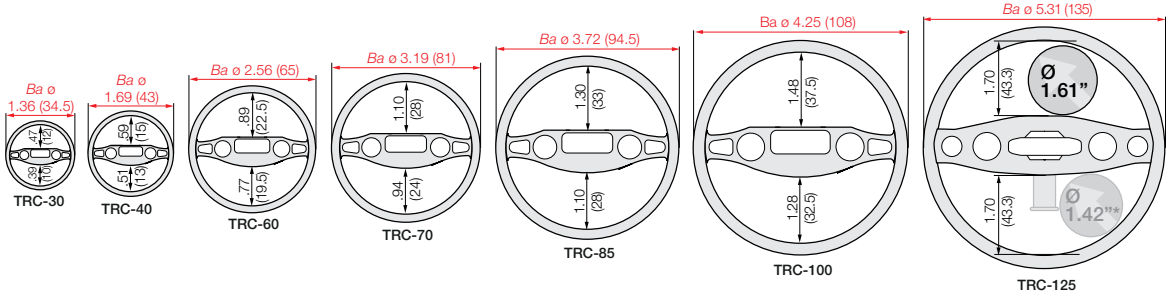
** If shortening/lengthening of a "filled" Triflex® TRC-125 is required, cable diameter changes to Ø 1.42" (36 mm).

Part No.	Pitch		Weight		Links	
	in.	(mm)	lbs/ft	(kg/m)	links/ft	links/ m
TRC-30-	.44	(11.3)	≈ 0.18	(≈ 0.27)	27.27	(89)
TRC-40-	.55	(13.9)	≈ 0.25	(≈ 0.37)	21.82	(72)
TRC-60-	.80	(20.4)	≈ 0.57	(≈ 0.85)	15.00	(49)
TRC-70-	1.01	(25.6)	≈ 0.89	(≈ 1.32)	11.88	(39)
TRC-85-	1.20	(30.6)	≈ 1.18	(≈ 1.75)	10.00	(33)
TRC-100-	1.36	(34.5)	≈ 1.60	(≈ 2.38)	8.82	(29)
TRC-125-**	1.76	(44.6)	≈ 3.16	(≈ 4.70)	6.82	(23)

Part No. structure



Series TRC - Dimensions



Material - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Flammability Class, igumid NB	VDE 0304 IIC UL94 V2

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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Triflex® R TRCF

igus®

E-Chain System® - Series Triflex® R
TRCF - Closed Design with snap lock mechanism

1.18" - 1.35"

Price Index

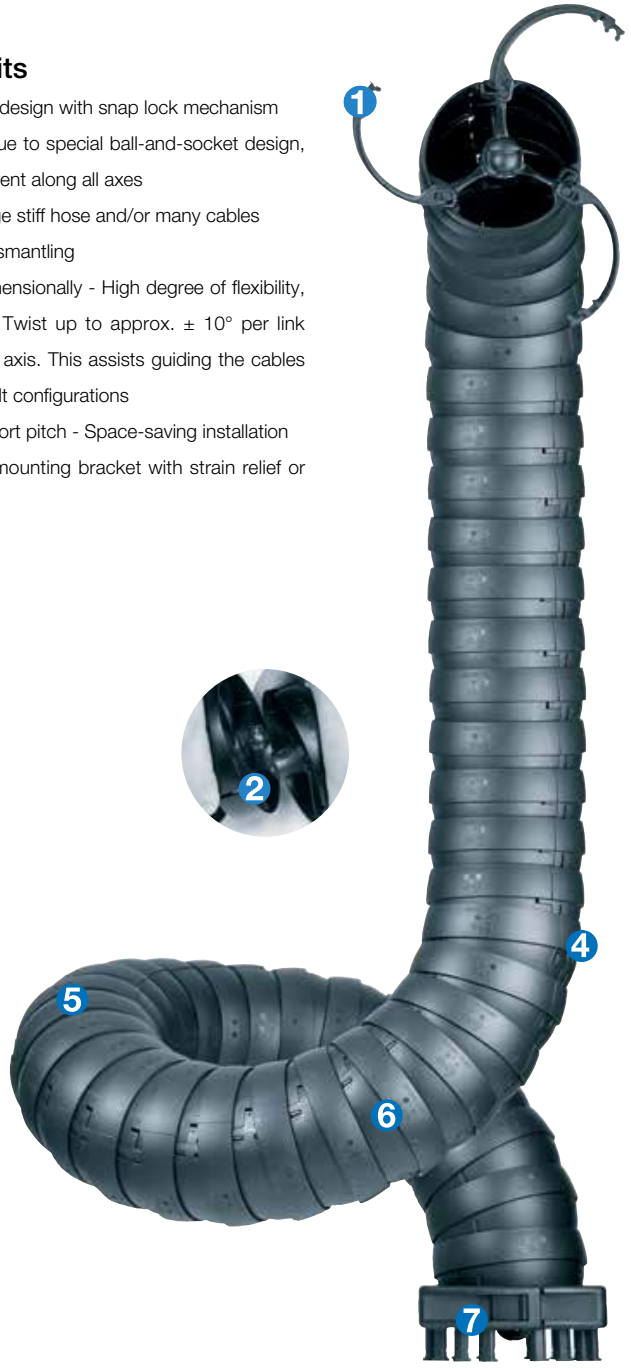
Series Triflex® TRCF

Special Options Available

Flammability Class
VDE 0304 IIC UL94 HB

Features & Benefits

1. Triflex® TRCF - Closed design with snap lock mechanism
2. High tensile strength due to special ball-and-socket design, enables flexible movement along all axes
3. Simply flip open for large stiff hose and/or many cables
4. Easy installation and dismantling
5. Able to move multi-dimensionally - High degree of flexibility, even on the 6th axis. Twist up to approx. ± 10° per link possible in longitudinal axis. This assists guiding the cables and lines around difficult configurations
6. Small bend radius & short pitch - Space-saving installation
7. Economical and light mounting bracket with strain relief or intermediate link



Assembly Tips

To close, push and click shut

Usage Guidelines

- If a secure energy supply system is required for multi-axial 3D movement
- When high torsion ability is required
- When easy shortening or lengthening is desired
- When a short bending radius is required
- When high tensile force absorption is important

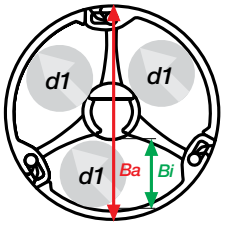
- For circular movements with high loads
  ➤ **System TwisterChain®**
- When a rugged, easy to fill variant is needed
  ➤ **Triflex® R - TRE**
- When a cost-effective, less demanding 3D solution is required
  ➤ **Triflex® R - TRL**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. **Example: 6.56 ft (2m) or 78 links**

6.56 ft (2 m) **TRCF-100-135-0**	**E-Chain®**
1 set mounting bracket with strain relief **TL-100-01**	**Mounting Bracket**

E-Chain System® - Series Triflex® R
TRCF - Closed Design with snap lock mechanism

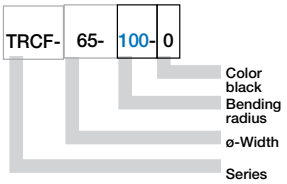


"TRCF" - Closed design with snap lock mechanism

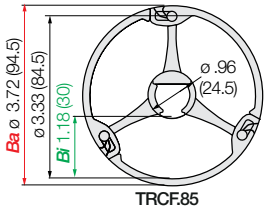
Series	Inner height Bi 1		max. cable ø d1		Outer width Ba		Bending radii R	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
TRCF-85-135-0	1.18	(30)	1.10	(28)	3.72	(94.5)	5.31	(135)
TRCF-100-145-0	1.35	(34.3)	1.27	(32.3)	4.25	(108)	5.71	(145)

Part No.	Pitch		Weight		Links	
	in.	(mm)	lbs/ft	(kg/m)	links/ft	links/ m
TRCF-85-	1.20	(30.6)	≈ 1.41	≈ 2.10	10.0	(33)
TRCF-100-	1.36	(34.5)	≈ 1.81	≈ 2.70	8.8	(29)

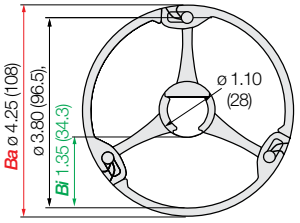
Part No. structure



Series TRCF - Dimensions



TRCF.85



TRCF.100

Snap lock mechanism for quick filling

Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid NB	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

Triflex® R TRE

igus®

E-Chain System® - Series Triflex® R TRE - Easy to fill

.39"-1.70"

Price Index

Series Triflex® TRE

Special Options Available

Clean-Room — Cleanroom suitability upon request

Flammability Class VDE 0304 IIC UL94 V2

Assembly Tips

Easy to fill - simply press cables in - "E-Z" Design

Usage Guidelines

- When an easy to fill 3D E-Chain® is needed
- If a secure cable guide is required for multi-dimensional 3D-movements
- If high torsional stability is required
- If the system has to be shortened or lengthened easily
- If a small bending radius is required
- If hight ensile strength is important

- For circular movements with high loads
  ➤ **TwisterChain® System**
- If a fully enclosed solution is required
  ➤ **Triflex® R, TRC**
- If a more simple and cost effective solution is required
  ➤ **Triflex® R, TRL**

Features & Benefits

1. For special cases also available: Fiber rods, universal assembly kit and FlexBar
2. Impact-resistant, dirt-repelling, rugged and abrasion-resistant, smooth, rounded exterior
3. Easy opening mechanism for easy filling with cable and hose packages
4. High tensile strength due to special ball-and-socket design, enables flexible movement along all axes
5. Triflex® R-Set - compact module for all movements on robots, which can be fixed on existing fastening points
6. Easy installation and dismantling - An injection molded component. No other components (steel cables, spring suspensions etc.) are required
7. Able to move multi-dimensionally - High degree of flexibility, even on the 6th axis. Twist up to approx. ± 10° per link possible in longitudinal axis. This assists guiding the cables and lines around difficult configurations
8. Small bend radius & short pitch - Space-saving installation
9. High stability - Due to outer stop dogs, defined stops for radius and torsion
10. Easy attachment onto the robot/machine reduces setup time

Order Example: Complete E-Chain®

Please indicate chain length or number of links. **Example: 6.56 ft (2m) or 144 links**

6.56 ft (2 m) **TRE-40-058-0**	**E-Chain®**
1 set mounting bracket with strain relief **TR-40-01**	**Mounting Bracket**
2 intermediate links without strain relief **TR-40-02**	**Mounting Bracket**
+23.6" (600 mm) fiber rods **TREF-40-0600-1**	**Fiber Rods**

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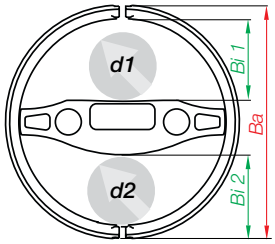
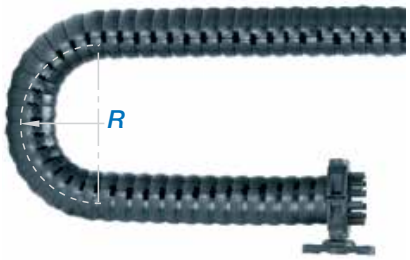
E-Chain System® - Series Triflex® R
TRE - Easy to fill





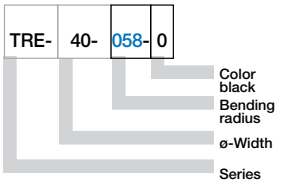
"TRE" - Triflex® R E-Z design, dirt-resistant

Series	Inner height				max. cable ø				Outer width		Bending radii	
	Bi 1		Bi 2		d1		d2		Ba		R	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
TRE-30-050-0	.47	(12)	.39	(10)	.39	(10*)	.31	(8*)	1.36	(34.5)	1.97	(50)
TRE-40-058-0-B	.59	(15)	.51	(13)	.51	(13*)	.43	(11*)	1.69	(43)	2.28	(58)
TRE-60-087-0-B	.88	(22.5)	.77	(19.5)	.81	(20.5*)	.69	(17.5*)	2.56	(65)	3.43	(87)
TRE-70-110-0-B	1.10	(28)	.94	(24)	1.02	(26*)	.87	(22*)	3.19	(81)	4.33	(110)
TRE-85-135-0-B	1.30	(33)	1.10	(28)	1.22	(31*)	1.02	(26*)	3.72	(94.5)	5.31	(135)
TRE-100-145-0-B	1.48	(37.5)	1.28	(32.5)	1.40	(35.5*)	1.20	(30.5*)	4.25	(108)	5.71	(145)
TRE-125-182-0**	1.70	(43.3)	1.70	(43.3)	1.61	(41*)	1.61	(41*)	5.31	(135)	7.17	(182)

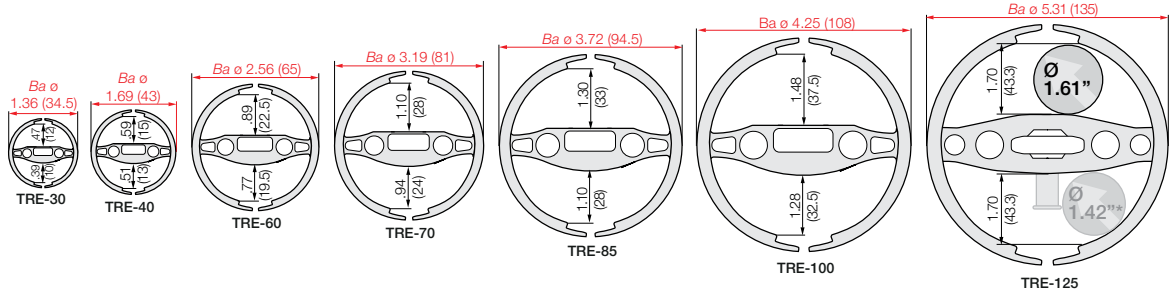
* For quick and easy insertion / removal of cables using the E-Z Chain® design, we recommend a maximum cable diameter of 70% of the specified value.
** If shortening/lengthening of a "filled" Triflex® TRE-125 is required, cable diameter changes to Ø 1.42" (36 mm).

Part No.	Pitch		Weight		Links	
	in.	(mm)	lbs/ft	(kg/m)	links/ft	links/ m
TRE-30-	.44	(11.3)	≈ 0.18	≈ 0.27	27.27	(89)
TRE-40-	.55	(13.9)	≈ 0.25	≈ 0.37	21.82	(72)
TRE-60-	.80	(20.4)	≈ 0.57	≈ 0.85	15.00	(49)
TRE-70-	1.01	(25.6)	≈ 0.89	≈ 1.32	11.88	(39)
TRE-85-	1.20	(30.6)	≈ 1.18	≈ 1.75	10.00	(33)
TRE-100-	1.36	(34.5)	≈ 1.60	≈ 2.38	8.82	(29)
TRE-125-**	1.76	(44.6)	≈ 3.16	≈ 4.70	6.82	(23)

Part No. structure



Series TRE - Dimensions



Material - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Flammability Class, igumid NB	VDE 0304 IIC UL94 V2

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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Triflex® R TRL

igus®

E-Chain System® - Series Triflex® R TRL - Light and economical

47"-1.50"

Price Index

Series Triflex® TRC

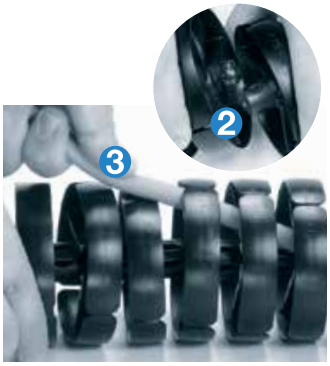
Special Options Available

Clean-Room — Cleanroom suitability upon request

iF-Design Award Winner Triflex® R Series

Flammability Class VDE 0304 IIC UL94 V2

Assembly Tips



To close, push and click shut

Usage Guidelines

- When an easy to fill, economical 3D E-Chain® is needed
- When 3D E-Chain® for easily manageable operating conditions is needed
- When a very easy to use 3D E-Chain® is needed

- For circular movements with high loads
  ➤ **System TwisterChain®**
- If a fully enclosed solution is required
  ➤ **Triflex® R - TRC**
- When a rugged, easy to fill variant is needed
  ➤ **Triflex® R - TRE**

Features & Benefits

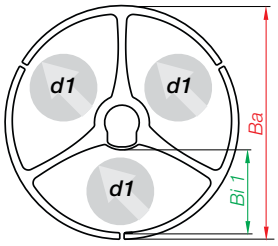
1. Triflex® R light - save twice on purchasing and installation, single-piece element, easy to fill using Easy Chain® design, matching Triflex® R standard mounting brackets
2. High tensile strength due to special ball-and-socket design, enables flexible movement along all axes
3. Easy opening mechanism for easy filling with cable and hose packages
4. Easy installation and dismantling - An injection molded component. No other components (steel cables, spring suspensions etc.) are required
5. Able to move multi-dimensionally - High degree of flexibility, even on the 6th axis. Twist up to approx. ± 10° per link possible in longitudinal axis. This assists guiding the cables and lines around difficult configurations
6. Small bend radius & short pitch - Space-saving installation
7. Economical and light mounting bracket with strain relief or intermediate link

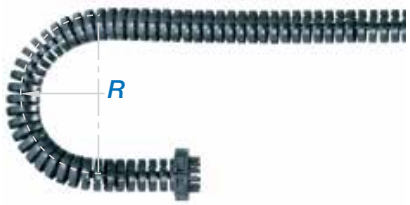
Order Example: Complete E-Chain®

Please indicate chain length or number of links. **Example: 6.56 ft (2m) or 78 links**

6.56 ft (2 m) **TRL-70-110-0**	**E-Chain®**
1 set mounting bracket with strain relief **TL-70-01-Z1**	**Mounting Bracket**

E-Chain System® - Series Triflex® R
TRL - Light and economical





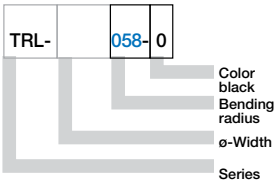
"TRL" - a light and economical alternative with an "E-Z" design

Series	Inner height				max. cable ø				Outer width		Bending radii	
	Bi 1		Bi 2		d1		d2		Ba		R	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
TRL-30-050-0	.47	(12)	.39	(10)	.39	(10*)	.31	(8*)	1.36	(34.5)	1.97	(50)
TRL-40-058-0	.59	(15)		–	.51	(13*)		–	1.77	(45)	2.28	(58)
TRL-60-087-0	.91	(23)		–	.81	(20.5*)		–	2.56	(65)	3.43	(87)
TRL-70-110-0	1.10	(28)		–	1.02	(26*)		–	3.19	(81)	4.33	(110)
TRL-100-145-0	1.50	(38)		–	1.40	(35.5*)		–	4.25	(108)	5.71	(145)

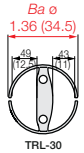
* For quick and easy insertion / removal of cables using the E-Z Chain® design, we recommend a maximum cable diameter of 70% of the specified value.

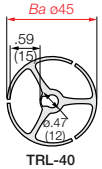
Part No.	Pitch		Weight		Links	
	in.	(mm)	lbs/ft	(kg/m)	links/ft	links/ m
TRL-30-	.44	(11.3)	≈ 0.18	≈ 0.27	27.27	(89)
TRL-40-	.55	(13.9)	≈ 0.25	≈ 0.37	21.82	(72)
TRL-60-	.80	(20.4)	≈ 0.57	≈ 0.85	15.00	(49)
TRL-70-	1.01	(25.6)	≈ 0.89	≈ 1.32	11.88	(39)
TRL-100-	1.36	(34.5)	≈ 1.60	≈ 2.38	8.82	(29)

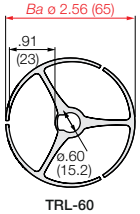
Part No. structure

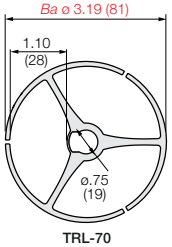


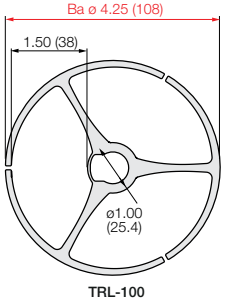
Series TRL - Dimensions











Material - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Flammability Class, igumid NB	VDE 0304 IIC UL94 V2

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

Triflex® R TRLF

igus®

E-Chain System® - Series Triflex® R TRLF - Light with snap lock mechanism

.96" - 1.48"

Price Index

Series Triflex® TRLF

Special Options Available

iF-Design Award Winner
Triflex® TRLF Series

Flammability Class
VDE 0304 IIC UL94 HB

Features & Benefits

1. Triflex® TRLF - light and cost-effective with snap lock mechanism
2. High tensile strength due to special ball-and-socket design, enables flexible movement along all axes
3. Simply flip open for large stiff hose and/or many cables
4. Easy installation and dismantling
5. Able to move multi-dimensionally - High degree of flexibility, even on the 6th axis. Twist up to approx. ± 10° per link possible in longitudinal axis. This assists guiding the cables and lines around difficult configurations
6. Small bend radius & short pitch - Space-saving installation
7. Economical and light mounting bracket with strain relief or intermediate link

Assembly Tips

To close, push and click shut

Usage Guidelines

- When easy snap-open by hand or with a screwdriver is desired
- For thick rigid hoses and/or many cables
- When the system needs to be easy to lengthen or shorten
- When easy filling and replacement of pre-harnessed cables or media hoses is important

- For circular movements with high loads
  ➤ **System TwisterChain®**
- If a fully enclosed solution is required
  ➤ **Triflex® R - TRC**
- When a rugged, easy to fill variant is needed
  ➤ **Triflex® R - TRE**
- When a cost-effective, less demanding 3D solution is required
  ➤ **Triflex® R - TRL**

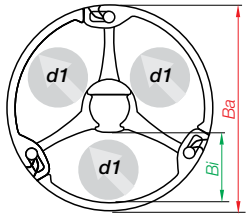
Order Example: Complete E-Chain®

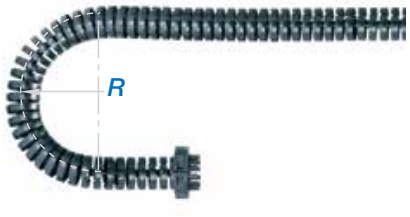
Please indicate chain length or number of links. **Example: 6.56 ft (2m) or 78 links**

6.56 ft (2 m) **TRLF-85-135-0**	**E-Chain®**
1 set mounting bracket with strain relief **TL-85-01**	**Mounting Bracket**

Estudio de Fluidos
Pol. Ind. de Guarnizo, Parcela 207
39611 GUARNIZO (Cantabria), España
942 25 27 50
edf@edfluidos.com
www.edfluidos.com

E-Chain System® - Series Triflex® R
TRLF - Light with snap lock mechanism



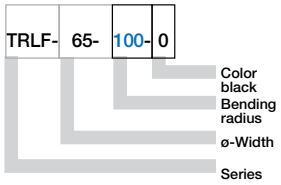


"TRLF" - a light version with snap lock mechanism

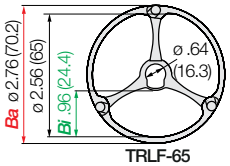
Series	Inner height Bi 1		max. cable ø d1		Outer width Ba		Bending radii R	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
TRLF-65-100-0	.96	(24.4)	.87	(22)	2.76	(70.2)	3.94	(100)
TRLF-85-135-0	1.29	(32.8)	1.18	(30)	3.72	(94.5)	5.31	(135)
TRLF-100-145-0	1.48	(37.5)	1.40	(35.5)	4.25	(108)	5.71	(145)

Part No.	Pitch		Weight		Links	
	in.	(mm)	lbs/ft	(kg/m)	links/ft	links/ m
TRLF-65-	.91	(23.1)	≈ 0.53	≈ 0.79	13.2	(44)
TRLF-85-	1.20	(30.6)	≈ 0.97	≈ 1.45	10.0	(33)
TRLF-100-	1.36	(34.5)	≈ 1.28	≈ 1.90	8.8	(29)

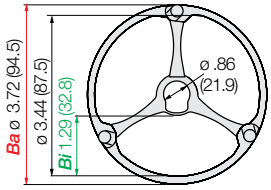
Part No. structure



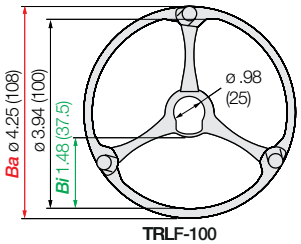
Series TRL - Dimensions



TRLF-65



TRLF-85



TRLF-100

Snap lock mechanism for quick filling

Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid NB	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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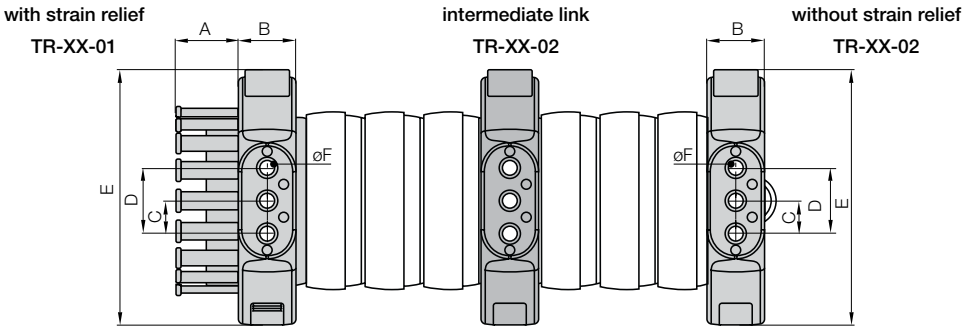
www.edfluidos.com

E-Chain System® - Series Triflex® R
Standard Mounting Brackets

Standard mounting brackets

- Quick and easy installation
- Short downtimes when swapping a harnessed Triflex® R system
- Mounting bracket 1 with strain relief available
- Mounting bracket also as 2 intermediate link
- Quick assembly by means of snap lock
- Bracket holes for common robot types
- Can be attached at the ends or anywhere in between



Mounting bracket with strain relief

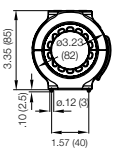
Ø Index		A	B	C	D	E	ø F
		in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)
-40- ➤	TR-40-01-M6[1)]	.70 (17.8)	.83 (21)	.53 (13.5)	1.06 (27)	3.35 (85)	.26 (6.5)
-60- ➤	TR-60-01-M8[1)]	.98 (25)	1.38 (35)	.79 (20)	1.57 (40)	4.96 (126)	.35 (9)
-70- ➤	TR-70-01-M8[1)]	.98 (25)	1.38 (35)	.79 (20)	1.57 (40)	4.96 (126)	.35 (9)
-85- ➤	TR-85-01-M8[2)]	1.57 (40)	1.38 (35)	.79 (20)	1.57 (40)	6.02 (153)	.35 (9)
-100- ➤	TR-100-01-M8[2)]	1.50 (38)	1.38 (35)	.79 (20)	1.57 (40)	6.02 (153)	.35 (9)

Mounting bracket without strain relief or as intermediate link

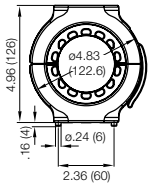
Ø Index		A	B	C	D	E	ø F
		in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)
-40- ➤	TR-40-02-M6[1)]	.70 (17.8)	.83 (21)	.53 (13.5)	1.06 (27)	3.35 (85)	.26 (6.5)
-60- ➤	TR-60-02-M8[1)]	.98 (25)	1.38 (35)	.79 (20)	1.57 (40)	4.96 (126)	.35 (9)
-70- ➤	TR-70-02-M8[1)]	.98 (25)	1.38 (35)	.79 (20)	1.57 (40)	4.96 (126)	.35 (9)
-85- ➤	TR-85-02-M8[2)]	1.57 (40)	1.38 (35)	.79 (20)	1.57 (40)	6.02 (153)	.35 (9)
-100- ➤	TR-100-02-M8[2)]	1.50 (38)	1.38 (35)	.79 (20)	1.57 (40)	6.02 (153)	.35 (9)
-125- ➤	TR-125-02-M8[2)]	—	1.57 (40)	—	2.52 (64)	7.48 (190)	.35 (9)

[1)] = ESD version available, [2)] = ESD version available on request. Call for delivery time.
Strain relief is possible on the moving end and/or the fixed end.
Standard: Trough holes in ØF - **Option:** with insert nuts, steel, M6/M8

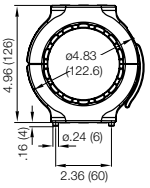
TR-40-XX



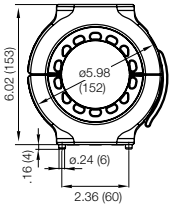
TR-60-XX



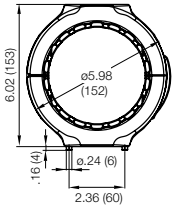
TR-70-XX



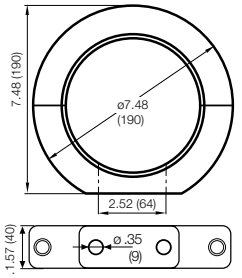
TR-85-XX



TR-100-XX



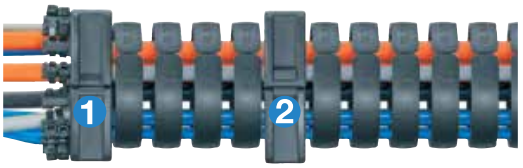
TR-125-XX

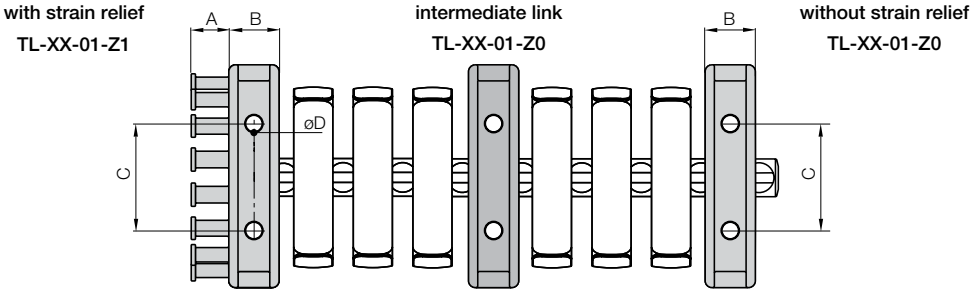


E-Chain System® - Series Triflex® R
Light Duty Mounting Brackets

Light mounting brackets

- Standard for TRL version, also compatible with all Triflex® R versions (TRC/TRE)
- Mounting bracket 1 with strain relief available
- Mounting bracket also as 2 intermediate link available
- Economical and light
- For simple 3D-movements and loads
- Consists of two halves - easy to assemble





Mounting bracket with short or long strain relief

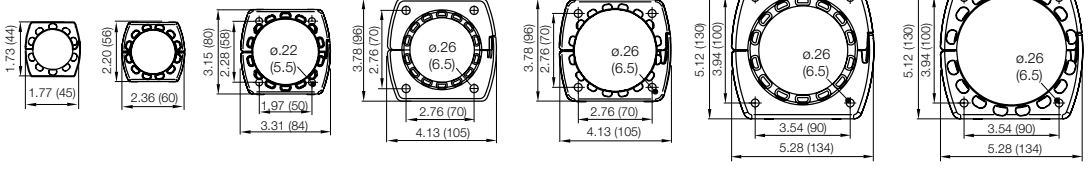
Ø Index	With short strain relief	With long strain relief	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)
-30- ➤	TL-30-01-Z1	—	.51 (13)	.49 (12.5)	—	.94 (24)	.18 (4.5)
-40- ➤	TL-40-01-Z1*	TL-40-01-Z2	.55 (14)	.49 (12.5)	.79 (20)	1.42 (36)	.23 (5.8)
-60- ➤	TL-60-01-Z1*	TL-60-01-Z2	.79 (20)			1.89 (48)	.23 (5.8)
-65- ➤	TL-65-01-Z1*	—	.67 (17)	.79 (20)	1.89 (48)	.23 (5.8)	
-70- ➤	TL-70-01-Z1*	TL-70-01-Z2	1.06 (27)	2.52 (64)	.26 (6.5)		
-85- ➤	TL-85-01-Z1*	TL-85-01-Z1	.69 (17.5)	1.06 (27)	2.52 (64)	.26 (6.5)	
-100- ➤	TL-100-01-Z1*	TL-100-01-Z2	1.18 (30)	2.52 (64)	.26 (6.5)		

Mounting bracket without strain relief

Ø Index	Without strain relief	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)
-30- ➤	TL-30-01-Z0	.51 (13)	.49 (12.5)	—	.94 (24)	.18 (4.5)
-40- ➤	TL-40-01-Z0	.55 (14)	.49 (12.5)	.79 (20)	1.42 (36)	.23 (5.8)
-60- ➤	TL-60-01-Z0	.79 (20)			1.89 (48)	.23 (5.8)
-65- ➤	TL-65-01-Z0	.67 (17)	.79 (20)	1.89 (48)	.23 (5.8)	
-70- ➤	TL-70-01-Z0	1.06 (27)	2.52 (64)	.26 (6.5)		
-85- ➤	—	.69 (17.5)	1.06 (27)	2.52 (64)	.26 (6.5)	
-100- ➤	TL-100-01-Z0	1.18 (30)	2.52 (64)	.26 (6.5)		

*For moving end (ball) only suitable for Series TRL/TRLF

TL-30-XX TL-40-XX TL-60-XX TL-65-XX TL-70-XX TL-85-XX TL-100-XX



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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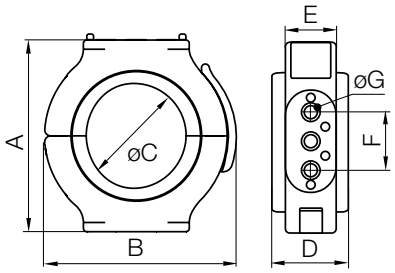
E-Chain System® - Series Triflex® R
Feed-Through Guides and Protectors
For Series TRC and TRE

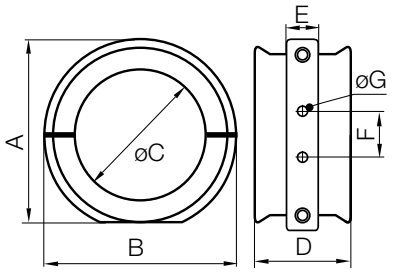
Feed-Through Guides

- Feed through guides provide a flexible guide for the E-Chain®
- Not defined axially
- Combined with protectors to limit available range of motion
- For use with Triflex® Series TRC and TRE

Feed-through guides without swivel bearing
TR-40-05 / TR-60-05
TR-70-05 / TR-85-05



Feed-through guides without swivel bearing
TR-100-05
TR-125-05

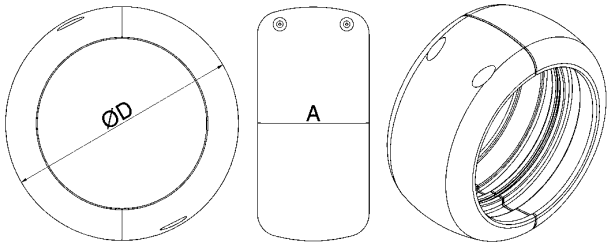


Feed-through guides without swivel bearing

Ø Index	without swivel bearing	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)
-40- ➤	TR-40-05	3.35 (85)	3.33 (84.5)	1.81 (46)	1.26 (32)	.83 (21)	1.06 (27)	.26 (6.5)
-60- ➤	TR-60-05	4.96 (126)	4.96 (126)	2.76 (70)	1.97 (50)	1.26 (32)	1.57 (40)	.35 (9)
-70- ➤	TR-70-05	6.02 (153)	6.10 (155)	3.39 (86)	2.76 (70)	1.38 (35)	1.57 (40)	.35 (9)
-85- ➤	TR-85-05	6.02 (153)	6.10 (155)	3.94 (100)	3.31 (84)	1.38 (35)	1.57 (40)	.35 (9)
-100- ➤	TR-100-05	6.40 (162.5)	6.67 (169.5)	4.53 (115)	3.35 (85)	1.10 (28)	1.57 (40)	.33 (8.5)
-125- ➤	TR-125-05	7.05 (179)	7.48 (190)	5.59 (142)	3.31 (84)	1.57 (40)	2.52 (64)	.35 (9)

Protectors

- For long service life at high loads - can be optionally used as the contact locations
- Easy, fast assembly
- Dampening
- Lightweight
- Glides over edges with ease
- Can be positioned anywhere on two consecutive chain links
- Available with or without quick release



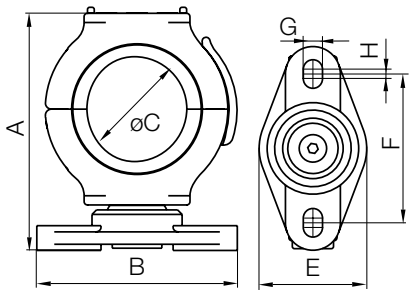
Feed-through guides without swivel bearing

Ø Index	Part No. with screw fastener	Part No. with Quick Release	A in. (mm)	D in. (mm)
-40- ➤	TR-40-10	TR-40-30	2.17 (55)	1.06 (27)
-60- ➤	TR-60-10	TR-60-30	3.15 (80)	1.57 (40)
-70- ➤	TR-70-10	TR-70-30	4.02 (102)	1.97 (50)
-85- ➤	TR-85-10	TR-85-30	4.65 (118)	2.32 (59)
-100- ➤	TR-100-10	TR-100-30	5.24 (133)	2.64 (67)
-125- ➤	TR-125-10	—	6.69 (170)	3.22 (82)

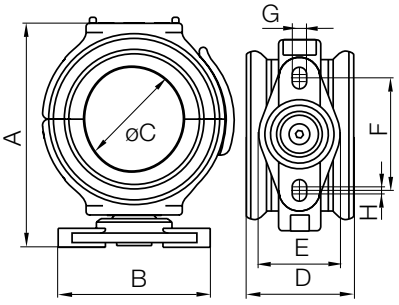
E-Chain System® - Series Triflex® R
Mounting bracket and Feed-Through Guides with Swivel Bearing

- Swivel bearing with maintenance-free igubal® spherical bearings
- Maximum range of motion on robots
- For use with Triflex® Series TRC and TRE

Feed-through guides with swivel bearing
TR-40-07



Feed-through guides with swivel bearing
TR-60-07 / TR-70-07
TR-85-07



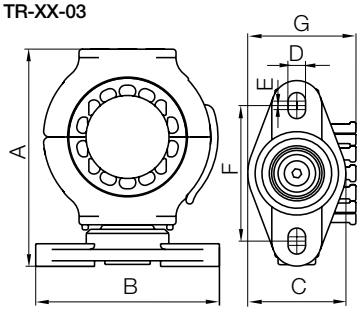
Feed-through guides with swivel bearing

Ø Index		with swivel bearing	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)	H in. (mm)
-40-	➤	TR-40-07	4.25 (108)	3.50 (89)	1.81 (46)	1.26 (32)	1.85 (47)	2.56 (65)	0.33 (8.4)	0.16 (4.1)
-60-	➤	TR-60-07	6.14 (156)	4.65 (118)	2.76 (70)	1.97 (50)	2.56 (65)	3.44 (87.5)	0.41 (10.5)	0.22 (5.5)
-70-	➤	TR-70-07	7.20 (183)	4.65 (118)	3.39 (86)	2.76 (70)	2.56 (65)	3.44 (87.5)	0.41 (10.5)	0.22 (5.5)
-85-	➤	TR-85-07	7.20 (183)	4.65 (118)	3.94 (100)	3.31 (84)	2.56 (65)	3.44 (87.5)	0.41 (10.5)	0.22 (5.5)

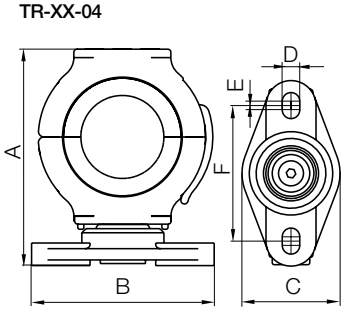
Swivel Mounting Bracket with or without Strain Relief

- Swivel bearings are used to lessen the motion of the cables requiring guidance, while allowing for extreme twisting and bending. This relieves cables with highly sensitive bending radii (such as fiber optic cables) when following a robot's movements.
- Available in 2 designs (with or without strain relief)
- Pivoting bearing with a maintenance-free igubal® ball-and-socket joint
- Minimization of critical bending cycles
- Gentler motion
- For use with Triflex® Series TRC, TRE, TRL and TRLF

Swivel Mounting bracket with strain relief
TR-XX-03



Swivel Mounting bracket without strain relief
TR-XX-04



Swivel mounting bracket with or without strain relief

Ø Index		with strain relief	without strain relief	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G* in. (mm)
-40-	➤	TR-40-03	TR-40-04	4.13 (105)	3.50 (89)	1.85 (47)	0.33 (8.4)	0.16 (4.1)	2.56 (65)	2.04 (51.8)
-60-	➤	TR-60-03	TR-40-04	5.98 (152)	4.65 (118)	2.56 (65)	0.41 (10.5)	0.22 (5.5)	3.44 (87.5)	2.89 (73.5)
-70-	➤	TR-70-03	TR-40-04	5.98 (152)	4.65 (118)	2.56 (65)	0.41 (10.5)	0.22 (5.5)	3.44 (87.5)	2.89 (73.5)
-85-**	➤	TR-85-03	TR-40-04	7.05 (179)	4.65 (118)	2.56 (65)	0.41 (10.5)	0.22 (5.5)	3.44 (87.5)	3.46 (88)
-100-	➤	TR-100-03	TR-100-04	7.05 (179)	4.65 (118)	2.56 (65)	0.41 (10.5)	0.22 (5.5)	3.44 (87.5)	3.46 (88)

* only for TR-XX-03
**Width -85 not for Triflex® Series TRL

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Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E-Chain System® - Series Triflex® R
Accessories - TRC, TRE

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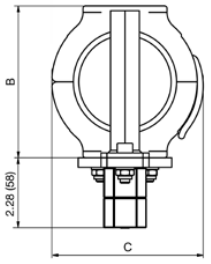
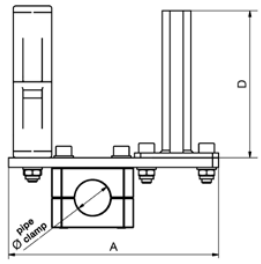
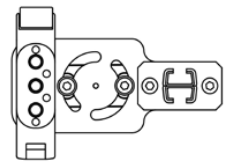
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

Connections - for TRC·TRE

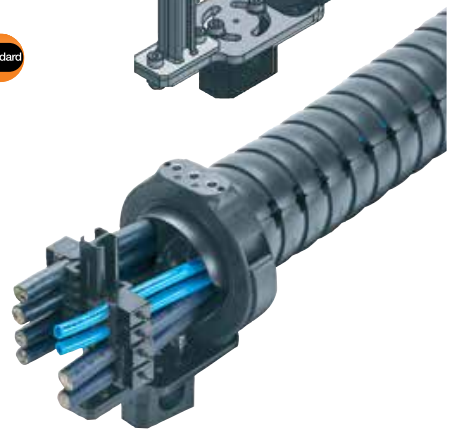
- For cables with large cross sections, or for heavy hydraulic hoses
- Optional: additional bending radius support for heavy-duty connections
- Double profile rail for igus® CFX clips
- igus® chainfix clamps made from stainless steel or steel can be used







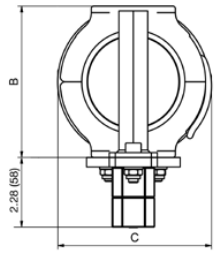
Standard-connection

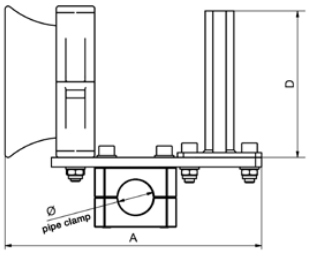


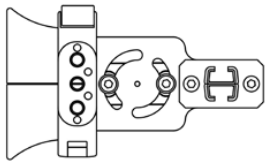
Ø Series	Connection standard	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)
-60- ➤	TR-60-20-XX*	6.89 (175)	4.96 (126)	4.96 (126)	4.80 (122)
-70- ➤	TR-70-20-XX*	6.89 (175)	4.96 (126)	4.96 (126)	4.80 (122)
-85- ➤	TR-85-20-XX*	6.89 (175)	6.02 (153)	6.02 (153)	5.87 (149)
-100- ➤	TR-100-20-XX*	6.89 (175)	6.02 (153)	6.02 (153)	5.87 (149)
-125- ➤	TR-125-20-XX*	7.09 (180)	7.48 (190)	7.48 (190)	6.89 (175)

* Please add the appropriate pipe clamp diameter -XX. Available in -30 mm as standard.
Also available in -32 and -34 mm upon request. **Example: TR-100-05-30**

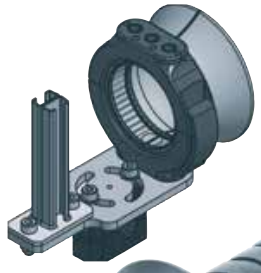
Connection with Radius Support • for TRC·TRE

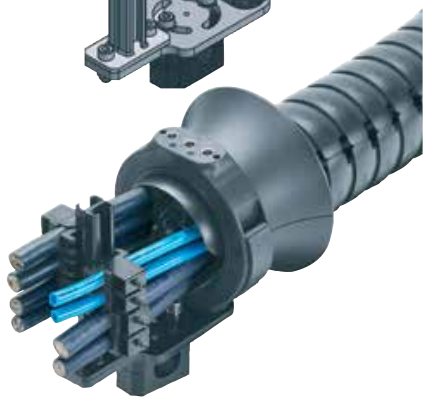






Connection with radii support





Ø Series	Connection standard	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)
-60- ➤	TR-60-23-XX*	6.89 (175)	4.96 (126)	4.96 (126)	4.80 (122)
-70- ➤	TR-70-23-XX*	6.89 (175)	4.96 (126)	4.96 (126)	4.80 (122)
-85- ➤	TR-85-23-XX*	6.89 (175)	6.02 (153)	6.02 (153)	5.87 (149)
-100- ➤	TR-100-23-XX*	6.89 (175)	6.02 (153)	6.02 (153)	5.87 (149)
-125- ➤	TR-125-23-XX*	7.09 (180)	7.48 (190)	7.48 (190)	6.89 (175)

* Please add the appropriate pipe clamp diameter -XX. Available in 1.18“ (30 mm) as standard.
Also available in 1.26“ (32 mm) and 1.34“ (34 mm) upon request. **Example: TR-100-05-30**

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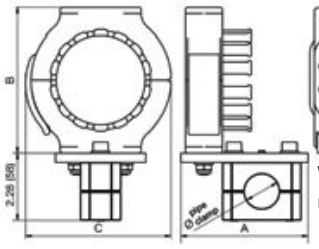
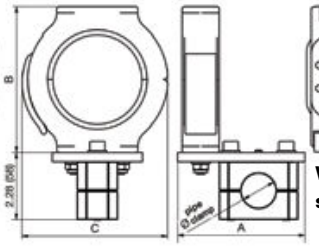
E-Chain System® - Series Triflex® R
Accessories - TRC, TRE

Pivot Bracket • for TRC·TRE

- Available in 2 versions per size (with/without strain relief)
- Reliable and simple securing of cables with cable ties
- Possible also with strain relief on the application



With strain relief



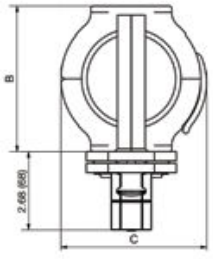
Without strain relief

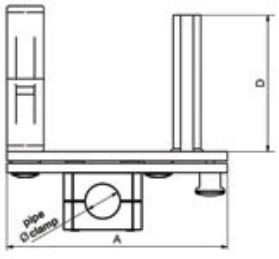
Ø Series		Pivot Bracket with strain relief	Pivot Bracket without strain relief	A in. (mm)	B in. (mm)	C in. (mm)
-40-	➤	TR-40-21-01-XX*	TR-40-21-02-XX*	4.33 (110)	3.35 (85)	3.35 (85)
-60-	➤	TR-60-21-01-XX*	TR-60-21-02-XX*	4.33 (110)	4.96 (126)	4.96 (126)
-70-	➤	TR-70-21-01-XX*	TR-70-21-02-XX*	4.33 (110)	4.96 (126)	4.96 (126)
-85-	➤	TR-85-21-01-XX*	TR-85-21-02-XX*	4.33 (110)	6.02 (153)	6.02 (153)
-100-	➤	TR-100-21-01-XX*	TR-100-21-02-XX*	4.33 (110)	6.02 (153)	6.02 (153)

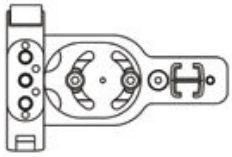
* Please add the appropriate pipe clamp diameter -XX. Available in -30 mm as standard.
Also available in -32 and -34 mm upon request. **Example: TR-100-21-01-30**

Quick Exchange Unit • for TRC·TRE

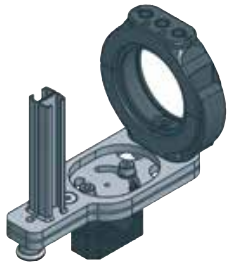
- Quickly replce in seconds
- One time alignment
- No realignment required when replacing the ReadyChain®
- Exchange of the Triflex® R unit including cables without tools



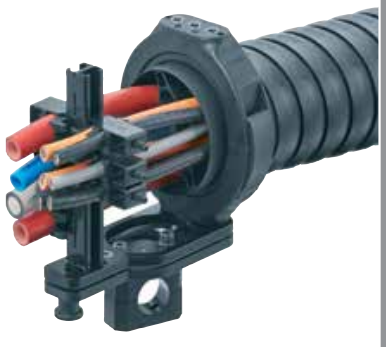




Quick exchange unit



Ø Series		Part No. Quick exchange unit	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)
-60-	➤	TR-60-22-XX*	7.52 (191)	4.96 (126)	4.96 (126)	4.72 (120)
-70-	➤	TR-70-22-XX*	7.52 (191)	4.96 (126)	4.96 (126)	4.72 (120)
-85-	➤	TR-85-22-XX*	7.52 (191)	6.02 (153)	6.02 (153)	4.72 (120)
-100-	➤	TR-100-22-XX*	7.52 (191)	6.02 (153)	6.02 (153)	4.72 (120)



* Please add the appropriate pipe clamp diameter -XX. Available in -30 mm as standard.
Also available in -32 and -34 mm upon request. **Example: TR-100-22-30**

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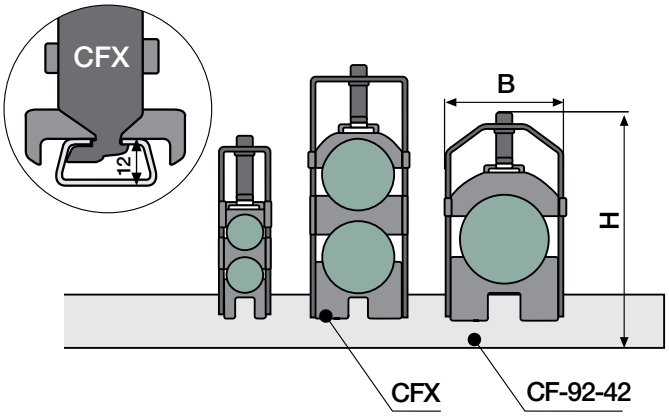
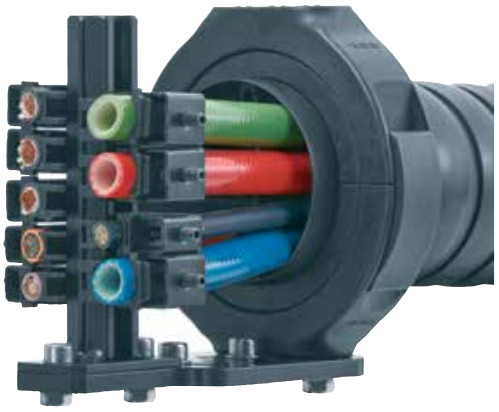
Chainfix Clamps - Strain relief systems (only for TRC/TRE)
Secure mounting of large cross sections with igus® standard Chainfix clamps

- A reliable strain relief is a basic requirement for a durable energy supply system. Chainfix clamps securely absorb push and tensile forces even with larger cable diameters
- Individual attachment also supports replacing specific cables
- Specifically recommended when using solid welding cables and rigid hydraulic hoses
- For use with heavy-duty connection **TR.XX.20** / **TR.XX.23** and quick release unit **TR.XX.22**





Single clamp housing, including top/bottom saddle clamps

Part No. Steel	Part No. Stainless Steel	in.	(ø mm)	B	H
CFX12-1	CFX12-1E	.24 - .47	(6 – 12)	.63 (16)	1.57 (40)
CFX14-1	CFX14-1E	.47-.55	(12 – 14)	.71 (18)	1.97 (50)
CFX16-1	CFX16-1E	.55-.63	(14 – 16)	.79 (20)	2.05 (52)
CFX18-1	CFX18-1E	.63-.71	(16 – 18)	.87 (22)	2.13 (54)
CFX20-1	CFX20-1E	.71-.79	(18 – 20)	.94 (24)	2.20 (56)
CFX22-1	CFX22-1E	.79-.87	(20 – 22)	1.02 (26)	2.28 (58)
CFX26-1	CFX26-1E	.87-1.02	(22 – 26)	1.18 (30)	2.64 (67)
CFX30-1	CFX30-1E	1.02-1.18	(26 – 30)	1.34 (34)	2.80 (71)
CFX34-1	CFX34-1E	1.18-1.34	(30 – 34)	1.50 (38)	2.95 (75)
CFX38-1	CFX38-1E	1.34-1.50	(34 – 38)	1.65 (42)	3.11 (79)
CFX42-1	CFX42-1E	1.50-1.65	(38 – 42)	1.81 (46)	3.27 (83)

igus® recommends strain relieving the moving end of a robotic application.

Single clamp housing, including top/bottom saddle clamps and one stacker saddle clamp

Part No. Steel	Part No. Stainless Steel	For cable diameters in.	(ø mm)	B+2	H
CFX12-2	CFX12-2E	.24-.47	(6 – 12)	.63 (16)	2.83 (72)
CFX14-2	CFX14-2E	.47-.55	(12 – 14)	.71 (18)	2.91 (74)
CFX16-2	CFX16-2E	.55-.63	(14 – 16)	.79 (20)	3.07 (78)
CFX18-2	CFX18-2E	.63-.71	(16 – 18)	.87 (22)	3.23 (82)
CFX20-2	CFX20-2E	.71-.79	(18 – 20)	.94 (24)	3.38 (86)
CFX22-2	CFX22-2E	.79-.87	(20 – 22)	1.02 (26)	3.54 (90)
CFX26-2	CFX26-2E	.87-1.02	(22 – 26)	1.18 (30)	4.29 (109)
CFX30-2	CFX30-2E	1.02-1.18	(26 – 30)	1.34 (34)	4.61 (117)
CFX34-2	CFX34-2E	1.18-1.34	(30 – 34)	1.50 (38)	4.92 (125)

The dimensions given for H in the table is based on the maximum cable diameter. Cables with smaller diameters may result in lower overall clamp housing heights.

E-Chain System® - Series Triflex® R
Accessories - TRC, TRE, TRL, TRLF

Protective Jacket

- Temperatures up to room temperature
- Basic structure: weave
- Coating: none
- Easy to replace due to hook and loop seal on the length side
- End sealed with rubber seals
- Silicone-free
- Standard lengths from stock

TR-XX-16

For Series	Part No. XX= Length of the protective cover - choose from the following standard lengths Example: TR-40-16-0500							
		in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
-40	TR-40-16-XX	19.68	(500)	39.37	(1000)	59.06	(1500)	78.74	(2000)
-60	TR-60-16-XX	19.68	(500)	39.37	(1000)	59.06	(1500)	78.74	(2000)
-70	TR-70-16-XX	19.68	(500)	39.37	(1000)	59.06	(1500)	78.74	(2000)
-85	TR-85-16-XX	19.68	(500)	39.37	(1000)	59.06	(1500)	78.74	(2000)
-100	TR-100-16-XX	19.68	(500)	39.37	(1000)	59.06	(1500)	78.74	(2000)

Heat Resistant Protective Jacket

- Made from heat-resistant, wear-resistant Kevlar weave
- Short-term protection against welding and metal spatter, temperatures up to 540°C
- High abrasion resistance
- Very tight
- For rugged environments
- Easy to replace or retrofit with zipper closure
- Velcro straps at beginning and end
- Rugged (thick) design
- Silicone-free
- Asbestos-free
- Standard lengths from stock

TR-XX-18

For Series	Part No. XX= Length of the protective cover - choose from the following standard lengths Example: TR-40-16-0500							
		in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
-40	TR-40-18-XX	19.68	(500)	39.37	(1000)	59.06	(1500)	78.74	(2000)
-60	TR-60-18-XX	19.68	(500)	39.37	(1000)	59.06	(1500)	78.74	(2000)
-70	TR-70-18-XX	19.68	(500)	39.37	(1000)	59.06	(1500)	78.74	(2000)
-85	TR-85-18-XX	19.68	(500)	39.37	(1000)	59.06	(1500)	78.74	(2000)
-100	TR-100-18-XX	19.68	(500)	39.37	(1000)	59.06	(1500)	78.74	(2000)

Abrasion Resistant Protective Jacket

- Extremely high abrasion resistance
- Black leather
- For temperatures - 40°C to +100°C
- Very flexible
- Easy to replace or retrofit
- Silicone-free
- Asbestos-free
- Standard lengths from stock

TR-XX-19

For Series	Part No. XX= Length of the protective cover - choose from the following standard lengths Example: TR-40-16-0500							
		in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
40	TR-40-19-XX	19.68	(500)	39.37	(1000)	59.06	(1500)	78.74	(2000)
-60	TR-60-19-XX	19.68	(500)	39.37	(1000)	59.06	(1500)	78.74	(2000)
-70	TR-70-19-XX	19.68	(500)	39.37	(1000)	59.06	(1500)	78.74	(2000)
-85	TR-85-19-XX	19.68	(500)	39.37	(1000)	59.06	(1500)	78.74	(2000)
-100	TR-100-19-XX	19.68	(500)	39.37	(1000)	59.06	(1500)	78.74	(2000)

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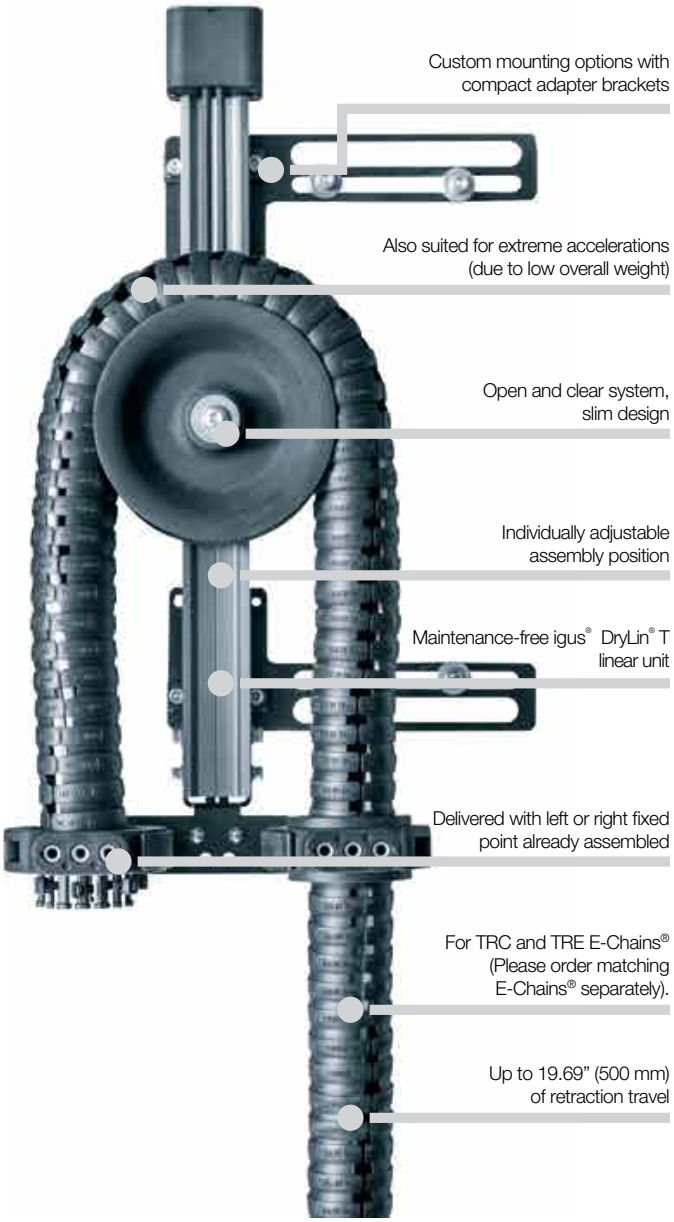
Triflex® RSE

igus®

E-Chain System® - Series Triflex® R
Triflex® RSE - Retraction System - Compact
For low to medium loads



RSE - Compact, lightweight retraction system for small-scale robotics

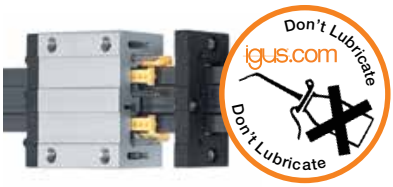
- RSE - specifically tailored to small-scale robotics
- Simple retraction system - cost effective solution to avoid loop formation
- Responds extremely fast, even on fast robot motions
- Low additional load on the robot results in no negative impact on robot handling capacity
- Universally adjustable assembly brackets
- Self-lubricating and maintenance-free igus® DryLin® T linear unit
- For maximum degrees of freedom
- Plenty of latitude for programmers
- For cable diameters up to (11 mm)

Optional accessories - RSE Retraction System

Adapter brackets for customized mounting options

Mounting brackets - for installing directly on the tool

Clamps - axis 6 - for Triflex® R mounting bracket



Self-lubricating and maintenance-free igus® DryLin® T linear unit

Estudio de Fluidos
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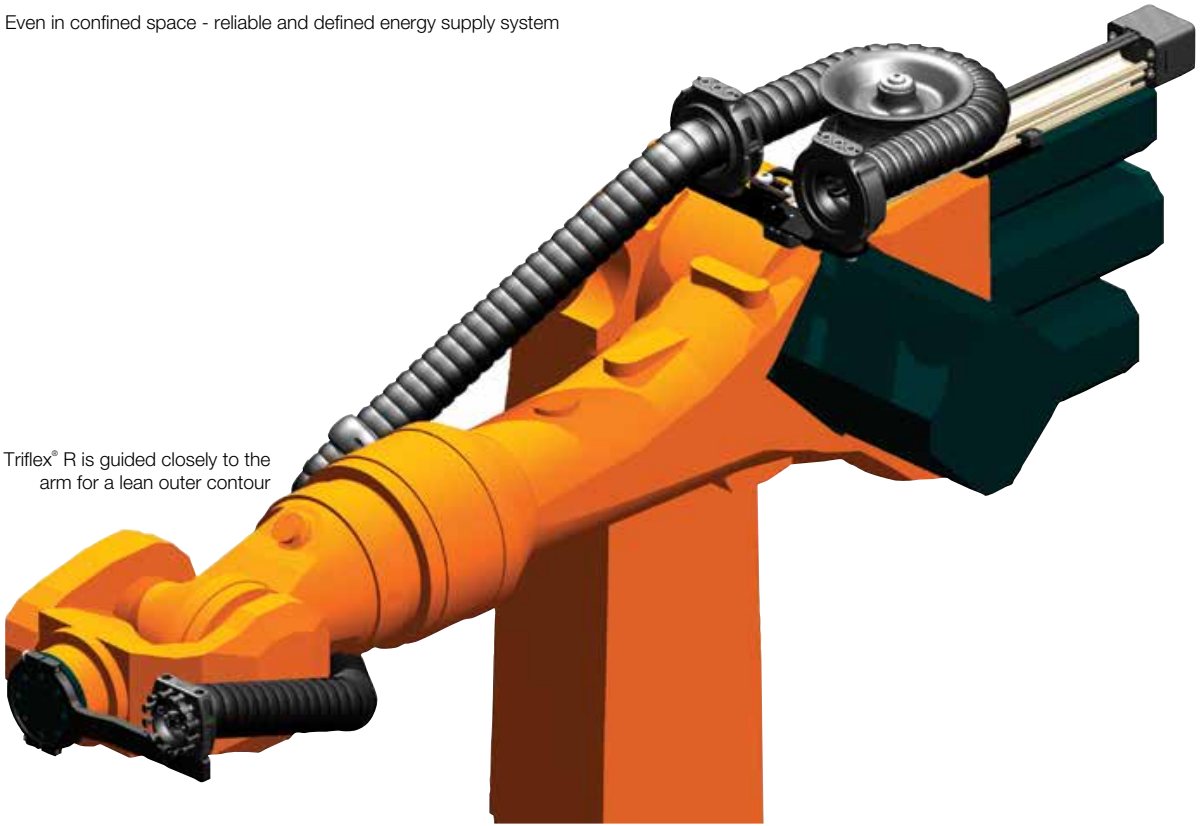
39611 GUARNIZO (Cantabria), España
942 25 27 50
edf@edfluidos.com
www.edfluidos.com

E-Chain System® - Series Triflex® R
Triflex® RSE - Retraction System - Compact
For low to medium loads

Even in confined space - reliable and defined energy supply system



Triflex® R is guided closely to the arm for a lean outer contour

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igus®

E-Chain System® - Series Triflex® R
Triflex® RSE - Retraction System - Compact
Technical Data and Product Range

igus® E-Chain System®
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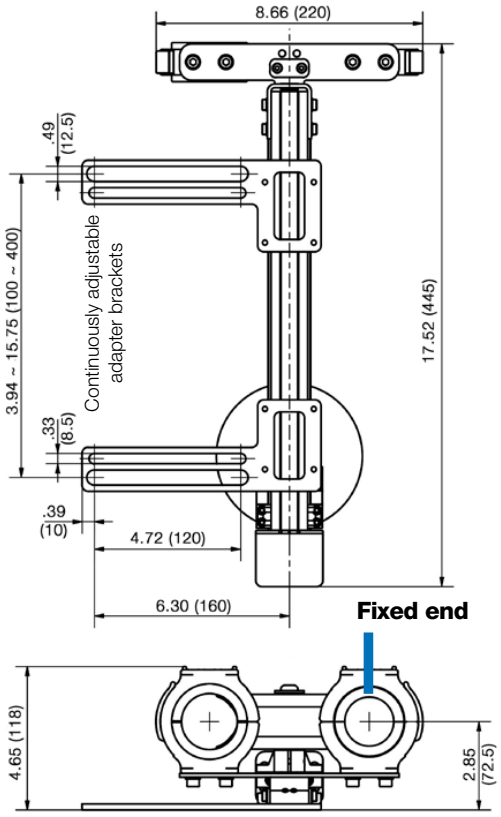
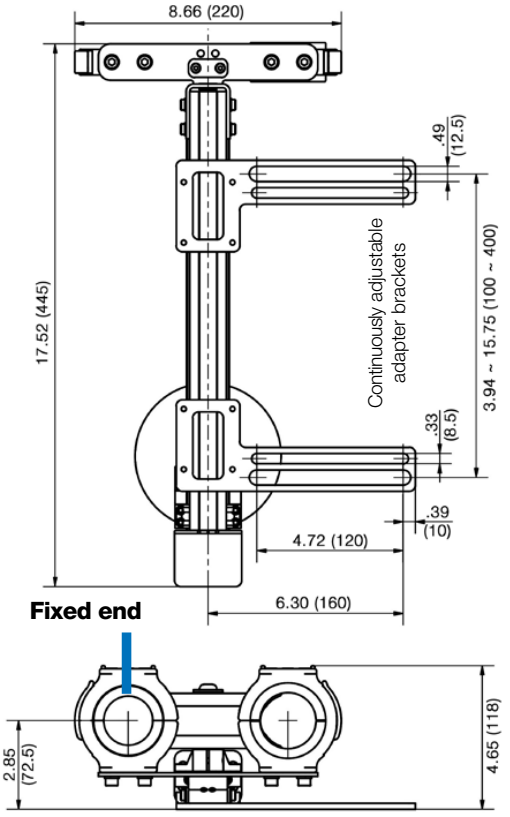
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

TR-RSE-40-L



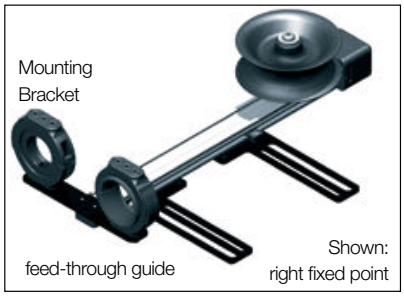
TR-RSE-40-R

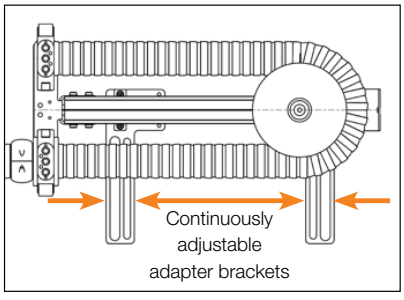


RSE Retraction system for small-scale robotics - for TRC·TRE

For Series ø	RSE Left fixed point Part No.	RSE Right fixed point Part No.	Retract travel max. (mm) [1]	Weight lb.	(kg)
-40- ➤	TR-RSE-40-L	TR-RSE-40-R	500	3.53	(1.6)

1) These are maximum values. We do not recommend using more than 70% during normal operations to preserve a margin of error.
Please order matching Triflex® R E-Chain® separately.





TR-RSE-40-L / R Order code

- **R** = Right fixed end
- **L** = Left fixed end
- Series Ø
- System
- Triflex® series

E-Chain System® - Series Triflex® R
Triflex® RSE - Retraction System - Compact
RSE Triflex® E-Chain® and Cable Length Calculations

igus® Triflex® RSE

Matching Triflex® E-Chains® for RSE
TRC-RSE-40-058-LLLL-0
TRE-RSE-40-058-LLLL-0

Overall chain length =
Additional length of the feed-through guide **LLLL** + the chain length within the system

RSE system (e-chain® not included)
+ Mounting bracket
+ Feed-through guide =
TR-RSE-40-L or **TR-RSE-40-R**

Product range - Matching Triflex® E-Chains® for RSE

For Series ø	Part. No. **TRC** enclosed	Part. No. **TRE** "easy" design	Triflex® standard lengths (mm)			
-40- ➤	TRC-RSE-40-058- **LLLL**-0	TRE-RSE-40-058- **LLLL**-0	**500**	**750**	**1000**	**1250**

*Standard lengths (additional length from feed-through guide - outside of the system)

Please add the standard-length (measured from the feed-through guide) based on the robot arm length from axis 3.

Example: TRC-RSE-40-058-500-0

Calculating the overall chain length and ordering code - RSE Triflex® E-Chains®

For Series ø	Radius *R* mm	Chain length within the system mm	Number of chain links	Overall chain length in. (mm)
-40- ➤	058	904	65	**LLLL** + 904

Order code

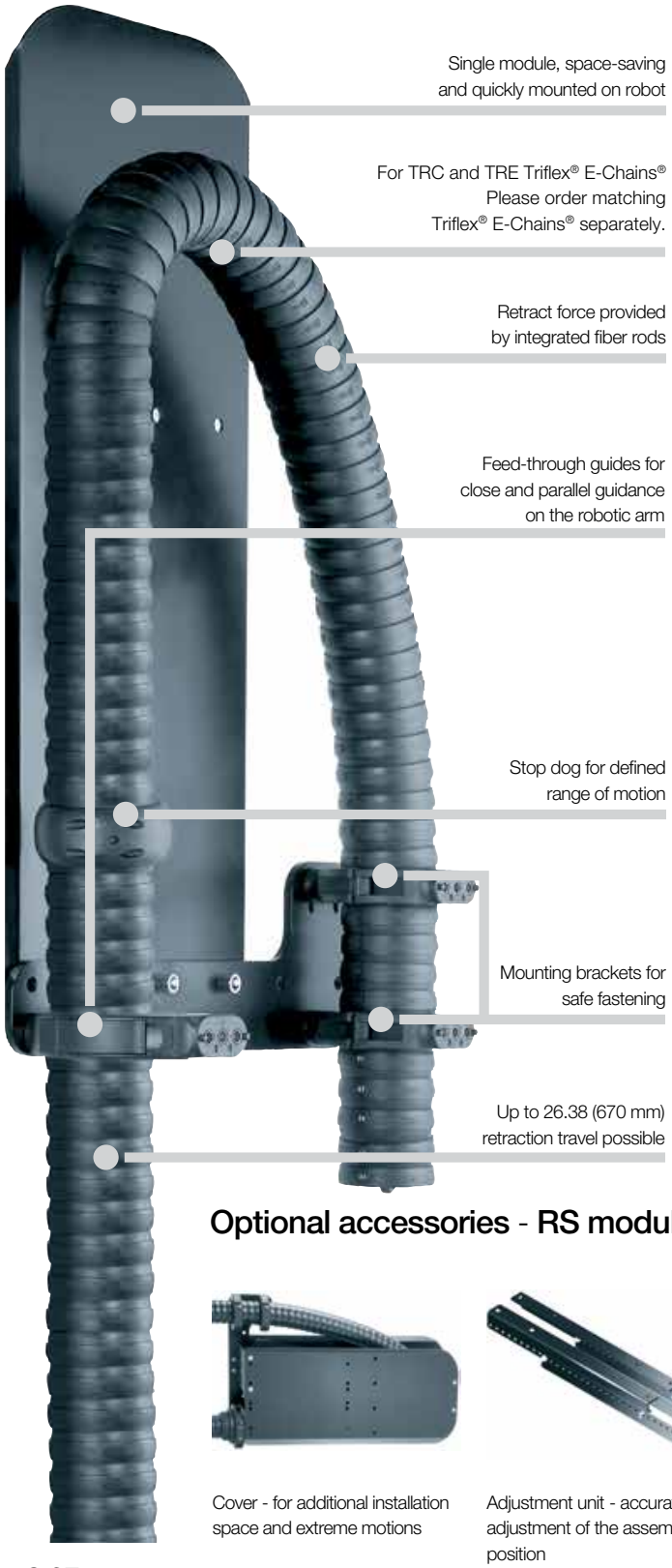
TRC-RSE-40-058-LLLL-0

- Standard color - black
- Additional length
- *R* Bending radius
- Series Ø
- System
- Triflex® series

Triflex® RS

igus®

E-Chain System® - Series Triflex® R
Triflex® RS - Retraction System - Universal
For medium to large loads



RS - Universal, modular Retraction System

Triflex® RS is a retraction system for robots with medium and high load-bearing capacity. The Triflex® RS is used as a space-saving guide for the multi-dimensionally moving Triflex® R in parallel to the robot arm. Integrated fiber rods generate a directed camber to prevent undesirable loops from forming in the working space of the robot. This permits applications with very tight installation space to be realized as well. Triflex® RS provides the option to reliably implement the energy supply system to the tool, without placing stress on the cable, therefore making a key contribution to minimizing downtimes.

- Saves space - low interfering contours, closely routed on the robotic arm
- System solution tested by the tens of thousands
- Universally applicable
- Integrated fiber rods - no external mechanical components such as springs or steel wires needed!

Optional accessories - RS modular retraction system

Cover - for additional installation space and extreme motions

Adjustment unit - accurate adjustment of the assembly position

Adapter brackets for customized mounting options

Clamps - axis 6 - for Triflex® R mounting bracket

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E-Chain System® - Series Triflex® R
Triflex® RS - Retraction System - Universal
For medium to large loads

Triflex® RS for a lean chain guide. The Triflex® RS is used as a space-saving guide for the multi-dimensionally moving Triflex® R in parallel to the robot arm. Video at ➤ www.igus.com/triflexr

Optional: Triflex® RS with cover - creates additional installation space on the robot

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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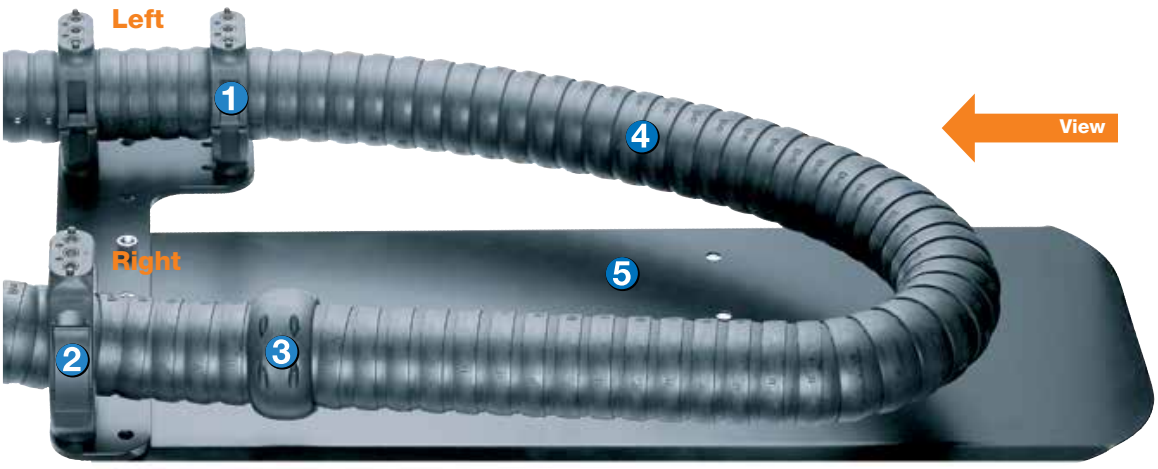
Triflex® RS

igus®

E-Chain System® - Series Triflex® R
Triflex® RS - Retraction System - Universal
Technical Data and Product Range

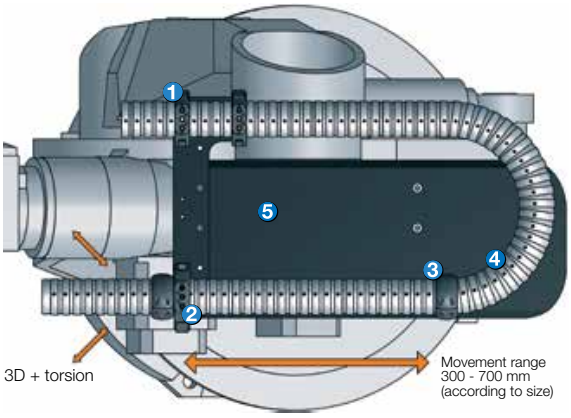


RS Assembly

Triflex® RS is a very compact universal assembly that is mounted to installation points available on the robot. Thanks to the low profile and the Triflex® R chain guide parallel to the robotic arm, applications with extremely low installation space can be achieved. Triflex® RS can be installed parallel to the robotic arm. Triflex® RS with integrated spring mechanism allows efficient energy supply to the robotic head without stress on the cables. The Triflex® R kit offers all advantages of proven Triflex® accessories, such as the FlexBar, universal assembly kit and fiber rod module in one system. All Triflex® R features are also included in the universal Triflex® RS module.

- One package for all applications, immediately installable
- Integrated fiber rods to retract cables
- First choice for robotic applications with narrow installation space
- Saves space through low installation height and close routing on the robotic arm
- Excellent service life
- Universally applicable

Triflex® RS - Extremely flat design, guides close to the robotic arm



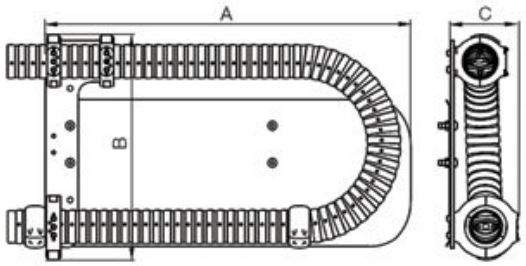
1. Mounting brackets for safe fastening
2. Glide lead-through for a close and parallel guidance on the robotic arm
3. Limit stop dog for a defined free movement
4. Integrated recuperating spring prevents loop formations
5. Single module, space-saving and quickly mounted on robot

Integrated recuperating spring prevents loop formations

Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

E-Chain System® - Series Triflex® R
Triflex® RS - Retraction System - Universal
RS Triflex® E-Chain® and Cable Length Calculations

igus® Triflex® RS



Triflex® RS - Fastening point, right

Universal module TRS for Series	Part No.	A in. (mm)	B in. (mm)	C in. (mm)
TRC-40/TRE-40	➤ TRC/TRE-RS-40-R	24.41 (620)	11.85 (301)	3.74 (95)
TRC-60/TRE-60	➤ TRC/TRE-RS-60-R	34.84 (885)	20.79 (528)	5.91 (150)
TRC-70/TRE-70	➤ TRC/TRE-RS-70-R	34.84 (885)	21.46 (545)	6.57 (167)
TRC-85/TRE-85	➤ TRC/TRE-RS-85-R	34.84 (885)	22.24 (565)	6.57 (167)
TRC-100/TRE-100	➤ TRC/TRE-RS-100-R	35.93 (912.5)	24.17 (614)	6.57 (167)

Triflex® RS - Fastening point, right, with cover

Universal module TRS for Series	Part No.	A in. (mm)	B in. (mm)	C in. (mm)
TRC-40/TRE-40	➤ TRC/TRE-RS-40-RC	24.41 (620)	11.85 (301)	3.74 (95)
TRC-60/TRE-60	➤ TRC/TRE-RS-60-RC	34.84 (885)	20.79 (528)	5.91 (150)
TRC-70/TRE-70	➤ TRC/TRE-RS-70-RC	34.84 (885)	21.46 (545)	6.57 (167)
TRC-85/TRE-85	➤ TRC/TRE-RS-85-RC	34.84 (885)	22.24 (565)	6.57 (167)
TRC-100/TRE-100	➤ TRC/TRE-RS-100-RC	35.93 (912.5)	24.17 (614)	6.57 (167)

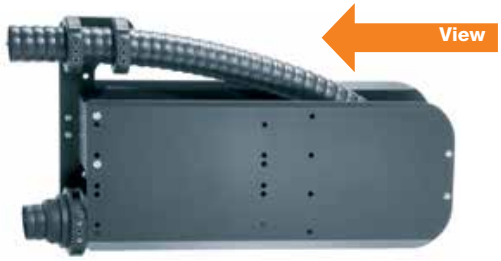
Triflex® RS - Fastening point, left

Universal module TRS for Series	Part No.	A in. (mm)	B in. (mm)	C in. (mm)
TRC-40/TRE-40	➤ TRC/TRE-RS-40-L	24.41 (620)	11.85 (301)	3.74 (95)
TRC-60/TRE-60	➤ TRC/TRE-RS-60-L	34.84 (885)	20.79 (528)	5.91 (150)
TRC-70/TRE-70	➤ TRC/TRE-RS-70-L	34.84 (885)	21.46 (545)	6.57 (167)
TRC-85/TRE-85	➤ TRC/TRE-RS-85-L	34.84 (885)	22.24 (565)	6.57 (167)
TRC-100/TRE-100	➤ TRC/TRE-RS-100-L	35.93 (912.5)	24.17 (614)	6.57 (167)

Triflex® RS - Fastening point, left, with cover

Universal module TRS for Series	Part No.	A in. (mm)	B in. (mm)	C in. (mm)
TRC-40/TRE-40	➤ TRC/TRE-RS-40-LC	24.41 (620)	11.85 (301)	3.74 (95)
TRC-60/TRE-60	➤ TRC/TRE-RS-60-LC	34.84 (885)	20.79 (528)	5.91 (150)
TRC-70/TRE-70	➤ TRC/TRE-RS-70-LC	34.84 (885)	21.46 (545)	6.57 (167)
TRC-85/TRE-85	➤ TRC/TRE-RS-85-LC	34.84 (885)	22.24 (565)	6.57 (167)
TRC-100/TRE-100	➤ TRC/TRE-RS-100-LC	35.93 (912.5)	24.17 (614)	6.57 (167)

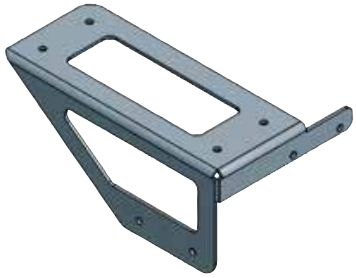
Fastening point, right



Triflex® R-Set with cover for the additional support of switch cabinets or valve terminals

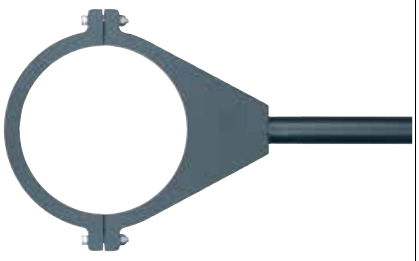
Triflex® R-Set with cover (barrier)

- Creates more mounting space on robots - e.g. for switch cabinets or valve terminals
- For upside down applications
- Enables the use of Triflex® RS in applications with extreme movements



43 Adapter brackets for robots from stock

- 43 adapter bracket types from stock for many different robots
- For all Triflex® RS modules
- For assembly to the side or on top



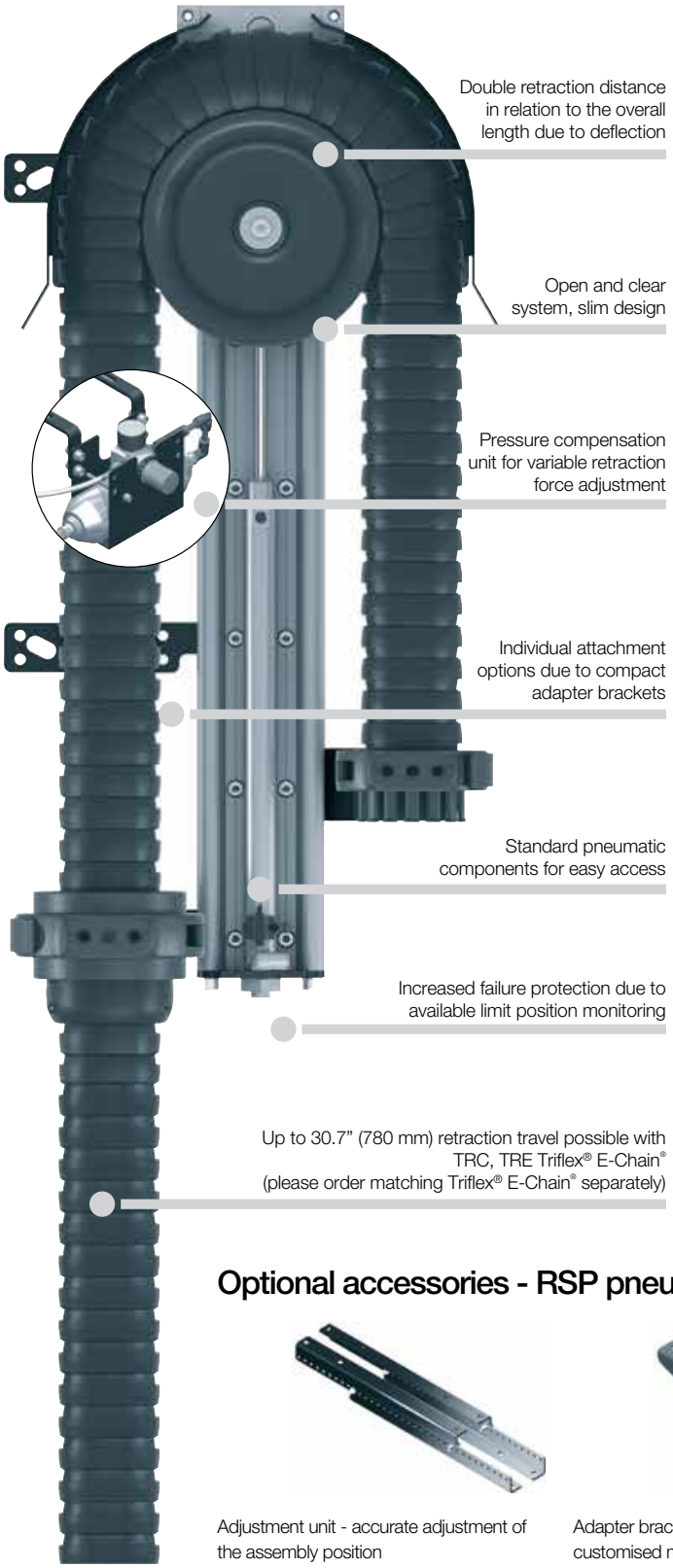
Triflex® R installed on axis 6 Part No. TR-907-667-Inner Ø

- One axis diameter (Ø30 mm) for all robots
- Easy and fast assembly
- For Triflex® R mounting bracket with CFX clamps (TR-XX-20-30)
- For Triflex® R mounting bracket with profile rail (TR-XX-21-30)
- For TR-XX-22-30 Quick exchange kit

Triflex® RSP

igus®

E-Chain System® - Series Triflex® R
Triflex® RSP - Retraction System - Pneumatic



RSP - Pneumatic Retraction System

Prevent creation of loops on robot hand with continuously adjustable retraction force - Triflex® RSP. Pneumatic retraction system for multi-axis robot applications. Deployment lengths of up to 30.7" (780 mm) facilitate reliable guidance of cables and hoses, even on large robots with complex motions. The use of a pneumatic cylinder allows the retraction forces to be adjustable. Ranging from light or heavy fillings, long or short robot arms - the RSP retraction system can always be adjusted for the retraction force needed by the specific application.

- **Even larger E-Chains®** diameters up to 4.92" (125 mm) can be guided reliably
- Almost constant force path over the complete travel, even with heavy fillings
- The limit position can be monitored, thus preventing damage during malfunctions
- Greater retraction forces than RS system
- Attachment options for a wide range of robot types and manufacturers with adapter brackets
- Developed for axis 3-6 on industrial robots
- Almost no energy consumption due to integrated compressed air accumulator

Optional accessories - RSP pneumatic retraction system

Adjustment unit - accurate adjustment of the assembly position

Adapter brackets for customised mounting options

Clamps - axis 6 - for Triflex® R mounting bracket

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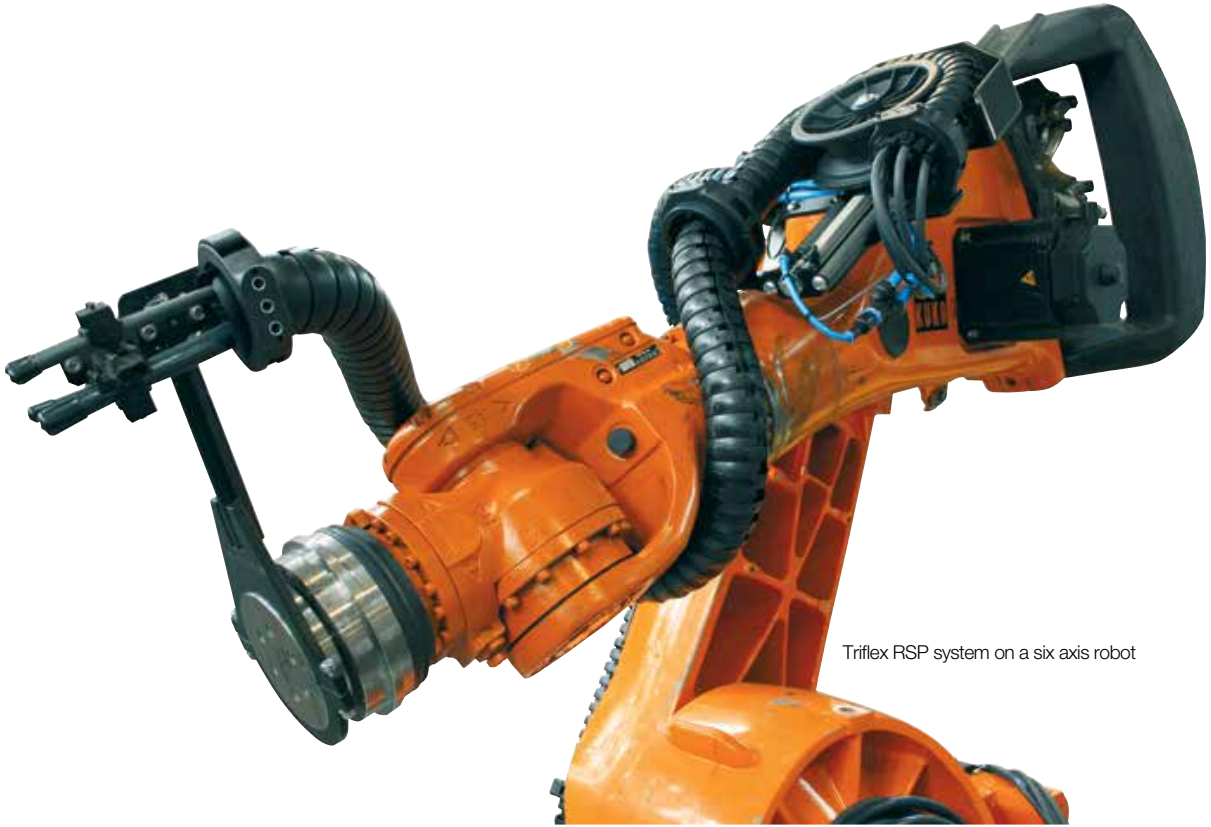
E-Chain System® - Series Triflex® R
Triflex® RSP - Retraction System - Pneumatic

Pneumatic Retraction System Triflex® RSP - prevents loops from forming in the operating space of the robot



Triflex RSP system on a six axis robot

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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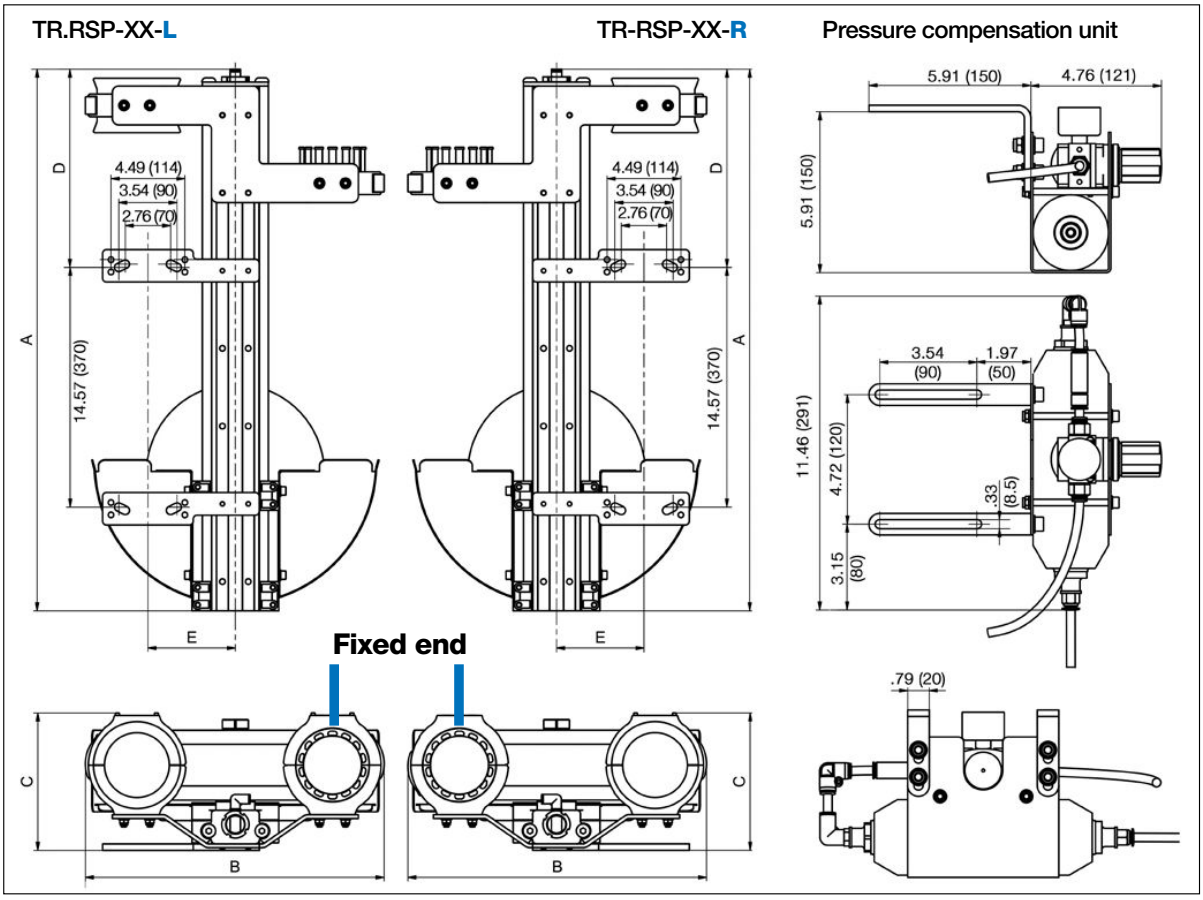
E-Chain System® - Series Triflex® R
Triflex® RSP - Retraction System - Pneumatic
Technical Data and Product Range



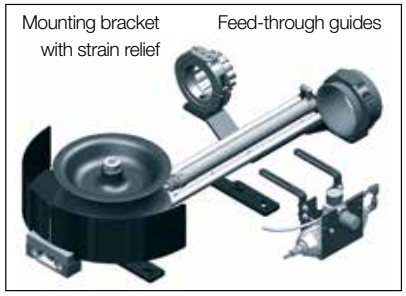
Product range - RSP Pneumatic Retraction System - for TRC TRE

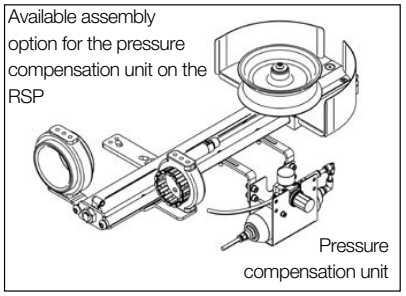
For Series ø	RSP Left fixed point Part. No.	RSP Right fixed point Part. No.	Retract travel maximum in. (mm) 1)	Dimension A in. (mm)	Dimension B in. (mm)	Dimension C in. (mm)	Dimension D in. (mm)	Dimension E in. (mm)	Weight lb. (kg)
-60- ➤	TR-RSP-60-L	TR-RSP-60-R	22.83 (580)	31.18 (792)	15.59 (396)	6.97 (177)	10.91 (277)	5.31 (135)	35.49 (16.1)
-70- ➤	TR-RSP-70-L	TR-RSP-70-R	22.83 (580)	31.18 (792)	15.59 (396)	6.97 (177)	10.91 (277)	5.31 (135)	35.71 (16.2)
-85- ➤	TR-RSP-85-L	TR-RSP-85-R	24.41 (620)	32.91 (836)	18.15 (461)	8.39 (213)	12.05 (306)	5.31 (135)	42.77 (19.4)
-100- ➤	TR-RSP-100-L	TR-RSP-100-R	24.41 (620)	33.27 (845)	18.39 (467)	8.39 (213)	12.05 (306)	5.31 (135)	42.99 (19.5)
-125- ➤	TR-RSP-125-L	TR-RSP-125-R	30.71 (780)	41.06 (1043)	22.44 (570)	9.65 (245)	15.94 (405)	5.31 (135)	53.13 (24.1)

Pressure compensation unit, mounting bracket, and feed-through guides are included.

Please order matching Triflex® E-Chain® separately.

1) These are maximum values. We do not recommend using more than 70% during normal operations to preserve a margin of error.



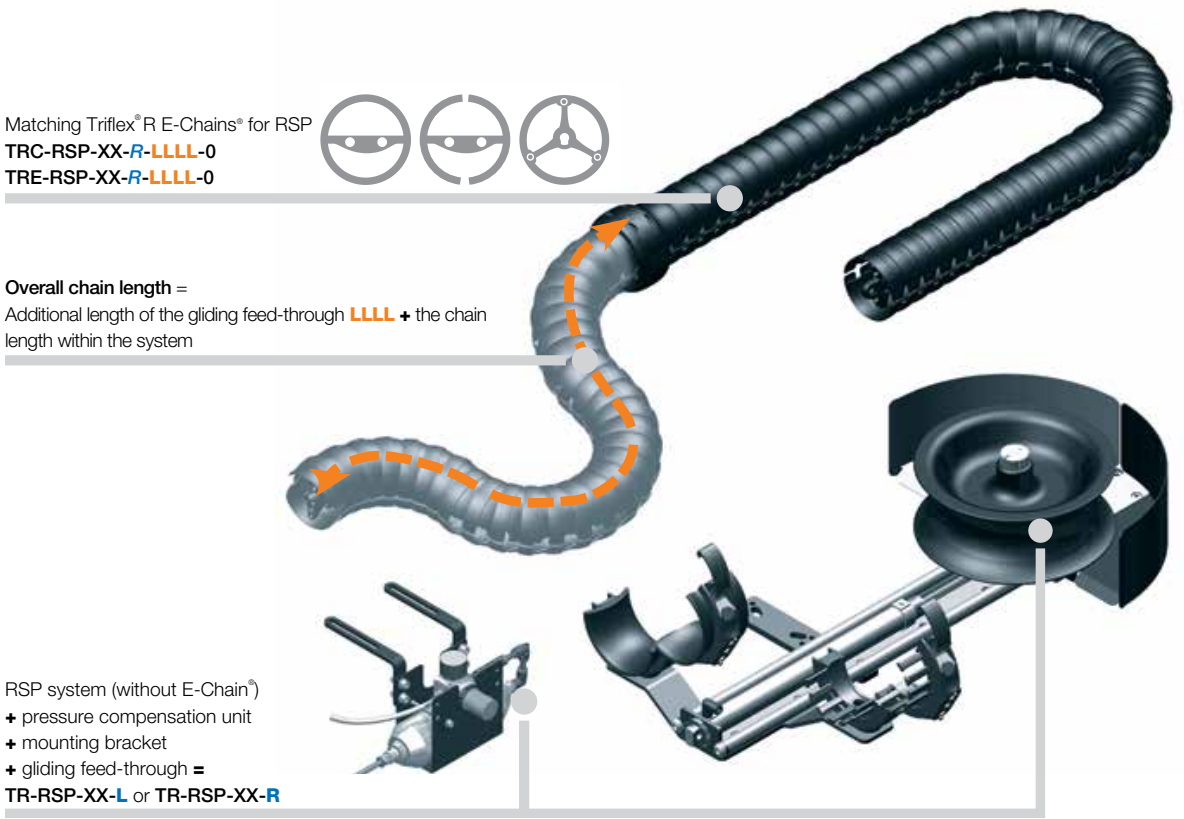


TR- RSP-XX -L / R — Order code

- R = Right fixed end
- L = Left fixed end
- Series Ø
- System
- Triflex® series

E-Chain System® - Series Triflex® R
Triflex® RSP - Retraction System - Pneumatic
RSP E-Chain® and Cable Length Calculations

igus® Triflex® RSP



Product range - Matching Triflex® E-Chains® for RSP

For Series ø	Part. No. **TRC** enclosed	Part. No. **TRE** "easy" design	E-Chains® Standard lengths (mm)			
-60- ➤	TRC-RSP-60-087- LLLL-0	TRE-RSP-60-087- LLLL-0	500	1000	1500	2000
-70- ➤	TRC-RSP-70-110- LLLL-0	TRE-RSP-70-110- LLLL-0	500	1000	1500	2000
-85- ➤	TRC-RSP-85-135- LLLL-0	TRE-RSP-85-135- LLLL-0	500	1000	1500	2000
-100- ➤	TRC-RSP-100-145- LLLL-0	TRE-RSP-100-145- LLLL-0	500	1000	1500	2000
-125- ➤	TRC-RSP-125-182- LLLL-0	TRE-RSP-125-182- LLLL-0	500	1000	1500	2000

*Standard lengths (additional length from feed-through guide - outside of the system) - Custom lengths on request.
Please add the standard-length (measured from the feed-through guide) based on the robot arm length from axis 3.
Example: TRC-RSP-60-087-500-0

Calculating the overall chain length and ordering code - RSP Triflex® E-Chains®

For Series ø	Radius *R* mm	Chain length within the system mm	Number of chain links	Overall chain length in. (mm)
-60- ➤	087	1489	73	LLLL + 1489
-70- ➤	110	1484	58	LLLL + 1484
-85- ➤	135	1622	53	LLLL + 1622
-100- ➤	145	1656	48	LLLL + 1656
-125- ➤	182	1940	44	LLLL + 1940

TRC-RSP-XX-*R*-LLLL-0
TRE-RSP-XX-*R*-LLLL-0

Order code

- Standard color - black
- Additional length
- *R* Bending radius
- Series ø
- System
- Triflex® series

E-Chain System® - Series Triflex® R
Triflex® RS & RSP Accessories

Connection to axis 6

Clamps

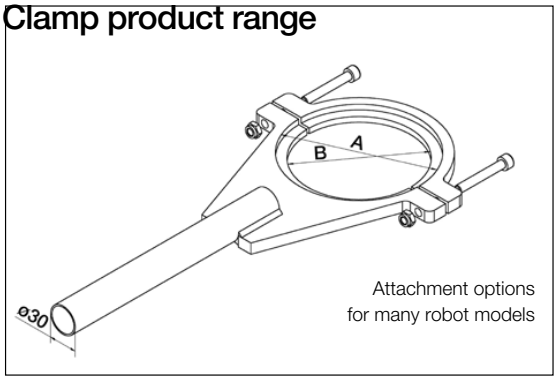
- Easy and fast alignment of the fixed point relative to the tool position
- **Depending on robot design, with or without circumferential keyway**
- **Used together with:**
  - Heavy-duty connection **TR-XX-20**... / **TR-XX-23**...
  - Swivel retainers **TR-XX-21**...
  - Quick exchange unit **TR-XX-22**...

Part No.	Example for robot type	Flange	Dim. A (mm)	Dim. B (mm)	Weight (lb)
TR-907-857	KUKA KR 30-3 (HA)	yes	130	115	4.2
	KUKA KR 60-3 (HA)	yes	130	115	4.2
	KUKA KR 60 L45-3 (HA)	yes	130	115	4.2
	KUKA KR 60 L30-3 (HA)	yes	130	115	4.2
TR-907-901	KUKA Quantec, large flange	yes	205	190	5.5
	KUKA KR 125/3	yes	205	190	5.5
	KUKA KR 150/3	yes	205	190	5.5
	KUKA KR 200/3	yes	205	190	5.5
	KUKA KR 360/1	yes	205	190	5.5
	KUKA KR 500/1	yes	205	190	5.5
	KUKA KR 150/2 Series 2000	yes	205	190	5.5
	KUKA KR 150/2 Series 2000	yes	205	190	5.5
	KUKA KR 180/2 Series 2000	yes	205	190	5.5
	KUKA KR 210/2 Series 2000	yes	205	190	5.5
TR-908-115	KUKA KR 1000 Titan	yes	250	242	6.7
TR-907-992	Fanuc R-2000iB	yes	165	160	5.3
	Fanuc R-2000iA	yes	165	160	5.3
	Reis RV 130	yes	165	160	5.3
TR-908-065	Fanuc M-710iC 50	yes	130	124	4.9
	Fanuc M-710iC 70	yes	130	124	4.9
TR-909-387	Motoman UP 50	yes	125	100	4.2
	Motoman HP 50	yes	125	100	4.2
	Motoman MH 50	yes	125	100	4.2
TR-910-544	Reis RV60-60	yes	145	125	4.2
	Reis RV60-40	yes	145	125	4.2
	Stäubli TX200	yes	145	125	4.2

Other sizes available on request!

E-Chain System® - Series Triflex® R
Triflex® RS & RSP Accessories

Clamp product range



Attachment options
for many robot models

Part No.	Example for robot type	Flange	Dim. A (mm)	Dim. B (mm)	Weight (lb)
TR-907-667-125	for custom flange	no	125	= A	4.6
TR-907-667-140	KUKA Quantec small flange	no	140	= A	10.8
TR-907-667-142	Hyundai HX 165	no	142	= A	5.0
TR-907-667-150	Comau NJ 130	no	150	= A	5.3
TR-907-667-160	ABB IRB 6400	no	160	= A	5.4
	Fanuc R2000	no	160	= A	5.4
	Fanuc S420	no	160	= A	5.4
Tr-907-667-180	for custom flange	no	180	= A	5.6
Tr-907-667-190	Comau NH3	no	190	= A	5.7
Tr-907-667-200	KUKA KR 125/1	no	200	= A	6.0
	KUKA KR 150/1	no	200	= A	6.0
	KUKA KR 200/1	no	200	= A	6.0
	ABB IRB 6640	no	200	= A	6.0
	ABB IRB 6620	no	200	= A	6.0
	ABB IRB 6650	no	200	= A	6.0
Tr-907-667-220	KUKA KR 360-2	no	220	= A	6.2
	KUKA KR 500-2	no	220	= A	6.2
Tr-907-667-223	ABB IRB 7600-340	no	223	= A	7.7
	ABB IRB 7600-500	no	223	= A	7.7
Tr-907-667-230	KUKA KR 360 Series 2000	no	230	= A	6.4
	KUKA KR 500 Series 2000	no	230	= A	6.4
Tr-907-667-250	Fanuc M900iA 350	no	250	= A	7.1
	Fanuc M900iA 260L	no	250	= A	7.1
Tr-907-667-275	Fanuc M900iA 200P	no	275	= A	7.5
Tr-907-667-315	Fanuc M900iA 600	no	315	= A	7.9
	Fanuc M900iA 400L	no	315	= A	7.9

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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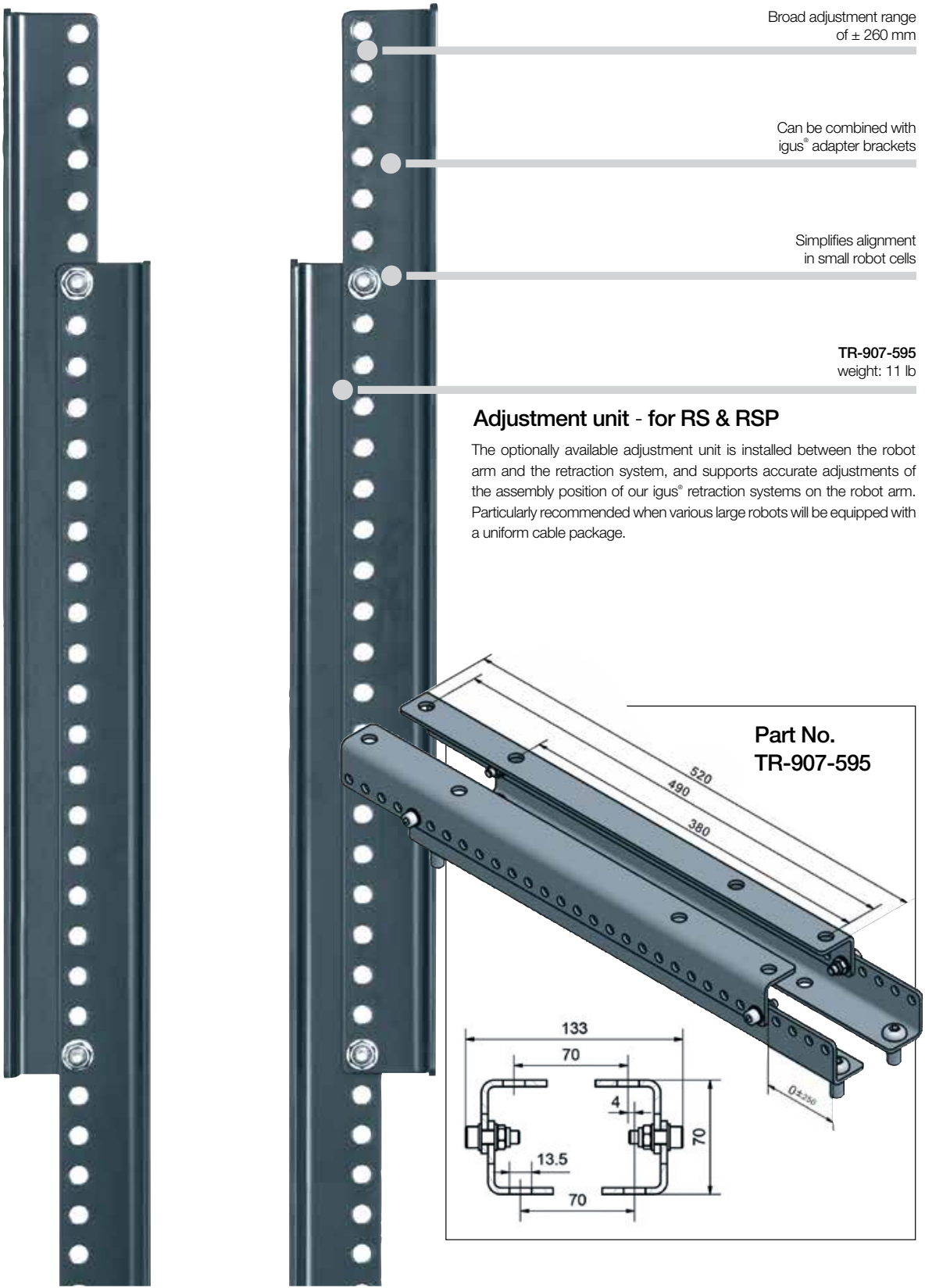
igus®

E-Chain System® - Series Triflex® R
Triflex® RS & RSP Accessories - Adapter Brackets

Adjustment unit - for RSP·RS



Adjustment unit - for RS & RSP

The optionally available adjustment unit is installed between the robot arm and the retraction system, and supports accurate adjustments of the assembly position of our igus® retraction systems on the robot arm. Particularly recommended when various large robots will be equipped with a uniform cable package.

Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

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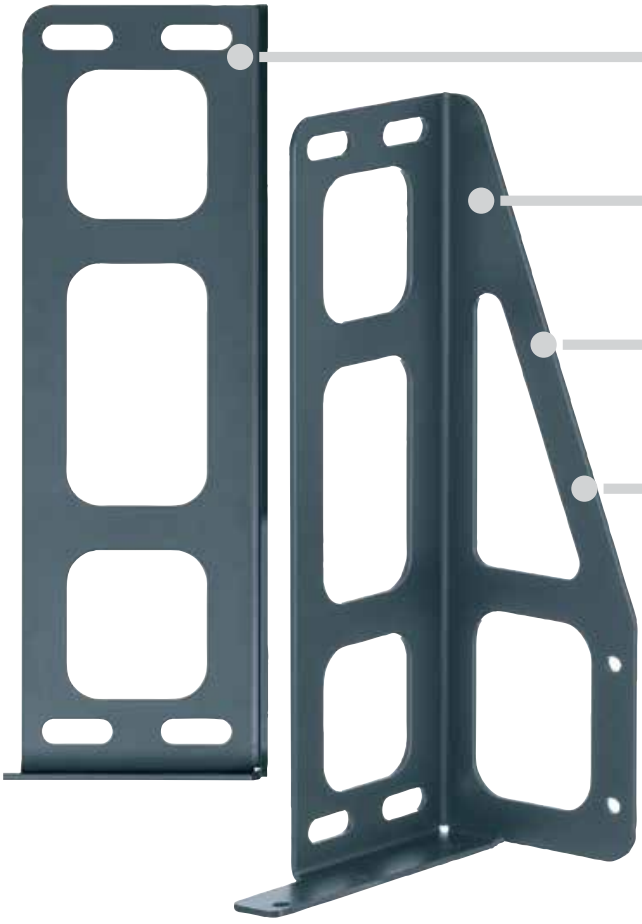
E-Chain System® - Series Triflex® R
Triflex® RS & RSP Accessories - Adapter Brackets

From stock for many robot types | for RSE, RS & RSP



43 brackets from stock for many robot types

For all Triflex® RSE-, RS and RSP modules

Also for robots with lateral assembly positions

3D CAD data available online for download

Adapter bracket - for RSE, RS & RSP

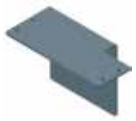
As attachment mechanism to robots, our RS and RSP retraction systems provide the widely used drill patterns: 380 x 70 mm and 490 x 90 mm (in Ø12.5 mm). We also supply a wide range of manufacturer and model-dependent adapters (from stock) to adapt to attachment options on robots that vary from these. For instance, many robot models are equipped by the factory only with lateral assembly positions - in these cases, our adapter product range also supports reliable assembly of the retraction systems without additional design-engineering effort. Product range for many robot types

▶ next page

Application example with RS system on ABB Series 6600

E-Chain System® - Series Triflex® R
Triflex® RS & RSP Accessories - Adapter Brackets

Adapter bracket product range - for RSE, RS & RSP

Adapter bracket	Part No.	For manufacturer	Example for robot type	Weight (lb)
	TR-907-347	**ABB**	IRB 6600 IRB 6640 IRB 6650	8.8
	TR-907-468	**ABB**	IRB 6400	21.6
	TR-907-448	**ABB**	IRB 4400	11
	TR-907-381	**ABB**	IRB 2400/10 IRB 2400/16	11.5
	TR-907-905	**ABB**	IRB 6620	6.2
	TR-908-494	**ABB**	IRB 4600 IRB 2600	6.4
	TR-907-374	**Comau**	NH1 130-2.6 NH3 165-2.7 NH3 220-2.7 NJ 110-3.0 NJ 110-2.6 SMART5 NJ 165 3.0	10.4
	TR-907-447	**Comau**	NM 45-2.0 NM 16-3.1	7.5
	TR-908-493	**Comau**	Smart six	4.9
	TR-907-327	**Motomann**	UP 20 UP 50 UP 130 UP 165 ES 165 ES 200 ES 280 HP 20 HP 50 MH6 HP 165	1.9
	TR-909-641	**Motomann**		4.4

More adapeter brackets on request. CAD data online.

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E-Chain System® - Series Triflex® R
Triflex® RS & RSP Accessories - Adapter Brackets

From stock for many robot types

Adapter bracket	Part No.	For manufacturer	Example for robot type		Weight (lb)
	TR-911-220	**Fanuc**	M-710iC 50 M-710iC 70		4.4
	TR-908-973	**Fanuc**	M-710iB 45		2.4
	TR-907-270	**Fanuc**	R-2000iB R-2000iA R-1000iA	S 430 S 420	9.9
	TR-907-470-12	**Fanuc**	M-900iA 260L M-900iA 350		15.0
	TR-907-902-12	**Fanuc**	M-900iA 600		19.6
	TR-910-876	**Fanuc**	M900-IB700		10.1
	TR-907-599	**Kuka**	KR5 KR5arc KR6 KR16		5.5
	TR-908-113	**Kuka**	KR-1000		11.5
	TR-908-014	**Kuka**	KR 60 (HA) KR 30 (HA)		9.5
	TR-907-706	**Reis**	RV30-26 RV10-16 RV20-16 RV60-16	RV60-26 RV60-40 RV60-60 RV130	9.5
	Spacer pin TR-911-223	**Kuka Series Quantec**	4 piece kit		1.3

More adapeter brackets on request. CAD data online.

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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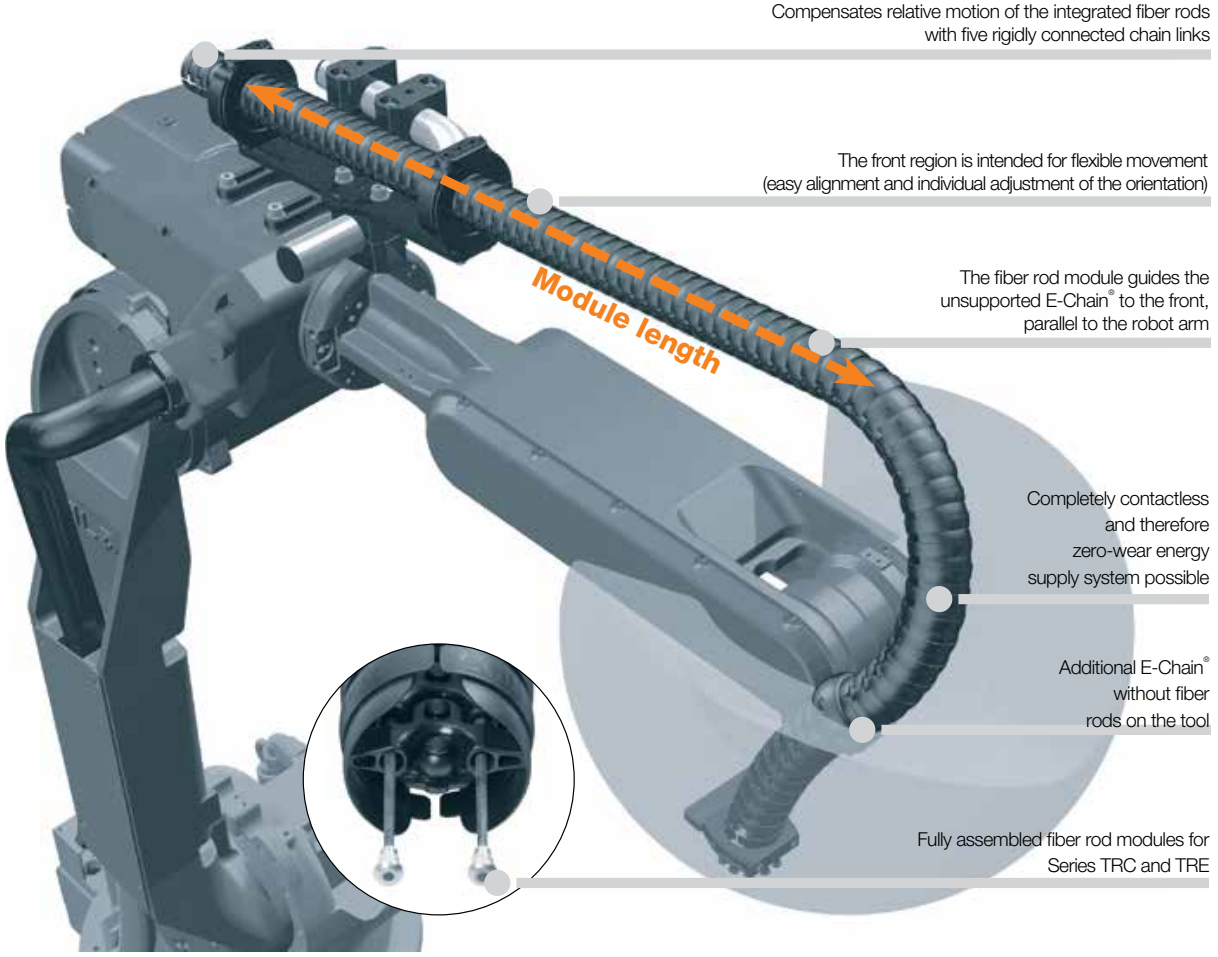
E-Chain System® - Series Triflex® R
Triflex® R Accessories - Fiber Rods

Fiber rod modules and universal assembly kits



Fiber rod modules for a directional camber of the E-Chain® - for TRC & TRE

We supply fully assembled fiber rod modules for Triflex® R E-Chain®, Series TRC and TRE. The integrated fiber rods generate a directional camber of the e-chain®. This system creates a unique choice of combinations for the energy supply system on manual axis of industrial robots. The fiber rod module guides the unsupported E-Chain® to the front, parallel to the robot arm. The bending properties of the modules depends on the installation orientation: only the front area is designed for flexible movement (accordingly, align with moving tool during assembly). The five rear chain links are rigidly connected and compensate the relative movement of the integrated fiber rods. A fully contactless and therefore zero-wear energy supply system can be realized, particularly for moderate movements with limited pivot motion of the axis. An additional E-Chain® without fiber rods for the hand area needs to be ordered separately.

Integrated fiber rods prevent loop formation

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E-Chain System® - Series Triflex® R
Triflex® R Accessories - Fiber Rods, Universal Assembly Kit

igus® Triflex® R

Product range - Fiber rods (Universal assembly kit below sold separately)

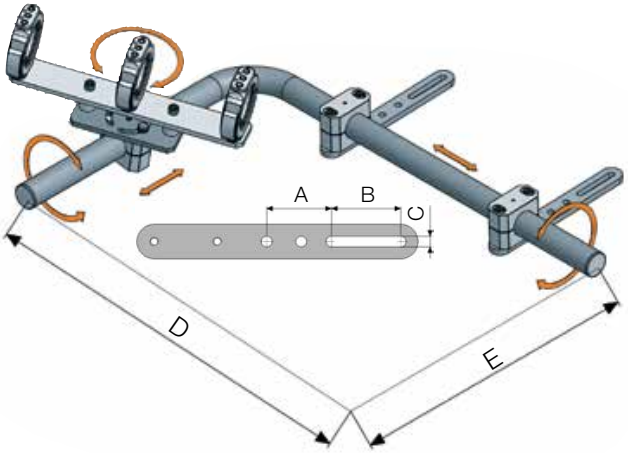
Part- No- fiber rod modules for TRC / TRE		Approx. length (m)
TRC-40	**TRE-40**	
TRCF.**40**.1000.1.0	TREF.**40**.1000.1.0.B	1.0
TRCF.**40**.0900.1.0	TREF.**40**.0900.1.0.B	0.9
TRCF.**40**.0800.1.0*	TREF.**40**.0800.1.0.B*	0.8
TRCF.**40**.0700.1.0	TREF.**40**.0700.1.0.B	0.7
TRCF.**40**.0600.1.0	TREF.**40**.0600.1.0.B	0.6
TRCF.**40**.0500.1.0	TREF.**40**.0500.1.0.B	0.5
TRCF.**40**.0400.1.0	TREF.**40**.0400.1.0.B	0.4
TRC-60	**TRE-60**	
TRCF.**60**.1400.1.0	TREF.**60**.1400.1.0.B	1.4
TRCF.**60**.1200.1.0	TREF.**60**.1200.1.0.B	1.2
TRCF.**60**.1000.1.0*	TREF.**60**.1000.1.0.B*	1.0
TRCF.**60**.0800.1.0	TREF.**60**.0800.1.0.B	0.8
TRCF.**60**.0600.1.0	TREF.**60**.0600.1.0.B	0.6
TRCF.**60**.0400.1.0	TREF.**60**.0400.1.0.B	0.4
TRC-70	**TRE-70**	
TRCF.**70**.1800.1.0	TREF.**70**.1800.1.0.B	1.8
TRCF.**70**.1600.1.0	TREF.**70**.1600.1.0.B	1.6
TRCF.**70**.1400.1.0	TREF.**70**.1400.1.0.B	1.4
TRCF.**70**.1200.1.0*	TREF.**70**.1200.1.0.B*	1.2
TRCF.**70**.1000.1.0	TREF.**70**.1000.1.0.B	1.0
TRCF.**70**.0800.1.0	TREF.**70**.0800.1.0.B	0.8

Part- No- fiber rod modules for TRC / TRE		Approx. length (m)
TRC-85	**TRE-85**	
TRCF.**85**.2000.1.0	TREF.**85**.2000.1.0.B	2.0
TRCF.**85**.1800.1.0	TREF.**85**.1800.1.0.B	1.8
TRCF.**85**.1600.1.0	TREF.**85**.1600.1.0.B*	1.6
TRCF.**85**.1400.1.0*	TREF.**85**.1400.1.0.B*	1.4
TRCF.**85**.1200.1.0	TREF.**85**.1200.1.0.B	1.2
TRCF.**85**.1000.1.0	TREF.**85**.1000.1.0.B	1.0
TRCF.**85**.0800.1.0	TREF.**85**.0800.1.0.B	0.8
TRC-100	**TRE-100**	
TRCF.**100**.2000.1.0	TREF.**100**.2000.1.0.B	2.0
TRCF.**100**.1800.1.0	TREF.**100**.1800.1.0.B	1.8
TRCF.**100**.1600.1.0	TREF.**100**.1600.1.0.B	1.6
TRCF.**100**.1400.1.0*	TREF.**100**.1400.1.0.B	1.4
TRCF.**100**.1200.1.0	TREF.**100**.1200.1.0.B	1.2
TRCF.**100**.1000.1.0	TREF.**100**.1000.1.0.B	1.0
TRC-125	**TRE-125**	
TRCF.**125**.2000.1.0	TREF.**125**.2000.1.0.C	2.0
TRCF.**125**.1800.1.0	TREF.**125**.1800.1.0.C	1.8
TRCF.**125**.1600.1.0	TREF.**125**.1600.1.0.C*	1.6
TRCF.**125**.1400.1.0*	TREF.**125**.1400.1.0.C*	1.4
TRCF.**125**.1200.1.0	TREF.**125**.1200.1.0.C	1.2
TRCF.**125**.1000.1.0	TREF.**125**.1000.1.0.C	1.0

***Maximum recommended length for fiber rod modules**

Universal assembly kit - for TRC, TRE

Stainless steel angle tube with attachment brackets and module retainer. Freely positionable. The energy supply system can be quickly and easily adapted to the new programming sequences of the robot. Sizes 40 / 60 with 2 mounting brackets - with 3 mounting brackets starting at size 70



Assembly example on axis 3 (of the robot)

Product range - Universal mounting kit

For Series ø		Part No.	A (mm)	B (mm)	D (mm)	E (mm)	C (mm)	Weight (lb)
40-	➤	**TR-40-80**	40	30	475	325	8.4	7.9
60-	➤	**TR-60-80**	40	30	475	325	8.4	9.5
70-	➤	**TR-70-80**	75	80	875	575	12.5	13.0
85-	➤	**TR-85-80**	75	80	875	575	12.5	13.9
100-	➤	**TR-100-80**	75	80	875	575	12.5	6.3

Size index 123 available upon request.

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E-Chain System® - Series Triflex® R
Triflex® R - Selection and Filling

Space-saving integrated strain relief at the connection point

When filling Triflex® R, sufficient clearance needs to be provided for all electric cables, pneumatic and media hoses, in order to compensate for forces from relative motion between the cables and hoses.

As a rule of thumb, the following values apply:

- The total of cable/hose diameters must not exceed 60% of the total cross section of their Triflex® R component.
- A clearance of at least 10% (min. 1 mm) between any two cables/hoses
- Cables/hoses need to be able to move freely inside the Triflex® R.

Please refer to the chart on this page for an overview of available cross sections for Triflex® R.

Example:
Cross Section Calculation

$$A_{conduit} = \frac{d^2 \times \pi}{4}$$

Examples:

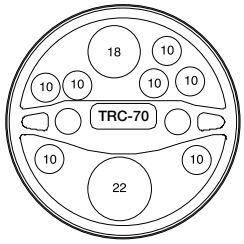
A_1 = 10 mm x 10 mm x π/4
= 78.5 mm² x 7 (number of conduits)
= 549.50 mm²

A_2 = 18 mm x 18 mm x π/4
= 254.34 mm²

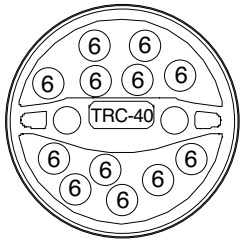
A_3 = 22 mm x 22 mm x π/4
= 379.94 mm²

$A_{conduit} = A_1 + A_2 + A_3 = 1183.7$ mm²

Filling Example: TRC-70



Filling Example: TRC-40



The smaller the relation between usable cross section and the total of cable/hose diameters, the less the stress of the cables.

Series	Usable Cross Section
TRC/TRE-30	.48 inch² (313.0 mm²)
TRC/TRE-40	.78 inch² (508.0 mm²)
TRC/TRE-60	1.77 inch² (1144.6 mm²)
TRC/TRE-70	2.77 inch² (1788.0 mm²)
TRC/TRE-85	3.77 inch² (2431.0 mm²)
TRC/TRE-100	4.92 inch² (3177.0 mm²)

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E-Chain System® - Series Triflex® R Selection and Filling

Customer-specific special cable for robotic and torsion applications

- Control, motor, servo, bus and data cables
- Shielded and unshielded
- Outer jacket material: PVC, PUR, TPE
- Torsion area according to requirement
- Sectors: Robotic and 3D applications

The service life of cables in torsion applications depend disproportionately on the exact progression of the angle of torsion and the cable length of the exact application. As a single test facility is often insufficient, Chainflex® cables are tested on various constructional systems. Your torsion cables are tested as realistic as possible for your application. For this purpose, igus® uses up to 8 different test facilities in the in-house laboratory.

Torsionable Chainflex® robotic cables for +/-180° angle of twist per meter length

Chainflex® CFROBOT9 - PUR-Hybrid cable, torsionable

Chainflex® CFROBOT8 - PUR-Bus cable, torsionable

Chainflex® CFROBOT6 - PUR-Motor cable, torsionable

Chainflex® CFROBOT7 - PUR-Motor cable, torsionable, shielded

Chainflex® CFROBOT5 - TPE-Fiber optic cable, torsionable

Chainflex® CFROBOT - Single-core TPE robotic cable

Triflex® R - Tests in the igus® lab

Testing facility at the igus® laboratory

Torsion test of CF-ROBOT

Triflex® R - Chainflex® Robot Cable Package

Robot cables and other conduits are delivered as harnessed kits.

Triflex® R - ReadyChain® - Chainflex® cable/hose Packages
Turnkey harnessed ReadyChain® cable and hose packages, equipped with Chainflex® cables for use on robots. Delivered complete with cables, hoses, connectors and accessories. ReadyChain® minimizes setup time and reduces downtime. Cable and hose packages for robotic applications can be customized with Chainflex® products or other special items. Robot cables and other conduits are delivered as complete harnessed systems.
Under the igus® CFRobot range, control, data, servo- and motor cables are available.

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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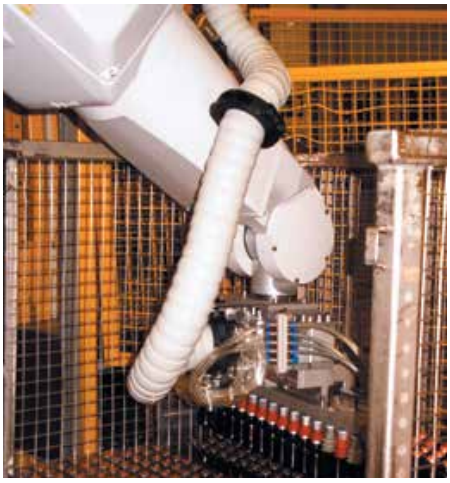
E-Chain System® - Series Triflex® R
Application Examples

TRC-100-145-0 with cable handling package

Handling robot for the glass industry

Laser cutting machine



Triflex® R in the pharmaceutical industry

igus® E2 E-Tube and Triflex® R in a processing machine

igus® System E6 and Triflex® R TRE in a Y/Z-gantry

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Estudio de Fluidos

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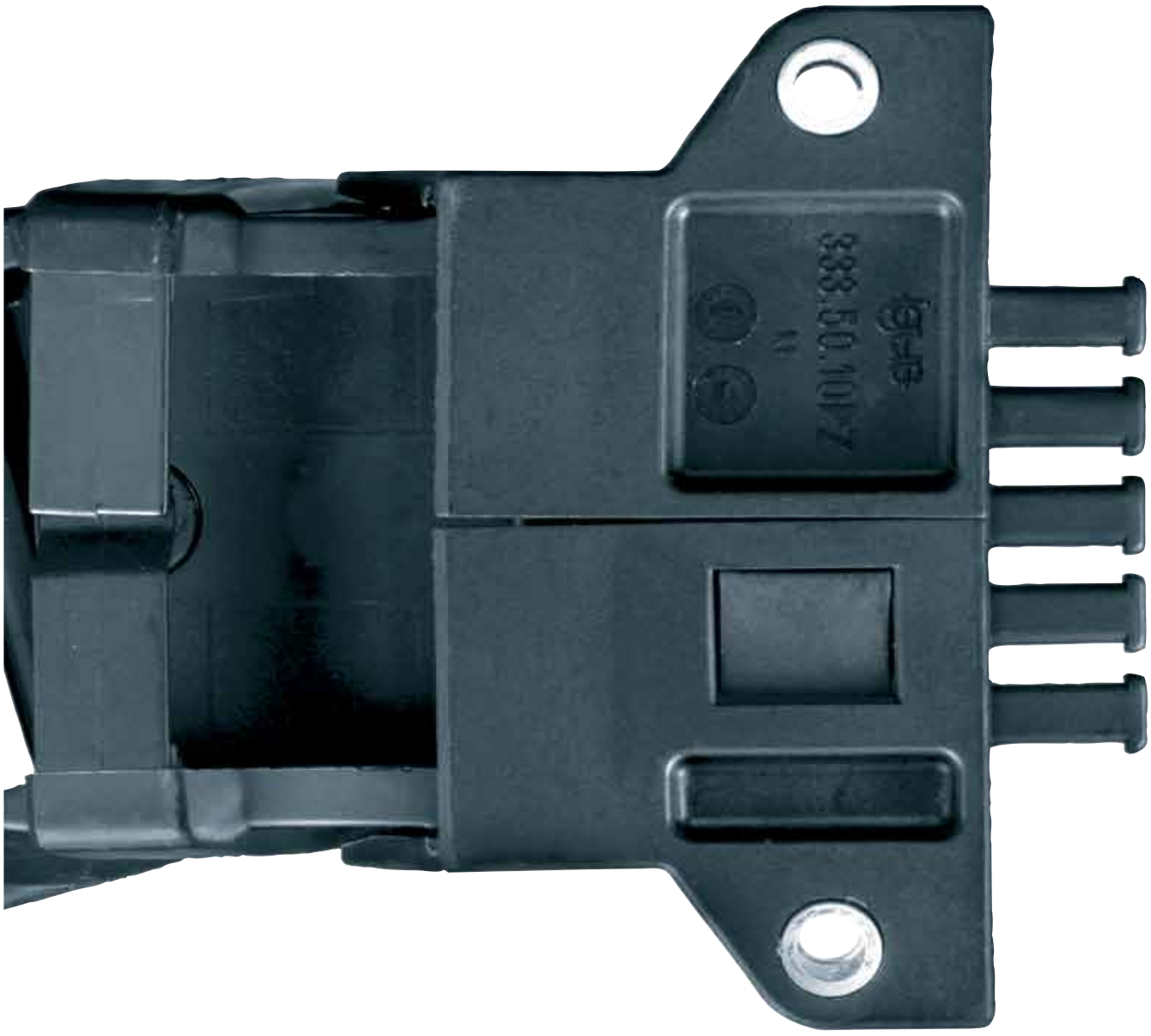

igus®
E-Z Triflex®

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E-Z Triflex® - for 2D and 3D movements, easy access to cable from both sides

The Triflex® series has been developed to safely guide cables through a 3D movement. With E-Z Triflex®, the installation of cables and hoses is easy. Cables can be inserted into the E-Chain® from the top or bottom through an opening along the length of the chain. The unique modular design of Triflex® enables very complex movements through all three axes.

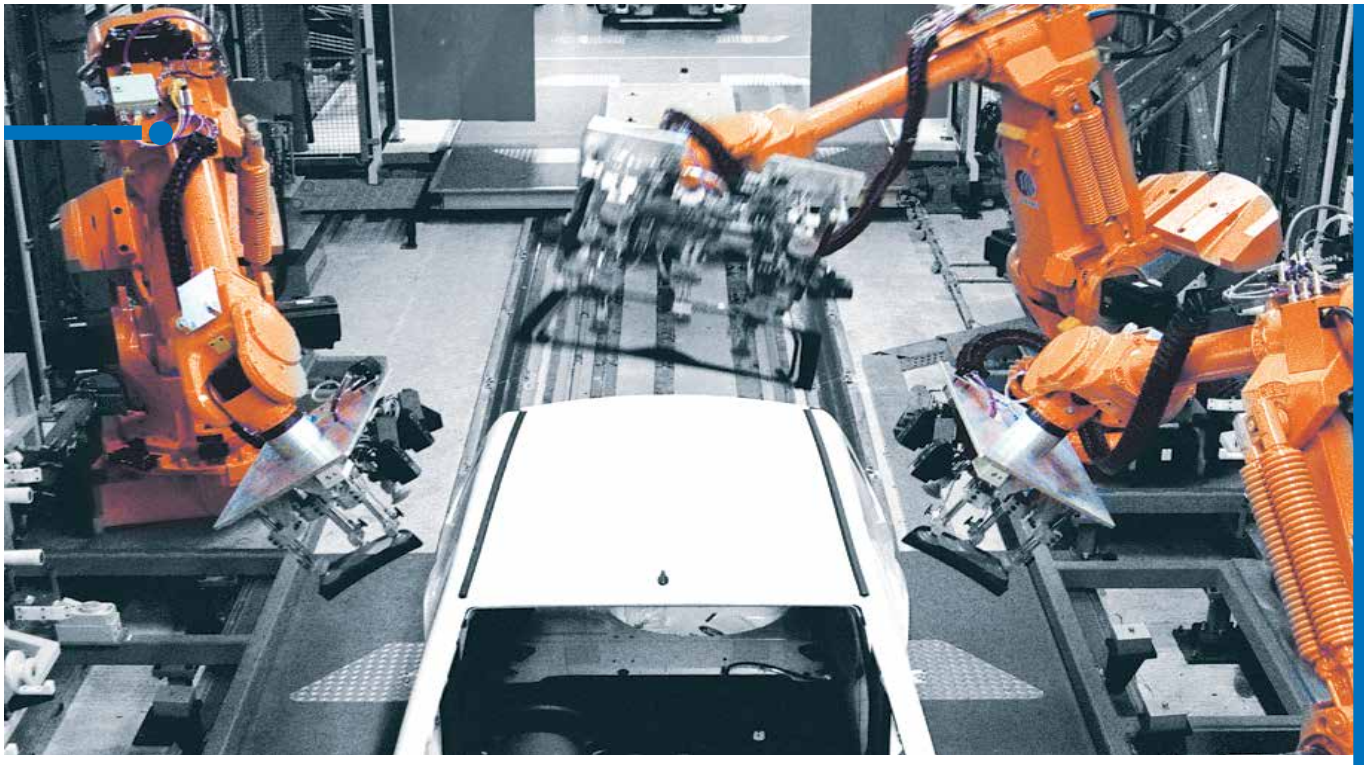
Typical industries and applications

- Machine Tools
- Robots
- Material handling
- Plastics machinery
- Construction machines
- Vehicles
- General machinery
- Medical equipment

iF-Design awards for Easy Triflex®-design

Torsional motion possible

UL94-V2 classifications



Robots with igus® E-Z Triflex® E-Chains® on an assembly line

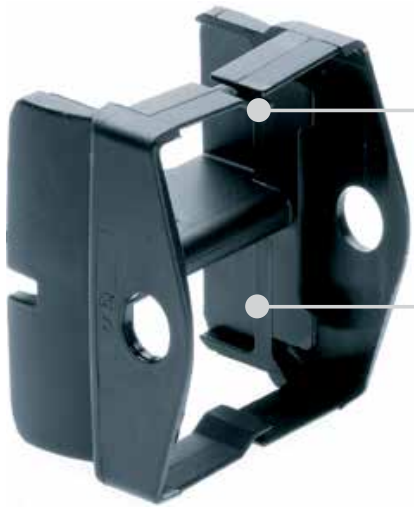
E-Z Triflex® E-Chains® for multi-dimensional movements on a production line

E-Z Triflex® E-Chains® also for easy applications - here an aesthetic application

E-Z Triflex® - The Solution for Your Office

Dangling lines are risky and unaesthetic. The new solution: E-Z Triflex® and Triflex® E-Chains® with special connector elements for your desk. They offer reliable, movable and elegant protection for lines, are quickly installed and are available in many variations. Naturally they can be installed at any time as retrofits. Simply press the lines from two sides. This is possible at any point desired.

E-Chain System®
E-Z Triflex® Series



Select this modular E-Chain System® for:

- 3-axis motions in all kinds of machinery
- Some robotics applications
- Very fast cable assembly with “E-Z” design
- Simple filling from two sides
- Where rectangular shapes fit better
- Combination of different bending radii and movement directions
- Lengthen and shorten anywhere
- KMA mounting brackets with integrated strain relief
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

Selection table

Single-axis and double-axis movement:

Series	Inner Height *Bi* 1/*Bi* 2		Inner Width *Bi* 3		Outer height/Outer Width □ *Ba*		Bending Radii *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
E331-25	.51	(13)	.98	(25)	1.34	(34)	1.89 - 7.87	(048 - 200)
E331-32	.69	(17.5)	1.26	(32)	1.97	(50)	2.95 - 9.84	(075 - 250)
E331-50	1.02	(26)	1.97	(50)	2.68	(68)	3.94 - 9.84	(100 - 250)
E331-75	1.52	(38.5)	2.95	(75)	3.78	(96)	5.51 - 11.81	(140 - 300)

Single-axis and double-axis movement:

Series	Inner Height *Bi* 1/*Bi* 2		Inner Width *Bi* 3		Outer height/Outer Width □ *Ba*		Bending Radii *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
E332-25	.51	(13)	.98	(25)	1.34	(34)	1.89 - 7.87	(048 - 200)
E332-32	.69	(17.5)	1.26	(32)	1.97	(50)	2.95 - 9.84	(075 - 250)
E332-50	1.02	(26)	1.97	(50)	2.68	(68)	3.94 - 9.84	(100 - 250)
E332-75	1.52	(38.5)	2.95	(75)	3.78	(96)	5.51 - 11.81	(140 - 300)

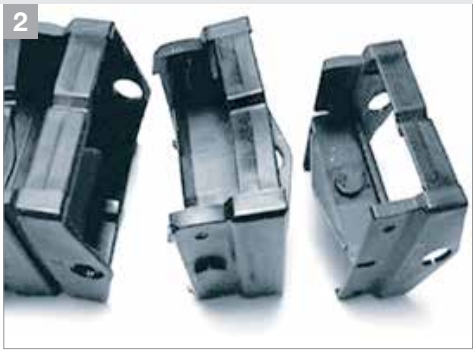
Triple-axis movement

Series	Inner Height *Bi* 1/*Bi* 2		Inner Width *Bi* 3		Outer height/Outer Width □ *Ba*		Bending Radii *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
E333-25	.51	(13)	.98	(25)	1.34	(34)	1.89 - 7.87	(048 - 200)
E333-32	.69	(17.5)	1.26	(32)	1.97	(50)	2.95 - 9.84	(075 - 250)
E333-50	1.02	(26)	1.97	(50)	2.68	(68)	3.94 - 9.84	(100 - 250)
E333-75	1.52	(38.5)	2.95	(75)	3.78	(96)	5.51 - 11.81	(140 - 300)

E-Chain System®
E-Z Triflex® Series

E-Z Triflex® Series - Assembling

Twist and snap in



Shorten and lengthen
at any given point

E-Z Triflex® Series - Separating

Lever the E-Z Triflex®
side link with screwdriver

Twist and separate - For Series E333
you have to separate the “middle” pin

E-Z Triflex® Series - Filling

Easy to fill - simply press cables in...

...and easy to take the cables out

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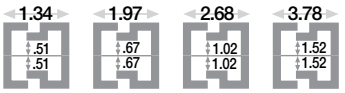
E-Z Triflex® igus®

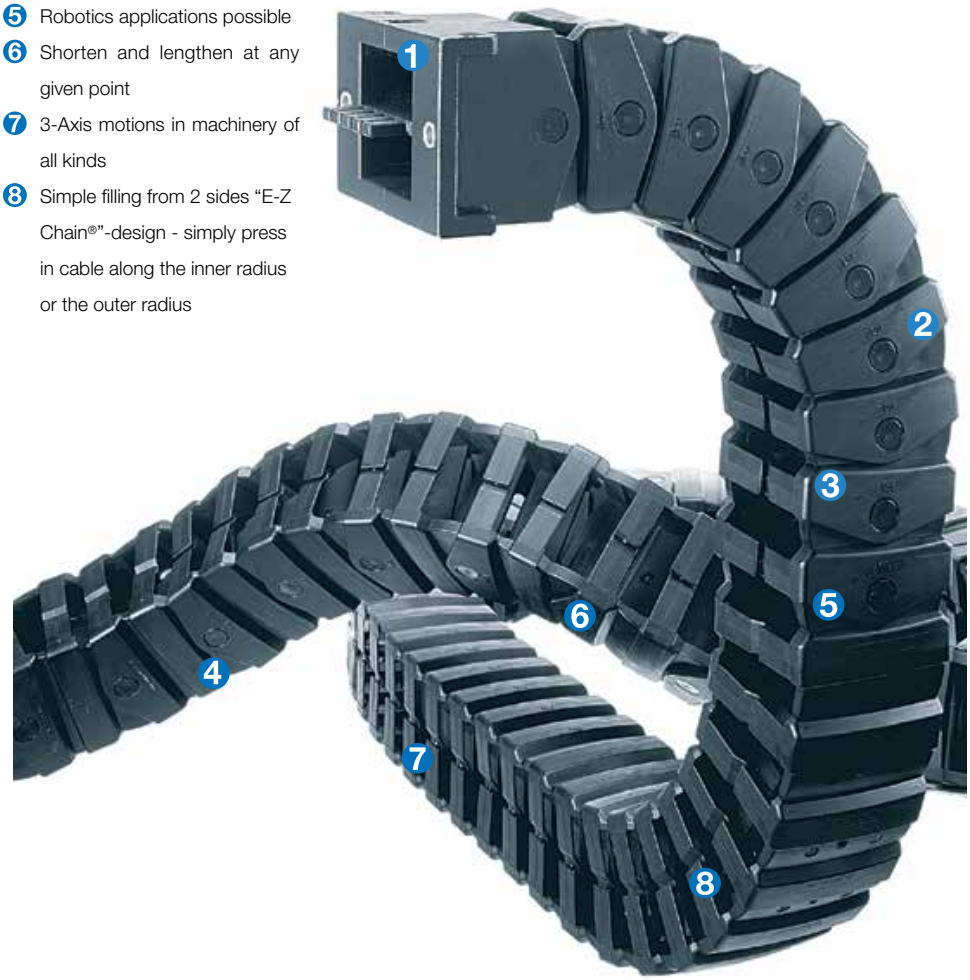
E-Chain System®
E-Z Triflex® Series



Price Index

Features & Benefits

1. KMA split-open mounting bracket with integrated strain relief
2. Patented “push-button-design”
3. iF-Design Award Winner
4. Different bending radii and directions can be combined
5. Robotics applications possible
6. Shorten and lengthen at any given point
7. 3-Axis motions in machinery of all kinds
8. Simple filling from 2 sides “E-Z Chain®”-design - simply press in cable along the inner radius or the outer radius



Flammability Class VDE 0304 IIC UL94 V2

Torsion motion possible

iF-Design Award Winner

Assembly Tips

Easy to fill - simply press cables in

- If simple cable installation is required with complex movements
- If simple cable installation from both sides with complex movements is required
- For repair and supplementation of existing Triflex® Systems

- For circular movements with high loads
  ➤ TwisterChain® System, from **Chapter 8**
- If chip protection is necessary
  ➤ Triflex® System, from **Chapter 8**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

6.56 ft (2 m) **E333-50-100/100-0**	**E-Chain®**
1 Set **333-50-12PZ**	**Mounting Bracket**

Technical Data

Material - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Flammability Class, igumid NB	VDE 0304 IIC UL94 V2

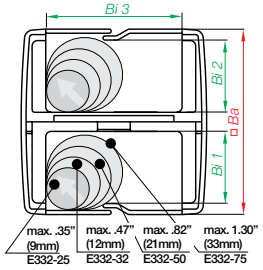
Details of material properties
➤ **Chapter 1**

E-Chain System®
E-Z Triflex® Series - Single Axis Movement

igus®

Series E331

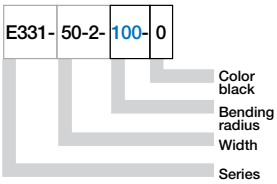
Single Axis Movement, Series E331



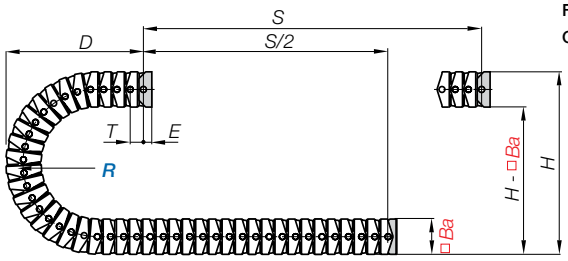
Part No.	Bi 1	Bi 2	Bi 3	□ Ba
E331-25-2-[ ]-0	.51 (13)	.51 (13)	.98 (25)	1.34 (34)
E331-32-2-[ ]-0	.69 (17.5)	.69 (17.5)	1.26 (32)	1.97 (50)
E331-50-2-[ ]-0	1.02 (26)	1.02 (26)	1.97 (50)	2.68 (68)
E331-75-2-[ ]-0	1.52 (38.5)	1.52 (38.5)	2.95 (75)	3.78 (96)

Supplement part number with required radius from below
for example E331-50-2-[100]-0

Part No. structure



Installation dimensions for single-axis movement



For center mount applications:
Chain length = $S/2 + K$

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *"safety buffer"*

Series E331-25-2-[XXX]-0

R	1.89 (048)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)
H	5.12 (130)	7.28 (185)	9.25 (235)	11.22 (285)	13.19 (335)	15.15 (385)	17.13 (435)
D	3.74 (95)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
K	7.68 (195)	11.02 (280)	14.17 (360)	17.32 (440)	20.28 (515)	23.43 (595)	26.57 (675)

Pitch = .57 (14.5 mm)
Links/ft (m) = 21.03 (69)
Dimensions E = .39 (10 mm)
Ba = 1.34 (34 mm)

Series E331-32-2-[XXX]-0

R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	17.72 (450)	21.65 (550)
D	5.12 (130)	6.10 (155)	7.09 (180)	8.07 (205)	10.04 (255)	12.01 (305)
K	12.01 (305)	15.15 (385)	18.30 (465)	21.46 (545)	27.56 (700)	34.06 (865)

Pitch = .98 (25 mm)
Links/ft (m) = 12.24 (40)
Dimensions E = .79 (20 mm)
Ba = 1.97 (50 mm)

Series E331-50-2-[XXX]-0

R	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	10.63 (270)	12.60 (320)	14.76 (375)	18.50 (470)	22.44 (570)
D	7.68 (195)	8.66 (220)	9.65 (245)	11.61 (295)	13.58 (345)
K	17.13 (435)	20.47 (520)	23.23 (590)	29.53 (750)	35.83 (910)

Pitch = 1.18 (30 mm)
Links/ft (m) = 10.17 (34)
Dimensions E = .98 (25 mm)
Ba = 2.68 (68 mm)

Series E331-75-2-[XXX]-0

R	5.51 (140)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)
H	14.96 (380)	17.71 (450)	19.69 (500)	23.62 (600)	27.56 (700)
D	9.45 (240)	10.83 (275)	11.81 (300)	13.78 (350)	15.75 (400)
K	21.65 (550)	25.98 (660)	29.13 (740)	35.43 (900)	41.73 (1060)

Pitch = 1.42 (36 mm)
Links/ft (m) = 8.45 (28)
Dimensions E = .98 (25 mm)
Ba = 3.78 (96 mm)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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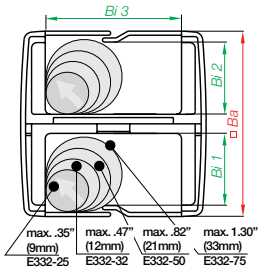
Series E332

igus®

E-Chain System®
E-Z Triflex® Series - Double Axis Movement

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

Double Axis Movement, Series E332

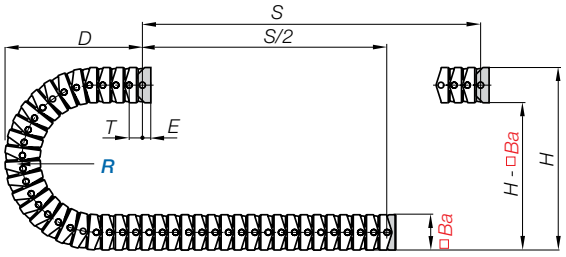


Part No.	Bi 1	Bi 2	Bi 3	□ Ba
E332-25-2-[ ]-0	.51 (13)	.51 (13)	.98 (25)	1.34 (34)
E332-32-2-[ ]-0	.69 (17.5)	.69 (17.5)	1.26 (32)	1.97 (50)
E332-50-2-[ ]-0	1.02 (26)	1.02 (26)	1.97 (50)	2.68 (68)
E332-75-2-[ ]-0	1.52 (38.5)	1.52 (38.5)	2.95 (75)	3.78 (96)

Supplement part number with required radius from below
for example, E332-75-2-[200]-0

Part No. structure

Installation dimensions for double-axis movement



For center mount applications:
Chain length = $\frac{S}{2}$ + K

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *"safety buffer"*

Series E332-25-2-[XXX] -0

R	1.89 (048)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)
H	5.12 (130)	7.28 (185)	9.25 (235)	11.22 (285)	13.19 (335)	15.15 (385)	17.13 (435)
D	3.74 (95)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
K	7.68 (195)	11.02 (280)	14.17 (360)	17.32 (440)	20.28 (515)	23.43 (595)	26.57 (675)

Pitch = .57 (14.5 mm)
Links/ft (m) = 21.03 (69)
Dimensions E = .39 (10 mm)
Ba = 1.34 (34 mm)

Series E332-32-2-[XXX] -0

R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	17.72 (450)	21.65 (550)
D	5.12 (130)	6.10 (155)	7.09 (180)	8.07 (205)	10.04 (255)	12.01 (305)
K	12.01 (305)	15.15 (385)	18.30 (465)	21.46 (545)	27.56 (700)	34.06 (865)

Pitch = .98 (25 mm)
Links/ft (m) = 12.24 (40)
Dimensions E = .79 (20 mm)
Ba = 1.97 (50 mm)

Series E332-50-2-[XXX] -0

R	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	10.63 (270)	12.60 (320)	14.76 (375)	18.50 (470)	22.44 (570)
D	7.68 (195)	8.66 (220)	9.65 (245)	11.61 (295)	13.58 (345)
K	17.13 (435)	20.47 (520)	23.23 (590)	29.53 (750)	35.83 (910)

Pitch = 1.18 (30 mm)
Links/ft (m) = 10.17 (34)
Dimensions E = .98 (25 mm)
Ba = 2.68 (68 mm)

Series E332-75-2-[XXX] -0

R	5.51 (140)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)
H	14.96 (380)	17.71 (450)	19.69 (500)	23.62 (600)	27.56 (700)
D	9.45 (240)	10.83 (275)	11.81 (300)	13.78 (350)	15.75 (400)
K	21.65 (550)	25.98 (660)	29.13 (740)	35.43 (900)	41.73 (1060)

Pitch = 1.42 (36 mm)
Links/ft (m) = 8.45 (28)
Dimensions E = .98 (25 mm)
Ba = 3.78 (96 mm)

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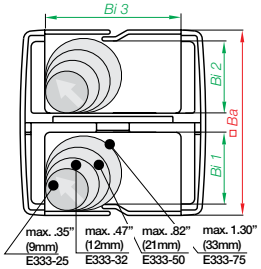
E-Chain System®
E-Z Triflex® Series - Triple Axis Movement

igus®

Series E333

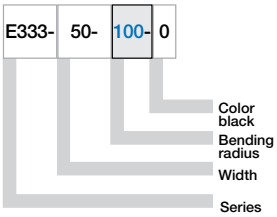
Triple Axis Movement, Series E333



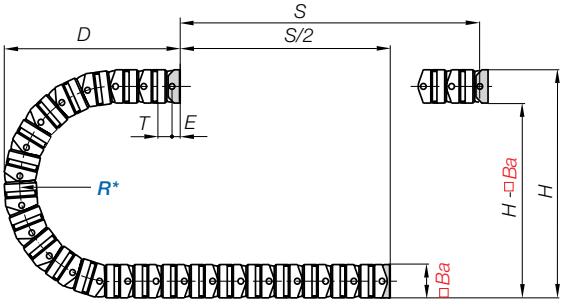
Part No.	Bi 1	Bi 2	Bi 3	□ Ba
E333-25-[ ]-0	.51 (13)	.51 (13)	.98 (25)	1.34 (34)
E333-32-[ ]-0	.69 (17.5)	.69 (17.5)	1.26 (32)	1.97 (50)
E333-50-[ ]-0	1.02 (26)	1.02 (26)	1.97 (50)	2.68 (68)
E333-75-[ ]-0	1.52 (38.5)	1.52 (38.5)	2.95 (75)	3.78 (96)

Supplement part number with required radius from above
for example, E333-32-[100]-0

Part No. structure



Installation dimensions for triple-axis movement



For center mount applications:
Chain length = $\frac{S}{2}$ + K

* The bending radii are doubled in the case of the **Series E333** E-Chain®

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *"safety buffer"*

Series E333-25-[XXX]-0

R	3.78 (096)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)
H	9.06 (230)	13.19 (335)	17.13 (435)	21.06 (535)	25.00 (635)	28.94 (735)	32.87 (835)
D	5.71 (145)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)
K	13.78 (350)	20.28 (515)	26.57 (675)	32.68 (830)	38.98 (990)	45.28 (1150)	51.18 (1300)

Pitch = .57 (14.5 mm)
Links/ft (m) = 21.03 (69)
Dimensions E = .39 (10 mm)
Ba = 1.34 (34 mm)

Series E333-32-[XXX]-0

R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)	19.69 (500)
H	13.78 (350)	17.72 (450)	21.65 (550)	25.59 (650)	33.46 (850)	41.33 (1050)
D	8.07 (205)	10.04 (255)	12.01 (305)	13.98 (355)	17.91 (455)	21.85 (555)
K	21.46 (545)	27.56 (700)	33.86 (860)	40.16 (1020)	51.18 (1300)	63.19 (1605)

Pitch = .98 (25 mm)
Links/ft (m) = 12.24 (40)
Dimensions E = .79 (20 mm)
Ba = 1.97 (50 mm)

Series E333-50-[XXX]-0

R	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)	19.69 (500)
H	18.50 (470)	22.44 (570)	26.38 (670)	34.25 (870)	42.13 (1070)
D	11.61 (295)	13.58 (345)	15.55 (395)	19.49 (495)	23.42 (595)
K	29.53 (750)	35.83 (910)	42.13 (1070)	54.33 (1380)	66.54 (1690)

Pitch = 1.18 (30 mm)
Links/ft (m) = 10.17 (34)
Dimensions E = .98 (25 mm)
Ba = 2.68 (68 mm)

Series E333-75-[XXX]-0

R	11.02 (280)	13.78 (350)	15.75 (400)	19.69 (500)	23.62 (600)
H	25.98 (660)	31.50 (800)	35.43 (900)	43.31 (1100)	51.18 (1300)
D	14.96 (380)	17.72 (450)	19.69 (500)	23.62 (600)	27.56 (700)
K	38.98 (990)	47.64 (1210)	55.12 (1400)	66.93 (1700)	78.74 (2000)

Pitch = 1.42 (36 mm)
Links/ft (m) = 8.45 (28)
Dimensions E = .98 (25 mm)
Ba = 3.78 (96 mm)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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E-Chain System®
E-Z Triflex® Series

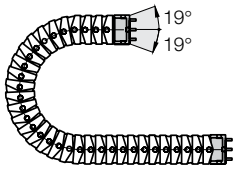
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

Mounting Brackets

Option 1: KMA

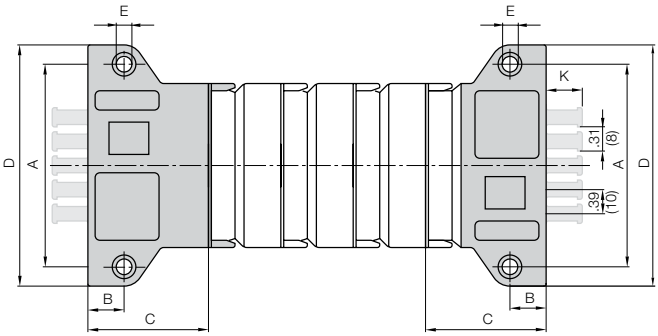
- Corrosion resistant
- Strain relief with tiewrap plate



333-50-1PZB
Moving end
with tiewrap plate

333-50-2PZB
Fixed end
(with tiewrap plate
333-50-ZB)

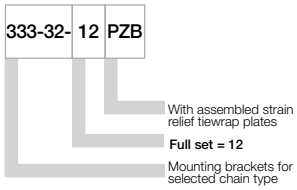
333-50-1PZ



333-50-2PZB

For high loads we recommend screwing the mounting brackets to the chain. If you have any questions, please give us a call.

Part No. structure



Full set, for both ends:
333- 32-12 PZB +tiewrap plate

Single-part order:
333- 32-1 PZB +tiewrap plate
Mounting bracket **with bore**
333- 32-2 PZB +tiewrap plate
Mounting bracket **with pin**

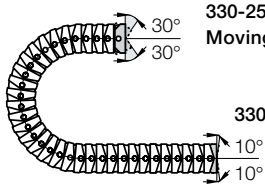
Series	Part No. without tie-wrap plate	Part No. with tie-wrap plate	A	B	C	D	E	K	N No. of Teeth
E331-25/E332-25-2/E333-25	333-25-12PZ	333-25-12PZB	1.69 (43)	.28 (7)	.87 (22)	2.04 (52)	.18 (4.5)	–	–
E331-32/E332-32-2/E333-32	333-32-12PZ	333-32-12PZB	2.60 (66)	.59 (15)	1.81 (46)	3.23 (82)	.26 (6.5)	.59 (15)	3
E331-50/E332-50-2/E333-50	333-50-12PZ	333-50-12PZB	3.31 (84)	.59 (15)	1.97 (50)	3.94 (100)	.26 (6.5)	.59 (15)	5
E331-75/E332-75-2/E333-75	333-75-12PZ	333-75-12PZB	4.29 (109)	.59 (15)	2.17 (55)	4.92 (125)	.26 (6.5)	.59 (15)	7

E-Chain System®
E-Z Triflex® Series

Mounting Brackets

Option 2: flange

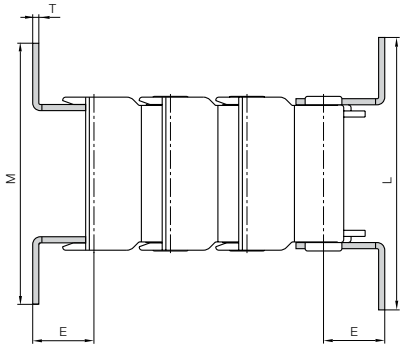
- Galvanized steel
- Electrically conductive
- Flush mounting



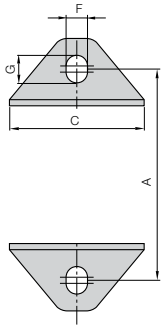
330-25-1 – 330-75-1
Moving end

330-25-2 – 330-75-2
Fixed end

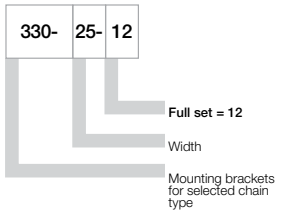
330-25-2 – 330-75-2



330-25-1 – 330-75-1



Part No. structure



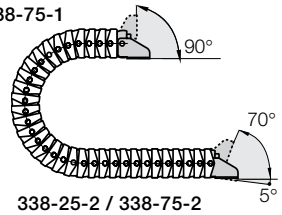
Full set, 4 parts
2 with pin / 2 with bore:
330-25-12
Single-part order:
330-25-1
Mounting bracket **with bore**
330-25-2
Mounting bracket **with pin**

Series	Part No.	A	M	C	L	T	E	F	G
E331-25/E332-25-2 /E333-25	330-25-12	1.73 (44)	2.17 (55)	1.14 (29)	2.17 (55)	.06 (1.5)	.41 (10.5)	.26 (6.5)	.35 (9)
E331-32/E332-32-2 /E333-32	330-32-12	2.60 (66)	3.31 (84)	1.73 (44)	3.46 (88)	.08 (2)	.79 (20)	.28 (7)	.35 (9)
E332-50/E332-50-2 /E333-50	330-50-12	3.31 (84)	4.02 (102)	2.44 (62)	4.17 (106)	.08 (2)	.98 (25)	.28 (7)	.35 (9)
E331-75/E332-75-2 /E333-75	330-75-12	4.29 (109)	5.00 (127)	3.54 (90)	5.16 (131)	.08 (2)	.98 (25)	.28 (7)	.35 (9)

Option 3: angle

- Galvanized steel
- Electrically conductive
- Can be attached to top or bottom of the machine

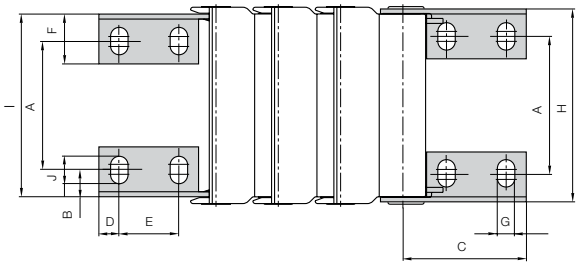
338-25-1/ 338-75-1
Moving end



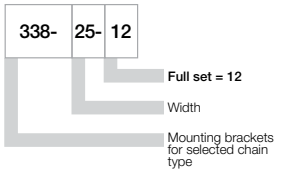
338-25-2 / 338-75-2
Fixed end

338-25-2 / 338-75-2

338-25-1 / 338-75-1



Part No. structure



Full set, 4 parts
2 with pin / 2 with bore:
338-25-12
Single-part order:
338-25-1
Mounting bracket **with bore**
338-25-2
Mounting bracket **with pin**

Series	Part No.	A	B	C	D	E	F	G	H	I	J
E331-25/E332-25-2/E333-25	338-25-12	.67 (17)	.25 (6.25)	1.10 (28)	.24 (6)	.63 (16)	.55 (14)	.22 (5.5)	1.33 (33.8)	1.22 (31)	.33 (8.5)
E331-25/E332-32-2/E333-32	338-32-12	.94 (24)	.22 (5.5)	1.85 (47)	.31 (8)	.94 (24)	.79 (20)	.28 (7)	1.93 (49)	1.77 (45)	.43 (11)
E331-25/E332-50-2/E333-50	338-50-12	1.65 (42)	.22 (5.5)	3.03 (77)	.47 (12)	1.38 (35)	.94 (24)	.35 (9)	2.64 (67)	2.44 (62)	.59 (15)
E331-25/E332-75-2/E333-75	338-75-12	2.56 (65)	.22 (5.5)	3.03 (77)	.47 (12)	1.38 (35)	.94 (24)	.35 (9)	3.74 (95)	3.54 (90)	.59 (15)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®
Triflex®

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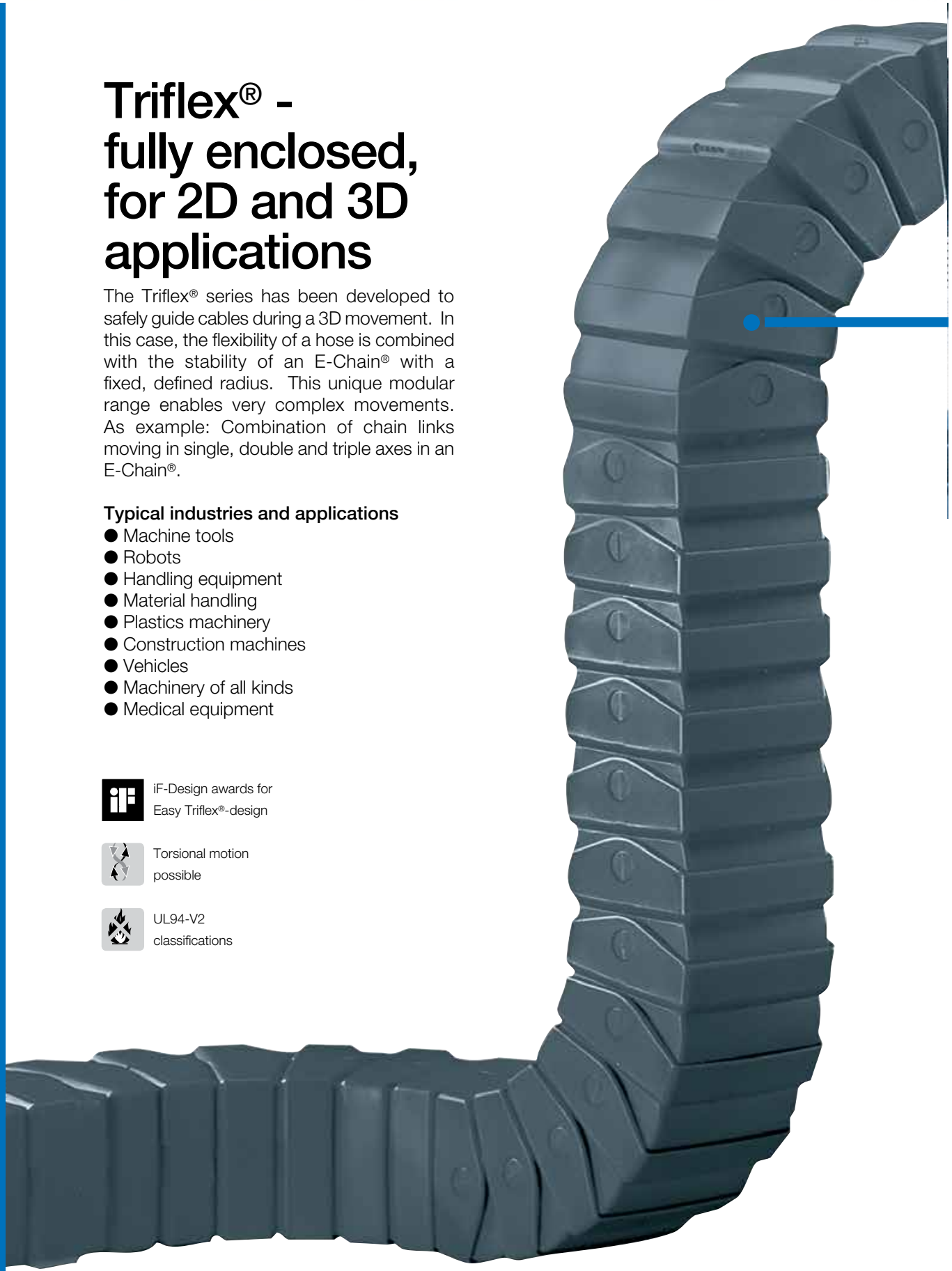
Triflex® - fully enclosed, for 2D and 3D applications

The Triflex® series has been developed to safely guide cables during a 3D movement. In this case, the flexibility of a hose is combined with the stability of an E-Chain® with a fixed, defined radius. This unique modular range enables very complex movements. As example: Combination of chain links moving in single, double and triple axes in an E-Chain®.



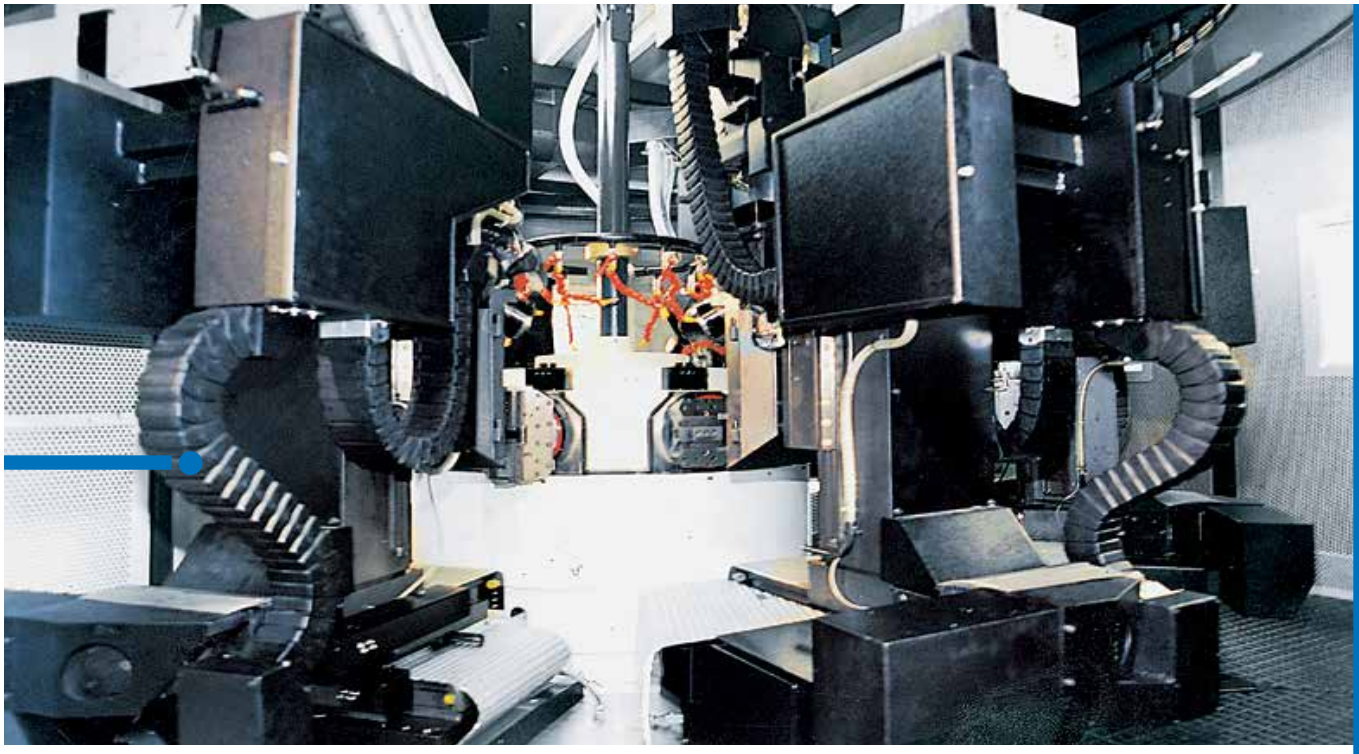
Typical industries and applications

- Machine tools
- Robots
- Handling equipment
- Material handling
- Plastics machinery
- Construction machines
- Vehicles
- Machinery of all kinds
- Medical equipment

iF-Design awards for Easy Triflex®-design

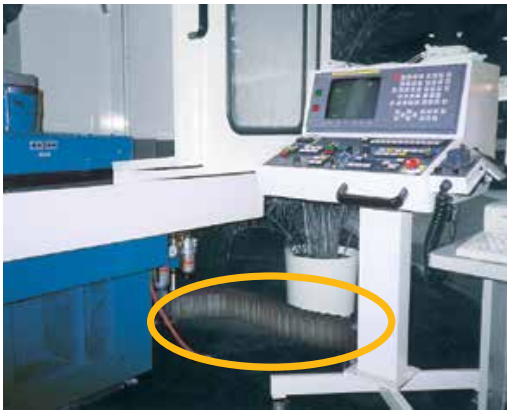
Torsional motion possible

UL94-V2 classifications



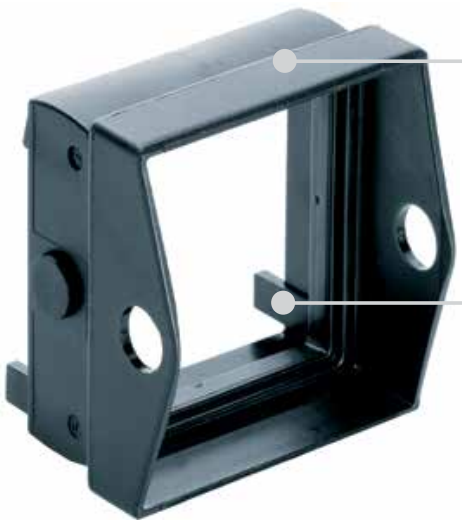
Various Triflex® tubes on the inside of a machining center

Triflex® for 3 movement directions combined with Triflex® for 1 movement direction



Triflex® 332 as unsupported link from machines to control desk

E-Chain System®
Triflex® Series
Selection Guide



Select this modular, robust, Energy chain system® for:

- 3-axis motions in machinery of all kinds
- Dirty environments
- High tensile strength
- Where rectangular shapes fit better
- Side-mounted unsupported
- Completely enclosed - protection against dirt and chips
- Combinations of varying bending radii and moving axes
- Connecting and separating possible at every link
- Flanged mounting brackets or mounting brackets angle, galvanized steel
- Series 352 and 353 snap-open
- Combination Series 353/333 possible
- Cost-effective design for complex movements
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

Selection table

Single-axis movement:

Series	Inner height/Inner width □ *Bi*		Outer width/Outer height □ *Ba*		Bending radii *R*	
	in.	(mm)	in.	(mm)	in.	(mm)
331-16	.63	(16)	1.02	(26)	1.50 - 3.94	(038 - 100)
331-32	1.26	(32)	1.97	(50)	2.95 - 9.84	(075 - 250)
331-50	1.97	(50)	2.68	(68)	3.94 - 9.84	(100 - 250)
331-75	2.95	(75)	3.78	(96)	5.51 - 11.81	(140 - 300)

Double-axis movement:

Series	Inner height/Inner width □ *Bi*		Outer width/Outer height □ *Ba*		Bending radii *R*	
	in.	(mm)	in.	(mm)	in.	(mm)
332-16	.63	(16)	1.02	(26)	1.50 - 3.94	(038 - 100)
332-32	1.26	(32)	1.97	(50)	2.95 - 9.84	(075 - 250)
332-50	1.97	(50)	2.68	(68)	3.94 - 9.84	(100 - 250)
332-75	2.95	(75)	3.78	(96)	5.51 - 11.81	(140 - 300)

Triple-axis movement:

Series	Inner height/Inner width □ *Bi*		Outer width/Outer height □ *Ba*		Bending radii *R*	
	in.	(mm)	in.	(mm)	in.	(mm)
333-16	.63	(16)	1.02	(26)	1.50 - 3.94	(038 - 100)
333-32	1.26	(32)	1.97	(50)	2.95 - 9.84	(075 - 250)
333-50	1.97	(50)	2.68	(68)	3.94 - 9.84	(100 - 250)
333-75	2.95	(75)	3.78	(96)	5.51 - 11.81	(140 - 300)

Snap-open Series:

Series	Inner height/Inner width □ *Bi*		Outer width/Outer height □ *Ba*		Bending radii *R*	
	in.	(mm)	in.	(mm)	in.	(mm)
351-50 Single	1.97	(50)	2.68	(68)	3.94 - 9.84	(100 - 250)
352-50 Double	1.97	(50)	2.68	(68)	3.94 - 9.84	(100 - 250)
353-50 Triple	1.97	(50)	2.68	(68)	3.94 - 9.84	(100 - 250)

E-Chain System®
Triflex® Series
Assembly Instructions

Triflex® Series - Assembling

1

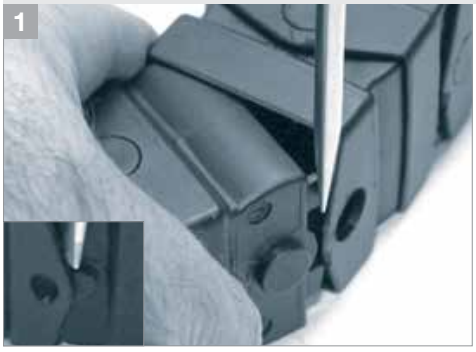
Twist and snap in

2

Snap in pin “push-button-design”

Triflex® Series - Separating

1



Release side link

2

Twist and separate

Triflex® Series 352 and 353 - Filling

1

To open Series 352 and Series 353 only - Insert screwdriver into slot on top of lid and push down

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Triflex® igus®

E-Chain System® Triflex® Series
Series 331/332/333
Series 351/352/353 (Snap-Open)

.63 | 1.26 | 1.97 | 2.95 | 1.97

Price Index

Series 332/333 Series 352/353

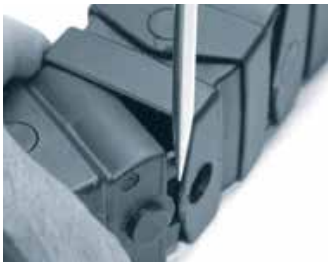
Special Options Available

Flammability Class VDE 0304 IIC UL94 V2

Torsion motion possible

iF-Design Award Winner

Assembly Tips



Release side link, twist and separate

To open Series 352 and Series 353 only - Insert screwdriver into slot on top of lid and push down

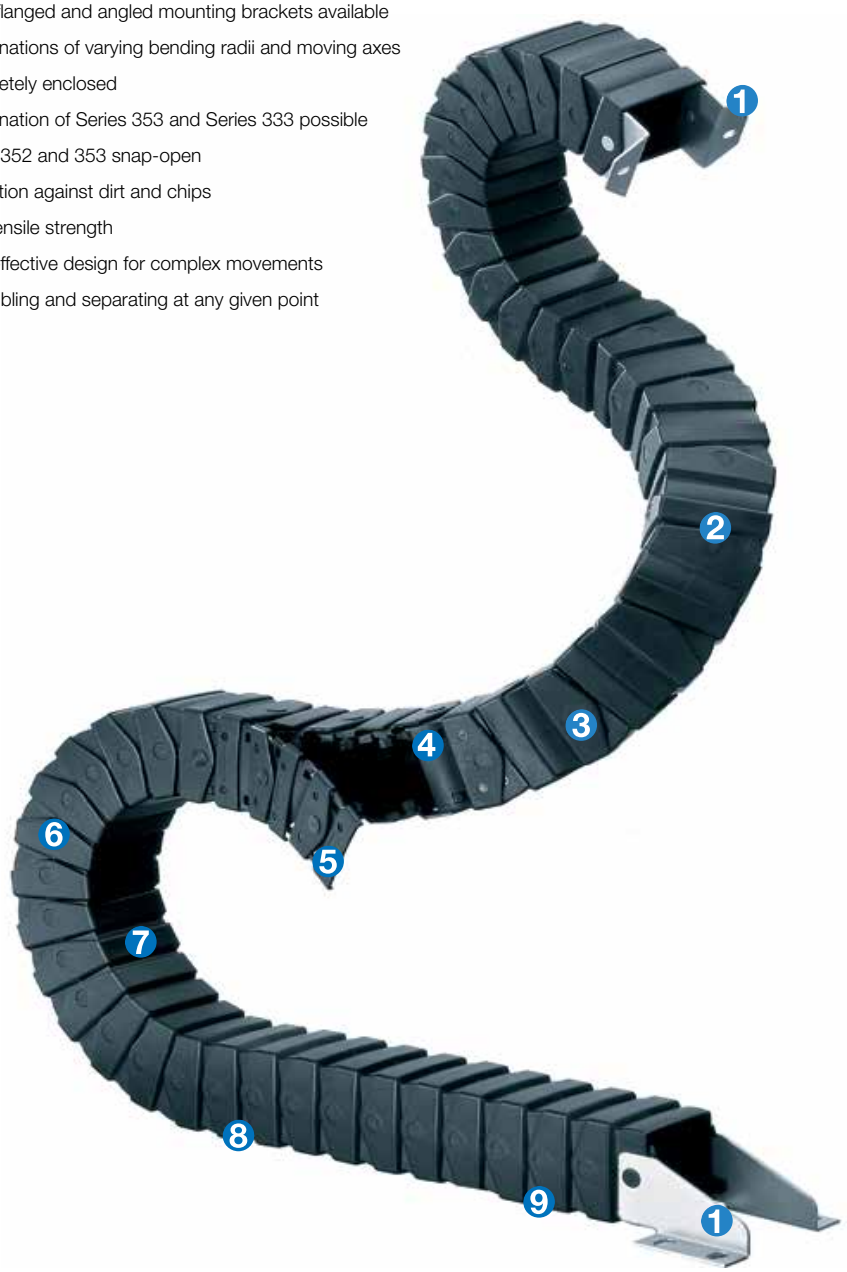
Usage Guidelines

- For applications that move within two or three axes (combined rotary and circular movements)
- If chip protection is required

- If every link must open on both sides
  ➤ TwisterChain® system, **Chapter 8**
- For gliding applications
  ➤ System E4, **Chapter 6**
- For rotary movements only
  ➤ TwisterChain® system, **Chapter 8**

Features & Benefits

1. KMA, flanged and angled mounting brackets available
2. Combinations of varying bending radii and moving axes
3. Completely enclosed
4. Combination of Series 353 and Series 333 possible
5. Series 352 and 353 snap-open
6. Protection against dirt and chips
7. High tensile strength
8. Cost-effective design for complex movements
9. Assembling and separating at any given point

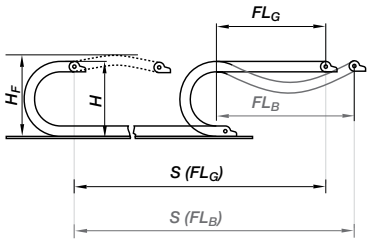


Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

6.56 ft (2 m) **332-50-100/100-0**	E-Chain®
With 2 separators **351** assembled every 2nd link	Interior Separation
1 Set **338-50-12**	Mounting Bracket

E-Chain System® Triflex® Series
Series 331/332/333
Series 351/352/353 (Snap-Open)



Short travel, unsupported length

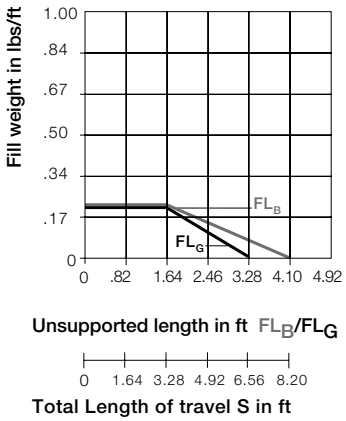
● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1

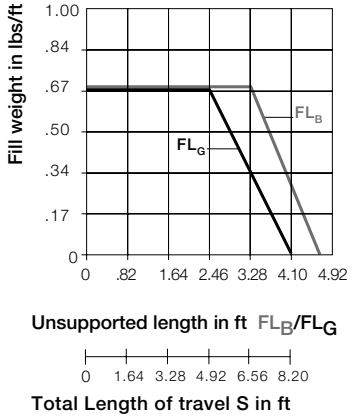
Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *"safety buffer"*
H_F = Required clearance height

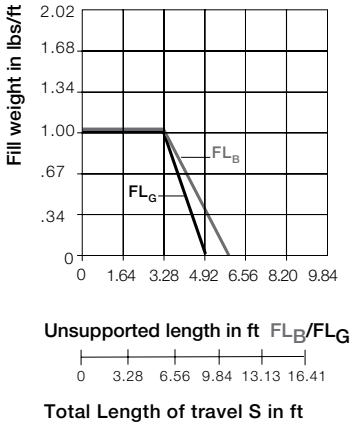
Unsupported length 331/332-16



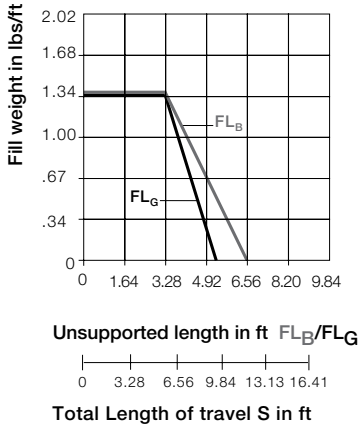
Unsupported length 331/332-32



Unsupported length 331/332-50



Unsupported length 331/332-75



Technical Data

Material - permitted temperature	igumid G / -40°F (-40°C) up to +176°F (+80° C)
Flammability Class, igumid NB	VDE 0304 IIC UL94 V2

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains-pdfs
RoHS info: www.igus.com/RoHS

E-Chain System® Triflex® Series
Single Axis Movement

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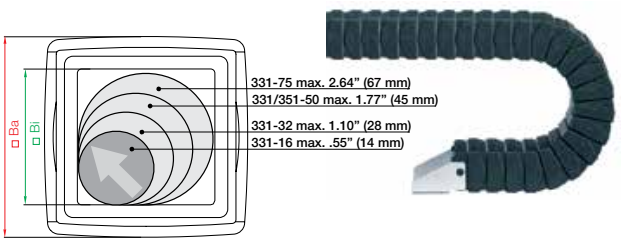
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

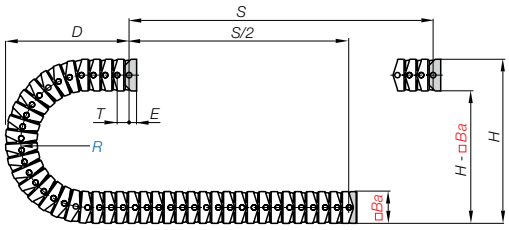
Single Axis Movement, Series 331/351



Part No.	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
331-16-	.63 (16)	1.02 (26)	≈ 0.22 (.33)
331-32-	1.26 (32)	1.97 (50)	≈ 0.60 (.90)
331-50-	1.97 (50)	2.68 (68)	≈ 0.94 (1.40)
331-75-	2.95 (75)	3.78 (96)	≈ 1.58 (2.35)
Snap-open			
351-50-	1.97 (50)	2.68 (68)	≈ 0.94 (1.40)

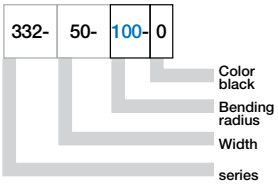
Supplement part number with required radius from below. for example 331-50-100-0

Installation dimensions for single-axis movement



For center mount applications:
Tube length = $\frac{S}{2} + K$

Part No. structure



Series 331-16

R	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)
H	4.13 (105)	4.92 (125)	7.09 (180)	9.06 (230)
D	2.76 (70)	3.15 (80)	4.13 (105)	5.12 (130)
K	7.87 (200)	9.06 (230)	12.40 (315)	15.75 (400)

Pitch = .52 (13.3 mm)
Links/ft (m) = 23.08 (76)
Dimensions E = .39 (10 mm)
Ba = 1.02 (26 mm)

Series 331-32

R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	17.72 (450)	21.65 (550)
D	5.12 (130)	6.10 (155)	7.09 (180)	8.07 (205)	10.04 (255)	12.01 (305)
K	12.01 (305)	15.15 (385)	18.30 (465)	21.46 (545)	27.56 (700)	34.06 (865)

Pitch = .98 (25 mm)
Links/ft (m) = 12.24 (40)
Dimensions E = .79 (20 mm)
Ba = 1.97 (50 mm)

Series 331-50

R	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	10.63 (270)	12.60 (320)	14.76 (375)	18.50 (470)	22.44 (570)
D	7.68 (195)	8.66 (220)	9.65 (245)	11.61 (295)	13.58 (345)
K	17.13 (435)	20.47 (520)	23.23 (590)	29.53 (750)	35.83 (910)

Pitch = 1.18 (30 mm)
Links/ft (m) = 10.17 (34)
Dimensions E = .98 (25 mm)
Ba = 2.68 (68 mm)

Series 331-75

R	5.51 (140)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)
H	14.96 (380)	17.71 (450)	19.69 (500)	23.62 (600)	27.56 (700)
D	9.45 (240)	10.83 (275)	11.81 (300)	13.78 (350)	15.75 (400)
K	21.65 (550)	25.98 (660)	29.13 (740)	35.43 (900)	41.73 (1060)

Pitch = 1.42 (36 mm)
Links/ft (m) = 8.45 (28)
Dimensions E = .98 (25 mm)
Ba = 3.78 (96 mm)

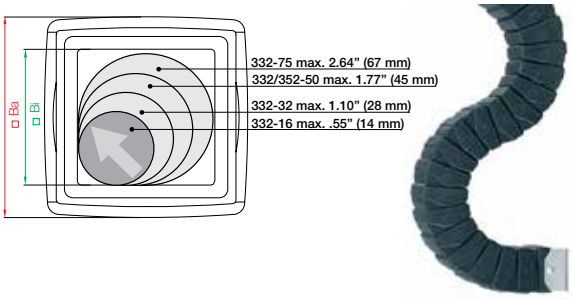
Series 351-50 (Snap-Open)

R	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	10.63 (270)	12.60 (320)	14.76 (375)	18.50 (470)	22.44 (570)
D	7.68 (195)	8.66 (220)	9.65 (245)	11.61 (295)	13.58 (345)
K	17.13 (435)	20.47 (520)	23.23 (590)	29.53 (750)	35.83 (910)

Pitch = 1.18 (30 mm)
Links/ft (m) = 10.17 (34)
Dimensions E = .98 (25 mm)
Ba = 2.68 (68 mm)

E-Chain System® Triflex® Series
Double Axis Movement

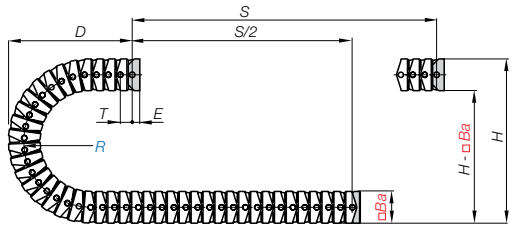
Double Axis Movement, Series 332/352



Part No.	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
332-16-	.63 (16)	1.02 (26)	≈ 0.22 (.33)
332-32-	1.26 (32)	1.97 (50)	≈ 0.60 (.90)
332-50-	1.97 (50)	2.68 (68)	≈ 0.94 (1.40)
332-75-	2.95 (75)	3.78 (96)	≈ 1.58 (2.35)
Snap-open			
352-50-	1.97 (50)	2.68 (68)	≈ 0.94 (1.40)

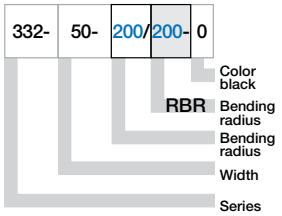
Supplement part number with required radius from below for example, 332-75-2-200-0

Installation dimensions for double-axis movement



For center mount applications:
Tube length = $_{-}^{S}/_{2} + K$

Part No. structure



Series 332-16

R	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)
H	4.13 (105)	4.92 (125)	7.09 (180)	9.06 (230)
D	2.76 (70)	3.15 (80)	4.13 (105)	5.12 (130)
K	7.87 (200)	9.06 (230)	12.40 (315)	15.75 (400)

Pitch = .52 (13.3 mm)
Links/ft (m) = 23.08 (76)
Dimensions E = .39 (10 mm)
Ba = 1.02 (26 mm)

Series 332-32

R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	17.72 (450)	21.65 (550)
D	5.12 (130)	6.10 (155)	7.09 (180)	8.07 (205)	10.04 (255)	12.01 (305)
K	12.01 (305)	15.15 (385)	18.30 (465)	21.46 (545)	27.56 (700)	34.06 (865)

Pitch = .98 (25 mm)
Links/ft (m) = 12.24 (40)
Dimensions E = .79 (20 mm)
Ba = 1.97 (50 mm)

Series 332-50

R	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	10.63 (270)	12.60 (320)	14.76 (375)	18.50 (470)	22.44 (570)
D	7.68 (195)	8.66 (220)	9.65 (245)	11.61 (295)	13.58 (345)
K	17.13 (435)	20.47 (520)	23.23 (590)	29.53 (750)	35.83 (910)

Pitch = 1.18 (30 mm)
Links/ft (m) = 10.17 (34)
Dimensions E = .98 (25 mm)
Ba = 2.68 (68 mm)

Series 332-75

R	5.51 (140)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)
H	14.96 (380)	17.71 (450)	19.69 (500)	23.62 (600)	27.56 (700)
D	9.45 (240)	10.83 (275)	11.81 (300)	13.78 (350)	15.75 (400)
K	21.65 (550)	25.98 (660)	29.13 (740)	35.43 (900)	41.73 (1060)

Pitch = 1.42 (36 mm)
Links/ft (m) = 8.45 (28)
Dimensions E = .98 (25 mm)
Ba = 3.78 (96 mm)

Series 352-50 (Snap-Open)

R	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	14.96 (380)	12.60 (320)	14.76 (375)	18.50 (470)	22.44 (570)
D	9.45 (240)	8.66 (220)	9.65 (245)	11.61 (295)	13.58 (345)
K	21.65 (550)	20.47 (520)	23.23 (590)	29.53 (750)	35.83 (910)

Pitch = 1.18 (30 mm)
Links/ft (m) = 10.17 (34)
Dimensions E = .98 (25 mm)
Ba = 2.68 (68 mm)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains-pdfs
RoHS info: www.igus.com/RoHS

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E-Chain System® Triflex® Series
Triple Axis Movement

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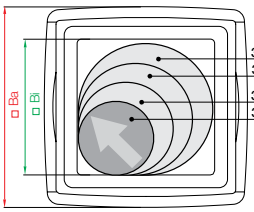
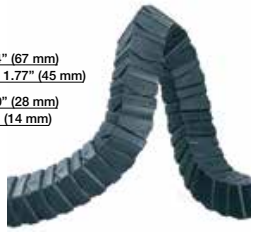
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

Triple Axis Movement, Series 333/353 (Snap-Open)

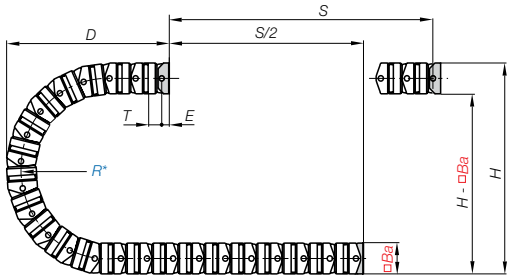




Part No.	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
333-16-	.63 (16)	1.02 (26)	≈ 0.22 (.33)
333-32-	1.26 (32)	1.97 (50)	≈ 0.60 (.90)
333-50-	1.97 (50)	2.68 (68)	≈ 0.94 (1.40)
333-75-	2.95 (75)	3.78 (96)	≈ 1.58 (2.35)
Snap-open			
353-50-	1.97 (50)	2.68 (68)	≈ 0.94 (1.40)

Supplement part number with required radius from above for example, 333-32-100-0

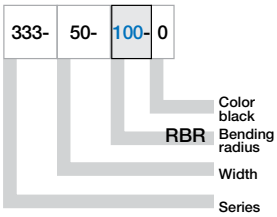
Installation dimensions for triple-axis movement



For center mount applications:
Tube length = $\frac{S}{2} + K$

* The bending radii are doubled in the case of the **Series 333** E-Chain®

Part No. structure



Series 333-16

R	(076)	3.78 (096)	5.91 (150)	7.87 (200)
H	7.09 (180)	8.66 (220)	12.99 (330)	16.93 (430)
D	4.13 (105)	4.92 (125)	7.09 (180)	9.06 (230)
K	12.60 (320)	14.96 (380)	21.65 (550)	27.95 (710)

Pitch = .52 (13.3 mm)
Links/ft (m) = 23.08 (76)
Dimensions E = .39 (10 mm)
Ba = 1.02 (26 mm)

Series 333-32

R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)	19.69 (500)
H	13.78 (350)	17.72 (450)	21.65 (550)	25.59 (650)	33.46 (850)	41.33 (1050)
D	8.07 (205)	10.04 (255)	12.01 (305)	13.98 (355)	17.91 (455)	21.85 (555)
K	21.46 (545)	27.56 (700)	33.86 (860)	40.16 (1020)	51.18 (1300)	63.19 (1605)

Pitch = .98 (25 mm)
Links/ft (m) = 12.24 (40)
Dimensions E = .79 (20 mm)
Ba = 1.97 (50 mm)

Series 333-50

R	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)	19.69 (500)
H	18.50 (470)	22.44 (570)	26.38 (670)	34.25 (870)	42.13 (1070)
D	11.61 (295)	13.58 (345)	15.55 (395)	19.49 (495)	23.43 (595)
K	29.53 (750)	35.83 (910)	42.13 (1070)	54.33 (1380)	66.54 (1690)

Pitch = 1.18 (30 mm)
Links/ft (m) = 10.17 (34)
Dimensions E = .98 (25 mm)
Ba = 2.68 (68 mm)

Series 333-75

R	11.02 (280)	13.78 (350)	15.75 (400)	19.69 (500)	23.62 (600)
H	25.98 (660)	31.50 (800)	35.43 (900)	43.31 (1100)	51.18 (1300)
D	14.96 (380)	17.72 (450)	19.69 (500)	23.62 (600)	27.56 (700)
K	38.98 (990)	47.64 (1210)	55.12 (1400)	66.93 (1700)	78.74 (2000)

Pitch = 1.42 (36 mm)
Links/ft (m) = 8.45 (28)
Dimensions E = .98 (25 mm)
Ba = 3.78 (96 mm)

Series 353-50 (Snap-Open)

R	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)	19.69 (500)
H	18.50 (470)	22.44 (570)	26.38 (670)	34.25 (870)	42.13 (1070)
D	11.61 (295)	13.58 (345)	15.55 (395)	19.49 (495)	23.43 (595)
K	29.53 (750)	35.83 (910)	42.13 (1070)	54.33 (1380)	66.54 (1690)

Pitch = 1.18 (30 mm)
Links/ft (m) = 10.17 (34)
Dimensions E = .98 (25 mm)
Ba = 2.68 (68 mm)

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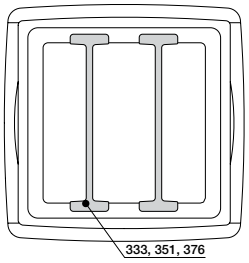
E-Chain System® Triflex® Series
Interior Separation

Interior Separation

Modular separators are available as interior shelving for the igus® Triflex® System. They can be used for both vertical and horizontal sub-division. If the separators are assembled every other link and turned 90°, the tube can be sub-divided into four segments. We recommend ordering the tube pre-assembled, as subsequent assembly of separators is only possible after dismantling the tube. Please note that assembled separators have a different part number than unassembled separators.

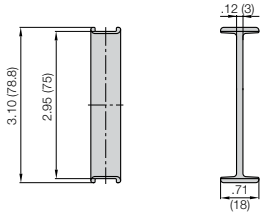
Horizontal sub-division

Vertical sub-division



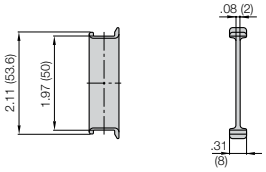
333, 351, 376

331/332/333-75



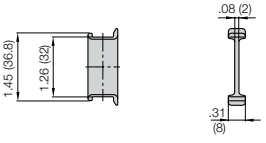
Separator	
Unassembled	**Part No. 375**
Assembled	**Part No. 376**

331/332/333-50
351/352/353-50



Separator	
Unassembled	**Part No. 350**
Assembled	**Part No. 351**

331/332/333-32



Separator	
Unassembled	**Part No. 332**
Assembled	**Part No. 333**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains-pdfs
RoHS info: www.igus.com/RoHS

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Triflex®

igus®

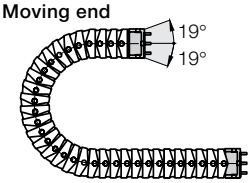
E-Chain System® Triflex® Series Mounting Brackets

Standard

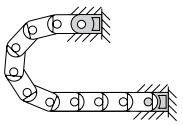
Option 1: KMA

- Corrosion resistant
- Strain relief with tiewrap plate

333-50-1PZ
Moving end

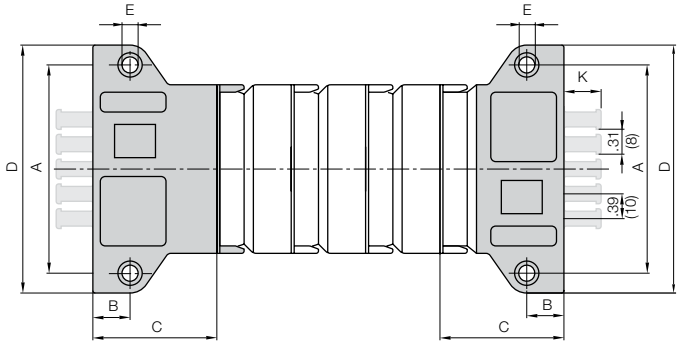


333-50-2PZB
Fixed end
(with tiewrap plate 333-50-ZB)



Possible installation configurations -

333...1PZ(B)



333...2PZ(B)

For high loads we recommend screwing the mounting brackets to the chain. If you have any questions, please give us a call.

Part No. structure

333-32-12-PZB

- With assembled strain relief tiewrap plates
- **Full set = 12**
- Mounting brackets for selected chain type

Full set, for both ends:
333-32-12PZB +tiewrap plate

Single-part order:
333-32-1PZB +tiewrap plate
Mounting bracket **with bore**

333-32-2PZB +tiewrap plate
Mounting bracket **with pin**

Series	Part No. Full Set with tiewrap plate	Part No. Full Set without tiewrap plate	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	K in. (mm)	N No. of Teeth
331/332/333-32	333-32-12PZB	333-32-12-PZ	2.60 (66)	.59 (15)	1.81 (46)	3.23 (82)	.26 (6.5)	.59 (15)	3
331/332/333-50	333-50-12PZB	333-50-12-PZ	3.31 (84)	.59 (15)	1.97 (50)	3.94 (100)	.26 (6.5)	.59 (15)	5
331/332/333-75	333-75-12PZB	333-75-12-PZ	4.29 (109)	.59 (15)	2.17 (55)	4.92 (125)	.26 (6.5)	.59 (15)	7
Snap-open series									
351/352/353-50	333-50-12PZB	333-50-12-PZ	3.31 (84)	.59 (15)	1.97 (50)	3.94 (100)	.26 (6.5)	.59 (15)	5

Tiewrap plate as individual part

Special tiewrap plates for Triflex® E-Chains®

- Single-piece for installation inside switch cabinets or machine assembly
- Accessory for igus® E-Chain Systems®
- Easy to assemble, no need for screws

Part No. Tiewrap plate	Width in. (mm)	Number of teeth	For Series	
333-32-ZB	1.57 (40)	3	331/332/333-32	
333-50-ZB	2.28 (58)	5	331/332/333-50	351/352/353-50
333-75-ZB	3.27 (83)	7	331/332/333-75	

igus® E-Chain System®
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QuickSpec/RFQ: http://www.igus.com/quickspec

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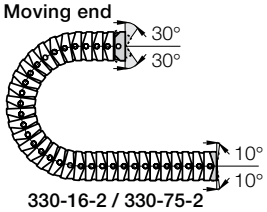
E-Chain System® Triflex® Series Mounting Brackets

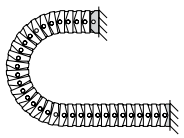
Option 2: pivoting steel flange

- Galvanized steel
- Electrically conductive
- Flush mounting

330-16-1 / 330-75-1
Moving end

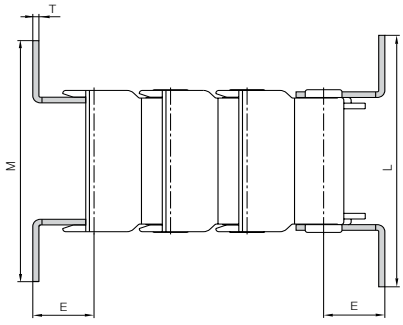


330-16-2 / 330-75-2
Fixed end

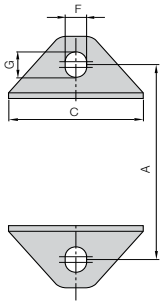


Possible installation configurations -

330-26-2 / 330-75-2



330-16-1 / 330-75-1



Part No. structure

330-	32-	12

- Full set = 12
- Width
- Mounting brackets for selected chain type

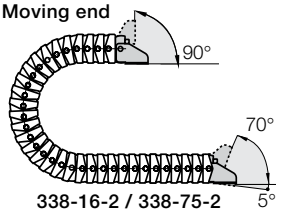
Full set, 4 parts
2 with pin / 2 with bore:
330-32-12
Single-part order:
330-32-1
Mounting bracket **with bore**
330-32-2
Mounting bracket **with pin**

Series	Part No.	A	M	C	L	T	E	F	G
331/332/333-16	330-16-12	1.38 (35)	2.09 (53)	.83 (21)	2.24 (57)	.04 (1)	.39 (10)	.18 (4.5)	.24 (6)
331/332/333-32	330-32-12	2.60 (66)	3.31 (84)	1.73 (44)	3.46 (88)	.08 (2)	.79 (20)	.28 (7)	.35 (9)
331/332/333-50	330-50-12	3.31 (84)	4.02 (102)	2.44 (62)	4.17 (106)	.08 (2)	.98 (25)	.28 (7)	.35 (9)
331/332/333-75	330-75-12	4.29 (109)	5.00 (127)	3.54 (90)	5.16(131)	.08 (2)	.98 (25)	.28 (7)	.35 (9)

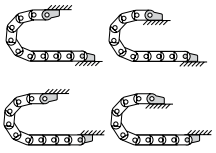
Option 3: angle

- Galvanized steel
- Electrically conductive
- Can be attached to top or bottom of the machine

338-16-1/ 338-75-1
Moving end

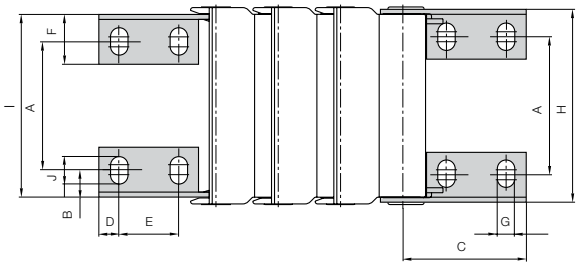


338-16-2 / 338-75-2
Fixed end



Possible installation configurations -

338-16-2 / 338-75-2



338-16-1 / 338-75-1

Part No. structure

338-	32-	12

- Full set = 12
- Width
- Mounting brackets for selected chain type

Full set, 4 parts
2 with pin / 2 with bore:
338-32-12
Single-part order:
338-32-1
Mounting bracket **with bore**
338-32-2
Mounting bracket **with pin**

Series	Part No.	A	B	C	D	E	F	G	H	I	J
331/332/333-16	338-16-12	.47 (12)	.12 (3)	.98 (25)	.20 (5)	.39 (10)	.43 (11)	18 (4,5)	.98 (25)	.91 (23)	.24 (6)
331/332/333-32	338-32-12	.94 (24)	.22 (5.5)	1.85 (47)	.31 (8)	.94 (24)	.79 (20)	.28 (7)	1.93 (49)	1.77 (45)	.43 (11)
331/332/333-50	338-50-12	1.65 (42)	.22 (5.5)	3.03 (77)	.47 (12)	1.38 (35)	.94 (24)	.35 (9)	2.64 (67)	2.44 (62)	.59 (15)
331/332/333-75	338-75-12	2.56 (65)	.22 (5.5)	3.03 (77)	.47 (12)	1.38 (35)	.94 (24)	.35 (9)	3.74 (95)	3.54 (90)	.59 (15)
Snap-open											
351/352/353-50	338-50-12	1.65 (42)	.22 (5.5)	3.03 (77)	.47 (12)	1.38 (35)	.94 (24)	.35 (9)	2.64 (67)	2.44 (62)	.59 (15)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains-pdfs
RoHS info: www.igus.com/RoHS

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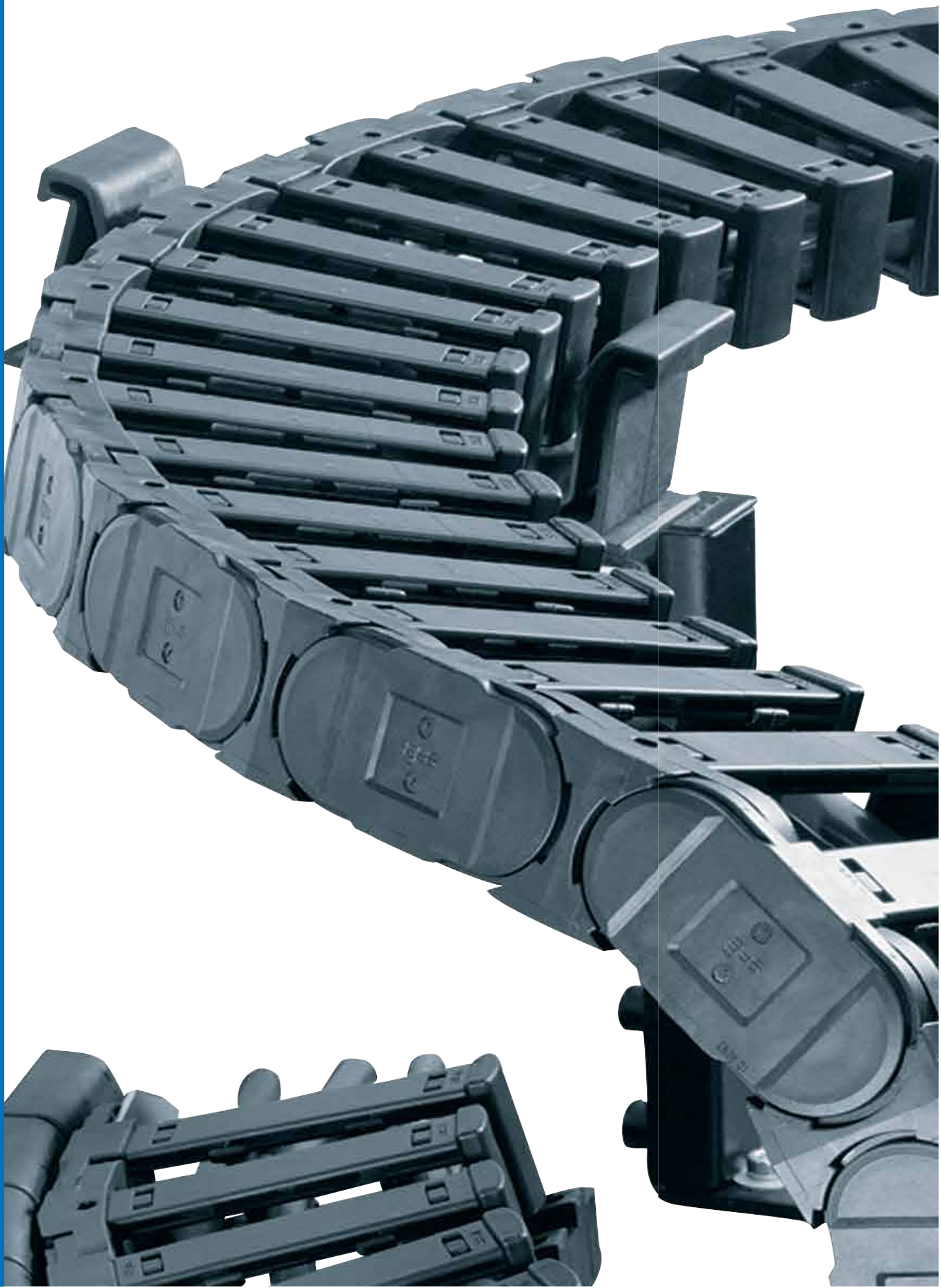

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igus®
TwisterChain®

NEW

Second Generation: robust, low-noise, for high loads

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TwisterChain® New - robust, low-noise, for high loads

Higher loads and smoother running igus® new generation of TwisterChain® circular E-Chains® significantly improved smoothness, stability and strength. The TwisterChain® New has a modular construction for width, height and radius and therefor provides very flexible use in applications where rotating movements up to 540° are required.

- Sturdier through intermediate link - more additional load possible
- 25% less weight than TwisterChain® Classic
- Rotary speeds up to 6.56 ft/s (2 m/s) and more
- Rotary/spiral movements up to 540°
- Highly dynamic and smoother running (with a new guide trough)
- Cable-friendly, smooth interior
- Crossbars snap-open along inner radius
- Over 1 million cycles tested successfully in the igus® laboratory

Typical industries and applications

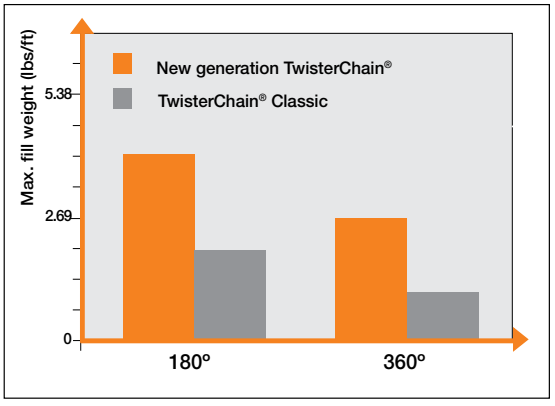
- Robots, handling machines
- Packaging machines
- Glass machines
- General mechanical engineering etc.

Circular movements up to 540° possible (with special attachments)

UL94-V2 classifications upon request

New Guide Trough System available

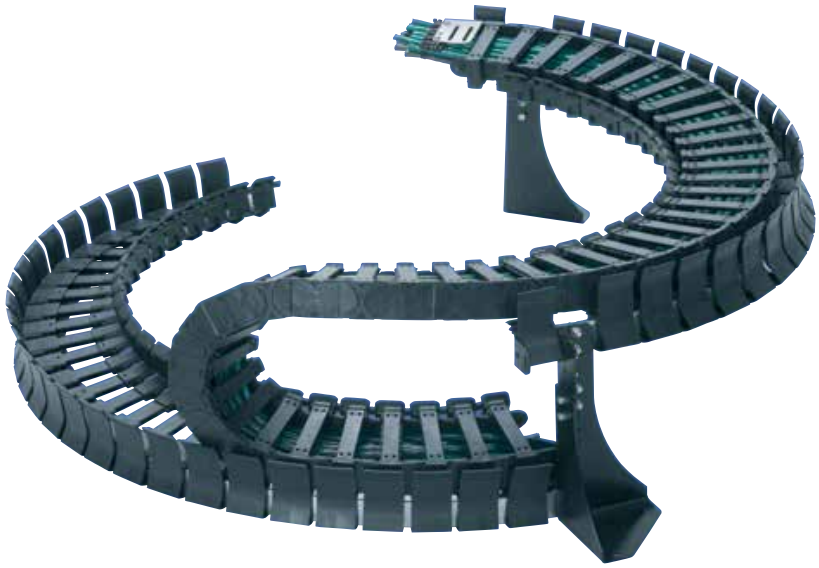
igus® TwisterChain® New - over 1 million cycles tested successfully in the igus® laboratory



100% more additional loads with the new generation of igus® TwisterChain® New

The cable-optimized intermediate link increases the stability of TwisterChain® New several times. It also serves as interior separation and divides the filling space into two chambers

E-Chain System®
TwisterChain® New Series
Selection Guide

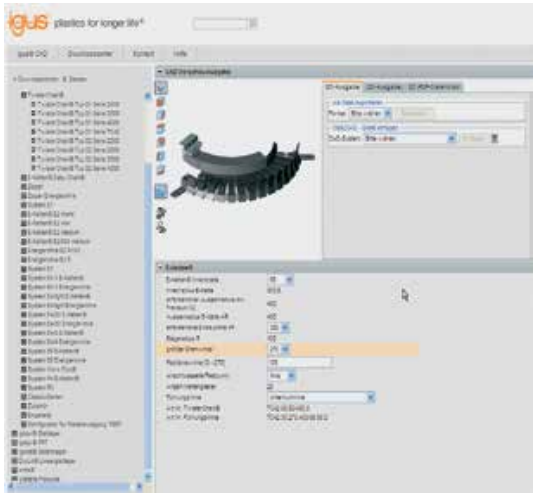


TwisterChain® New
For circular movements up to 540°,
crossbars snap-open along inner radius

Series	Inner height *hi* (mm)	Inner width *Bi* (mm)	Outer width *Ba* (mm)	Outer height *ha* (mm)	Bending radius *R* (mm)	Circular Radii AR (mm)
TC32-	32	87.5-150	108.5-171	54	100 - 250	400 - 600
TC42-	42	87.5-200	110.5-223	64	100 - 250	400 - 850
TC56-	56	125-200	155-230	84	150 - 400	650 - 850

Quickly generate complete TwisterChain® models with guide trough and accessories

➤ www.igus.com/twisterconfigurator

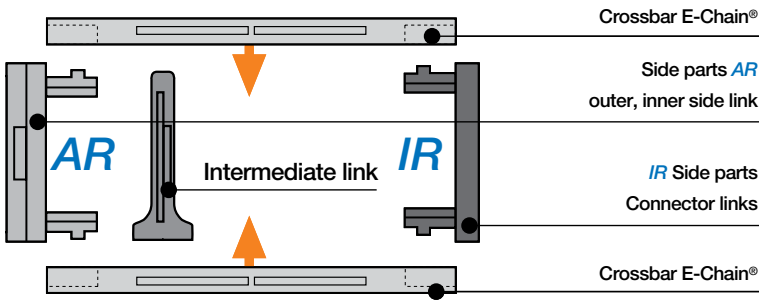


- Preparing of 3D-models only with input of chosen E-Chain® radii and installation area
- Free positioning of the E-Chain® moving end along the travel lengths
- Generation of TwisterChain® optionally as single part or with guide trough and base support
- Fast download of the CAD files without registration
- CAD models in 11 different 3D CAD formats and 8 different 2D CAD formats

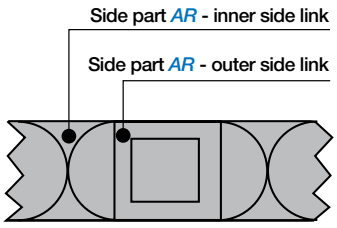
E-Chain System®
TwisterChain® New Series

Speed / acceleration	max. 3.28 ft/s (1.0 m/s) / max. 6.56 ft/s$_2$ (2.0 m/s$_2$)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability class, igumid G	VDE 0304 IIC UL94 HB

Part No. of E-Chain® links as single parts - System TwisterChain® New



Lateral view *AR*



Series	Crossbar E-Chain [1]	Side parts *AR* outer side link [2]	Side parts *AR* inner side link [3]	Side parts *IR* Connector links	Intermediate link
TC32	385-*Bi*	E4-32-01	TC32-02-*R-AR*	2808-03	TC32-04
TC42	385-*Bi*	E4-42-01	TC42-02-*R-AR*	3808-03	TC42-04
TC56	450-*Bi*	E4-56-01	TC56-02-*R-AR*	4008-03	TC56-04

No linking possible in combination with QuickLock crossbars!

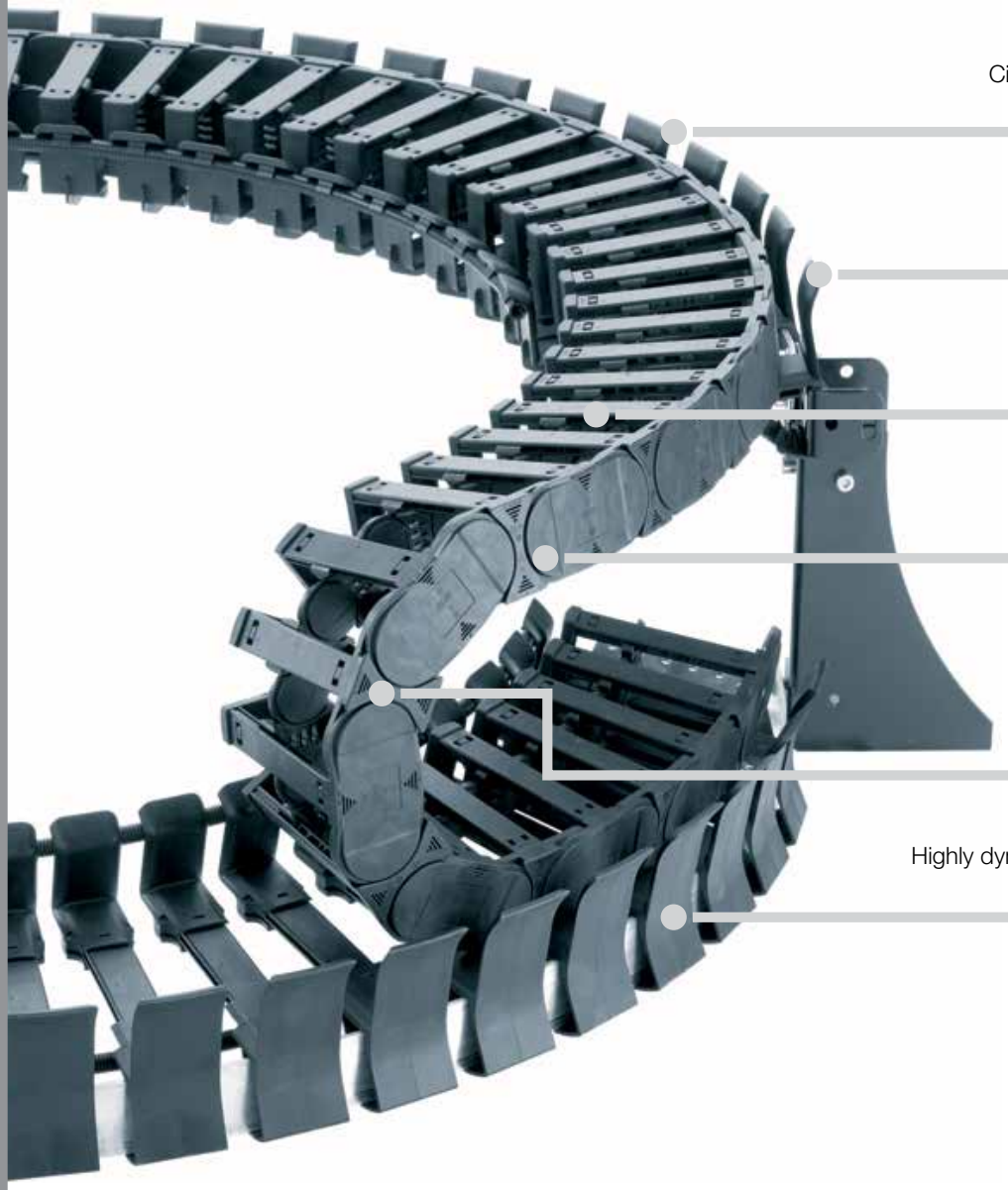
1) Supplement Part No. of crossbar with required width index (*Bi*) e.g. **450-150**
2) Outer side link - fit for each radius (only for outer radius *AR*)
3) Inner side link - supplement Part No. with required radius (*R*)
   e.g. **TC56-02-100-AR** (only for outer radius *AR*)

New Twister-Chain®

igus®

E-Chain System® TwisterChain® New Series

1.26 | 1.65 | 2.20



Circular and spiral movements up to 540° possible

Cable-friendly, smooth interior

Crossbars snap-open along inner radius

Modular, variable width, height and radius

More stable, more additional load possible due to intermediate link

Highly dynamic and smoother running (new Guide Trough)

⊕ New design, higher loads, circular movements up to 540°

When to use the System TwisterChain®:

- If a robust, low-noise system is required, appropriate for high loads
- Rotatory speeds up to 3.28 ft/s (1 m/s) and more
- At rotatory/spiral movements up to 540°
- If a variable interior separation is desired
- If two-sided opening is desire

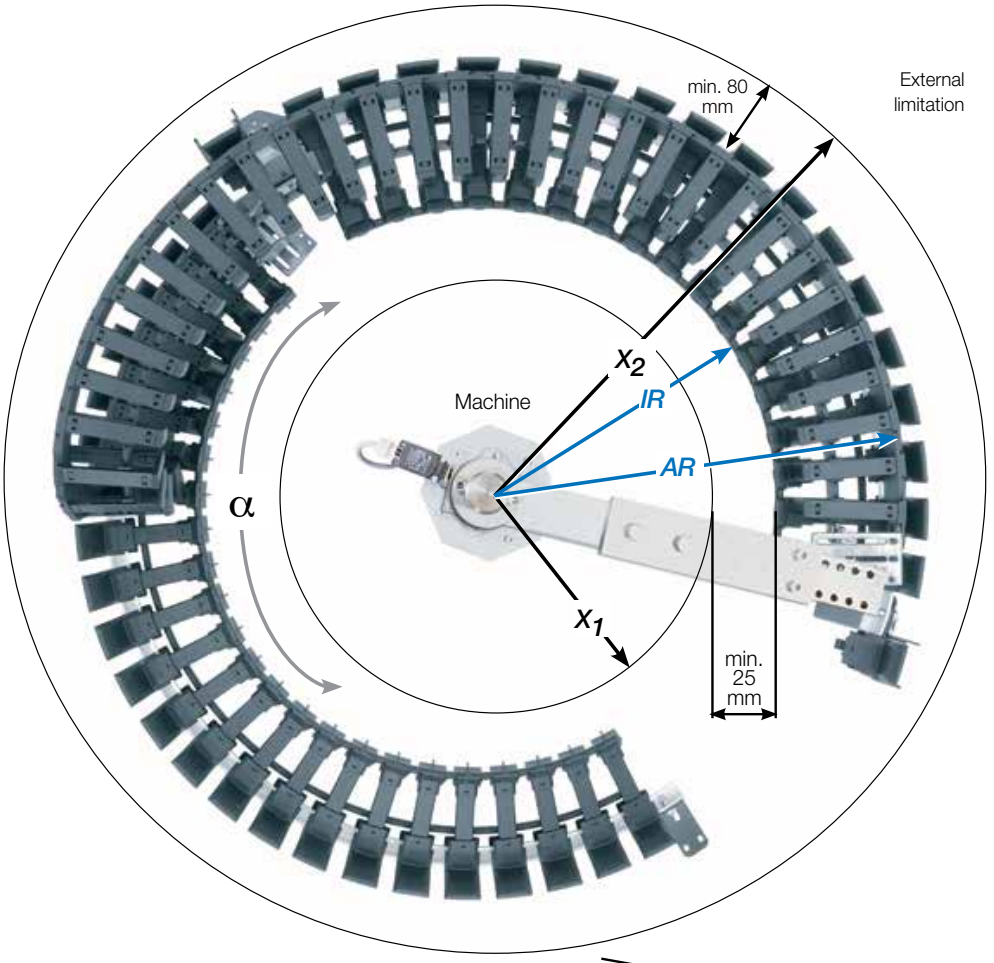
⊖

When to use a different igus® Series:

- For larger rotations
  ➤ **igus® RBR-solutions, Design, chapter 1**
- For rotation angles higher than 360° please consult igus®

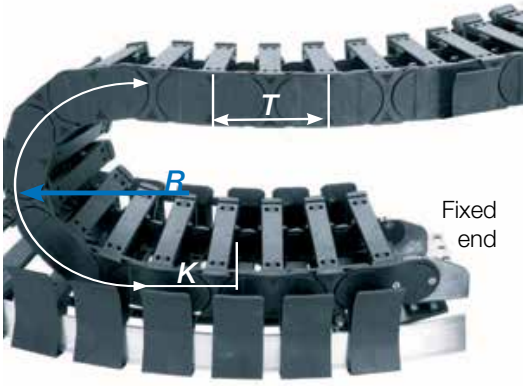
E-Chain System®
TwisterChain® New Series

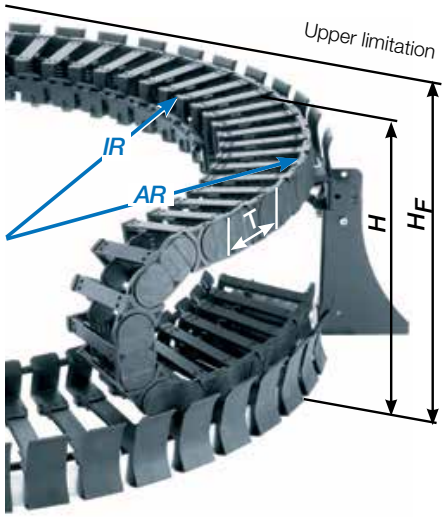
igus® New Twister-Chain®



TwisterChain® definition

In the case of machine elements which both move to the left and to the right following a circular path, the rotation angle can be determined by adding the two angles





AR = Outer radius, E-Chain®
IR = Inner radius, E-Chain®
R = Bending radius

X_1 = Inner machine construction space
X_2 = Outer radius *AR*, including clearance
T = Pitch
H_F = Height including 50 mm clearance
H = Nominal clearance height

K = Add-on for bending radius
hi = Inner height E-Chain®
ha = Outer height E-Chain®
α = Rotation angle

New Twister-Chain®

igus®

E-Chain System®
TwisterChain® New Series
Selecting the correct TwisterChain® New

If you would like us to design your TwisterChain® application, simply supply us with your requirements. Please use the igus® system design form at the end of this chapter. If you would like to specify the E-Chain® and the guide trough yourself, please work through the following points and enter the results on the calculation sheet at the end of the chapter.

1. Determine the series and E-Chain® width - Example of client data:

- Available construction space outer radius - 592 mm
- Inner radius = 311 mm
- α Rotation angle = 220°
- Installation height = 466 mm
- ø cable of client = 22 mm
- Minimum bend radius of client cable = 165mm

Estimate the dimensions of the E-Chain® by means of the internal separation with filling and select the series, or verify the maximum cable diameter and select the series using the next larger permissible ø. (For the inner height, we recommend the consideration of a cable clearance of approximately 20% of the chain's inner height and width.
Maximum ø cable TwisterChain®: TC32 = 25 mm, TC42 = 39 mm, TC56 = 53 mm
Example: Maximum ø cable of client 22 mm ➞ Series TC32 (next larger)

2. Specify the outer radius *AR*

Select the next smaller X_2 of the E-Chain® from the available installation space of the outer radius. From the dimension X_2 please subtract 80 mm, which results in the necessary outer radius ***AR***.
Selection of the chain outer radii, see table; dimension X_2 of the corresponding series
Formula: *AR* = X_2 - 80 mm
Example: 1. Available construction space outer radius 592 mm ➞ 580 mm (X_2)
2. X_2 580 mm - 80 mm ➞ ***AR*** 500 mm (next smaller selected)

3. Specify the inner radius *IR*

Add the allowance of 25 mm to the available installation space of the inner radius and select the next larger X_1 of the E-Chain®. The maximum width **Bi** results from the selected value.
Selection from the table of the corresponding series.
Formula: IR_{min} = X_1 + 25 mm
Example: Available installation space inner radius 311 mm + 25 mm = 336 mm ➞ X_1 350 mm = **Bi** 11 (108 mm)

4. Specify the bending radius *R*

Basically, the chain's bending radius ***R*** is determined by the largest bending radius of the cables.
Selection from the table of the corresponding series.
Example: 1. ø 22 mm (7.5 x ø) ➞ 22 mm x 7.5 = 165 mm cable's bending radius minimum
2. 165 ➞ ***R*** 175 mm (next higher selected) ➤ Results ➞ **Part No. TC32-11-175/500**

5. Specify the required installation height H

An allowance of 170 mm is added to twice the value of the selected chain's bending radius ***R***.
Example: ***R*** 175 mm x 2 + 170 mm = H 520 mm

6. Calculate the required number of links

Formula: $$n = \frac{\pi \times AR \times \alpha}{360° \times T} + \frac{K}{T}$$

Please note:

- The resulting number of links must always be rounded up!
- The mounting brackets may be attached only to the outside plates of the TwisterChain®. Consequently, the number of links **must always be rounded up to the next highest odd number!**

Note: **In the case of machine elements which both move to the left and to the right following a circular path, the rotation angle can be determined by adding to two angles.**

AR	= Outer radius	***T***	= Pitch	α	= Rotation angle
IR	= Inner radius	H_F	= Height incl. 50 mm clearance	***a***	= Acceleration
R	= Bending radius	***H***	= Nominal clearance height	***n***	= Number of links
X_1	= Inner machine construction space	***K***	= Add-on for bending radius	FZ_{max}	= Maximum additional load
X_2	= Outer radius ***AR***, incl. clearance	***hi***	= Inner height		
		ha	= Outer height		

E-Chain System®
TwisterChain® New Series
Selecting the correct TwisterChain® New

igus® New Twister-Chain®

Recommendations for design without additional components

Series	*AR* (mm)	$FZ_{max.}$ α 0°- 180° lbs/ft (kg/m)	$FZ_{max.}$ α 180°- 360° lbs/ft (kg/m)	*v* at *AR* permissible ft/s (m/s)	*a* at *AR* maximum ft/s² m/s²
TC32	400	2.69 (4.0)	1.34 (2.0)	3.28 (1.0)	6.56 (2.0)
	500	2.69 (4.0)	1.34 (2.0)	3.28 (1.0)	6.56 (2.0)
	600	2.69 (4.0)	1.34 (2.0)	3.28 (1.0)	6.56 (2.0)
TC42	400	4.03 (6.0)	2.42 (3.6)	3.28 (1.0)	6.56 (2.0)
	500	4.03 (6.0)	2.42 (3.6)	3.28 (1.0)	6.56 (2.0)
	600	4.03 (6.0)	2.42 (3.6)	3.28 (1.0)	6.56 (2.0)
	650	3.36 (5.0)	1.81 (2.7)	3.28 (1.0)	4.92 (1.5)
	750	2.69 (4.0)	1.21 (1.8)	3.28 (1.0)	3.28 (1.0)
	850	2.69 (4.0)	1.21 (1.8)	3.28 (1.0)	3.28 (1.0)
TC56	650	5.38 (8.0)	3.36 (5.0)	3.28 (1.0)	6.56 (2.0)
	750	5.38 (8.0)	3.36 (5.0)	3.28 (1.0)	6.56 (2.0)
	850	5.38 (8.0)	3.36 (5.0)	3.28 (1.0)	6.56 (2.0)

If your calculations exceed our recommendations, please call to us. We offer special solutions and many additional components!

New Twister-Chain®

igus®

E-Chain System®
TwisterChain® New Series TC32

Series TC32 - Snap-open along inner radius from both sides

Dimensions in mm

AR mm	Bi mm	Ba mm	X_2 mm	X_1 mm	*R* 100 TC32-	*R* 125 TC32-	*R* 150 TC32-	*R* 175 TC32-	*R* 200 TC32-	*R* 250 TC32-	Weight lbs/ft (kg/m)
400	87.5	108.5	480	270	087-100/400	087-125/400	087-150/400	087-175/400	087-200/400	087-250/400	≈ 1.22 (1.82)
400	100	121	480	250	–	–	10-150/400	10-175/400	10-200/400	10-250/400	≈ 1.28 (1.90)
400	108	129	480	250	–	–	–	11-175/400	11-200/400	11-250/400	≈ 1.31 (1.95)
400	125	146	480	220	–	–	–	12-175/400	12-200/400	12-250/400	≈ 1.38 (2.05)
400	137.5	158.5	480	210	–	–	–	–	–	137-250/400	≈ 1.43 (2.13)
400	150	171	480	200	–	–	–	–	–	15-250/400	≈ 1.49 (2.21)
500	100	121	580	350	10-100/500	10-125/500	10-150/500	10-175/500	10-200/500	10-250/500	≈ 1.28 (1.90)
500	108	129	580	350	–	11-125/500	11-150/500	11-175/500	11-200/500	11-250/500	≈ 1.31 (1.95)
500	125	146	580	320	–	12-125/500	12-150/500	12-175/500	12-200/500	12-250/500	≈ 1.38 (2.05)
500	137.5	158.5	580	310	–	–	137-150/500	137-175/500	137-200/500	137-250/500	≈ 1.43 (2.13)
500	150	171	580	300	–	–	15-150/500	15-175/500	15-200/500	15-250/500	≈ 1.49 (2.21)
600	108	129	680	450	11-100/600	11-125/600	11-150/600	–	–	–	≈ 1.31 (1.95)
600	125	146	680	420	–	12-125/600	12-150/600	12-175/600	12-200/600	12-250/600	≈ 1.38 (2.05)
600	137.5	158.5	680	410	–	137-125/600	137-150/600	137-175/600	137-200/600	137-250/600	≈ 1.43 (2.13)
600	150	171	680	400	–	–	15-150/600	15-175/600	15-200/600	15-250/600	≈ 1.49 (2.21)

Dimensions in mm

R	100	125	150	175	200	250
H^{+20}_{0}	254	304	354	404	454	554
K	430	505	585	665	745	900

Pitch *T* = 56 mm/link
Links/m = 18 (1008 mm)

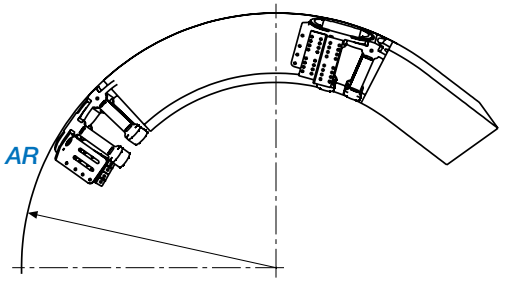
E-Chain System®
TwisterChain® New Series TC32
Installation Dimensions

igus® New Twister-Chain®

Dimensions in mm

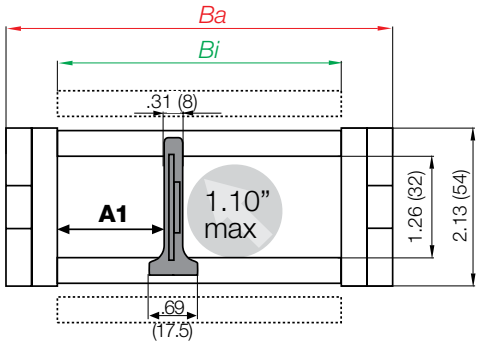
AR (mm)	*R* 100 **A1** (mm)	*R* 125 **A1** (mm)	*R* 150 **A1** (mm)	*R* 175 **A1** (mm)	*R* 200 **A1** (mm)	*R* 250 **A1** (mm)
400	51	51	52	53	53	58
500	65	65	66	67	69	71
600	79	80	81	81	82	85

Dimension A1 always with tolerance of ± 2.5 mm

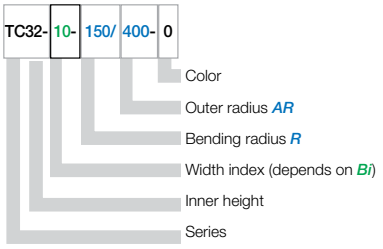


Note: Outer radius *AR* (see drawing) determines dimension A1!

Dimensioning

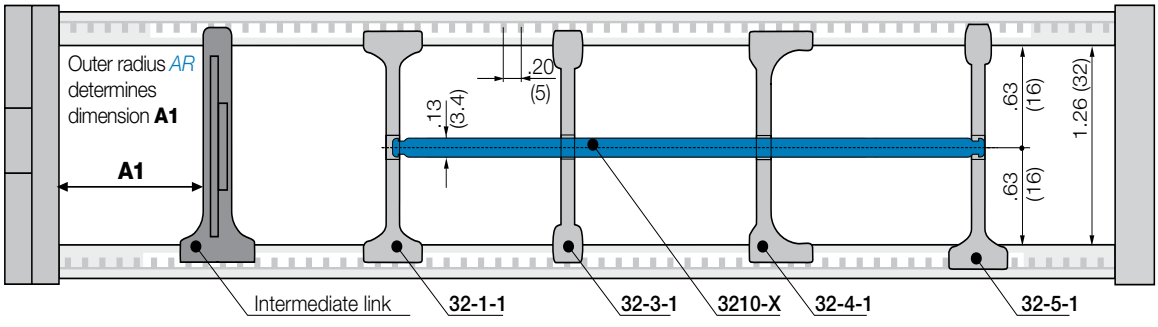


Part No. structure



TC32-10-150/400-0 = E-Chain® snap-open along inner radius from both sides
***Bi* 87.5** mm inner width, ***R* 150** mm bending radius / ***AR* 400** mm outer radius, color black

Interior Separation



For this series the interior separation elements of **Series E4-32** can be used with the exception of the side plates, **Part No. 286**

AR = Outer radius
R = Bending radius
X_1 = Inner machine construction space
X_2 = Outer radius ***AR***, including. clearance
Ba = Outer width
Bi = Inner width
H = Nominal clearance height
K = Add-on for bending radius
A1 = Distance intermediate link
T = Pitch

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New Twister-Chain®

igus®

E-Chain System®
TwisterChain® New Series TC42
Series TC42 - Snap-open along inner radius from both sides

Dimensions in mm

AR	Bi	Ba	X_2	X_1	R 100	R 125	R 150	R 175	R 200	R 250	Weight
mm	mm	mm	mm	mm	TC42-	TC42-	TC42-	TC42-	TC42-	TC42-	lbs/ft (kg/m)
400	87.5	110.5	480	270	087-100/400	087-125/400	087-150/400	087-175/400	087-200/400	087-250/400	≈ 1.32 (1.97)
400	100	123	480	250	10-100/400	10-125/400	10-150/400	10-175/400	10-200/400	10-250/400	≈ 1.36 (2.03)
400	108	131	480	250	–	11-125/400	11-150/400	11-175/400	11-200/400	11-250/400	≈ 1.39 (2.07)
400	125	148	480	220	–	12-125/400	12-150/400	12-175/400	12-200/400	12-250/400	≈ 1.45 (2.16)
400	137.5	160.5	480	210	–	137-125/400	137-150/400	137-175/400	137-200/400	137-250/400	≈ 1.49 (2.22)
400	150	173	480	200	–	–	–	15-175/400	15-200/400	15-250/400	≈ 1.54 (2.29)
400	162.5	185.5	480	190	–	–	–	–	162-200/400	162-250/400	≈ 1.60 (2.35)
400	168	191	480	190	–	–	–	–	–	17-250/400	≈ 1.60 (2.38)
400	175	198	480	180	–	–	–	–	–	18-250/400	≈ 1.62 (2.41)
500	100	123	580	350	10-100/500	10-125/500	10-150/500	10-175/500	10-200/500	10-250/500	≈ 1.36 (2.03)
500	108	131	580	350	–	11-125/500	11-150/500	11-175/500	11-200/500	11-250/500	≈ 1.39 (2.07)
500	125	148	580	320	–	12-125/500	12-150/500	12-175/500	12-200/500	12-250/500	≈ 1.45 (2.16)
500	137.5	160.5	580	310	–	–	137-150/500	137-175/500	137-200/500	137-250/500	≈ 1.49 (2.22)
500	150	173	580	300	–	–	15-150/500	15-175/500	15-200/500	15-250/500	≈ 1.54 (2.29)
500	162.5	185.5	580	290	–	–	162-150/500	162-175/500	162-200/500	162-250/500	≈ 1.60 (2.35)
500	168	191	580	290	–	–	–	17-175/500	17-200/500	17-250/500	≈ 1.60 (2.38)
500	175	198	580	280	–	–	–	–	18-200/500	18-250/500	≈ 1.62 (2.41)
500	187.5	210.5	580	280	–	–	–	–	187-200/500	187-250/500	≈ 1.67 (2.48)
500	200	223	580	250	–	–	–	–	20-200/500	20-250/500	≈ 1.71 (2.54)
600	108	131	680	450	11-100/600	11-125/600	11-150/600	11-175/600	11-200/600	–	≈ 1.39 (2.07)
600	125	148	680	420	12-100/600	12-125/600	12-150/600	12-175/600	12-200/600	12-250/600	≈ 1.45 (2.16)
600	137.5	160.5	680	410	137-100/600	137-125/600	137-150/600	137-175/600	137-200/600	137-250/600	≈ 1.49 (2.22)
600	150	173	680	400	15-100/600	15-125/600	15-150/600	15-175/600	15-200/600	15-250/600	≈ 1.54 (2.29)
600	162.5	185.5	680	390	–	162-125/600	162-150/600	162-175/600	162-200/600	162-250/600	≈ 1.60 (2.35)
600	168	191	680	390	–	–	17-150/600	17-175/600	17-200/600	17-250/600	≈ 1.60 (2.38)
600	175	198	680	380	–	–	18-150/600	18-175/600	18-200/600	18-250/600	≈ 1.62 (2.41)
600	187.5	210.5	680	380	–	–	187-150/600	187-175/600	187-200/600	187-250/600	≈ 1.67 (2.48)
600	200	223	680	350	–	–	20-150/600	20-175/600	20-200/600	20-250/600	≈ 1.71 (2.54)
650	125	148	730	470	12-100/650	12-125/650	12-150/650	12-175/650	12-200/650	12-250/650	≈ 1.45 (2.16)
650	137.5	160.5	730	460	137-100/650	137-125/650	137-150/650	137-175/650	137-200/650	137-250/650	≈ 1.49 (2.22)
650	150	173	730	450	15-100/650	15-125/650	15-150/650	15-175/650	15-200/650	15-250/650	≈ 1.54 (2.29)
650	162.5	185.5	730	440	–	162-125/650	162-150/650	162-175/650	162-200/650	162-250/650	≈ 1.60 (2.35)
650	168	191	730	430	–	17-125/650	17-150/650	17-175/650	17-200/650	17-250/650	≈ 1.60 (2.38)
650	175	198	730	430	–	–	18-150/650	18-175/650	18-200/650	18-250/650	≈ 1.62 (2.41)
650	187.5	210.5	730	420	–	–	187-150/650	187-175/650	187-200/650	187-250/650	≈ 1.67 (2.48)
650	200	223	730	400	–	–	20-150/650	20-175/650	20-200/650	20-250/650	≈ 1.71 (2.54)
750	137.5	160.5	830	560	137-100/750	137-125/750	137-150/750	137-175/750	137-200/750	137-250/750	≈ 1.49 (2.22)
750	150	173	830	550	15-100/750	15-125/750	15-150/750	15-175/750	15-200/750	15-250/750	≈ 1.54 (2.29)
750	162.5	185.5	830	540	–	162-125/750	162-150/750	162-175/750	162-200/750	162-250/750	≈ 1.60 (2.35)
750	168	191	830	540	–	17-125/750	17-150/750	17-175/750	17-200/750	17-250/750	≈ 1.60 (2.38)
750	175	198	830	530	–	18-125/750	18-150/750	18-175/750	18-200/750	18-250/750	≈ 1.62 (2.41)
750	187.5	210.5	830	520	–	187-125/750	187-150/750	187-175/750	187-200/750	187-250/750	≈ 1.67 (2.48)
750	200	223	830	500	–	20-125/750	20-150/750	20-175/750	20-200/750	20-250/750	≈ 1.71 (2.54)
850	150	173	930	650	15-100/850	15-125/850	15-150/850	15-175/850	15-200/850	15-250/850	≈ 1.54 (2.29)
850	162.5	185.5	930	640	162-100/850	162-125/850	162-150/850	162-175/850	162-200/850	162-250/850	≈ 1.60 (2.35)
850	168	191	930	630	17-100/850	17-125/850	17-150/850	17-175/850	17-200/850	17-250/850	≈ 1.60 (2.38)
850	175	198	930	630	–	18-125/850	18-150/850	18-175/850	18-200/850	18-250/850	≈ 1.62 (2.41)
850	187.5	210.5	930	620	–	187-125/850	187-150/850	187-175/850	187-200/850	187-250/850	≈ 1.67 (2.48)
850	200	223	930	600	–	20-125/850	20-150/850	20-175/850	20-200/850	20-250/850	≈ 1.71 (2.54)

R	100	125	150	175	200	250
H^{0}_{+25}	254	304	354	404	454	554
K	430	505	585	665	745	900

Pitch *T* = 67 mm/link
Links/m = 15 (1005 mm)

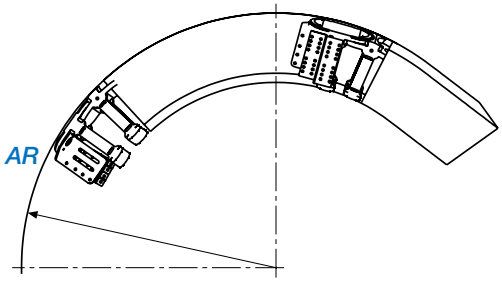
E-Chain System®
TwisterChain® New Series TC42
Installation Dimensions

igus® New Twister-Chain®

Dimensions in mm

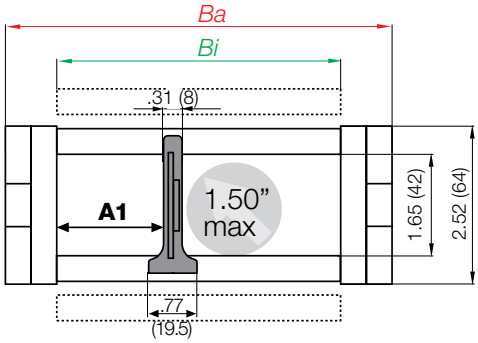
AR (mm)	*R* 100 **A1** (mm)	*R* 125 **A1** (mm)	*R* 150 **A1** (mm)	*R* 175 **A1** (mm)	*R* 200 **A1** (mm)	*R* 250 **A1** (mm)
400	49	50	51	53	53	53
500	64	65	66	67	68	71
600	79	79	80	81	82	85
650	86	87	87	88	89	92
750	101	101	102	103	104	106
850	116	116	117	118	118	120

Dimension A1 always with tolerance of ± 2.5 mm

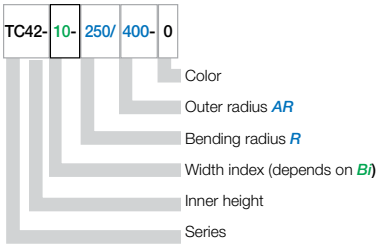


Note: Outer radius *AR* (see drawing) determines dimension A1!

Dimensioning

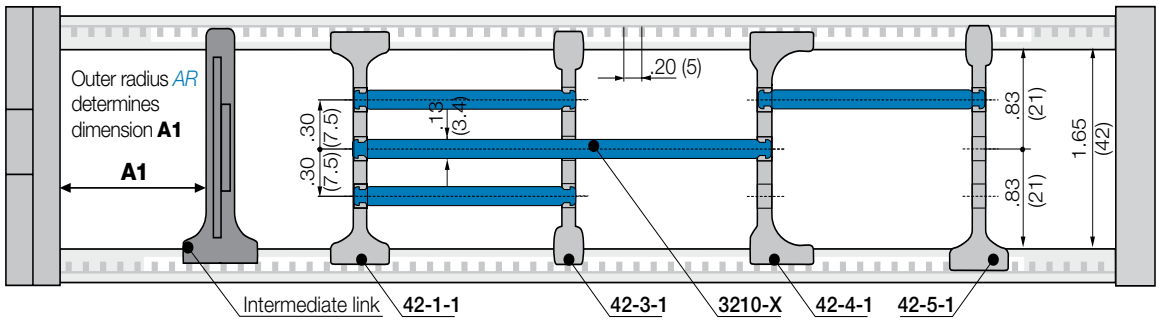


Part No. structure



TC42-10-250/400-0 = E-Chain® snap-open along inner radius from both sides
***Bi* 87.5** mm inner width, ***R* 250** mm bending radius / ***AR* 400** mm outer radius, color black

Interior Separation



For this series the interior separation elements of **Series E4-42** can be used with the exception of the side plates, **Part No. 386**

AR = Outer radius
R = Bending radius
X_1 = Inner machine construction space
X_2 = Outer radius ***AR***, including. clearance
Ba = Outer width
Bi = Inner width
H = Nominal clearance height
K = Add-on for bending radius
A1 = Distance intermediate link
T = Pitch

New Twister-Chain®

igus®

E-Chain System®
TwisterChain® New Series TC56
Series TC56 - Snap-open along inner radius from both sides

Dimensions in mm

AR mm	Bi mm	Ba mm	X_2 mm	X_1 mm	*R* 150 TC56-	*R* 200 TC56-	*R* 250 TC56-	*R* 300 TC56-	*R* 400 TC56-	Weight lbs/ft (kg/m)
650	125	155	730	470	12-150/650	12-200/650	12-250/650	12-300/650	–	≈ 2.32 (3.45)
650	137.5	168	730	460	–	13-200/650	13-250/650	13-300/650	13-400/650	≈ 2.38 (3.54)
650	150	180	730	450	–	–	15-250/650	15-300/650	15-400/650	≈ 2.43 (3.62)
650	162.5	193	730	440	–	–	16-250/650	16-300/650	16-400/650	≈ 2.49 (3.70)
650	175	205	730	430	–	–	–	17-300/650	17-400/650	≈ 2.54 (3.78)
650	187.5	218	730	420	–	–	–	18-300/650	18-400/650	≈ 2.60 (3.87)
650	200	230	730	400	–	–	–	–	20-400/650	≈ 2.65 (3.95)
750	137.5	168	830	560	13-150/750	13-200/750	13-250/750	13-300/750	–	≈ 2.38 (3.54)
750	150	180	830	550	–	15-200/750	15-250/750	15-300/750	15-400/750	≈ 2.43 (3.62)
750	162.5	193	830	540	–	16-200/750	16-250/750	16-300/750	16-400/750	≈ 2.49 (3.70)
750	175	205	830	530	–	–	17-250/750	17-300/750	17-400/750	≈ 2.54 (3.78)
750	187.5	218	830	520	–	–	18-250/750	18-300/750	18-400/750	≈ 2.60 (3.87)
750	200	230	830	500	–	–	20-250/750	20-300/750	20-400/750	≈ 2.65 (3.95)
850	150	180	930	650	15-150/850	15-200/850	15-250/850	15-300/850	15-400/850	≈ 2.43 (3.62)
850	162.5	193	930	640	16-150/850	16-200/850	16-250/850	16-300/850	16-400/850	≈ 2.49 (3.70)
850	175	205	930	630	17-150/850	17-200/850	17-250/850	17-300/850	17-400/850	≈ 2.54 (3.78)
850	187.5	218	930	620	–	18-200/850	18-250/850	18-300/850	18-400/850	≈ 2.60 (3.87)
850	200	230	930	600	–	–	20-250/850	20-300/850	20-400/850	≈ 2.65 (3.95)

R	150	200	250	300	400
H^{-0}_{+25}	384	484	584	684	884
K	655	815	970	1125	1440

Pitch *T* = 67 mm/link
Links/m = 15 (1005 mm)

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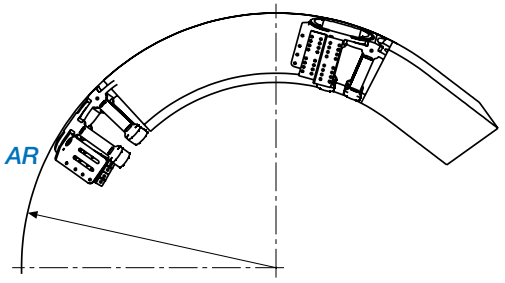
E-Chain System®
TwisterChain® New Series TC56
Installation Dimensions

igus® New Twister-Chain®

Dimensions in mm

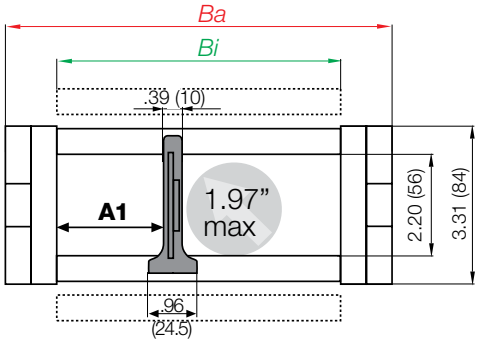
AR (mm)	*R* 150 **A1** (mm)	*R* 200 **A1** (mm)	*R* 250 **A1** (mm)	*R* 300 **A1** (mm)	*R* 400 **A1** (mm)
650	83	85	88	90	97
750	101	101	102	103	110
850	116	116	117	118	124

Dimension A1 always with tolerance of ± 2.5 mm

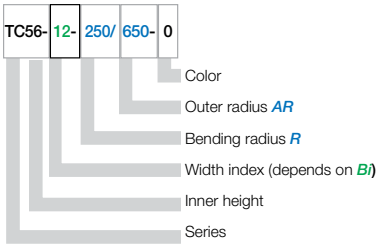


Note: Outer radius *AR* (see drawing) determines dimension A1!

Dimensioning

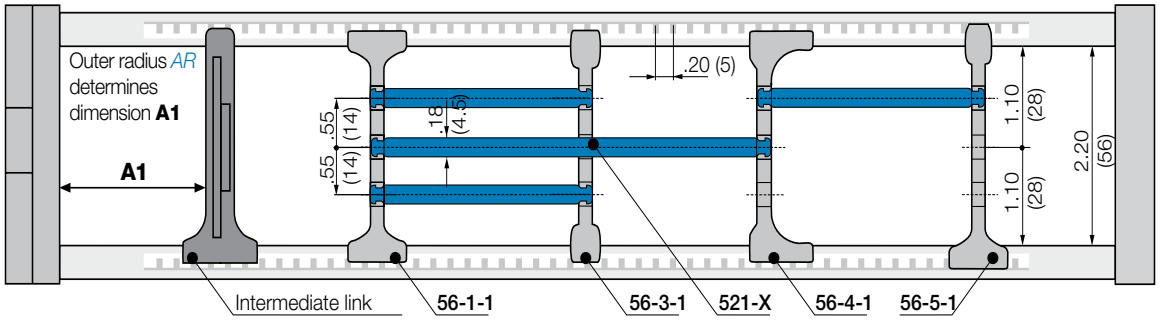


Part No. structure



TC56-12-250/650-0 = E-Chain® snap-open along inner radius from both sides
Bi 125 mm inner width, *R* 250 mm bending radius / *AR* 650 mm outer radius, color black

Interior Separation



For this series the interior separation elements of **Series E4-56** can be used with the exception of the side plates, **Part No. 402**

AR = Outer radius
R = Bending radius
X_1 = Inner machine construction space
X_2 = Outer radius *AR*, including. clearance
Ba = Outer width
Bi = Inner width
H = Nominal clearance height
K = Add-on for bending radius
A1 = Distance intermediate link
T = Pitch

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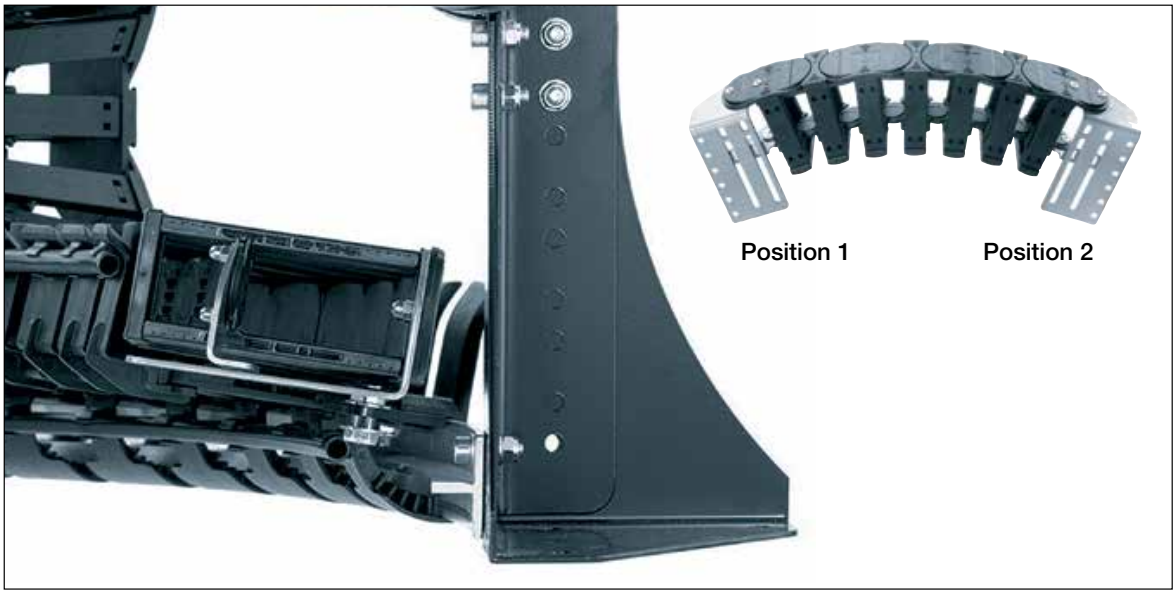
TC32
TC42
TC56

igus®

E-Chain System®
TwisterChain® New Series TC32, TC42, TC56
Mounting Brackets



Steel, one-piece - Recommended for unsupported and rotatory applications

For Series	Part No. Full set	Part No. Position 1	Part No. Position 2
TC32	**TC3200-34**	**TC3200-30**	**TC3200-40**
TC42	**TC4200-34**	**TC4200-30**	**TC4200-40**
TC56	**TC5600-34**	**TC5600-30**	**TC5600-40**

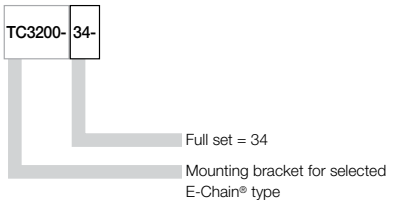
The guide trough must be mounted at the fixed point of the TwisterChain®.
The following bolted connections are permitted:

- Bore Hole: 4 x Ø 6.6 - 7 mm
- Mounting only with bolts: 4 x bolts M6

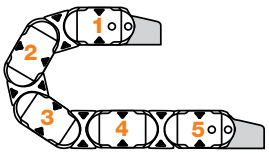
Other connection dimensions for mounting the guide trough Type 01 ➤ **from page 8.102**

- One part for all E-Chain® widths
- Electrically conductive
- Universal use
- Material: Stainless steel: 1.4301

Part No. structure



Note: TwisterChain® E-Chains® must always end with an outer side link. There must always be an odd number of links. At the moving end an outer side link always forms the first E-Chain® link.
Please note when calculating!



Single-part order
Position 1
TC3200-30
Position 1
TC3200-40

Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
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igus® E-Chain System®

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www.edfluidos.com

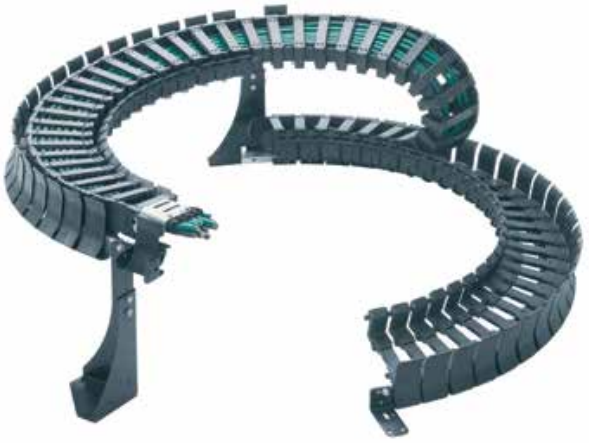
E-Chain System®
TwisterChain® New Series TC32, TC42, TC56
Guide Trough

igus®

TC32
TC42
TC56

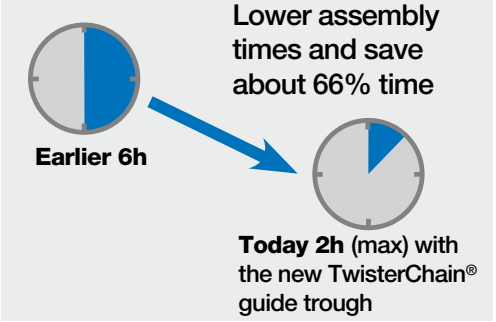
New generation of TwisterChain® guide troughs - Save assembly time and costs - increase cycle life!

TwisterChain® in a guide trough for rotary movements on an articulated robot - long service life and robust: more than 1,000,000 cycles tested successfully with prototype

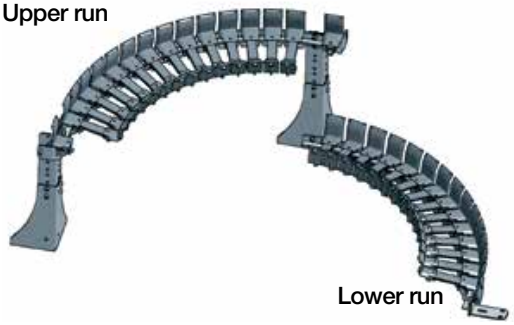


With the new TwisterChain® trough type 01, the previously complex adjustment work is clearly minimized. Assembly time is reduced from 6 h to 2 h. While reducing noise levels, travel speed and service life can be increased, thanks to an almost all-plastic design. Available for all TwisterChain® of the new and previous range.

- Suitable for high dynamics, because of the full and all-side guidance of the TwisterChain®
- Much smoother and quieter motion of the TwisterChain® in the trough due to continuous guidance of upper run
- Upper run guided in the new polymer trough over the full width
- Preassembled delivery possible
- Easy adjustment and alignment and handling
- Assembly time reduced from 6 hours to 2 hours



Upper run



Less parts, easier handling -
Illustration shows a 180° application

Easy adjustment and alignment on the robot, predefined angles and predrilled mounting holes for height fixation

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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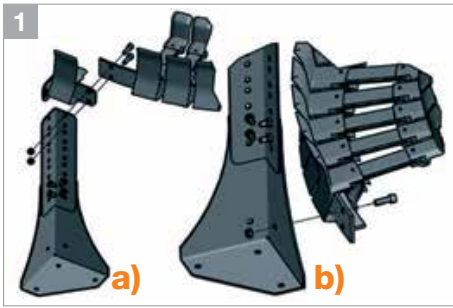
TC32
TC42
TC56

igus®

E-Chain System®
TwisterChain® New Series
Assembly Instructions

Assembling - TwisterChain®

1

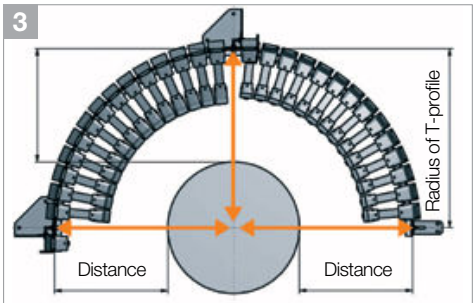


Check order for completeness. Screw together individual parts according to instructions...

2

...then assemble the complete guide trough with upper run and lower run

3



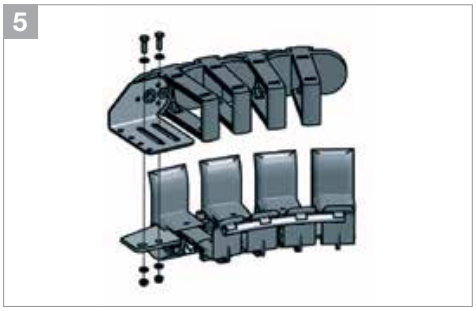
The T-profile should have 3 points equidistant from the pivot point

Align trough on the pivot point and then screw on

4

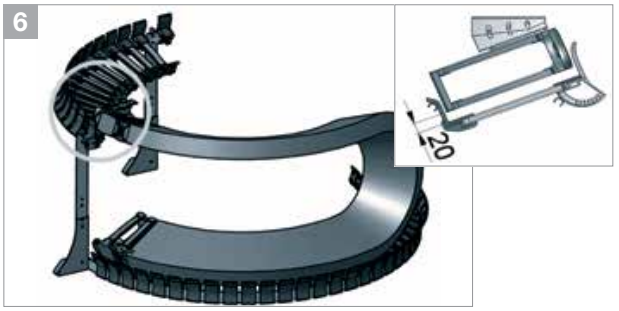
Alignment by defined angular and hole matrix for easy height fixing

5



TwisterChain® installation in the trough - screw the fixed end of E-Chain ® onto the trough

6

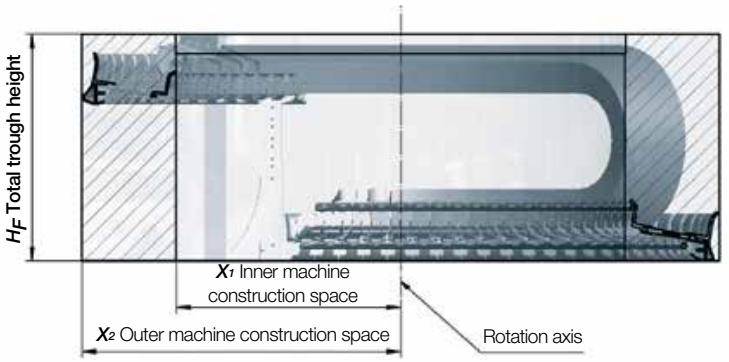


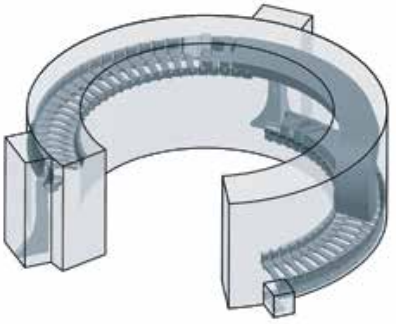
Attachment of the E-Chain® on the customer's moving end arm by screwing (moving arm provided by customer)

Guide Trough Type 02 - continues to be available for special applications.
Product Range ➤ page 8.127

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

E-Chain System®
TwisterChain® New Series
Guide Trough Dimensions





Minimum required construction space of TwisterChain® Guide Trough system

Installation Dimensions

X_1 Inner machine construction space and
X_2 Outer machine construction space of Guide Trough

AR (mm)	X_2 mm)	X_1 (mm) **depending on** *Bi* (mm)										
TC32		87,5	100	108	125	137.5	150					
400	480	270	250	250	220	210	200					
500	580	–	350	350	320	310	300					
600	680	–	–	450	420	410	400					
TC42		87,5	100	108	125	137.5	150	162.5	168	175	187.5	200
400	480	270	250	250	220	210	200	190	190	180	–	–
500	580	–	350	350	320	310	300	290	290	280	280	250
600	680	–	–	450	420	410	400	390	390	380	380	350
TC56			–	–	125	137.5	150	162.5	–	175	187.5	200
650	730	–	–	–	470	460	450	440	–	430	420	400
750	830	–	–	–	–	560	550	540	–	530	520	500
850	930	–	–	–	–	–	650	640	–	630	620	600

Construction height

H_F depending on bending radius of TwisterChain® Guide Trough

R [mm] Series	100	125	150	175	200	250	300	400
	H_F **Construction height** [mm]							
TC32	370	420	470	520	570	670	–	–
TC42	380	430	480	530	580	680	–	–
TC56	–	–	500	–	600	700	800	1000

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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TC32
TC42
TC56

igus®

E-Chain System® TwisterChain® Series Mounting Bracket

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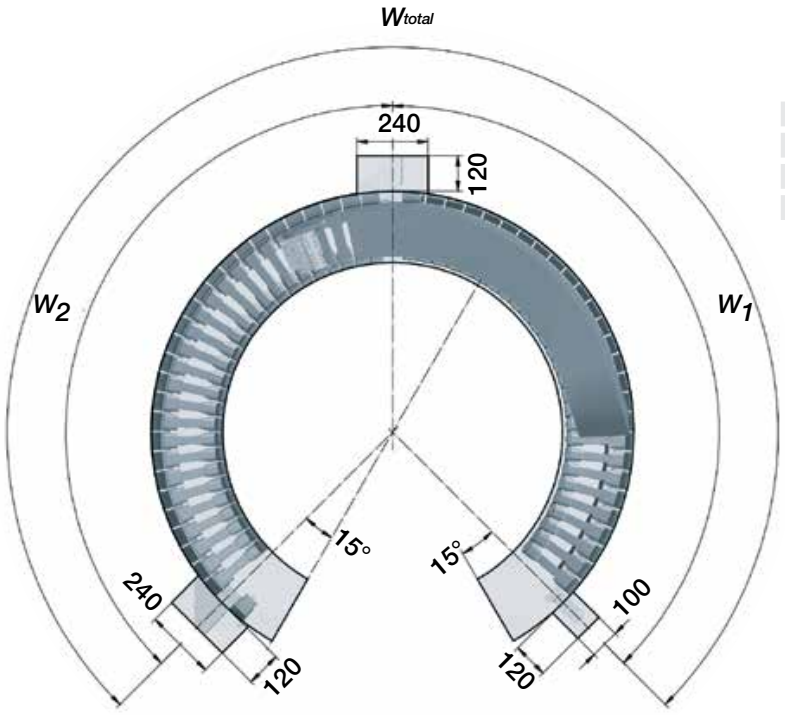
QuickSpec/RFQ: http://www.igus.com/quickspec



Rotation angle | *W1 + Wtotal*

Wtotal rotation angle System	**W1 rotation angle** of lower run trough
90°	45°
180°	90°
270°	135°
360°	180°

Rotation angle for 360° - *W2* angle of upper run (°) TwisterChain® Guide Trough

AR (mm)	Series	*R* [mm]	100	125	150	175	200	250	300	400
			W2 Rotation angle							
400	TC32/TC42		90°	90°	90°	90°	90°	90°	90°	90°
500	TC32/TC42		90°	90°	90°	90°	90°	90°	90°	90°
600	TC32/TC42		135°	135°	135°	135°	90°	90°	90°	90°
650	TC56		135°	135°	135°	135°	90°	90°	90°	90°
750	TC56		135°	135°	135°	135°	135°	135°	90°	90°
850	TC56		135°	135°	135°	135°	135°	135°	135°	135°

AR = Outer radius E-Chain®
IR = Inner radius E-Chain®
R = Bending radius

X_1 = Inner machine construction space
X_2 = Outer radius *AR*, including clearance
H_F = Total trough height

W_1 = Angle of lower run
W_2 = Angle of upper run
W_{total} = Rotation angle of system

E-Chain System®
TwisterChain® Series
Guide Trough Options

9XXX-31 Complete troughs
(**with base support**, height adjustment and attachment angles

9XXX-32 Upper and lower run trough
without base support and height adjustment
Special variant: Customer builds base support

9XXX-30 Lower run trough
with attachment angles
Special option:
Customer builds upper run trough

Product Range - TwisterChain® Guide Troughs Type 01

For Series	Outer radius *AR* [mm]	Rotation angle from-up to α (°)	Part No. Trough complete	Part No. Trough upper/lower run	Part No. Trough lower run
TC32 / TC42	400	0 - 90°	9XXXX-31-90-400/*Bi*-*R*	9XXXX-32-90-400/*Bi*-*R*	9XXXX-30-90-750/*Bi*-*R*
		90° - 180°	9XXXX-31-180-400/*Bi*-*R*	9XXXX-32-180-400/*Bi*-*R*	9XXXX-30-180-400/*Bi*-*R*
		180° - 270°	9XXXX-31-270-400/*Bi*-*R*	9XXXX-32-270-400/*Bi*-*R*	9XXXX-30-270-400/*Bi*-*R*
		270° - 360°	9XXXX-31-360-400/*Bi*-*R*	9XXXX-32-360-400/*Bi*-*R*	9XXXX-30-360-400/*Bi*-*R*
	500	0 - 90°	9XXXX-31-90-500/*Bi*-*R*	9XXXX-32-90-500/*Bi*-*R*	9XXXX-30-90-500/*Bi*-*R*
		90° - 180°	9XXXX-31-180-500/*Bi*-*R*	9XXXX-32-180-500/*Bi*-*R*	9XXXX-30-180-500/*Bi*-*R*
		180° - 270°	9XXXX-31-270-500/*Bi*-*R*	9XXXX-32-270-500/*Bi*-*R*	9XXXX-30-270-500/*Bi*-*R*
		270° - 360°	9XXXX-31-360-500/*Bi*-*R*	9XXXX-32-360-500/*Bi*-*R*	9XXXX-30-360-500/*Bi*-*R*
	600	0 - 90°	9XXXX-31-90-600/*Bi*-*R*	9XXXX-32-90-600/*Bi*-*R*	9XXXX-30-90-600/*Bi*-*R*
		90° - 180°	9XXXX-31-180-600/*Bi*-*R*	9XXXX-32-180-600/*Bi*-*R*	9XXXX-30-180-600/*Bi*-*R*
		180° - 270°	9XXXX-31-270-600/*Bi*-*R*	9XXXX-32-270-600/*Bi*-*R*	9XXXX-30-270-600/*Bi*-*R*
		270° - 360°	9XXXX-31-360-600/*Bi*-*R*	9XXXX-32-360-600/*Bi*-*R*	9XXXX-30-360-600/*Bi*-*R*
TC56	650	0 - 90°	9XXXX-31-90-650/*Bi*-*R*	9XXXX-32-90-650/*Bi*-*R*	9XXXX-30-90-650/*Bi*-*R*
		90° - 180°	9XXXX-31-180-650/*Bi*-*R*	9XXXX-32-180-650/*Bi*-*R*	9XXXX-30-180-650/*Bi*-*R*
		180° - 270°	9XXXX-31-270-650/*Bi*-*R*	9XXXX-32-270-650/*Bi*-*R*	9XXXX-30-270-650/*Bi*-*R*
		270° - 360°	9XXXX-31-360-650/*Bi*-*R*	9XXXX-32-360-650/*Bi*-*R*	9XXXX-30-360-650/*Bi*-*R*
	750	0 - 90°	9XXXX-31-90-750/*Bi*-*R*	9XXXX-32-90-750/*Bi*-*R*	9XXXX-30-90-750/*Bi*-*R*
		90° - 180°	9XXXX-31-180-750/*Bi*-*R*	9XXXX-32-180-750/*Bi*-*R*	9XXXX-30-180-750/*Bi*-*R*
		180° - 270°	9XXXX-31-270-750/*Bi*-*R*	9XXXX-32-270-750/*Bi*-*R*	9XXXX-30-270-750/*Bi*-*R*
		270° - 360°	9XXXX-31-360-750/*Bi*-*R*	9XXXX-32-360-750/*Bi*-*R*	9XXXX-30-360-750/*Bi*-*R*
	850	0 - 90°	9XXXX-31-90-850/*Bi*-*R*	9XXXX-32-90-850/*Bi*-*R*	9XXXX-30-90-850/*Bi*-*R*
		90° - 180°	9XXXX-31-180-850/*Bi*-*R*	9XXXX-32-180-850/*Bi*-*R*	9XXXX-30-180-850/*Bi*-*R*
		180° - 270°	9XXXX-31-270-850/*Bi*-*R*	9XXXX-32-270-850/*Bi*-*R*	9XXXX-30-270-850/*Bi*-*R*
		270° - 360°	9XXXX-31-360-850/*Bi*-*R*	9XXXX-32-360-850/*Bi*-*R*	9XXXX-30-360-850/*Bi*-*R*

Supplement Part No. **9XXXX** with required Series **(TC32, TC42 or TC56)**, ***Bi*** and **bending radius *R*** ➤ **9TC32-31-180-600/12-250**

9TC32-31-180-600/12.250

9XXXX-31-180-600/*Bi*. *R*

Order key Guide trough

R - Bending radius, please add appropriate value
Bi - Width index, please add appropriate value
Outer radius E-Chain®
Rotation angle of application (90°, 180°, 270°, 360°)
Trough version
Guide Trough of selected Series

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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TC32
TC42
TC56

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E-Chain System® TwisterChain® Series Calculation

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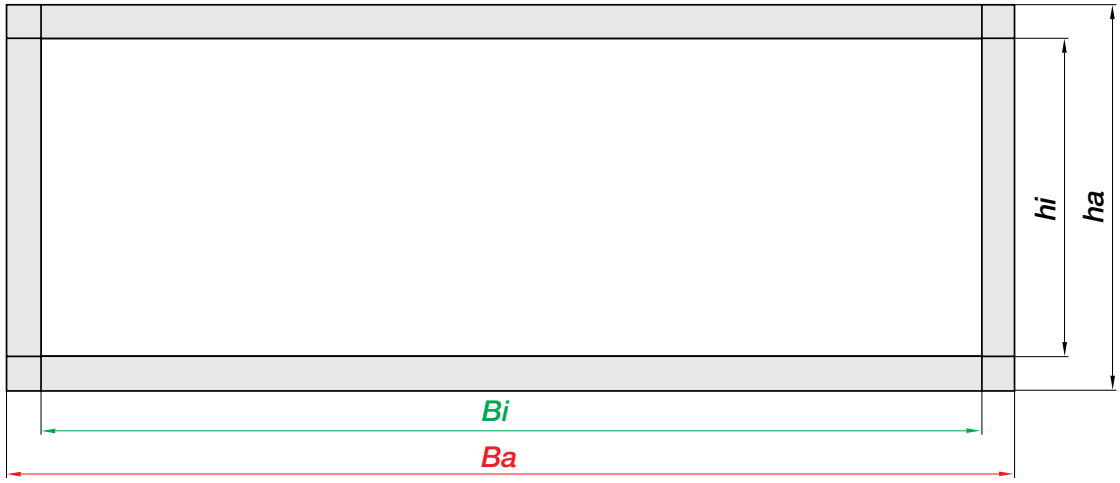
This calculation sheet should help you to select the right igus® TwisterChain® System for your application.



Note: To find the correct Series, refer to the thickest cable diameter, plus cable clearance of approx. 20% of the E-Chain® interior.

TwisterChain® New Series ☐ TC32 ☐ TC42 ☐ TC56

Existing installation space

X_1 max _____ X_2 max _____ H_F max _____

E-Chain® data

Outer radius *AR* _____ Inner radius *IR* _____

Bending radius *R* _____ Rotation angle (°) _____

Guide trough ☐ yes ☐ no

Part No. trough Type 01 9TC___-__-___-___/__-___

Order example 9TC32-31-180-600/12-250

Supporting structure necessary ☐ yes ☐ no

The guide trough part number includes all the necessary elements for proper operation. The rotation angle is dependent upon support for the upper run and should be assembled on-site. If on-site assembly is not possible. we will deliver a supporting structure which can be assembled on the floor and is based on the height of the lower trough run. If necessary, we will design a supporting structure specially adapted to your installation!

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E-Chain System®
TwisterChain® Series
Designing

igus®

TC32
TC42
TC56

Date:	Telephone: 401-438-2200 or 800-521-2747 Fax: 401-438-7270
From: Telephone: Fax:	To: igus,inc. Technical Sales E-Chain Systems® P.O. Box 14349 East Providence, RI 02914

Please supply us with your application data. We will then send you a full analysis with cable/layout suggestion and a quotation immediately. Please consult igus® should you have any questions.
Individual components:

☐ TwisterChain® ☐ Chainflex® high-flex cables ☐ Guide trough ☐ Pre-assembled

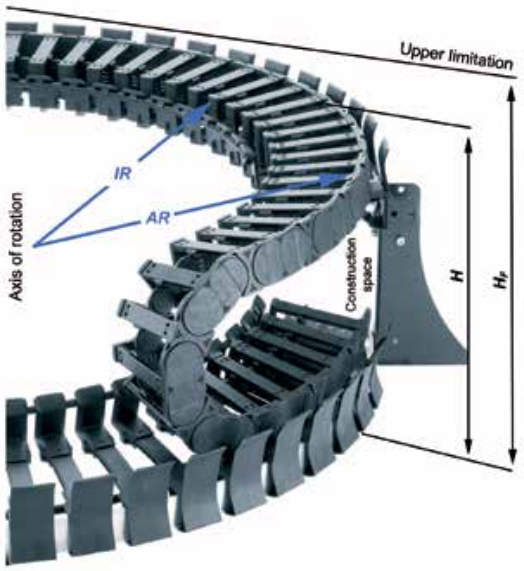
Cable and Hose package for igus® TwisterChain® New

Number	Type	Ø	Weight (lbs/ft)	Permitted Bending Radius

Dimensions

X_1 in mm _____
X_2 in mm _____
H_F in mm _____
Angle of rotation α* in ° _____

* On machine elements which move to the left and to the right following a circular path, the angle of rotation can be determined by adding the two angles.



Operating data

Rotations/day _____
Days/year _____
Speed in ft/s _____
Acceleration in ft/s² _____

Environment

Temperature in °F _____
Moisture ☐ yes ☐ no

Remarks:

_____
_____
_____
_____

Please copy, fill in, and fax this page.

Thank you!

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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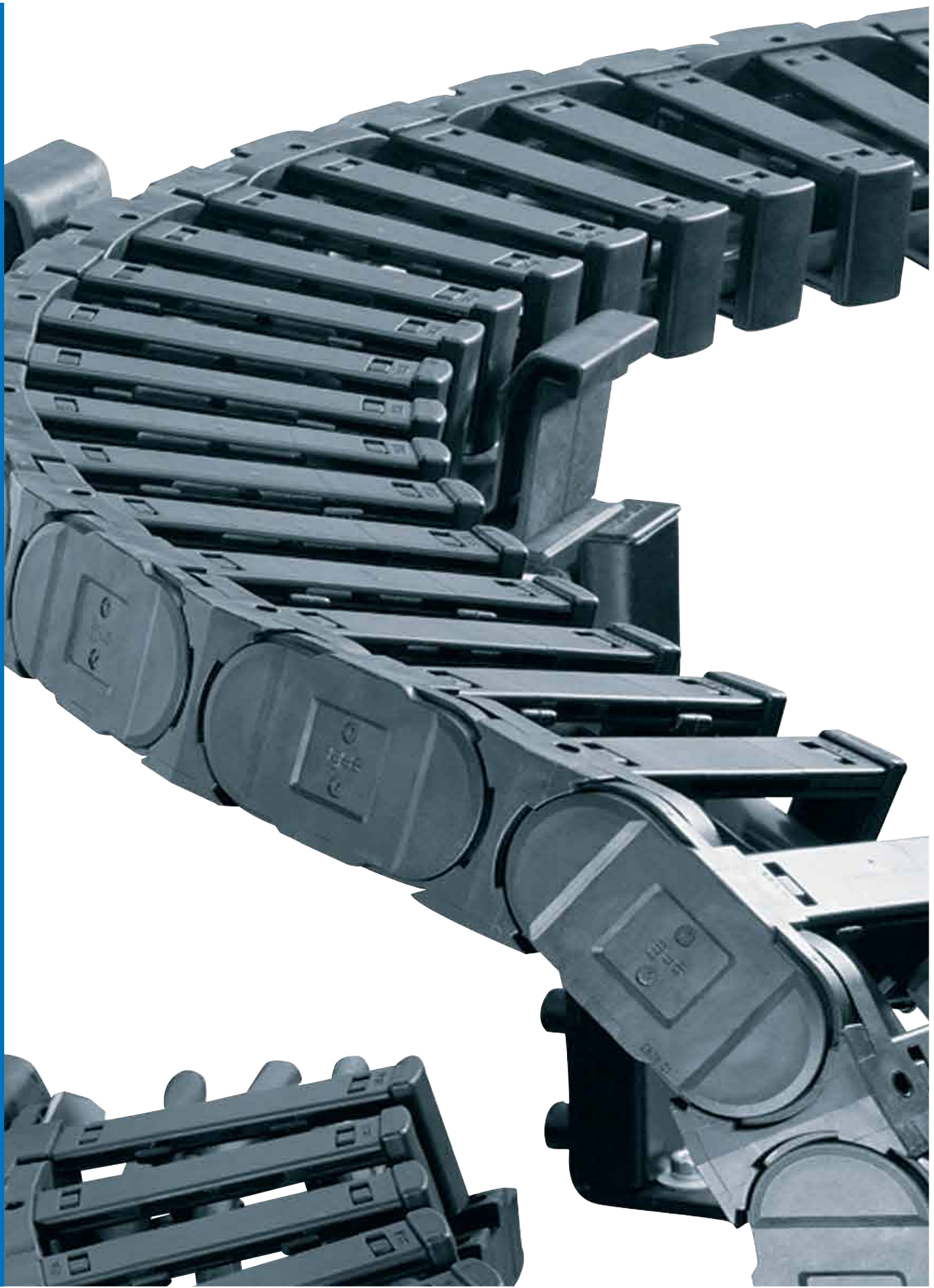

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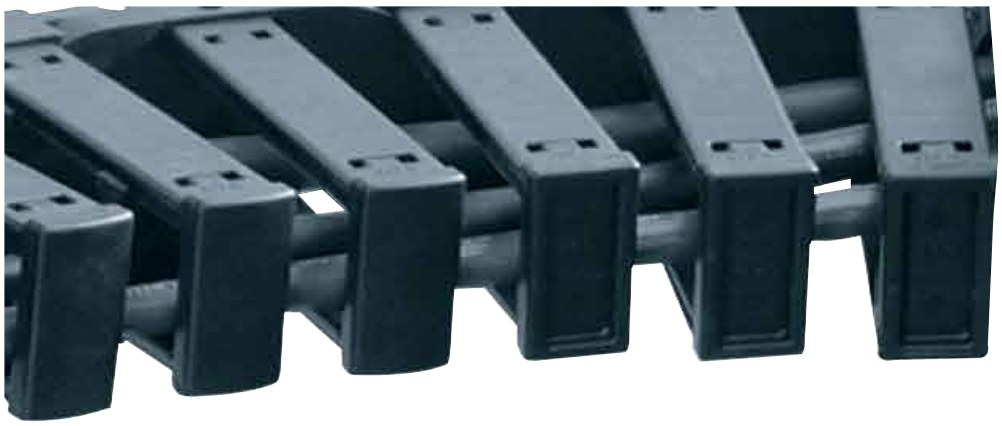

igus®
TwisterChain®
CLASSIC

First generation. Circular and spiral movements up to 540°

For new applications we recommend:

TwisterChain® New TC32 (2808), TC42 (3808), and TC56 (4008)

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TwisterChain® - Circular and spiral movements

TwisterChain® are modular and rugged E-Chains® for circular and spiral movements. They safely supply robots on the rotary axis with energy and media.

- Circular, spiral motions up to 540°
- Fast cable replacement
- Modular, rugged design - variable widths
- Cable-friendly interior
- Crossbars snap open on both sides
- New guide troughs Type 01 and Type 02 (up to 360° motion)
- Variable interior separation
- Applicable in rotational speeds of up to 13.12 ft/s (4 m/s)
- With steel mounting brackets (electrically conductive)

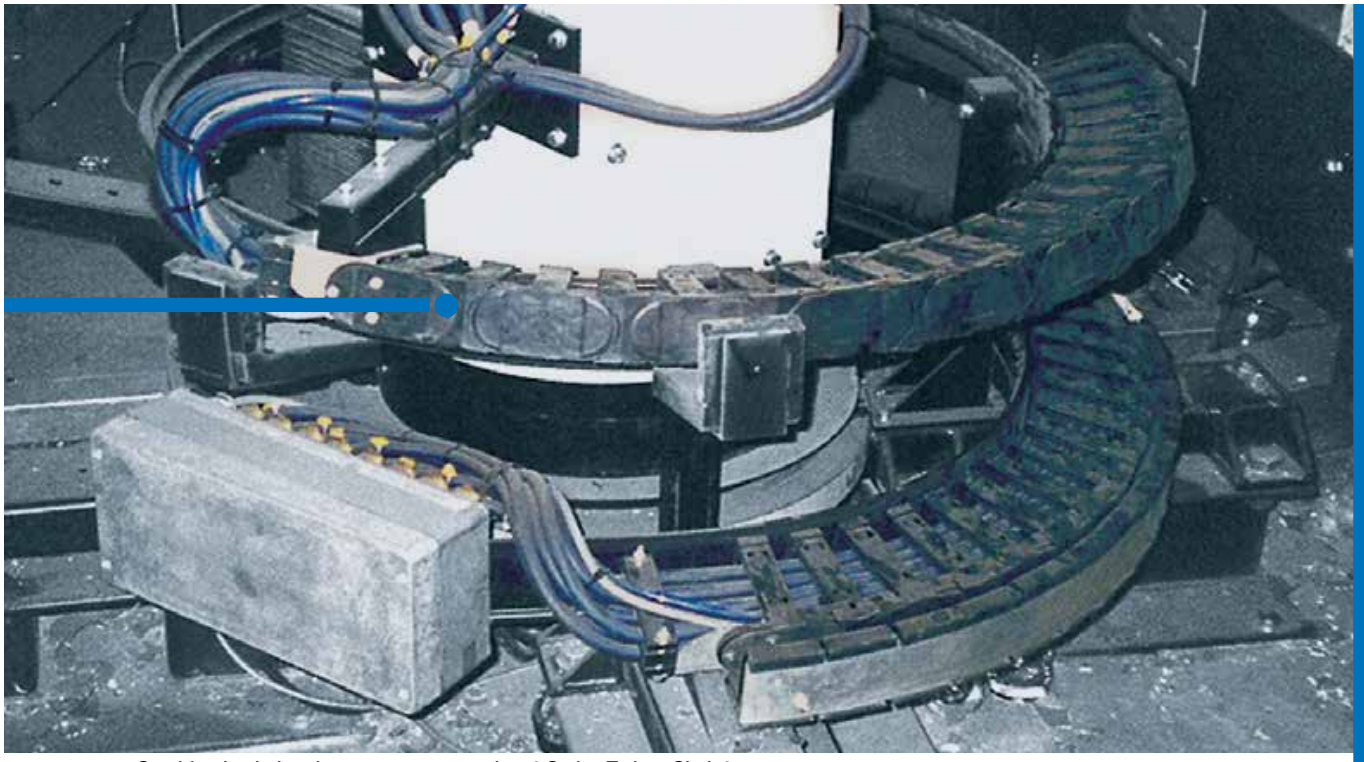
Typical industries and applications

- Robots
- Handling machines
- Packaging machines
- Glass machines
- General mechanical engineering

Circular movements up to 540° possible (with special attachments)

UL94-V2 classifications upon request

Two different types of Guide Trough Systems available



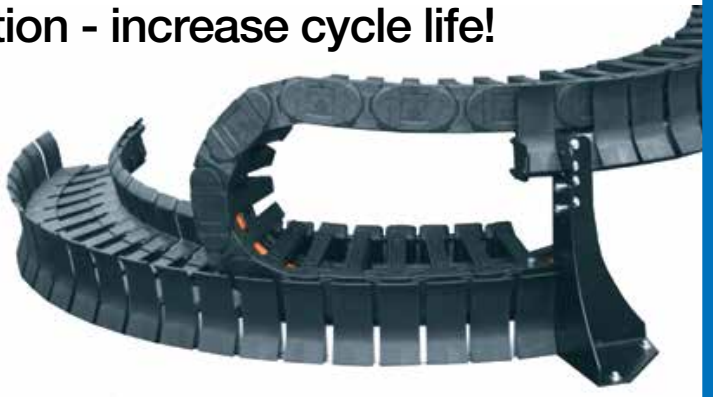
Combined spiral and rotary movement - igus® Series TwisterChain®

TwisterChain® for continuous industrial operation on a buckling arm robot (for welding applications, rotary movement 420°)

The robust link design allows also safety work in a dirty environment

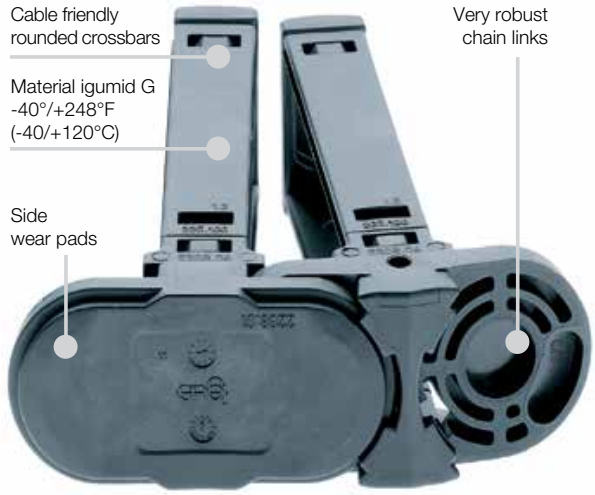
Save assembly time and costs - Better guidance for circular motion - increase cycle life!

With the new TwisterChain® trough, complex adjustment work is eliminated and assembly time is reduced from six hours to just two hours. Thanks to its almost all-plastic design, noise levels are reduced while travel speed and service life are increased. Now available for widths and radii on TwisterChain® models series 2808, 3808 and 4008. Please call igus® for more information.



New guide trough system - Type 01

E-Chain System®
TwisterChain® Series



Select this modular "spiral" E-Chain® for:

- igus® TwisterChain® for circular motions up to 540° (with special attachments)
- Fast cable change
- Modular design - variable widths
- Cable-friendly interior
- Crossbars can be opened on both sides
- New Guide Troughs Type 01 and Type 02 (circular motions up to 360°)
- Variable interior separation
- For rotational speeds of up to 13.12 ft/s (4 m/s)
- With steel (electrically conductive) mounting brackets
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, chapter 1**

Selection table

Series	Inner height *hi*	Inner width *Bi*	Outer width *Ba*	Outer height *ha*	Bending radius *R*	Circular Radii AR
	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)
2208-	1.10 (28)	2.07-4.43 (52.5-112.5)	3.15-5.51 (80-140)	1.65 (42)	2.17-5.91 (055 - 150)	11.81 (300)
2808-	1.26 (32)	1.97-5.91 (50-150)	3.19-7.13 (81-181)	2.13 (54)	3.94-9.84 (100 - 250)	15.75-23.62 (400 - 600)
3808-	1.65 (42)	1.97-7.87 (50-200)	3.35-9.25 (85-235)	2.52 (64)	3.94-9.84 (100 - 250)	15.75-23.62 (400 - 600)
4008-	2.20 (56)	1.97-7.87 (50-200)	3.66-9.57 (93-243)	3.31 (84)	5.91-15.75 (150 - 400)	25.59-33.46 (650 - 850)

E-Chain System®
TwisterChain® Series

Guide Trough Type 01 - Save assembly time and costs -
Better guidance for circular motion - increase cycle life! ➤ See page 8.123

Guide Trough Type 02 - continues to be available for special applications ➤ See page 8.127

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2208
2808
3808
4008

igus®

E-Chain System®
TwisterChain® Series

1.10 | 1.26 | 1.65 | 2.20

Price Index

●●◐

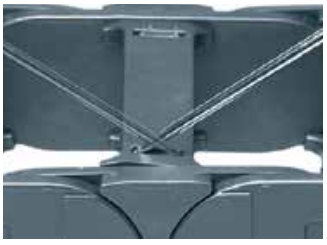
Special Options Available

Circular movements up to 540° possible (with special attachments)

UL94-V2 classifications upon request

Two different types of Guide Trough Systems available

Assembly Tips



Opening - push a screwdriver down vertically into the opening crossbar's groove. Using the screwdriver as a lever, loosen the opening crossbar

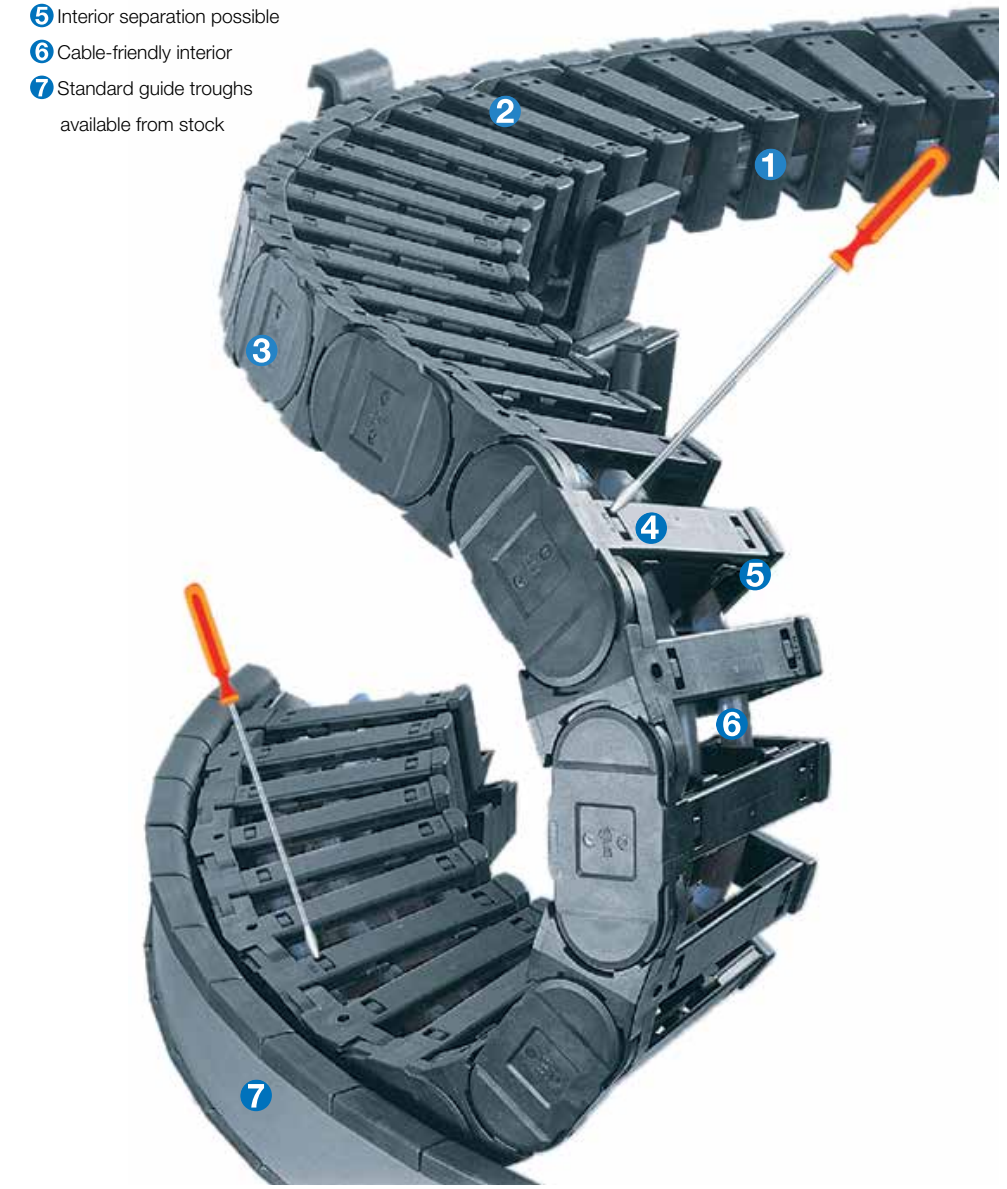
Usage Guidelines

- If you require variable interior separation
- If cable/hose accessibility on both sides is required
- If rotational speeds up to 90°/s are required
- For spiral motion up to 540° possible with special attachments

- If very small or large diameters are required
  ➤ **Design, Chapter 1**
- For applications using rotation angles over 400° please consult igus

Features & Benefits

1. Dirt-repellent exterior
2. Modular design - variable widths
3. Spiral chain for rotary motion up to 540° (with special attachments)
4. Crossbars which can be opened on both sides
5. Interior separation possible
6. Cable-friendly interior
7. Standard guide troughs available from stock



Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

6.56 ft (2 m) **2808-087-175/500-0**	**E-Chain®**
With 2 separators **282** assembled every 2nd link	**Interior Separation**
1 Set **28080-34**	**Mounting Bracket**

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E-Chain System®
TwisterChain® Series
Selecting the correct TwisterChain®

If you would like us to design your TwisterChain® application, simply supply us with your requirements. Please use the igus® system design form at the end of this chapter. If you would like to specify the chain and the guide trough yourself, please work through the following points and enter the results on the calculation sheet at the end of the chapter.

1. Determine the series and chain width

Specify which cables you would like to use for the chain. The type of cable(s) and the largest cable diameter determine the series and chain width selection. We recommend that you allow for a cable clearance of approx 20% of the chain's inner height and width. For instance, you must choose Series 3808 for a cable diameter of 1.18 (30 mm).

2. Specify the outer and inner radius

Determine the construction space available to you (dimensions X_1 and X_2)
Example: α = 220°/max. cable diameter .94" (24 mm) ➞ Series 2808
X_2 = 22.83 (580 mm) ➞ AR = 19.69 (500 mm)
X_1 = 12.20 (310 mm) ➞ IR_{min} = 15.35 (390 mm) ➞ selection table ➞ 15.43 (392 mm)

3. Specify the bending radius

H_F = 18.11 (460 mm) ➞ $H \leq$ 16.14 (410 mm) ➞ $R = \frac{H\text{-}ha}{2}$ = 7.00 (178 mm) ➞ R175*
*(next smallest radius)
➤ Result: Series 2808, **Part No. 2808-087-175/500**

4. Calculate the required number of links

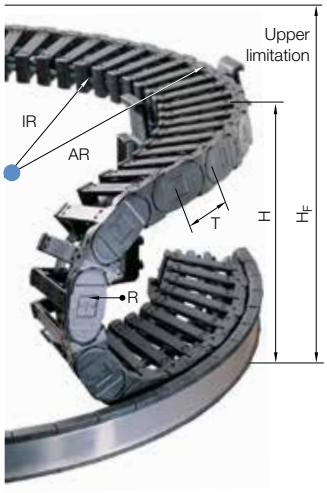
Number of links: $= \frac{\pi \times AR \times \alpha}{360° \times T} + \frac{K}{T}$

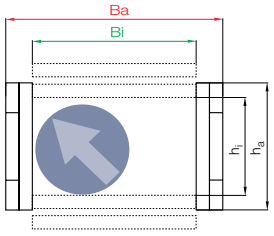
- The resulting number of links must always be rounded up!
- The mounting brackets may be attached only to the outside plates of the TwisterChain®. Consequently, the number of links **must always be rounded up to the next highest odd number!**

Recommendations for design without additional components

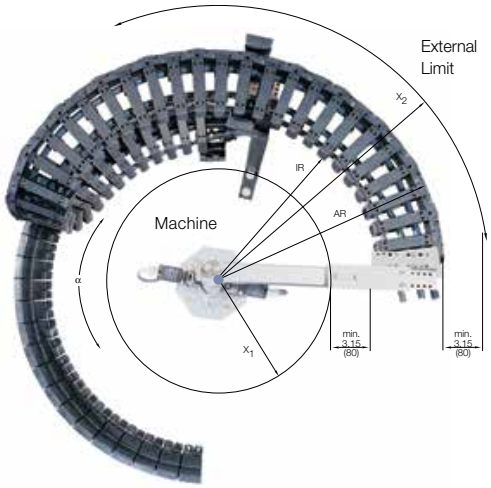
Series	$FZ_{max.}$ α 180°		$FZ_{max.}$ α 360°		v an AR permitted		a an AR max.		R max.		AR permitted	
	lbs/ft	(kg/m)	lbs/ft	(kg/m)	ft/s	(m/s)	ft/s²	(m/s²)	in.	(mm)	in.	(mm)
2208-	1.01	(1.5)	.67	(1)	.98-3.28	(0.3-1)	6.56	(2)	3.94	(100)	11.81	(300)
2808-	1.34	(2)	.67	(1)	.98-3.28	(0.3-1)	6.56	(2)	5.91	(150)	17.72-21.65	(450 - 550)
3808-	2.02	(3)	1.21	(1.8)	.98-3.28	(0.3-1)	6.56	(2)	7.87	(200)	17.72-21.65	(450 - 550)
4008-	2.69	(4)	1.68	(2.5)	.98-3.28	(0.3-1)	6.56	(2)	9.84	(250)	23.62-27.56	(600 - 700)

If your calculations exceed our recommendations, please contact igus® We offer special solutions and many additional components!





See Legend at upper right for drawing definitions.



Legend

a	=	Acceleration
α	=	Angle of rotation
AR	=	Outer E-Chain radius
Ba	=	Outer E-Chain width
Bi	=	Inner width
FZ_{max}	=	Max. additional load
H	=	Nominal clearance height
ha	=	Outer E-Chain height
hi	=	Inner E-Chain height
H_F	=	Required clearance height incl. 1.97" (50 mm) clearance
IR	=	Inner radius
K	=	Series-dependent add-on for bending radius
n	=	Number of links
R	=	E-Chain Bending radius
T	=	Pitch
v	=	Speed
X_1	=	Inner machine construction space
X_2	=	Outer radius, incl. clearance
R_{LK}	=	Distance pivot point/ outer mounting holes

The following clearances are absolutely essential for proper design function:
IR_{min} = X_1 + 3.15" (80 mm)
$X_{2\,min}$ = AR + 3.15" (80 mm)
H_F = H + 1.97" (50 mm)
Chain height including clearance

PDF: www.igus.com/e-chain-pdfs
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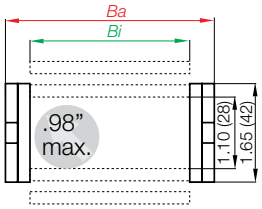
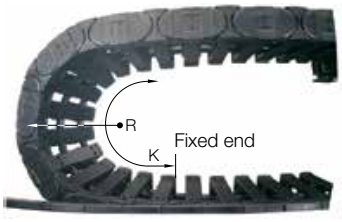
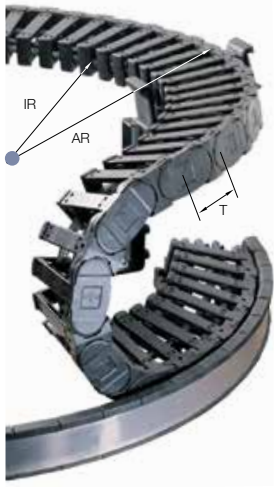
igus®

E-Chain System® TwisterChain® Series 2208

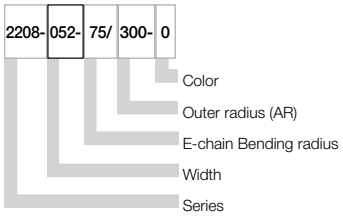
Series 2208 (snap-open along inner and outer radius)







Part No. structure



Legend

AR	= Outer radius
IR	= Inner radius
R	= E-Chain Bending radius
T	= Pitch
K	= Series-dependent add-on for bending radius

R	2.17 (55)	2.48 (63)	2.95 (75)	3.94 (100)	4.92 (125)	5.91 (150)
K	10.43 (265)	11.42 (290)	12.99 (330)	16.14 (410)	19.09 (485)	22.24 (565)
T	1.73 (44)	1.73 (44)	1.73 (44)	1.73 (44)	1.73 (44)	1.73 (44)

Bi in. (mm)	Ba in. (mm)	AR in. (mm)	IR in. (mm)	R 2.16 (55) 2208-...	R 2.48 (63) 2208-...	R 2.95 (75) 2208-...	R 3.94 (100) 2208-...	R 4.92 (125) 2208-...	R 5.91 (150) 2208-...	Weight lbs/ft (kg/m)
2.07 (52.5)	3.15 (80)	11.81 (300)	8.94 (227)	-052-55/300	-052-63/300	-052-75/300	-052-100/300	-052-125/300	-052-150/300	.81 (1.20)
2.46 (62.5)	3.54 (90)	11.81 (300)	8.54 (217)	–	–	-062-75/300	-062-100/300	-062-125/300	-062-150/300	.83 (1.24)
2.93 (74.5)	4.02 (102)	11.81 (300)	8.07 (205)	–	–	–	-074-100/300	-074-125/300	-074-150/300	.87 (1.29)
3.44 (87.5)	4.53 (115)	11.81 (300)	7.56 (192)	–	–	–	-087-100/300	-087-125/300	-087-150/300	.91 (1.35)
4.43 (112.5)	5.51 (140)	11.81 (300)	6.57 (167)	–	–	–	–	-112-125/300	-112-150/300	.98 (1.46)

Example Part No. 2208-112-150/300

Interior Separation: Series 2208 TwisterChain

➤ All interior elements of the **E4/100 Series 220 Energy Chain®** may be used with the Series 2208 TwisterChain, **Chapter 6.**

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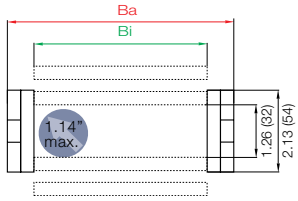
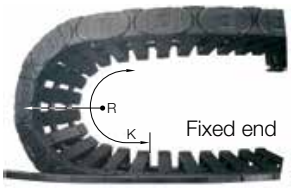
E-Chain System®
TwisterChain® Series 2808

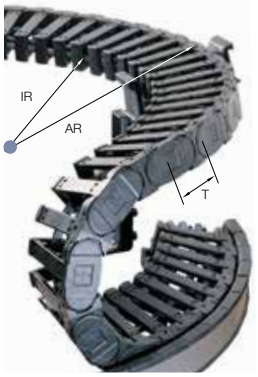
Series 2808 (can be opened along the inner and outer radius)





Legend

AR	= Outer radius
IR	= Inner radius
R	= E-Chain Bending radius
T	= Pitch
K	= Series-dependent add-on for bending radius



R	3.94	(100)	4.92	(125)	5.91	(150)	6.89	(175)	7.87	(200)	9.84	(250)
K	18.30	(465)	21.65	(550)	24.40	(620)	27.56	(700)	30.71	(780)	37.01	(940)
T	2.20	(56)	2.20	(56)	2.20	(56)	2.20	(56)	2.20	(56)	2.20	(56)

Bi in. (mm)	Ba in. (mm)	AR in. (mm)	IR in. (mm)	R 3.94 (100) 2808-...	R 4.92 (125) 2808-...	R 5.91 (150) 2808-...	R 6.89 (175) 2808-...	R 7.87 (200) 2808-...	R 9.84 (250) 2808-...	Weight lbs/ft (kg/m)
1.97 (50)	3.19 (81)	15.75 (400)	12.95 (329.5)	-05-100/400	-05-125/400	-05-150/400	-05-175/400	-05-200/400	-05-250/400	1.18 (1.76)
2.68 (68)	3.90 (99)	15.75 (400)	12.36 (311.5)	-06-100/400	-06-125/400	-06-150/400	-06-175/400	-06-200/400	-06-250/400	1.26 (1.87)
2.95 (75)	4.17 (106)	15.75 (400)	11.99 (304.5)	-07-100/400	-07-125/400	-07-150/400	-07-175/400	-07-200/400	-07-250/40	1.29 (1.92)
3.44 (87.5)	4.67 (118.5)	15.75 (400)	11.50 (292)	-087-100/400	-087-125/400	-087-150/400	-087-175/400	-087-200/400	-087-250/400	1.34 (1.99)
3.94 (100)	5.16 (131)	15.75 (400)	11.00 (279.5)	–	–	-10-150/400	-10-175/400	-10-200/400	-10-250/400	1.39 (2.07)
4.25 (108)	5.47 (139)	15.75 (400)	10.69 (271.5)	–	–	–	-11-175/400	-11-200/400	-11-250/400	1.42 (2.12)
4.92 (125)	6.14 (156)	15.75 (400)	10.02 (254.5)	–	–	–	-12-175/400	-12-200/400	-12-250/400	1.49 (2.22)
5.41 (137.5)	6.63 (168.5)	15.75 (400)	9.53 (242)	–	–	–	–	–	-137-250/400	1.55 (2.30)
5.91 (150)	7.13 (181)	15.75 (400)	9.04 (229.5)	–	–	–	–	–	-15-250/400	1.60 (2.38)
1.97 (50)	3.19 (81)	19.69 (500)	16.91 (429.5)	-05-100/500	-05-125/500	-05-150/500	-05-175/500	-05-200/500	-05-250/500	1.18 (1.76)
2.68 (68)	3.90 (99)	19.69 (500)	16.20 (411.5)	-06-100/500	-06-125/500	-06-150/500	-06-175/500	-06-200/500	-06-250/500	1.26 (1.87)
2.95 (75)	4.17 (106)	19.69 (500)	15.93 (404.5)	-07-100/500	-07-125/500	-07-150/500	-07-175/500	-07-200/500	-07-250/500	1.29 (1.92)
3.44 (87.5)	4.67 (118.5)	19.69 (500)	15.43 (392)	-087-100/500	-087-125/500	-087-150/500	-087-175/500	-087-200/500	-087-250/500	1.34 (1.99)
3.94 (100)	5.16 (131)	19.69 (500)	14.94 (379.5)	-10-100/500	-10-125/500	-10-150/500	-10-175/500	-10-200/500	-10-250/500	1.39 (2.07)
4.25 (108)	5.47 (139)	19.69 (500)	14.63 (371.5)	–	-11-125/500	-11-150/500	-11-175/500	-11-200/500	-11-250/500	1.42 (2.12)
4.92 (125)	6.14 (156)	19.69 (500)	13.96 (354.5)	–	-12-125/500	-12-150/500	-12-175/500	-12-200/500	-12-250/500	1.49 (2.22)
5.41 (137.5)	6.63 (168.5)	19.69 (500)	13.46 (342)	–	–	-137-150/500	-137-175/500	-137-200/500	-137-250/500	1.55 (2.30)
5.91 (150)	7.13 (181)	19.69 (500)	12.97 (329.5)	–	–	-15-150/500	-15-175/500	-15-200/500	-15-250/500	1.60 (2.38)
1.97 (50)	3.19 (81)	23.62 (600)	20.85 (529.5)	-05-100/600	-05-125/600	-05-150/600	-05-175/600	-05-200/600	-05-250/600	1.18 (1.76)
2.68 (68)	3.90 (99)	23.62 (600)	20.13 (511.5)	-06-100/600	-06-125/600	-06-150/600	-06-175/600	-06-200/600	-06-250/600	1.26 (1.87)
2.95 (75)	4.17 (106)	23.62 (600)	19.86 (504.5)	-07-100/600	-07-125/600	-07-150/600	-07-175/600	-07-200/600	-07-250/600	1.29 (1.92)
3.44 (87.5)	4.67 (118.5)	23.62 (600)	19.37 (492)	-087-100/600	-087-125/600	-087-150/600	-087-175/600	-087-200/600	-087-250/600	1.34 (1.99)
3.94 (100)	5.16 (131)	23.62 (600)	18.88 (479.5)	-10-100/600	-10-125/600	-10-150/600	-10-175/600	-10-200/600	-10-250/600	1.39 (2.07)
4.25 (108)	5.47 (139)	23.62 (600)	18.56 (471.5)	-11-100/600	-11-125/600	-11-150/600	-11-175/600	-11-200/600	-11-250/600	1.42 (2.12)
4.92 (125)	6.14 (156)	23.62 (600)	17.89 (454.5)	–	-12-125/600	-12-150/600	-12-175/600	-12-200/600	-12-250/600	1.49 (2.22)
5.41 (137.5)	6.63 (168.5)	23.62 (600)	17.40 (442)	–	-137-125/600	-137-150/600	-137-175/600	-137-200/600	-137-250/600	1.55 (2.30)
5.91 (150)	7.13 (181)	23.62 (600)	16.91 (429.5)	–	–	-15-150/600	-15-175/600	-15-200/600	-15-250/600	1.60 (2.38)

Example: Part Number 2808-15-150/600

Interior Separation: Series 2808 TwisterChain

All interior elements of the **E4/100 Series 280 Energy Chain®** may be used with the Series 2808 TwisterChain, **Chapter 6.**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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TwisterChain® Series 3808

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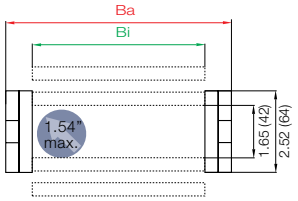
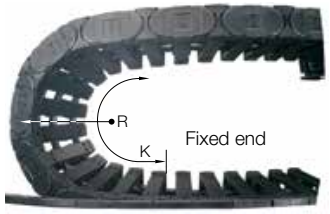
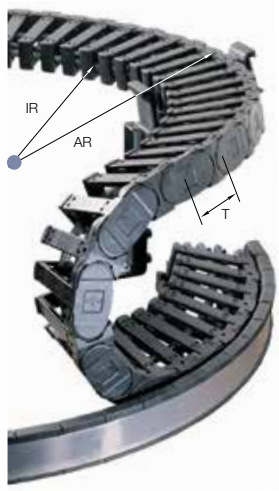
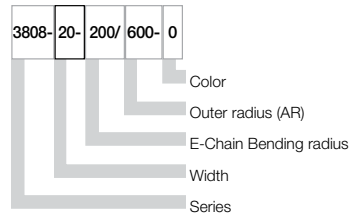
Series 3808 (can be opened along the inner and outer radius)







Part No. structure



Legend

AR	= Outer radius
IR	= Inner radius
R	= E-Chain Bending radius
T	= Pitch
K	= Series-dependent add-on for bending radius

R	3.94	(100)	4.92	(125)	5.91	(150)	7.87	(200)	9.84	(250)
K	19.69	(500)	25.59	(650)	28.54	(725)	34.45	(875)	41.34	(1050)
T	2.64	(67)	2.64	(67)	2.64	(67)	2.64	(67)	2.64	(67)

E-Chain System®
TwisterChain® Series 3808

Bi in. (mm)	Ba in. (mm)	AR in. (mm)	IR in. (mm)	R 3.94 (100) 3808-...	R 4.92 (125) 3808-...	R 5.91 (150) 3808-...	R 7.87 (200) 3808-...	R 9.84 (250) 3808-...	Weight lbs/ft (kg/m)
1.97 (50)	3.35 (85)	15.75 (400)	12.89 (327.5)	-05-100/400	-05-125/400	-05-150/400	-05-200/400	-05-250/400	1.49 (2.21)
2.68 (68)	4.06 (103)	15.75 (400)	12.19 (309.5)	-06-100/400	-06-125/400	-06-150/400	-06-200/400	-06-250/400	1.55 (2.30)
2.95 (75)	4.33 (110)	15.75 (400)	11.91 (302.5)	-07-100/400	-07-125/400	-07-150/400	-07-200/400	-07-250/400	1.57 (2.33)
3.44 (87.5)	4.82 (122.5)	15.75 (400)	11.42 (290)	-087-100/400	-087-125/400	-087-150/400	-087-200/400	-087-250/400	1.61 (2.40)
3.94 (100)	5.31 (135)	15.75 (400)	10.93 (277.5)	-10-100/400	-10-125/400	-10-150/400	-10-200/400	-10-250/400	1.65 (2.46)
4.25 (108)	5.63 (143)	15.75 (400)	10.61 (269.5)	–	-11-125/400	-11-150/400	-11-200/400	-11-250/400	1.68 (2.50)
4.92 (125)	6.30 (160)	15.75 (400)	9.94 (252.5)	–	-12-125/400	-12-150/400	-12-200/400	-12-250/400	1.74 (2.59)
5.41 (137.5)	6.79 (172.5)	15.75 (400)	9.45 (240)	–	-137-125/400	-137-150/400	-137-200/400	-137-250/400	1.78 (2.65)
5.91 (150)	7.28 (185)	15.75 (400)	8.96 (227.5)	–	–	–	-15-200/400	-15-250/400	1.83 (2.72)
6.40 (162.5)	7.78 (197.5)	15.75 (400)	8.46 (215)	–	–	–	-162-200/400	-162-250/400	1.87 (2.78)
6.61 (168)	7.99 (203)	15.75 (400)	8.25 (209.5)	–	–	–	–	-17-250/400	1.89 (2.81)
6.89 (175)	8.27 (210)	15.75 (400)	7.97 (202.5)	–	–	–	–	-18-250/400	1.91 (2.84)
1.97 (50)	3.35 (85)	19.69 (500)	16.83 (427.5)	-05-100/500	-05-125/500	-05-150/500	-05-200/500	-05-250/500	1.49 (2.21)
2.68 (68)	4.06 (103)	19.69 (500)	16.12 (409.5)	-06-100/500	-06-125/500	-06-150/500	-06-200/500	-06-250/500	1.55 (2.30)
2.95 (75)	4.33 (110)	19.69 (500)	15.85 (402.5)	-07-100/500	-07-125/500	-07-150/500	-07-200/500	-07-250/500	1.57 (2.33)
3.44 (87.5)	4.82 (122.5)	19.69 (500)	15.35 (390)	-087-100/500	-087-125/500	-087-150/500	-087-200/500	-087-250/500	1.61 (2.40)
3.94 (100)	5.31 (135)	19.69 (500)	14.86 (377.5)	-10-100/500	-10-125/500	-10-150/500	-10-200/500	-10-250/500	1.65 (2.46)
4.25 (108)	5.62 (143)	19.69 (500)	14.55 (369.5)	–	-11-125/500	-11-150/500	-11-200/500	-11-250/500	1.68 (2.50)
4.92 (125)	6.30 (160)	19.69 (500)	13.78 (352.5)	–	-12-125/500	-12-150/500	-12-200/500	-12-250/500	1.74 (2.59)
5.41 (137.5)	6.79 (172.5)	19.69 (500)	13.38 (340)	–	–	-137-150/500	-137-200/500	-137-250/500	1.78 (2.65)
5.91 (150)	7.28 (185)	19.69 (500)	12.89 (327.5)	–	–	-15-150/500	-15-200/500	-15-250/500	1.83 (2.72)
6.40 (162.5)	7.76 (197.5)	19.69 (500)	12.40 (315)	–	–	–	-162-200/500	-162-250/500	1.87 (2.78)
6.61 (168)	7.99 (203)	19.69 (500)	12.19 (309.5)	–	–	–	-17-200/500	-17-250/500	1.89 (2.81)
6.89 (175)	8.27 (210)	19.69 (500)	11.91 (302.5)	–	–	–	-18-200/500	-18-250/500	1.91 (2.84)
7.38 (187.5)	8.76(222.5)	19.69 (500)	11.42 (290)	–	–	–	-187-200/500	-187-250/500	1.96 (2.91)
7.87 (200)	9.25 (235)	19.69 (500)	10.93 (277.5)	–	–	–	-20-200/500	-20-250/500	2.00 (2.97)
1.97 (50)	3.35 (85)	23.62 (600)	20.76 (527.5)	-05-100/600	-05-125/600	-05-150/600	-05-200/600	-05-250/600	1.49 (2.21)
2.68 (68)	4.06 (103)	23.62 (600)	20.06 (509.5)	-06-100/600	-06-125/600	-06-150/600	-06-200/600	-06-250/600	1.55 (2.30)
2.95 (75)	4.33 (110)	23.62 (600)	19.78 (502.5)	-07-100/600	-07-125/600	-07-150/600	-07-200/600	-07-250/600	1.57 (2.33)
3.44 (87.5)	4.82 (122.5)	23.62 (600)	19.29 (490)	-087-100/600	-087-125/600	-087-150/600	-087-200/600	-087-250/600	1.61 (2.40)
3.94 (100)	5.31 (135)	23.62 (600)	18.80 (477.5)	-10-100/600	-10-125/600	-10-150/600	-10-200/600	-10-250/600	1.65 (2.46)
4.25 (108)	5.63 (143)	23.62 (600)	18.48 (469.5)	-11-100/600	-11-125/600	-11-150/600	-11-200/600	-11-250/600	1.68 (2.50)
4.92 (125)	6.30 (160)	23.62 (600)	17.81 (452.5)	-12-100/600	-12-125/600	-12-150/600	-12-200/600	-12-250/600	1.74 (2.59)
5.41 (137.5)	6.79 (172.5)	23.62 (600)	17.32 (440)	-137-100/600	-137-125/600	-137-150/600	-137-200/600	-137-250/600	1.78 (2.65)
5.91 (150)	7.28 (185)	23.62 (600)	16.83 (427.5)	-15-100/600	-15-125/600	-15-150/600	-15-200/600	-15-250/600	1.83 (2.72)
6.40 (162.5)	7.76 (197.5)	23.62 (600)	16.34 (415)	–	–	–	-162-200/600	-162-250/600	1.87 (2.78)
6.61 (168)	7.99 (203)	23.62 (600)	16.12 (409.5)	–	–	–	-17-200/600	-17-250/600	1.89 (2.81)
6.89 (175)	8.27 (210)	23.62 (600)	15.85 (402.5)	–	–	–	-18-200/600	-18-250/600	1.91 (2.84)
7.38 (187.5)	8.76 (222.5)	23.62 (600)	15.35 (390)	–	–	–	-187-200/600	-187-250/600	1.96 (2.91)
7.87 (200)	9.25 (235)	23.62 (600)	14.86 (377.5)	–	–	–	-20-200/600	-20-250/600	2.00 (2.97)

Example: Part Number 3808-20-150/600

Interior Separation: Series 3808 TwisterChain

All interior elements of the **E4/100 Series 380 Energy Chain®** may be used with the Series 3808 TwisterChain, **Chapter 6.**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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TwisterChain® Series 4008

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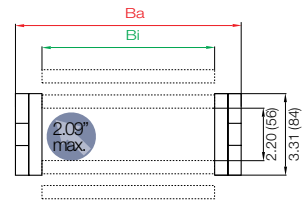
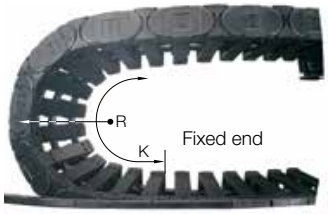
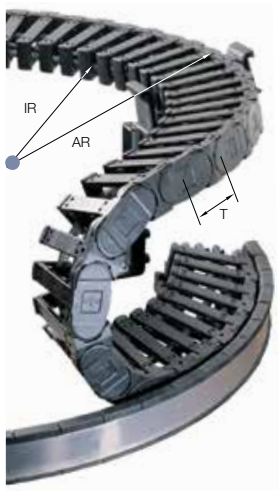
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

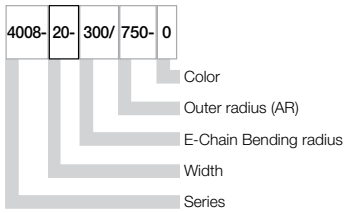
Series 4008 (snap-open along the inner and outer radius)







Part No. structure



Legend

AR	= Outer radius
IR	= Inner radius
R	= E-Chain Bending radius
T	= Pitch
K	= Series-dependent add-on for bending radius

R	5.91	(150)	7.87	(200)	9.84	(250)	11.81	(300)	15.75	(400)
K	29.53	(750)	35.43	(900)	41.34	(1050)	48.23	(1225)	57.09	(1450)
T	3.58	(91)	3.58	(91)	3.58	(91)	3.58	(91)	3.58	(91)

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E-Chain System®
TwisterChain® Series 4008

Bi in. (mm)	Ba in. (mm)	AR in. (mm)	IR in. (mm)	R 5.91 (150) 4008-...	R 7.87 (200) 4008-...	R 9.84 (250) 4008-...	R 11.81 (300) 4008-...	R 15.75 (400) 4008-...	Weight lbs/ft (kg/m)
1.97 (50)	3.66 (93)	25.59 (650)	22.52 (572)	-05-150/650	-05-200/650	-05-250/650	-05-300/650	-05-400/650	2.20 (3.28)
2.56 (65)	4.25 (108)	25.59 (650)	21.93 (557)	-06-150/650	-06-200/650	-06-250/650	-06-300/650	-06-400/650	2.27 (3.38)
2.95 (75)	4.65 (118)	25.59 (650)	21.54 547)	-07-150/650	-07-200/650	-07-250/650	-07-300/650	-07-400/650	2.31 (3.44)
3.94 (100)	5.63 (143)	25.59 (650)	20.55 (522)	–	-10-200/650	-10-250/650	-10-300/650	-10-400/650	2.43 (3.61)
4.41 (112)	6.10 (155)	25.59 (650)	20.08 (510)	–	-11-200/650	-11-250/650	-11-300/650	-11-400/650	2.48 (3.69)
4.92 (125)	6.61 (168)	25.59 (650)	19.57 (497)	–	-12-200/650	-12-250/650	-12-300/650	-12-400/650	2.53 (3.77)
5.41 (137.5)	7.11 (180.5)	25.59 (650)	19.07 (484.5)	–	–	-13-250/650	-13-300/650	-13-400/650	2.59 (3.86)
5.91 (150)	7.60 (193)	25.59 (650)	18.58 (472)	–	–	-15-250/650	-15-300/650	-15-400/650	2.65 (3.94)
6.40 (162.5)	8.09 (205.5)	25.59 (650)	18.09 (459.5)	–	–	-16-250/650	-16-300/650	-16-400/650	2.70 (4.02)
6.89 (175)	8.58 (218)	25.59 (650)	17.60 (447)	–	–	–	-17-300/650	-17-400/650	2.76 (4.10)
7.38 (187.5)	9.07 (230.5)	25.59 (650)	17.11 (434.5)	–	–	–	-18-300/650	-18-400/650	2.82 (4.19)
1.97 (50)	3.66 (93)	29.53 (750)	26.46 (672)	-05-150/750	-05-200/750	-05-250/750	-05-300/750	-05-400/750	2.20 (3.28)
2.56 (65)	4.25 (108)	29.53 (750)	25.87 (657)	-06-150/750	-06-200/750	-06-250/750	-06-300/750	-06-400/750	2.27 (3.38)
2.95 (75)	4.65 (118)	29.53 (750)	25.47 (647)	-07-150/750	-07-200/750	-07-250/750	-07-300/750	-07-400/750	2.31 (3.44)
3.94 (100)	5.63 (143)	29.53 (750)	24.49 (622)	-10-150/750	-10-200/750	-10-250/750	-10-300/750	-10-400/750	2.43 (3.61)
4.41 (112)	6.10 (155)	29.53 (750)	24.02 (610)	-11-150/750	-11-200/750	-11-250/750	-11-300/750	-11-400/750	2.48 (3.69)
4.92 (125)	6.61 (168)	29.53 (750)	23.50 (597)	–	-12-200/750	-12-250/750	-12-300/750	-12-400/750	2.53 (3.77)
5.41 (137.5)	7.11 (180.5)	29.53 (750)	23.01 (584.5)	–	-13-200/750	-13-250/750	-13-300/750	-13-400/750	2.59 (3.86)
5.91 (150)	7.60 (193)	29.53 (750)	22.52 (572)	–	-15-200/750	-15-250/750	-15-300/750	-15-400/750	2.65 (3.94)
6.40 (162.5)	8.09 (205.5)	29.53 (750)	22.03 (559.5)	–	-16-200/750	-16-250/750	-16-300/750	-16-400/750	2.70 (4.02)
6.89 (175)	8.58 (218)	29.53 (750)	21.54 (547)	–	–	-17-250/750	-17-300/750	-17-400/750	2.76 (4.10)
7.38 (187.5)	9.07 (230.5)	29.53 (750)	21.04 (534.5)	–	–	-18-250/750	-18-300/750	-18-400/750	2.82 (4.19)
7.87 (200)	9.57 (243)	29.53 (750)	20.55 (522)	–	–	-20-250/750	-20-300/750	-20-400/750	2.87 (4.27)
1.97 (50)	3.66 (93)	33.46 (850)	30.39 (772)	-05-150/850	-05-200/850	-05-250/850	-05-300/850	-05-400/850	2.20 (3.28)
2.56 (65)	4.25 (108)	33.46 (850)	29.80 (757)	-06-150/850	-06-200/850	-06-250/850	-06-300/850	-06-400/850	2.27 (3.38)
2.95 (75)	4.65 (118)	33.46 (850)	29.41 (747)	-07-150/850	-07-200/850	-07-250/850	-07-300/850	-07-400/850	2.31 (3.44)
3.94 (100)	5.63 (143)	33.46 (850)	28.43 (722)	-10-150/850	-10-200/850	-10-250/850	-10-300/850	-10-400/850	2.43 (3.61)
4.41 (112)	6.10 (155)	33.46 (850)	27.95 (710)	-11-150/850	-11-200/850	-11-250/850	-11-300/850	-11-400/850	2.48 (3.69)
4.92 (125)	6.61 (168)	33.46 (850)	27.44 (697)	-12-150/850	-12-200/850	-12-250/850	-12-300/850	-12-400/850	2.53 (3.77)
5.41 (137.5)	7.11 (180.5)	33.46 (850)	26.95 (684.5)	–	-13-200/850	-13-250/850	-13-300/850	-13-400/850	2.59 (3.86)
5.91 (150)	7.60 (193)	33.46 (850)	26.46 (672)	–	-15-200/850	-15-250/850	-15-300/850	-15-400/850	2.65 (3.94)
6.40 (162.5)	8.09 (205.5)	33.46 (850)	25.96 (659.5)	–	-16-200/850	-16-250/850	-16-300/850	-16-400/850	2.70 (4.02)
6.89 (175)	8.58 (218)	33.46 (850)	25.47 (647)	–	-17-200/850	-17-250/850	-17-300/850	-17-400/850	2.76 (4.10)
7.38 (187.5)	9.07 (230.5)	33.46 (850)	24.98 (634.5)	–	-18-200/850	-18-250/850	-18-300/850	-18-400/850	2.82 (4.19)
7.87 (200)	9.57 (243)	33.46 (850)	24.49 (622)	–	–	-20-250/850	-20-300/850	-20-400/850	2.87 (4.27)

Example: Part Number 4008-20-50/850

Interior Separation: Series 4008 TwisterChain

All interior elements of the **E4/100 Series 400 Energy Chain®** may be used with the Series 4008 TwisterChain, **Chapter 6.**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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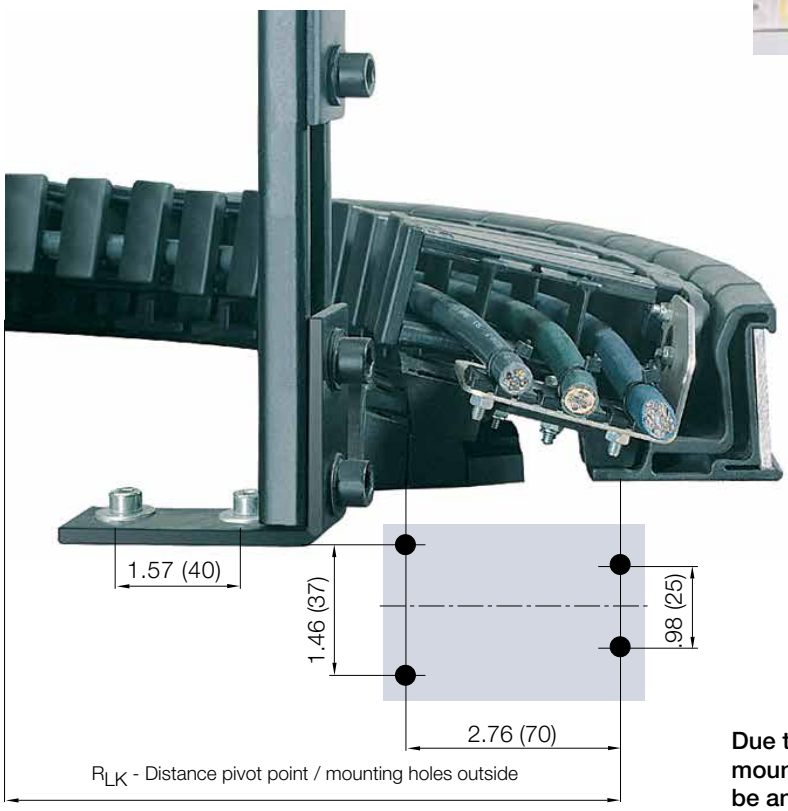
E-Chain System® TwisterChain® Series Mounting Bracket

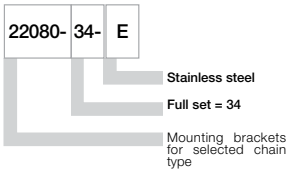
Steel mounting bracket

- Electrically conductive
- Universal use
- One component for all chain widths



Due to the design of the TwisterChain mounting brackets, chain length must be an odd number of links

Part No. structure



Full set, for both ends

22080- 34

Single-part order - Part 1:

22080- 3

Single-part order - Part 2:

22080- 4

Chain Type	Part Number Full Set	Part Number Item 1	Part Number Item 2
2208	22080-34	22080-3	22080-4
2808	28080-34	28080-3	28080-4
3808	38080-34	38080-3	38080-4
4008	40080-34	40080-3	40080-4

Other connection dimensions for mounting the guide trough,
➤ See Pages 8.126 and 8.128

The guide trough must be mounted at the fixed point of the TwisterChain® as shown by the drilling template in the illustration. The following bolted connections are permitted:

- Through-hole: 4 x Ø .26 - .28" (6.6 - 7 mm)
- Mounting only with bolts: 4 x M6 bolts

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E-Chain System®
TwisterChain® Series
Application Examples

TwisterChain® for continuous industrial use on a buckling arm robot (for welding applications, rotary movement 420°)

TwisterChain® in a guide trough for rotary movements on an articulated robot

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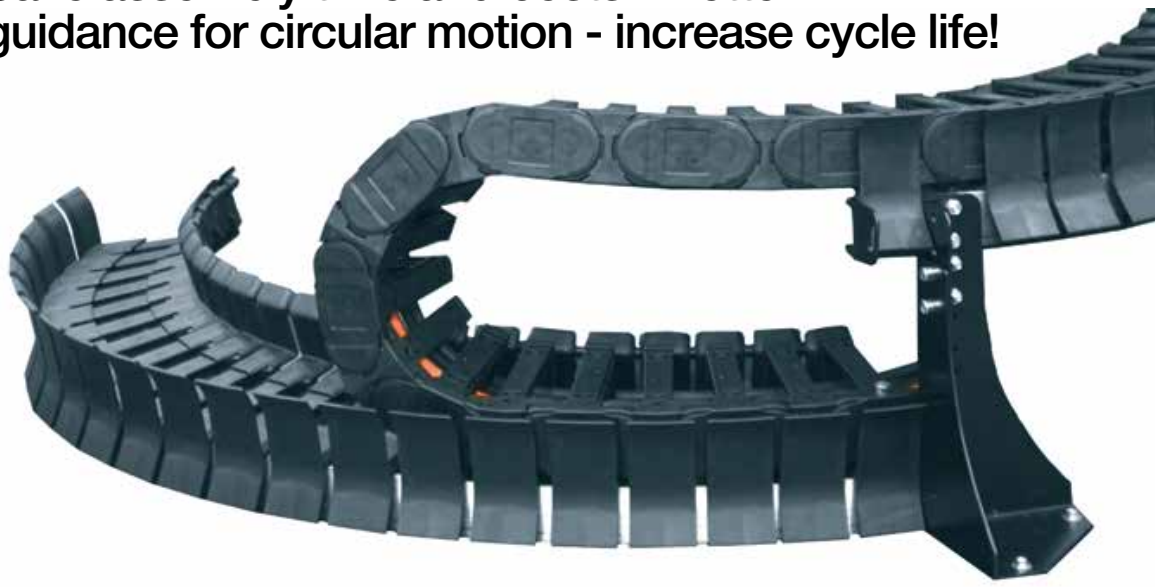
2208
2808
3808
4008

igus®

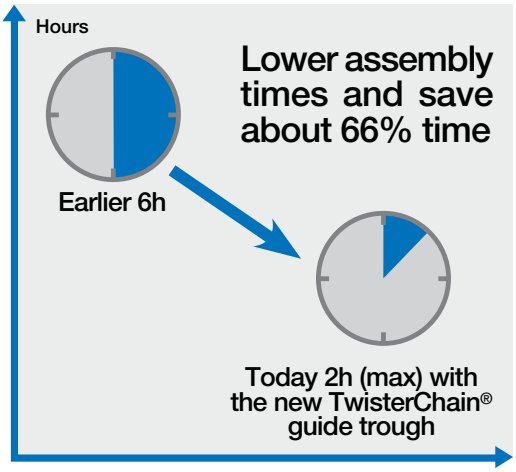
E-Chain System®
TwisterChain® Series
Guide Trough - Type 01

Save assembly time and costs - Better guidance for circular motion - increase cycle life!



With the new TwisterChain® trough, complex adjustment work is eliminated and assembly time is reduced from six hours to just two hours. Thanks to its almost all-plastic design, noise levels are reduced while travel speed and service life are increased. Now available for widths and radii on TwisterChain® models series 2808, 3808 and 4008. Please call igus® for more information.

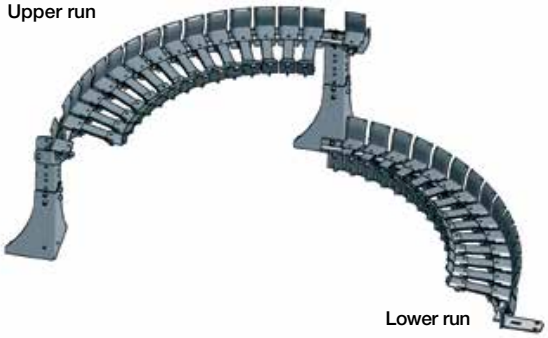
- Much smoother and quieter motion of the TwisterChain® in the trough due to continuous guidance of upper run
- Preassembled delivery possible
- Easy adjustment and alignment and handling
- Assembly time reduced from 6 hours to 2 hours



With the new Twister trough, the previously complex adjustment work is clearly minimized

Easy adjustment and alignment on the robot, due to the pre-defined angles and pre-drilled mounting holes

Upper run



Lower run

Less parts, easier handling - Illustration shows a 180° application

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E-Chain System®
TwisterChain® Series
Guide Trough - Type 01

igus®

2208
2808
3808
4008

TwisterChain® in the new igus® guide trough for rotary movements in a buckling arm robot - Durable and rugged: Prototype successfully tested in over 1,000,000 cycles

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

E-Chain System® TwisterChain® Series Guide Trough - Type 01

For Series*	Outer radius *AR* [mm]	Angle of rotation α [°]	Trough Type 01 complete
2808 / 3808	15.75" (400 mm)	0 - 90°	9 XXXX -31-90 -400/- Bi R
		90° - 180°	9 XXXX -31-180-400/- Bi R
		180° - 270°	9 XXXX -31-270-400/- Bi R
		270° - 360°	9 XXXX -31-360-400/- Bi R
	19.69" (500 mm)	0 - 90°	9 XXXX -31-90 -500/- Bi R
		90° - 180°	9 XXXX -31-180-500/- Bi R
		180° - 270°	9 XXXX -31-270-500/- Bi R
		270° - 360°	9 XXXX -31-360-500/- Bi R
	23.62" (600 mm)	0 - 90°	9 XXXX -31-90 -600/- Bi R
		90° - 180°	9 XXXX -31-180-600/- Bi R
		180° - 270°	9 XXXX -31-270-600/- Bi R
		270° - 360°	9 XXXX -31-360-600/- Bi R
4008	25.59" (650 mm)	0 - 90°	9 TC56 -31-90 -650/- Bi R
		90° - 180°	9 TC56 -31-180-650/- Bi R
		180° - 270°	9 TC56 -31-270-650/- Bi R
		270° - 360°	9 TC56 -31-360-650/- Bi R
	29.53" (750 mm)	0 - 90°	9 TC56 -31-90 -750/- Bi R
		90° - 180°	9 TC56 -31-180-750/- Bi R
		180° - 270°	9 TC56 -31-270-750/- Bi R
		270° - 360°	9 TC56 -31-360-750/- Bi R
	33.46" (850 mm)	0 - 90°	9 TC56 -31-90 -850/- Bi R
		90° - 180°	9 TC56 -31-180-850/- Bi R
		180° - 270°	9 TC56 -31-270-850/- Bi R
		270° - 360°	9 TC56 -31-360-850/- Bi R

Supplement Part No. with required Series (TC32, TC42 or TC56), the value *Bi* and the corresponding value of the **required E-Chain® bending radius** *R* ➤ 9 TC56 80-600/ -06 250

9	TC56-	31-	180	600/	06	250
9	XXXX.	31.	180.	600/	Bi.	R

Part No. structure - guide trough
9TC56-31-180-600/06-250

- E-Chain® bending radius, please add appropriate value
- *Bi* - widths index, please add appropriate value
- Outer radius (AR)
- Trough angle (90°, 180°, 270°, 360°)
- Trough version - See below
- Selected Series
- Guide trough

More order examples

- Complete system (E-Chain®, mounting bracket and trough) = Part. No. 9 TC56 -180-600/ 06 - 250 -0
- Complete trough = Part. No. 9 TC56 -31-180-600/ 06 - 250 -0
- Only lower run trough = Part. No. 9 TC56 -30-180-600/ 06 - 250 -0
- Upper and lower run trough without base support = Part. No. 9 TC56 -32-180-600/ 06 - 250 -0

*Classic TwisterChain® series 2808, 3808 and 4008 will use new TwisterChain® trough series TC32, TC42 and TC56 respectively.

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

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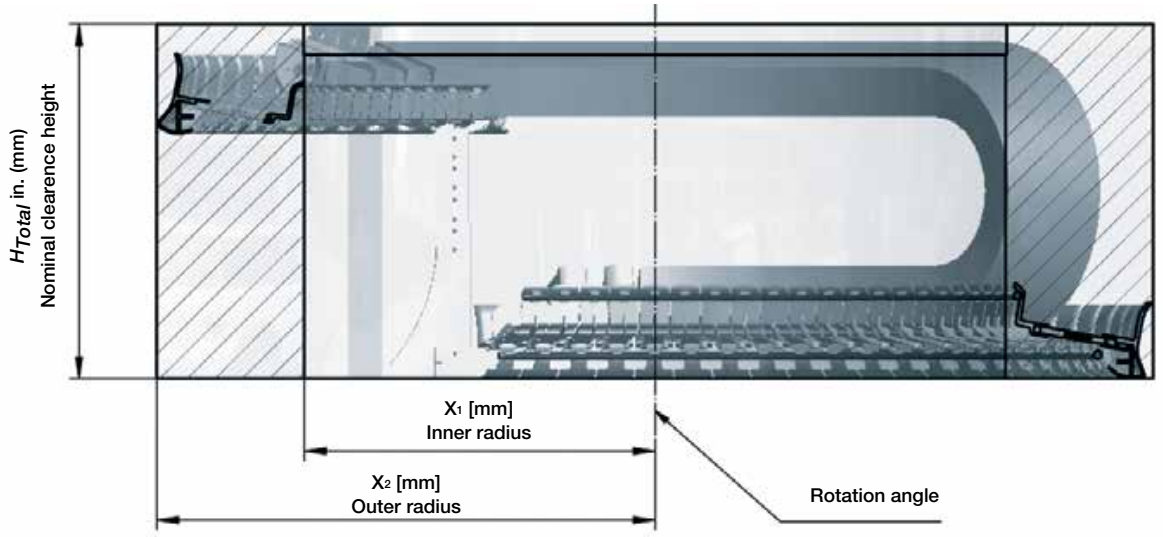
E-Chain System®
TwisterChain® Series
Guide Trough - Type 01

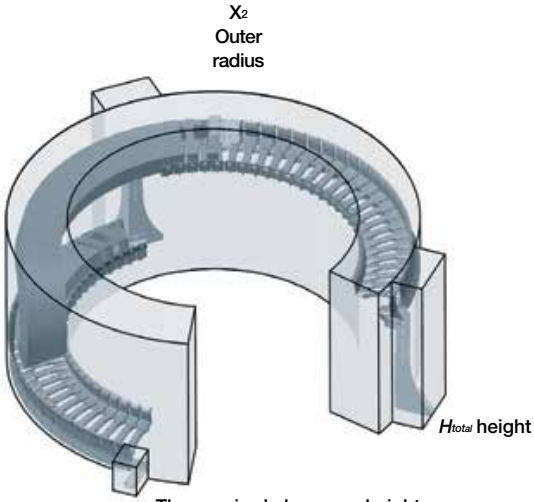
igus®

2208
2808
3808
4008

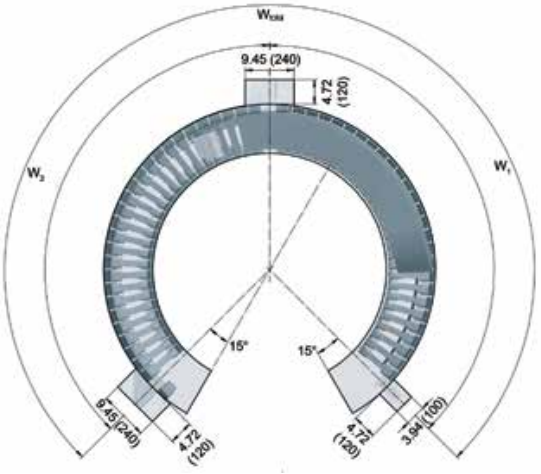


Installation Dimensions - X1 / X2

AR	X2	X1 Inner radius											
		Bi	Bi	Bi	Bi	Bi	Bi	Bi	Bi	Bi	Bi	Bi	Bi
in. (mm)	Outer	= 50	= 65	= 75	= 100	= 112	= 125	= 137	= 150	= 162	= 175	= 187	= 200
	radius	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)
15.75 (400)	18.90 (480)	11.42 (290)	11.02 (280)	10.63 (270)	9.84 (250)	9.45 (240)	8.66 (220)	8.27 (210)	7.87 (200)	7.48 (190)	7.09 (180)	6.69 (170)	5.91 (150)
19.69 (500)	22.83 (580)	15.35 (390)	14.96 (380)	14.57 (370)	13.78 (350)	13.39 (340)	12.60 (320)	12.20 (310)	11.81 (300)	11.42 (290)	11.02 (280)	10.63 (270)	9.84 (250)
23.62 (600)	26.77 (680)	19.29 (490)	18.90 (480)	18.50 (470)	17.72 (450)	17.32 (440)	16.54 (420)	16.14 (410)	15.75 (400)	15.35 (390)	14.96 (380)	14.57 (370)	13.78 (350)
25.59 (650)	28.74 (730)	21.26 (540)	20.87 (530)	20.47 (520)	19.69 (500)	19.29 (490)	18.50 (470)	18.11 (460)	17.72 (450)	17.32 (440)	16.93 (430)	16.54 (420)	15.75 (400)
29.53 (750)	32.68 (830)	25.20 (640)	24.80 (630)	24.41 (620)	23.62 (600)	23.23 (590)	22.44 (570)	22.05 (560)	21.65 (550)	21.26 (540)	20.87 (530)	20.47 (520)	19.69 (500)
33.46 (850)	36.61 (930)	29.13 (740)	28.74 (730)	28.35 (720)	27.56 (700)	27.16 (690)	26.38 (670)	25.98 (660)	25.59 (650)	25.20 (640)	24.80 (630)	24.41 (620)	23.62 (600)



The required clearance height
of the TwisterChain® trough system



Nominal clearance height - H_{total}

For Series	R 100 [mm]	R 125 in. (mm)	R 150 in. (mm)	R 175 in. (mm)	R 200 in. (mm)	R 250 in. (mm)	R 400 in. (mm)
2808	14.57 (370)	16.54 (420)	18.50 (470)	20.47 (520)	22.44 (570)	26.38 (670)	38.19 (970)
3808	14.96 (380)	16.93 (430)	18.90 (480)	20.87 (530)	22.83 (580)	26.77 (680)	38.58 (980)
4008	15.75 (400)	17.72 (450)	19.69 (500)	21.65 (550)	23.62 (600)	27.56 (700)	39.37 (1000)

Rotation angle - W1 / W2 / W_{total}

W_{total} Machine angle of rotation (°)	W_1 angle Lower run trough (°)	W_2 angle Upper run trough (°)
90°	45°	–
180°	90°	90°
270°	135°	135°
360°	180°	180°

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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2208
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igus® E-Chain System®

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email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

8.127

E-Chain System®
TwisterChain® Series
Guide Trough - Type 02

The delivery of an igus® TwisterChain® includes the guide trough, which affords certain advantages:

- Guidance of the chain
- Minimized wear on the chain
- Optimal running smoothness
- Rotational angle up to 400°

The modular design of the guide trough makes it possible to connect a large number of chain, circle and bending radii by using the same trough sections. If the chain radius changes, the trough can simply be adapted without purchasing a completely new trough. The table below will assist you in selecting the right guide trough system. The specified part number includes the complete trough system. In all cases, you should state the TwisterChain® series when ordering.

This bottom stanchion (pictured above in red) is required only if the support for the upper run (from a 180° rotation angle) cannot be mounted on the machine.

Order Example

9	4008-	5-	180-	600/	06-	250
9	XXXX-	5-	180-	600/	*Bi* -	*R*

Part No. structure - guide trough
94008-5-180-600/06-250

- E-Chain® bending radius, please add appropriate value
- *Bi* - widths index, please add appropriate value
- Outer radius (AR)
- Trough angle (Standard 180°, 135°, 90°, 45°)
- Trough version (-5- with and -4- without bottom support)
- Selected Series (2208, 2808, 3808 or 4008)
- Guide trough

Part No. Series	Outer radius *AR*	Rotation angle α [°]	Trough assembly Standard	Trough assembly with bottom support	Number of support
2208	11.81" (300 mm)	45 - 100	9 2208 -4-45-300/ *Bi* - *R*	Not necessary	
		>100 - 180	9 2208 -4-90-300/ *Bi* - *R*	Not necessary	
		>180 - 270	9 2208 -4-135-300/ *Bi* - *R* *	9 2208 -5-135-300/ *Bi* - *R*	1
		>270 - 360	9 2208 -4-180-300/ *Bi* - *R* **	9 2208 -5-180-300/ *Bi* - *R*	2
2808 / 3808 / 4008	17.72" (450 mm)	45 - 100	9 XXXX -4-45-400/ *Bi* - *R*	Not necessary	
		>100 - 180	9 XXXX -4-90-400/ *Bi* - *R*	Not necessary	
		>180 - 270	9 XXXX -4-135-400/ *Bi* - *R* *	9 XXXX -5-135-400/ *Bi* - *R*	1
		>270 - 360	9 XXXX -4-180-400/ *Bi* - *R* **	9 XXXX -5-180-400/ *Bi* - *R*	2
	17.72" - 21.65" (450 - 550 mm)	45 - 100	9 XXXX -4-45-500/ *Bi* - *R*	Not necessary	
		>100 - 180	9 XXXX -4-90-500/ *Bi* - *R*	Not necessary	
		>180 - 270	9 XXXX -4-135-500/ *Bi* - *R* *	9 XXXX -5-135-500/ *Bi* - *R*	1
		>270 - 360	9 XXXX -4-180-500/ *Bi* - *R* **	9 XXXX -5-180-500/ *Bi* - *R*	2
	21.65" - 23.62" (550 - 650 mm)	45 - 100	9 XXXX -4-45-600/ *Bi* - *R*	Not necessary	
		>100 - 180	9 XXXX -4-90-600/ *Bi* - *R*	Not necessary	
		>180 - 270	9 XXXX -4-135-600/ *Bi* - *R* *	9 XXXX -5-135-600/ *Bi* - *R*	1
		>270 - 360	9 XXXX -4-180-600/ *Bi* - *R* **	9 XXXX -5-180-600/ *Bi* - *R*	2
	>23.62"(650 mm)	>360	Ask us we will be happy to assist you		

Supplement Part No. with required Series (2208, 2808, 3808 oder 4008), value ***Bi,***
and appropriate value of the required E-Chain® radius *R* ➤ 9 4008 -5-180-600/ 06 250

* These troughs feature **one support** for the upper run, without bottom stanchion (See red portion of above photo)

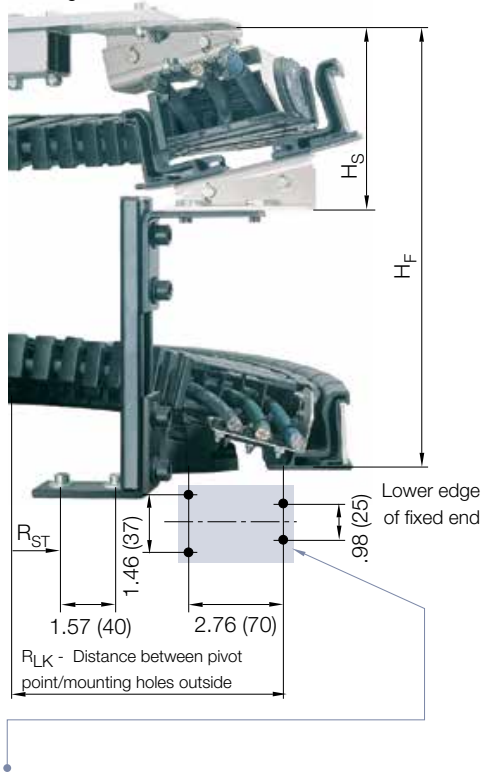
** These troughs feature **two supports** for the upper run, without bottom stanchion (See red portion of above photo)

E-Chain System®
TwisterChain® Series
Guide Trough - Type 02

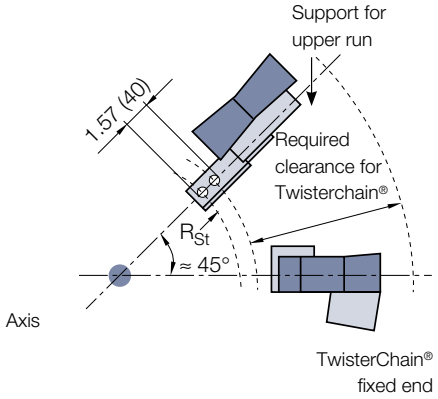
igus®

2208
2808
3808
4008

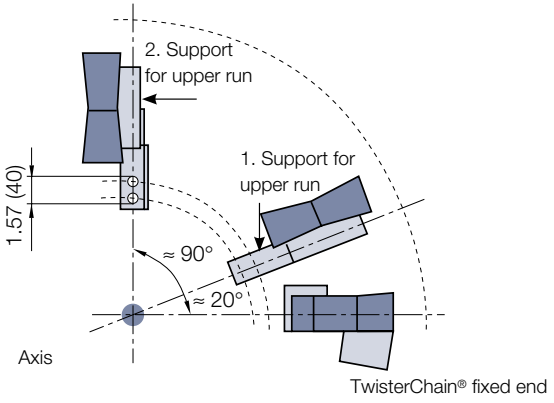
Support for the upper run (from a 180° rotational angle)
Lower edge of the carrier



Mounting position for one support



Mounting position for two supports



The guide trough must be mounted at the fixed end of the TwisterChain®, as shown by the drilling template.
The following bolted connections are permitted.

- Through-hole: 4 x Ø .26" - .28" (6.6 - 7 mm)
- Mounting only with bolts: 4 x M6 bolts

Installation dimensions

Series	R_{LK}	H_S	H_F for E-Chain Bending Radius						Part No. Guide Trough	R_{ST}	
			2.16 (55)	2.48 (63)	2.95 (75)	3.94 (100)	4.92 (125)	5.91 (150)		in.	mm
2208...300	10.43 (265)	5.12 (130)	7.68 (195)	8.31 (211)	9.25 (235)	11.22 (285)	13.19 (335)	15.16 (385)	**92208...300**	5.71	(145)

Series	R_{LK}	H_S	H_F for E-Chain Bending Radius									Part No. Guide Trough	R_{ST}	
			3.93 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)	11.81 (300)	15.75 (400)		in.	mm
2808...400	14.17 (360)	5.75 (146)	11.42 (290)	13.39 (340)	15.85 (390)	17.32 (440)	19.29 (490)	21.26 (540)	23.23 (590)	–	–	**92808...400**	7.58	(192.5)
3808...400	14.17 (360)	6.14 (156)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	21.65 (550)	23.62 (600)	–	–	**93808...400**	7.58	(192.5)
2808...500	18.11 (460)	5.75 (146)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	21.65 (550)	23.62 (600)	–	–	**92808...500**	11.52	(292.5)
3808...500	18.11 (460)	6.14 (156)	12.20 (310)	14.17 (360)	16.14 (410)	18.11 (460)	20.01 (510)	22.05 (560)	24.02 (610)	–	–	**93808...500**	11.52	(292.5)
2808...600	22.05 (560)	5.75 (146)	12.01 (305)	13.98 (355)	15.94 (405)	17.91 (455)	19.88 (505)	21.85 (555)	23.82 (605)	–	–	**92808...600**	15.43	(392.5)
3808...600	22.05 (560)	6.14 (156)	12.40 (315)	14.37 (365)	16.34 (415)	18.31 (465)	20.28 (515)	22.24 (565)	24.21 (615)	–	–	**93808...600**	15.43	(392.5)
4008...650	24.02 (610)	6.93 (176)	–	–	17.01 (432)	–	20.94 (532)	–	24.88 (632)	28.82 (732)	36.69 (932)	**94008...650**	17.42	(442.5)
4008...750	27.95 (710)	6.93 (176)	–	–	17.01 (432)	–	20.94 (532)	–	24.88 (632)	28.82 (732)	36.69 (932)	**94008...750**	21.36	(542.5)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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2208
2808
3808
4008

igus®

E-Chain System®
TwisterChain® Series
System Analysis

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email: sales@igus.com
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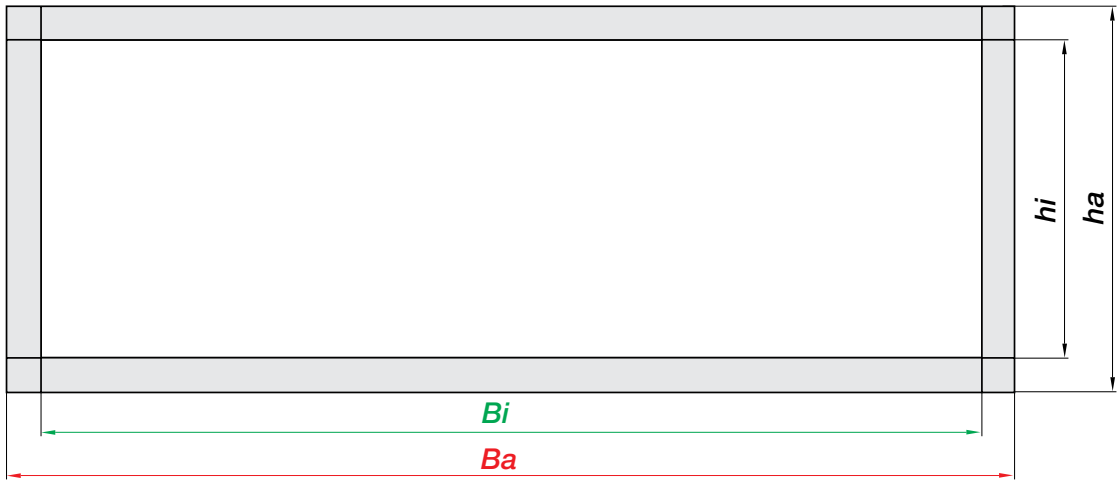
This calculation sheet should help you to select the right igus® TwisterChain® System for your application.



Rotation angle

Please sketch the cable and hose layout within the E-Chain®. **Note:** To find the correct Series, refer to the thickest cable diameter, plus cable clearance of approx. 20% of the E-Chain® interior.

TwisterChain® Classic Series ☐ 2208 ☐ 2808 ☐ 3808 ☐ 4008

Existing installation space

X_1 max _____ X_2 max _____ H_F max _____

E-Chain® data

Outer radius *AR* _____ Inner radius *IR* _____

Bending radius *R* _____ Rotation angle (°) _____

Guide trough ☐ yes ☐ no

Part No. trough Type 02 9____ - __ - ___ - ___ / __ - ___

Order example 92808-31-180-600/06-250

Supporting structure necessary ☐ yes ☐ no

The guide trough part number includes all the necessary elements for proper operation. The rotation angle is dependent upon support for the upper run and should be assembled on-site. If on-site assembly is not possible. we will deliver a supporting structure which can be assembled on the floor and is based on the height of the lower trough run. If necessary, we will design a supporting structure specially adapted to your installation!

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E-Chain System®
TwisterChain® Series
System Analysis

igus®

2208
2808
3808
4008

Date:	Telephone: 401-438-2200 or 800-521-2747 Fax: 401-438-7270
From: Telephone: Fax:	To: igus,inc. Technical Sales E-Chain Systems® P.O. Box 14349 East Providence, RI 02914

Please supply us with your application data. We will then send you a full analysis with cable/layout suggestion and a quotation immediately. Please consult igus® should you have any questions.
Individual components:

☐ TwisterChain® ☐ Chainflex® high-flex cables ☐ Guide trough ☐ Pre-assembled

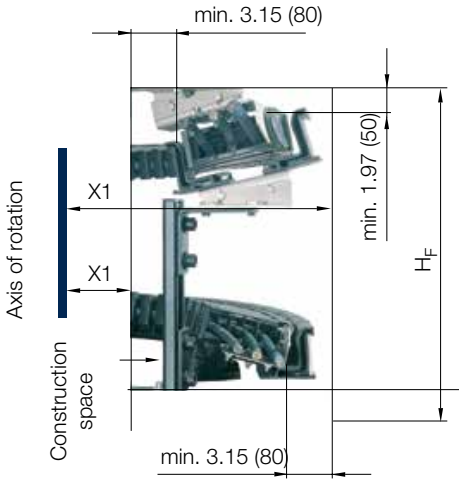
Cable and Hose package for igus® TwisterChain® Classic

Number	Type	Ø	Weight (lbs/ft)	Permitted Bending Radius

Dimensions

X_1 in mm _____
X_2 in mm _____
H_F in mm _____
Angle of rotation α* in ° _____

* On machine elements which move to the left and to the right following a circular path, the angle of rotation can be determined by adding the two angles.



Operating data

Rotations/day _____
Days/year _____
Speed in ft/s _____
Acceleration in ft/s² _____

Environment

Temperature in °F _____
Moisture ☐ yes ☐ no

Remarks:

_____
_____
_____
_____

Please copy, fill in, and fax this page.

Thank you!

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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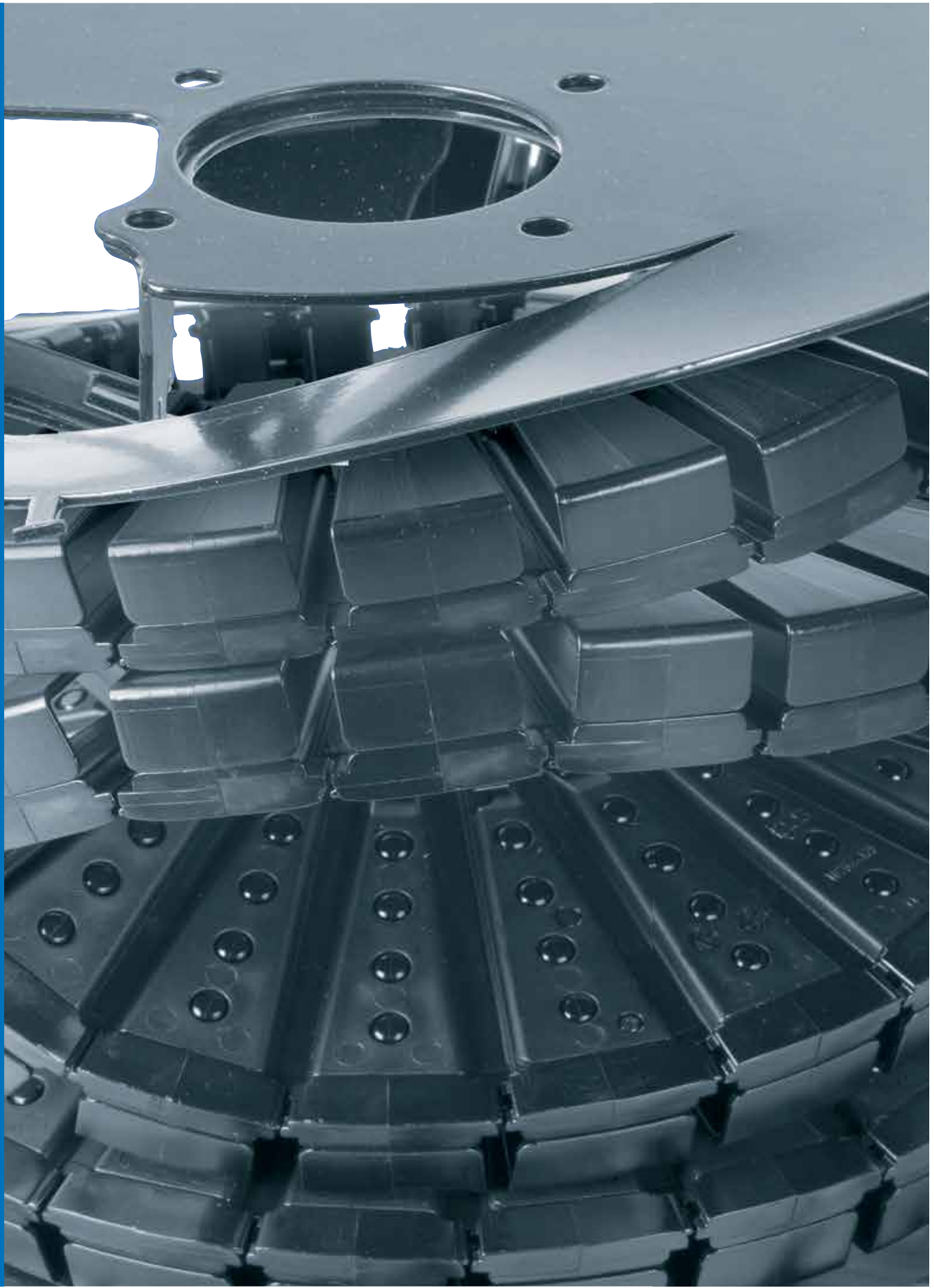

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igus®
TwisterBand
Rotary motions in small spaces

Estudio de Fluidos
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www.edfluidos.com

TwisterBand: compact, modular and cost-effective

Rotary movements in minimum space - 20 times around its own axis
With the very compact igus® TwisterBand rotations can be implemented economically and with low wear and low maintenance in a confined space. Energy (in the process), data and media are kept secure.

- 4 sizes available
- Rotary movements up to 7000° (installation position, vertical: up to 3000°, horizontal: 7000° and more possible)
- Rotary speeds up to 360°/s possible
- Compact, modular and lightweight
- Ribbons can be shortened easily
- Minimum installation space, builds very close around the rotary axis
- Can be reliably used in various installation positions (horizontal or vertical)
- Cost-effective
- Easy filling
- Limited length compensation possible in combination with igus® Chainflex® cables in very limited spaces

Typical industries and applications

● Cable reels ● Robots (robot arms, 1/6 axis, scara robots) ● Tooling machines ● Leisure rides ● Medical equipment ● Radar and telescope equipment ● Aerospace, test, measurement, handling, lifting and installation equipment ● Wind turbines (e.g. blade adjustment) ● Wherever rotary unions are used

product design award 2011

reddot design award winner 2011

In the Netherlands the TwisterBand will be used at the musical "Soldaat van Oranje" ensuring that a special platform can turn during the show

TwisterBand Features

An axis is to be centrally installed for angles of rotation from 1500° rotating and horizontal

360°... 3000°

Max. rotation angle: As a rule of thumb: Each section gives 180° = 360° more rotation

Film hinge: Easy access and quick filling with cables and hoses (TB20-44-18- / TB30-75-22-)

igus® TwisterBand:
Minimum installation space, builds very close around the rotary axis

Compact, modular, economical - up to 7.000° rotary* motions in smallest spaces (*Installation position, vertical: up to 3.000°, horizontal: 7.000° and more possible)

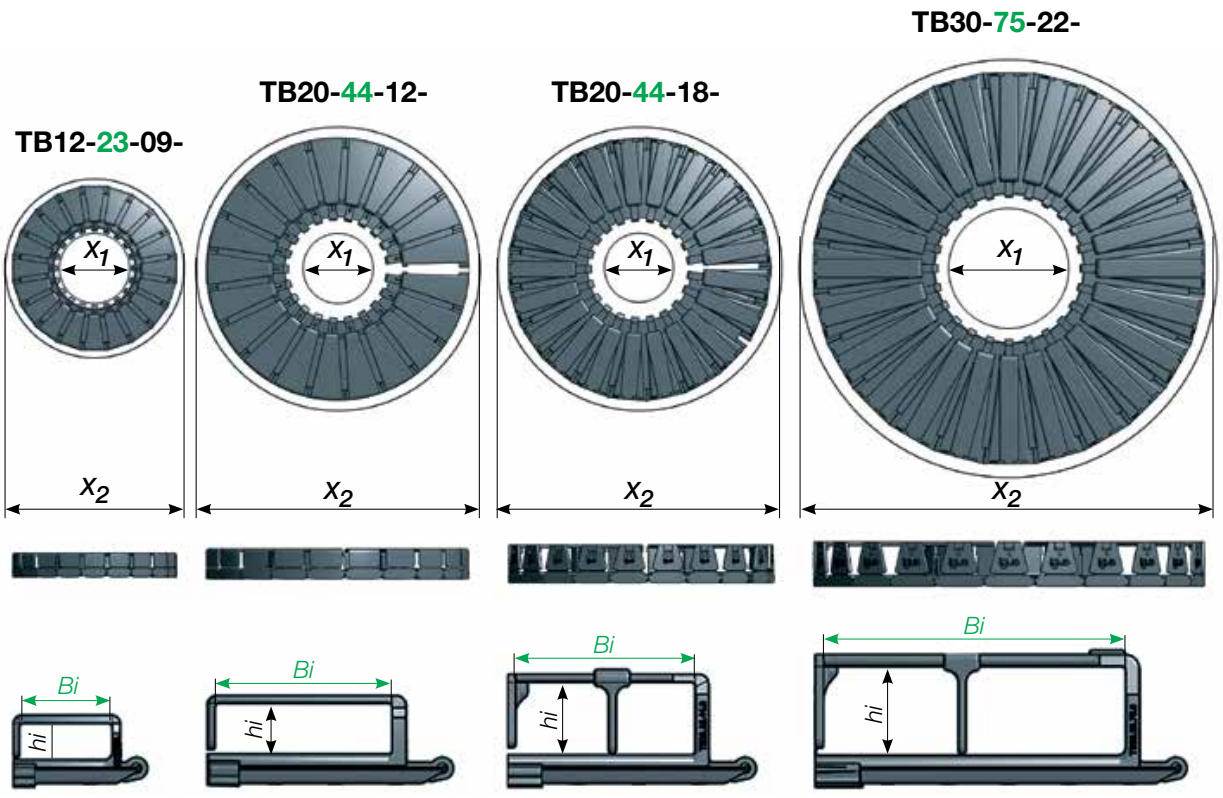
Can be reliably used in various installation positions (horizontal: 7.000° and more possible). Limited length compensation possible

E-Chain System®
TwisterBand Series
Selection Guide

TwisterBand
Rotary movements in minimum space -
20 times around its own axis

Series	Inner height *hi* (mm) in. (mm)	Inner width *Bi* (mm) in. (mm)	X_1 (mm) in. (mm)	X_2 (mm) in. (mm)	R min. (mm) in. (mm)	R max. (mm) in. (mm)	Interior Separation	Opening Design
TB12-23-09-X-01-0	.35 (9)	.91 (23)	1.57 (40)	5.51 (140)	.94 (24)	1.38 (35)	—	"Easy" design
TB20-44-12-X-01-0	.47 (12)	1.73 (44)	1.97 (50)	8.66 (220)	1.34 (34)	2.24 (57)	—	"Easy" design
TB20-44-18-X-01-0	.71 (18)	1.73 (44)	1.97 (50)	8.66 (220)	1.34 (34)	2.24 (57)	Yes	Film-hinge
TB30-75-22-X-01-0	.87 (22)	2.95 (75)	3.54 (90)	12.99 (330)	1.73 (44)	3.03 (77)	Yes	Film-hinge

X_1 = inner machine construction space X_2 = Outer machine construction space
More sizes available upon request



**Installation position, vertical: up to 3.000°, horizontal: 7.000° and more possible

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E-Chain System®
TwisterBand Series
Assembly Instructions

TB20-44-18- / TB30-75-22-, Snap open along outer radius with film-hinge

1

Easy opening and filling of
TwisterBand with a click

2

Please open lock...
insert the cable...

3

Push the separator on and add more cables

4

Close film-hinge with a click ...ready!

TB12-23-09- / TB20-44-12-, “Easy” design - simply press cables in

1

Easy opening and filling of TwisterBand
due to the “Easy” design

2

Please lift E-Chain® clamp slightly
and simply insert cable

Twister-Band

igus®

E-Chain System® TwisterBand Series

**Ground- and base plates are delivered standard. They are part of the TwisterBand module!

Rotary motions in smallest spaces

When to use the TwisterBand:

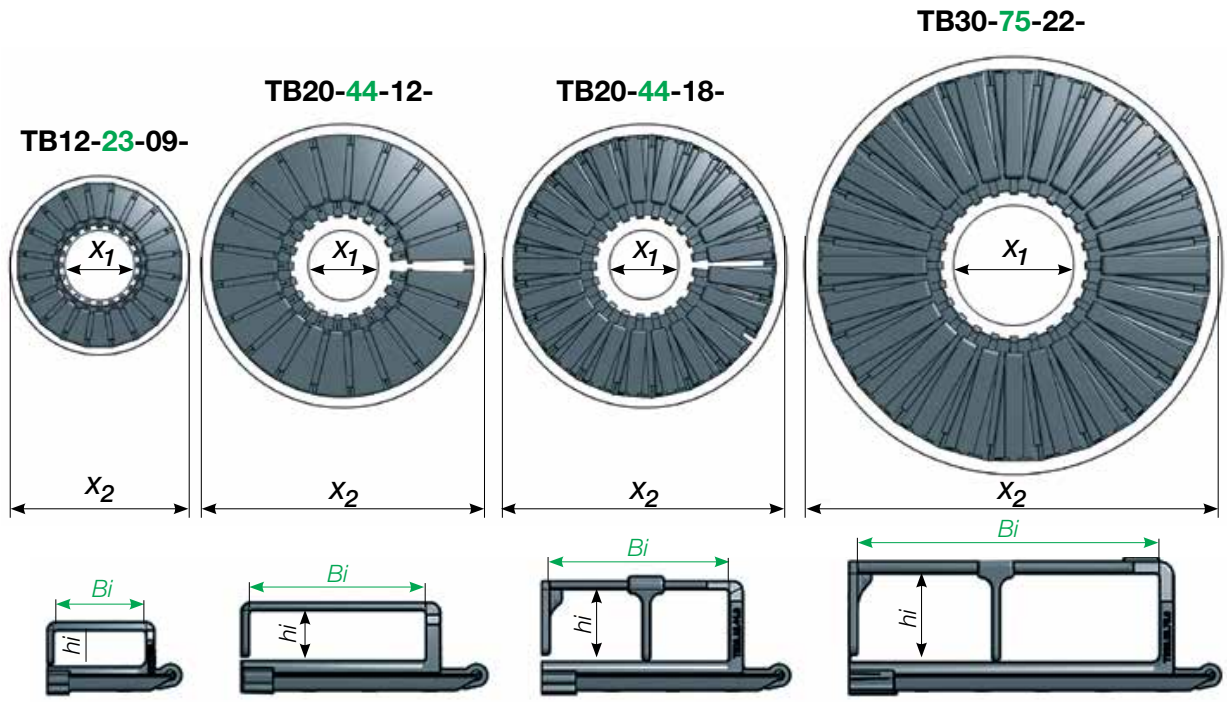
- Rotary movements up to 7000° (Installation position, vertical: up to 3000°, horizontal: 7000° and more possible)
- For smallest spaces
- Rotary speeds up to 360°/s possible*
- Some parts available with interior separation*
- Easy to fill with film-hinge or to be opened with "Easy" design*
- Limited length adjustment possible (*depending on Series)

When to use a different igus® Series:

- For higher fill weights
  ➤ **System TwisterChain® New, Chapter 8**
- For 3D-movements
  ➤ **Triflex® R, Chapter 8**
- RBR versions for additional fill weights
  ➤ **Design, Chapter 1**
- If a smear-and maintenance-free polymer slewing bearing for "endless" turning movements is required
  ➤ **iglide® PRT, iglide® Bearing Catalog**
- Use of shielded cables
  ➤ **please call for support**

E-Chain System®
TwisterBand Series
Installation Dimensions

igus® Twister-Band



Series	Inner height *hi* in. (mm)	Inner width *Bi* in. (mm)	X_1 in. (mm)	X_2 in. (mm)	*R min.* in. (mm)	*R max.* in. (mm)	d1 in. (mm)	Opening Design
TB12-23-09-X-01-0	.35 (9)	.91 (23)	1.57 (40)	5.51 (140)	.94 (24)	1.38 (35)	.28 (7)	"Easy" design
TB20-44-12-X-01-0	.47 (12)	1.73 (44)	1.97 (50)	8.66 (220)	1.34 (34)	2.24 (57)	.35 (9)	"Easy" design
TB20-44-18-X-01-0	.71 (18)	1.73 (44)	1.97 (50)	8.66 (220)	1.34 (34)	2.24 (57)	.55 (14)	Film-hinge
TB30-75-22-X-01-0	.87 (22)	2.95 (75)	3.54 (90)	12.99 (330)	1.73 (44)	3.03 (77)	.67 (17)	Film-hinge

*Ground and base plates are delivered standard. They are part of the TwisterBand module! More TwisterBand sizes upon request!

Supplement Part No. with required number of ribbons X (see calculation box) e.g. TB20-44-12-6-01-0

Calculation

Number of ribbons
depending on rotation angle

(please always round up number of ribbons)

TB12: $X \approx \frac{\text{Rotation angle}}{360} + 2 =$ Example:

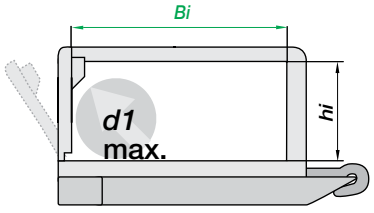
$X \approx \frac{1200°}{360} + 2 =$ result: **X ≈ 6 ribbons**

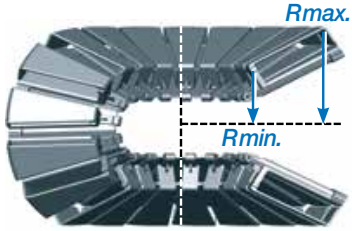
TB20: $X \approx \frac{\text{Rotation angle}}{340} + 2 =$ Example:

$X \approx \frac{1200°}{340} + 2 =$ result: **X ≈ 6 ribbons**

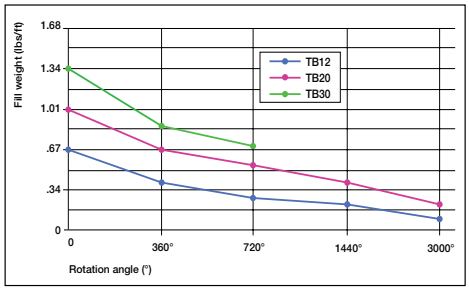
TB30: $X \approx \frac{\text{Rotation angle}}{180} + 2 =$ Example:

$X \approx \frac{1200°}{180} + 6 =$ result: **X ≈ 9 ribbons**





Additional loads depending of the rotation angle



Bi = Inner width, E-Chain®
hi = Inner height, E-Chain®
X_1 = Inner machine construction space
X_2 = Outer machine construction space
R min. = Minimum bending radius
R max. = Maximum bending radius
d1 = Maximum cable diameter
X = Number of ribbons

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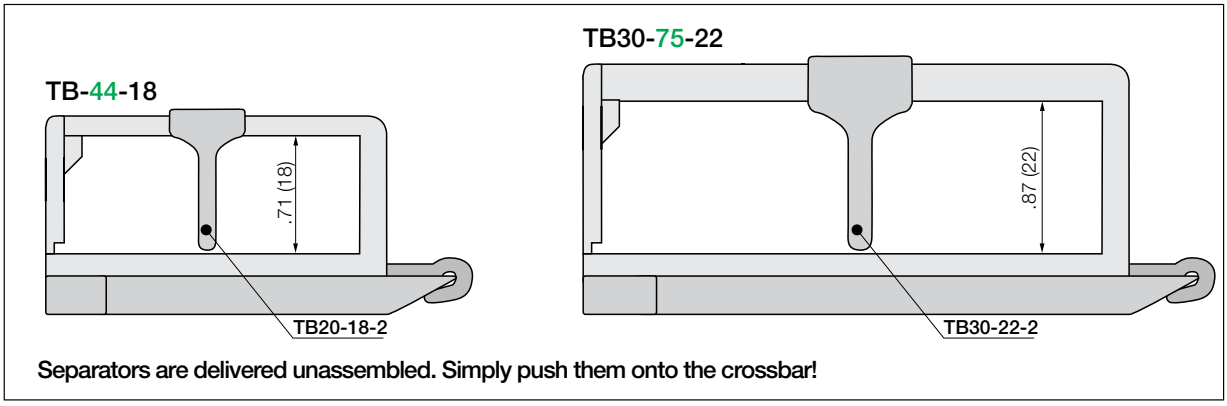
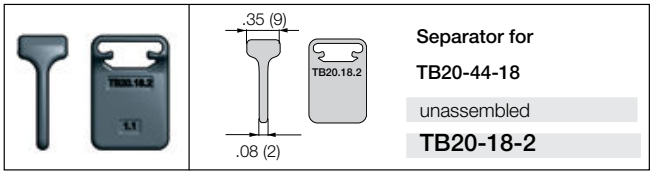
Twister-Band

igus®

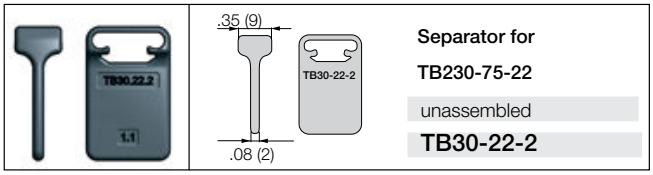
E-Chain System® TwisterBand Series Interior Separation



Separators are delivered unassembled. Simply push them onto the crossbar!



Separator for
TB20-44-18
unassembled
TB20-18-2



Separator for
TB230-75-22
unassembled
TB30-22-2

Separators

For Series TB20 with an inner height of 18 mm and Series TB30 inner height: .87" (22 mm). For installation simply open the E-Chain®, insert a cable and push the separator onto the crossbar. Then add more cables. The separators provide a clear, cable-friendly interior separation.

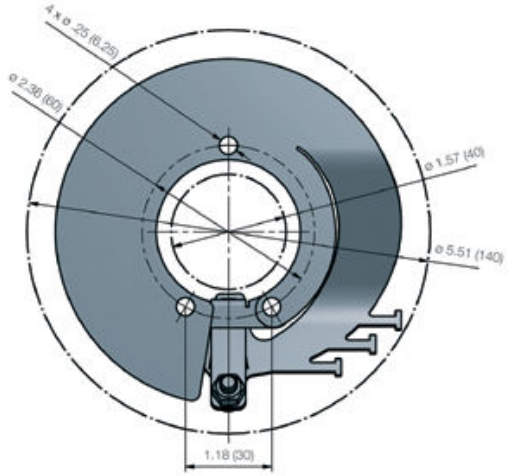
Easy opening and filling of the TwisterBand with a click or with the "Easy" design. Simply push separators on and add more cables. The separators provide a clear, cable-friendly interior separation.

igus® Twister-Band

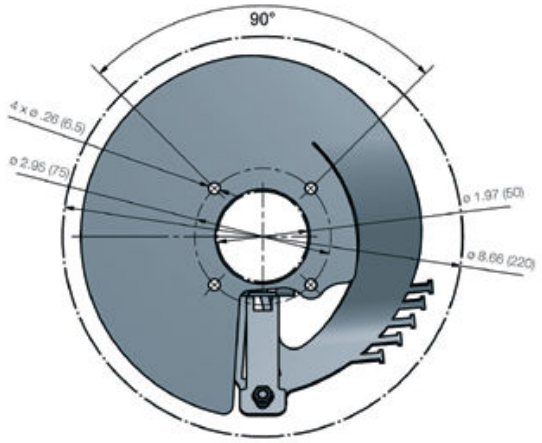
E-Chain System®
TwisterBand Series Ground and Base Plate Strain Relief

Dimensions - ground / base plate made of steel with strain relief for the following Series:

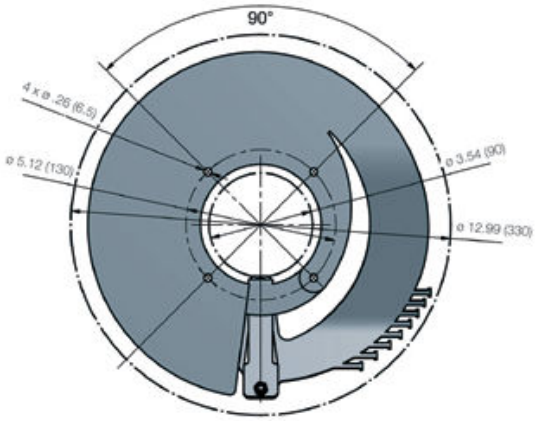
TB12-23-09-



TB20-44-12- / TB20-44-18-



TB30-75-22-



Ground plate and base plate are delivered standard. They are part of the TwisterBand module

TwisterBand application of two systems mounted above one another. This space-saving solution allows double filling space with a constant outer diameter of the system

Twister-Band

E-Chain System®
TwisterBand Series
Testing and Applications

Endurance test of a TwisterBand module in the igus® test laboratory

Customer application with TwisterBand TB20-44-18. Expensive rotary joints could be replaced here

Suitable igus® chainflex® cables for smallest bending radii at
➤ www.igus.com/chainflex

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E-Chain System®
TwisterBand Series
System Analysis Fax Sheet

igus® Twister-Band

Short description of application

Which task should be performed

Solution at the moment

Rotating angle (°)

Min. service life (cycles)

Frequency (°/s)

☐ Continuous rotation ☐ Stop & Go

Cable specification

Quantity	Type (control, data, servo, hoses, etc.)	Outer diameter ø in. (mm)	min. bending radius in. (mm)

Environment

Ambient temperature (F°)

☐ ATEX/ESD ☐ Cleanroom

Your data

Company

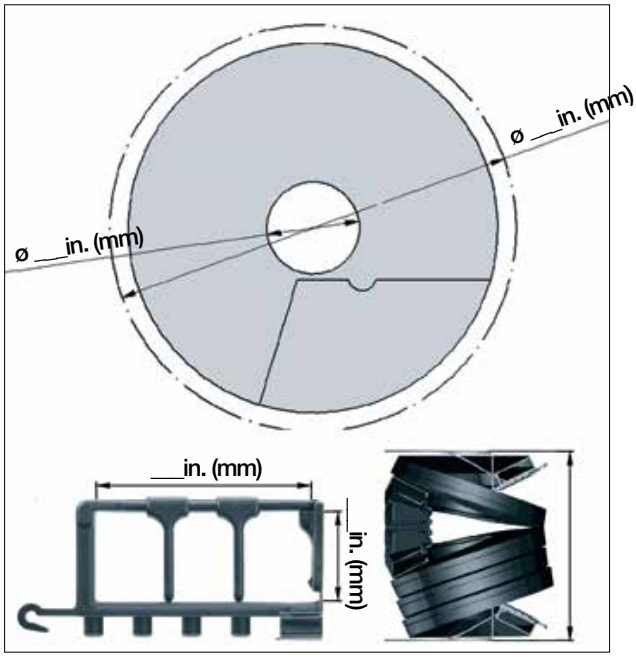
Name

Address

Phone/Fax

E-mail

Sketch please enter your dimensions in. (mm)



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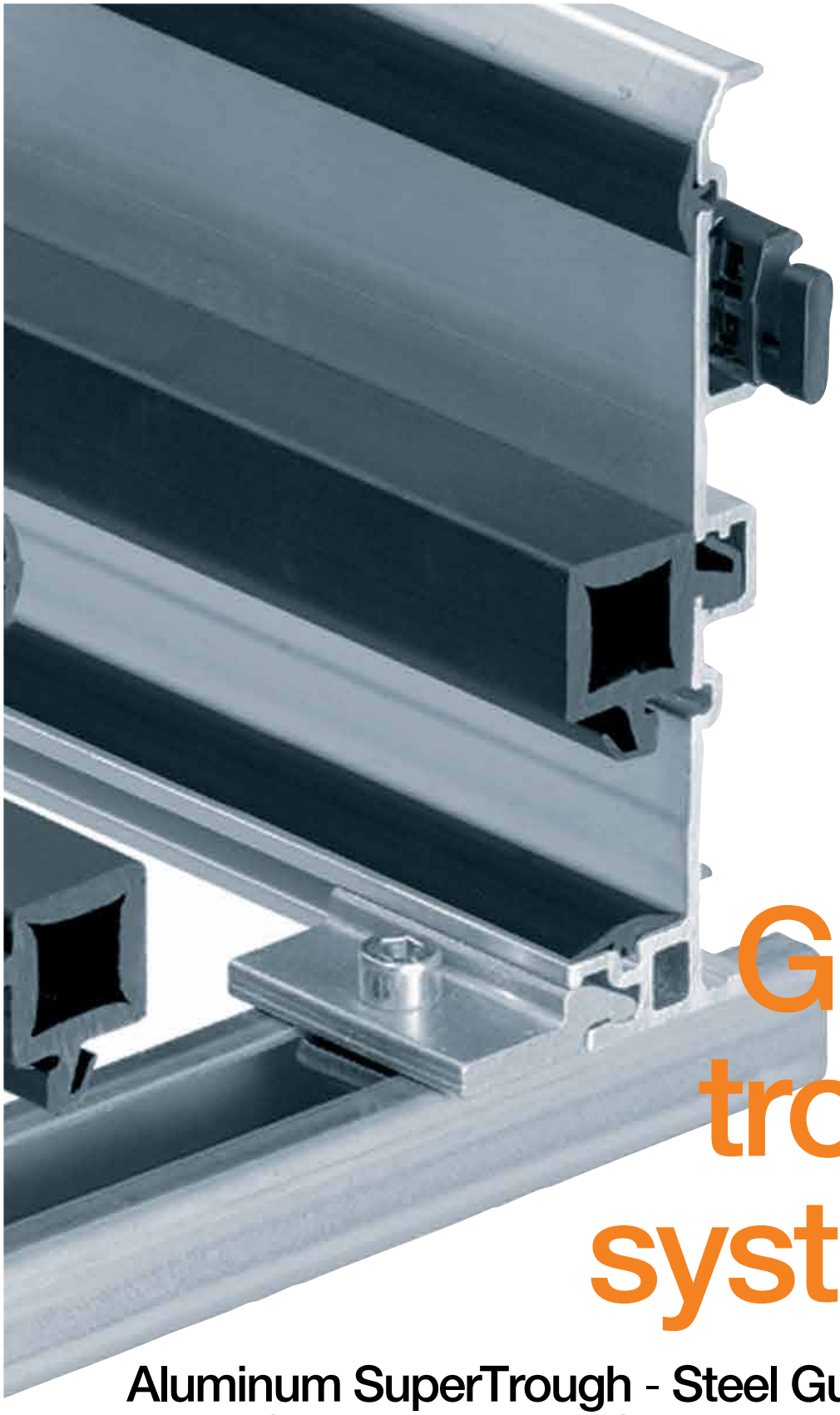
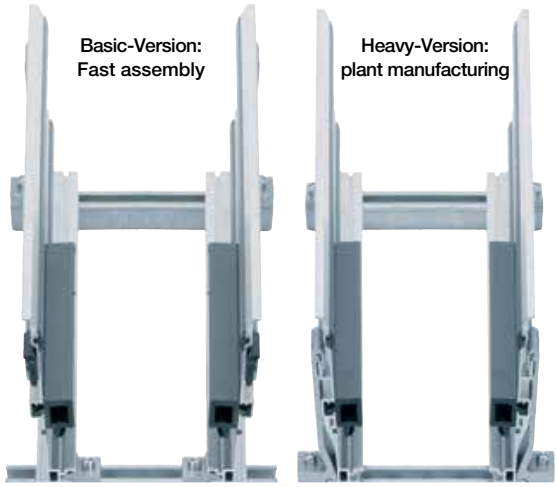


Guide trough systems

Aluminum SuperTrough - Steel Guide Trough Support Tray - Guidefast - Guidelite

Guide Troughs - Aluminum and Steel



AL Aluminum SuperTrough - The igus® standard guide trough

- Huge program available for almost all igus®
- Very simple, modular assembly
- Side-mounted glide strips for wear protection in high-speed
- Corrosion resistant, seawater resistant aluminum profile
- Flexible assembly - Fastening on substructure independent of profile lengths and butt joints
- Plastic glide bar made of PE
- Bottom clamp can be mounted -inside or outside- directly on the bottom or on the profile rail
- Heavy duty brackets for high load applications (add on item)

ST Steel guide trough - stable and rugged for heavy duty applications

- Very stable and robust guide trough made of steel for high load applications
- Easy assembly due to installation set for joint and attachment surface connection
- Simple fastening directly on the ground or with profile rails
- Big range, two piece design, adjustable to E-Chain® width
- Available in galvanized steel and stainless steel
- Low friction: glide bar made of PE
- Fixed end module, for fast and easy mounting - without drilling (add-on item)

Other Trough Options

For support of the lower run - Support tray tool kit

- Simple one-piece support trays
- Complete system, ready to install
- No more costly self-made designs
- Easy installation onto your machine, on profiles or wall-mount brackets

For crane girders and indoor cranes - Guidefast guide trough

- Save up to 80% installation time
- Fits virtually any standard crane girder
- Simplified installation, permanently installed cable can be fixed at the trough brackets
- With plastic glide bars for center fed applications

Realize long travels up to 492 ft - Guidelite - quick and cost-effective

- Simple one-piece support trays
- Complete system, ready to install
- No more costly self-made designs
- Easy installation onto your machine, on profiles or wall-mount brackets

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igus®

Guide Trough Systems
An introduction to long travels

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Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Various guide trough systems are available

Hundreds of igus® Guide Trough in stock

We are always happy to advise you by telephone or on site. Special solutions provided by igus® often result in significant assembly cost savings.

igus® guide troughs

Guide troughs are used for long travels. They allow for smooth low-friction operation in long travel applications. If the fixed end is installed in the center of the travel (center mounted), the E-Chain® glides on itself for half the travel. For the other half we recommend glide bars, which are assembled in the trough and on which the E-Chains® glide. igus® guide troughs are available from stock with these highly abrasion resistant polymer glide bars, which perform well with igus® E-Chains® regarding noise, abrasion and friction.

Trough type

igus® offers guide troughs made of corrosion-resistant aluminum or steel. The trough type to be used depends on the application conditions and the requirements of the customer.

Glide bars

Glide bars made of igulen are optimally matched to the E-Chain® material and achieve the lowest values of friction, noise and wear. Glide bars must be used if the fixed point is in the center of the travel. Refer to pictures below.

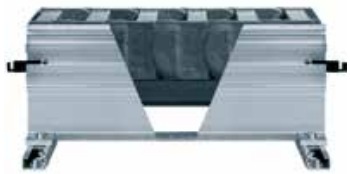
Delivery condition

The troughs are supplied in 6.56 ft (2 m) sections. The side parts (left and right) are installed on site at the required distance apart, depending on the width of the chain. The necessary width is shown in the table on the guide trough page of the respective chain chapter. The side parts of the trough can be bolted or welded directly to the attachment surface or connected to the base by means of screwing or welding or by using a special igus® installation set.
Guide trough systems can be ordered various ways: all the individual parts as separate components or completely assembled.

Customer-Supplied Guide Troughs

The dimensional data in this chapter consists of auxiliary dimensions for design and assembly. They apply exclusively to igus guide trough systems.
If the igus® E-Chain® customer supplies the trough, all dimensions (including installation dimensions) must be obtained from igus. This is particularly important for one-piece guide troughs. The clearance between the guide trough and E-Chain® is crucial and depends on the chain type, length and size, as well as the bending radius and the tolerance of the carrier and the attachment surface.
Since such guide troughs cannot be adjusted according to the application during the assembly process and cannot be readjusted in operation, careful calculation is required throughout this process.

Trough without glide bars:
E-Chain® glides on top of itself



Trough with glide bars:
E-Chain® glides on glide bars

Center mounted:
1/2 travel with glide bars
1/2 travel without glide bars

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Guide Trough Systems
An introduction to long travels

igus®

Guide Trough

For long travels, the upper run of the igus® E-Chain® rests on the lower run. The upper run glides partially on the lower run and partially at the same height on the glide bar. The diagram below shows this. For lateral guidance, a guide trough is necessary. If the stationary mounting bracket and the fixed end of the cables and hoses can be placed in the center, the E-Chain® length is calculated as follows: $L_k = {}^{s}/_{2} + K_2$

The shortest E-Chain® length is attained by the axial feeder module. The length of the E-Chain® then corresponds to about half the travel distance. Depending on the technical data and the selected E-Chain® the mounting point of the moving end of the E-Chain® must be lowered on some units. In our system analysis for long travels we give exact details for your specific application.

Selection criteria

The following parameters are required for the design of a trough system:
Following parameters are required for the design of a trough system:

- E-Chain® type (Series, width *Bi*, radius *R*)
- Travel and travel speed
- Fill weight
- Acceleration and/or lagging
- Lateral accelerations
- Environmental conditions

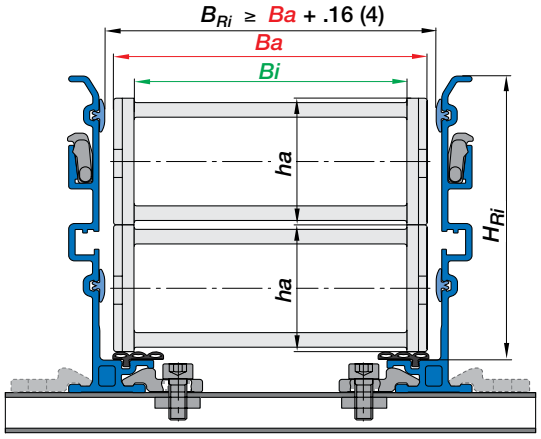
Design and installation of the guide trough

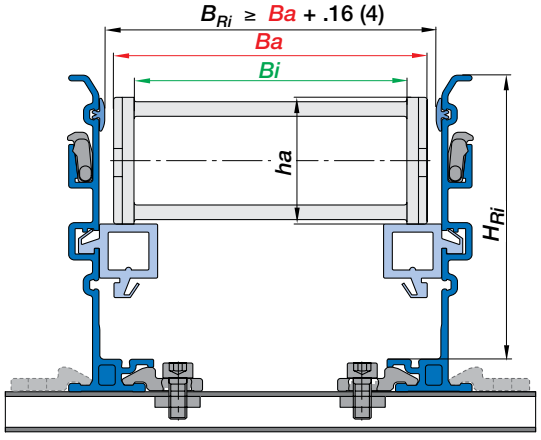
The guide trough is an important element in long travel applications. Usually, the height of the trough must be at least twice that of the E-Chain® link height: $H_{Ri} \geq 2 \times ha$. The sides must provide a chamfered opening. The trough inner width is the same as the E-Chain® outer width, plus .16" (4 mm) $B_{Ri} = Ba + .16$ (4). Along the side of the trough, where the upper run cannot glide on the lower run, glide bars must be installed. We recommend the use of polymer glide bars from igus®. They are optimally matched to the E-Chain® material and achieve the lowest values for friction, noise and wear. Guide troughs with and without glide bars can be obtained for almost all igus® E-Chains®.

Important: When assembling the trough parts, the following points must be given particular attention:

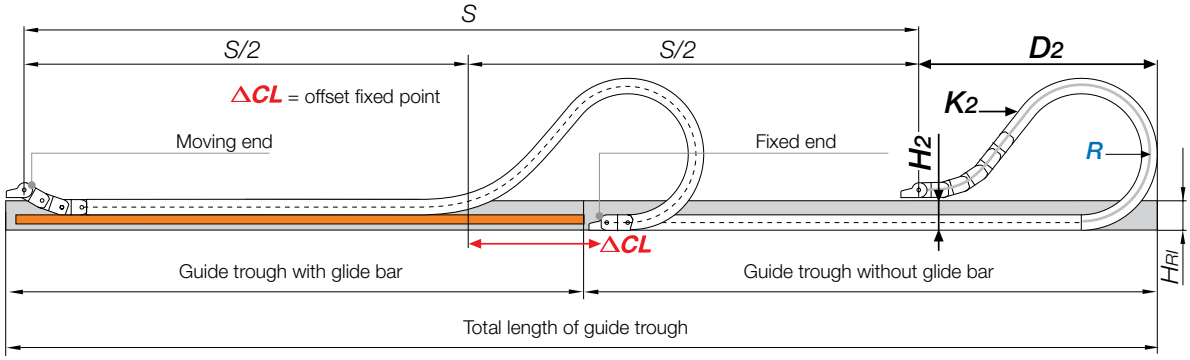
- Properly align all trough parts upon installation
- All screw heads should be flush with the trough
- Smooth leveled transition between the end of the E-Chain® and the glide bars
- Solid connection with the glide surface.

These points must be observed when using assembly-friendly igus® guide troughs.





E-Chain® length	$L_k = {}^{s}/_{2} + K_2$
Inner trough height	$H_{Ri} \geq 2 \times ha$
Inner width, Aluminum SuperTrough	$B_{Ri} = Ba + .16$ (4)
	(*Ba* + 5 Steel guide trough)



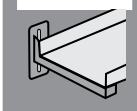
- Trough set
- Installation set
- Glide bar
- Profile rail

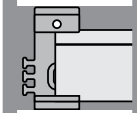
Ba	= Outer width E-Chains®	B_{Ri}	= Inner trough width	H_2	= Mounting height (if the moving end is set lower)
Bi	= Inner width E-Chains®	B_{Ra}	= Outer trough width	D_2	= Over length - long travels, gliding
R	= Bending radius	H_{Ri}	= Inner trough height	K_2	= Further add-on (if the moving end is set lower)
ΔCL	= Offset fixed point	H_{Ra}	= Outer trough height	H_F	= Required clearance height
S	= Length of travel	*ha*	= Outer E-Chain® height		
S/2	= Half length of travel	L_k	= E-Chain® length		

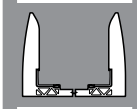
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

AL

ST







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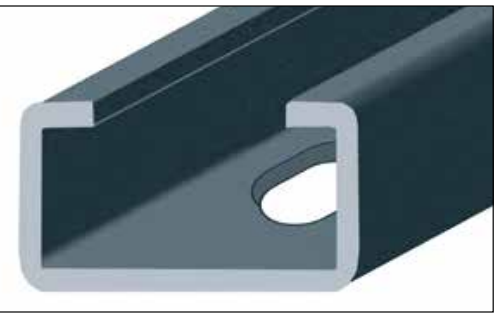
Guide Trough Systems
Profile Rail

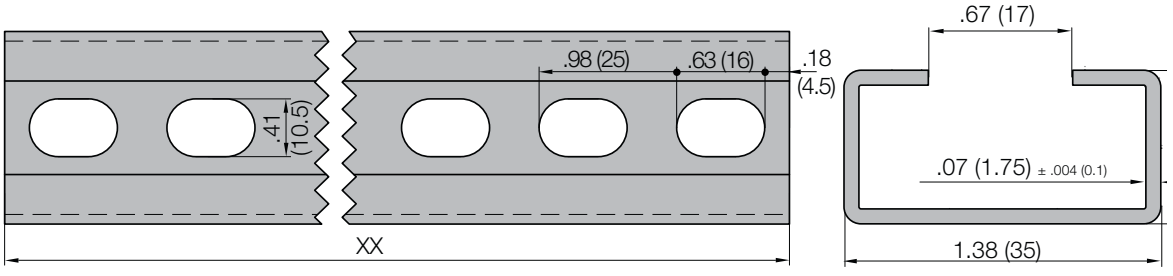
Profile rail Part No. 92-52-XX

- For all igus® Aluminum SuperTrough and Steel guide troughs
- With increased holding power - even for harsh applications
- Standard material: galvanized steel
  Part No. CF-92-52G-XX (XX - length in mm)
- Profile rail available in galvanized steel. Optional:
  Stainless steel material V2A, material 1.4301 (AISI 304).
  For AISI 304 please add index "SS" to the Part No. CF-92-52GSS
- Length tolerances of ±5 mm possible!



Profile rail Part No. CF-92-52G -
With increased holding power also for harsh conditions

Assembly in front of the E-Chain® - CANNOT be integrated into KMA mounting bracket



Profile rail Part No. CF-92-52G.XX - For all igus® Aluminum SuperTrough and Steel guide troughs

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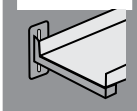
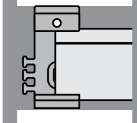
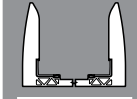
Guide Trough Systems Applications

All types of installations are possible. Very long, "green systems" up to 2,018 ft. (615 m) help to reduce energy costs, and are comprised of igus® E-Chains®, Chainflex® cables and corresponding guide troughs. Mix-and-match components allow for maximum design flexibility, and all igus® E-Chains® and Chainflex® cables offer extended service lives, even in harsh weather, polluted environments, and dirty, dusty applications



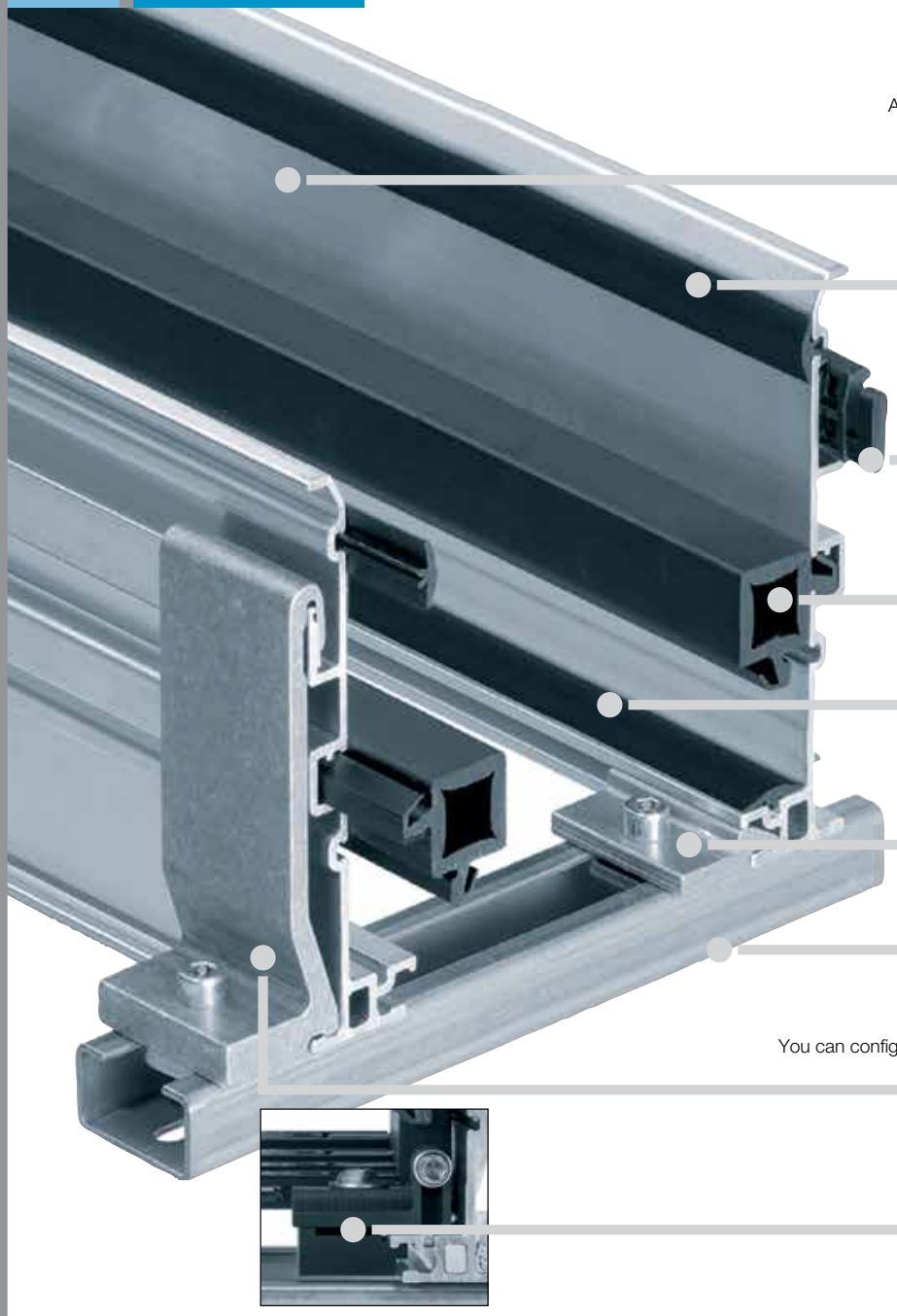




Guide Trough

igus®

Guide Trough Systems Aluminum SuperTrough Advantages



Huge program:
Aluminum profile (Standard: 6.56 ft. (2 m) section)
available for almost all igus® E-Chains®
Seawater resistant and corrosion resistant

Wear-reducing: Glide strip
Protect from wear on the sides

Fast connection:
Interface connector Basic, plastic, easy
assembly, no tools needed

Wear-reducing
Plastic glide bar
Easy click-on assembly

Noise-reducing:
Silencer profile, rubber (add-on item)

Simple fastening: Bottom clamp Basic,
attached inwards or outwards, fast and easy

Simple fastening:
Profile rail, for bottom clamps

high load: Heavy-Duty bracket (add-on item)
You can configure the Heavy-Duty version at our online-catalog
➤ **www.igus.com**

Simple connection:
Fixed end module (add-on item),
for fast and easy mounting - without any drilling

Aluminum SuperTrough

The Aluminum SuperTrough is a modular guide trough system for long travels (gliding application). Aluminum SuperTrough is available in low cost basic versions and can be upgraded for Heavy-Duty applications. This modular usage makes it the igus® recommended standard trough system.

- Very simple, modular assembly
- Corrosion resistant, seawater resistant aluminum profile
- Flexible assembly - Fastening on substructure independent of profile lengths and butt joints
- Misalignment-free installation - No screwing or welding of the profiles required

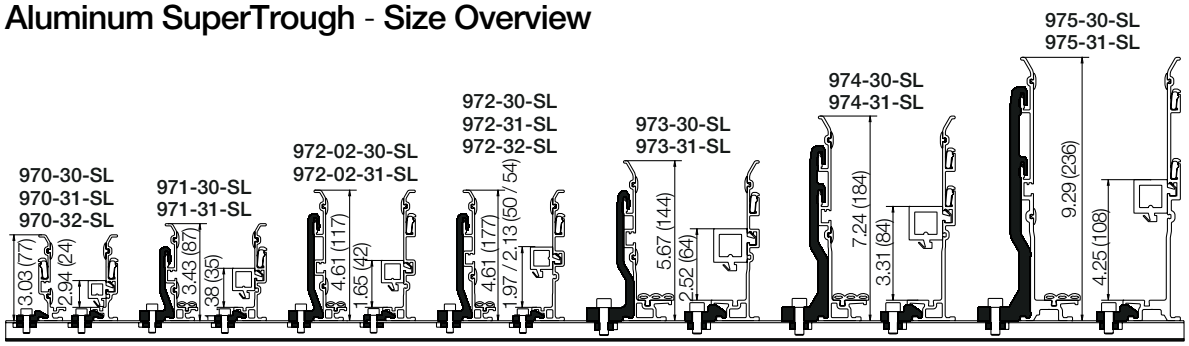
Installation Guide PDF with detailed assembly information ➤ www.igus.com/installation-guide-pdf

Guide Trough Systems
Aluminum SuperTrough
Selection Guide

Series Part No.	Outer trough height H_{Ra} (mm)	Installation set* Part No.	side part material
		Standard	**Basic version, Standard -** for general use
970-30-SL / 970-31-SL	3.03 (77)	960-30	aluminum
970-30-SL / 970-32-SL	3.03 (77)	960-30	aluminum
971-30-SL / 971-31-SL	3.43 (87)	960-30	aluminum
972-02-30-SL / 972-02-31-SL	4.61 (117)	960-30	aluminum
972-30-SL / 972-31-SL	4.61 (117)	960-30	aluminum
972-30-SL / 972-32-SL	4.61 (117)	960-30	aluminum
973-30-SL / 973-31-SL	5.67 (144)	960-50	aluminum
974-30-SL / 974-31-SL	7.24 (184)	960-50	aluminum
975-30-SL / 975-31-SL	9.29 (236)	960-50	aluminum
			Heavy Duty version - for rugged plant construction **You can configure the Heavy Duty version online with the respective E-Chain® you've chosen**
971-30-SL / 971-31-SL	3.43 (87)	971-50	aluminum
972-02-30-SL / 972-02-31-SL	4.61 (117)	972-50	aluminum
972-30-SL / 972-31-SL	4.61 (117)	972-50	aluminum
972-30-SL / 972-32-SL	4.61 (117)	972-50	aluminum
973-30-SL / 973-31-SL	5.67 (144)	973-50	aluminum
974-30-SL / 974-31-SL	7.24 (184)	974-50	aluminum
975-30-SL / 975-31-SL	9.29 (236)	975-50	aluminum

*The basic Installation sets are the standard for the Aluminum SuperTroughs. They can be fastened inside or outside and are recommended for most application areas. The basic clamping shoes are made of aluminum. The Heavy-Duty version is differentiated only by the type of the installation set. The part numbers of the channel side plates, slide bars, etc., are the same as the basic model. The Heavy-Duty installation set consists of a rugged aluminum bracket, fastened outside on the guide trough.

Aluminum SuperTrough - Size Overview



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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Guide Trough Systems Aluminum SuperTrough - Basic Components

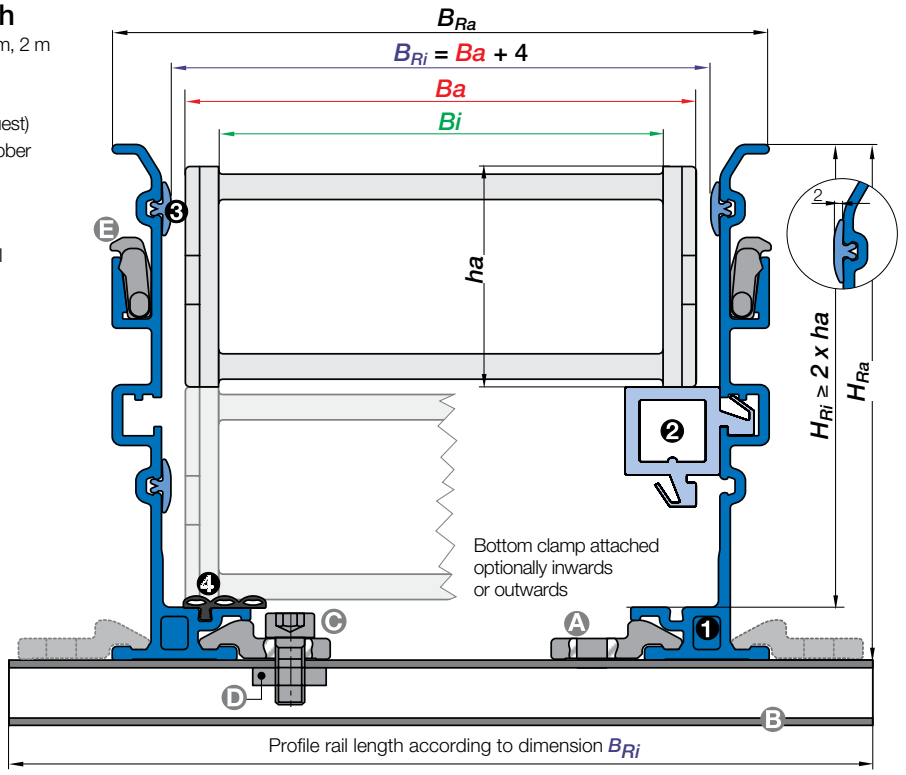
Components, trough

❶ Trough side parts, aluminum, 2 m
❷ Glide bar, plastic, 2 m
❸ Glide strips, plastic, 2 m
(without glide strips on request)
❹ Optional: Silencer profile, rubber

Components, installation set
Ⓐ Bottom clamp, aluminum
Ⓑ Profile rail[1], galvanized steel
Ⓒ Screw
Ⓓ Sliding nut
Ⓔ Interface connector, plastic

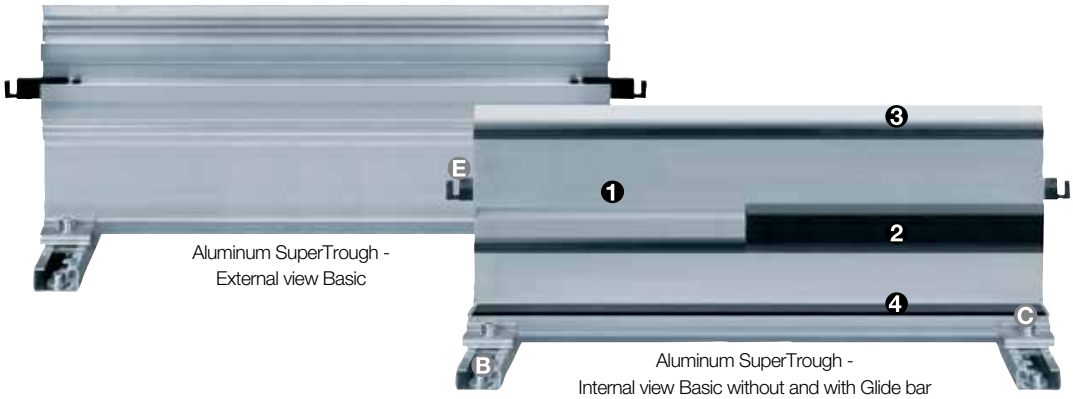
Ba = Outer E-Chain® width
Bi = Inner E-Chain® width
ha = E-Chain® outer height
H_{Ri} = Inner trough height
H_{Ra} = Outer trough height
B_{Ri} = Inner trough width
B_{Ra} = Outer trough width

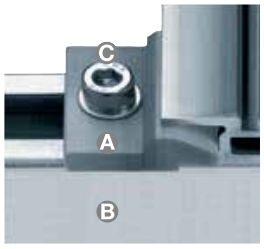
$H_{Ri} \geq 2 \times ha$
$B_{Ri} = Ba + 4$



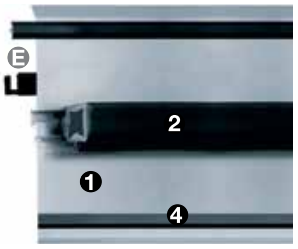
1) Profile rail also available in stainless steel V2A, material 1.4301 (AISI 304)

Aluminum SuperTrough | Features



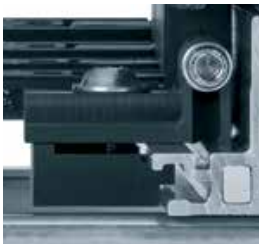


Simple fastening with Basic bottom clamp and profile rail



Wear-reducing with polymer glide bar and glide strip

Noise-reducing with silencer profile (add-on item)

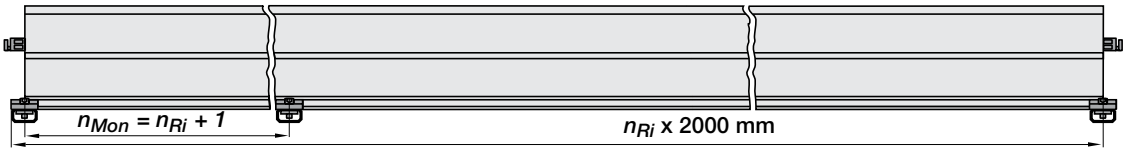

Simple connection to the E-Chain® with the fixed end module

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Guide Trough Systems
Aluminum SuperTrough - Basic Configuration

Aluminum SuperTrough - Configured according to your requirements
Quick and easy assemble the right trough for your application

- Selection of the suitable guide trough according to the E-Chain® Series and E-Chain® width ***Bi***
- Determine the feeding point of the cables
- Determine travel distance and thus the length of the required guide trough and the number of trough pieces. Standard length of a trough side plate: 78.7" (2000 mm). The length of the guide trough - for axial feeding - is calculated from half the travel length with and half the travel length without the glide bar
- Option: “Sound dampening” with silencer profile
- Number and selection of the assembly kit
  There are two assembly kit options: Basic (standard), Heavy-Duty (for plant construction)
  The quantity of the assembly kit is calculated from the number of the trough pieces + 1 kit:



- The assembly kit matches the igus® profile rail option
- If you have opted for an E-Chain® with KMA mounting brackets, we offer you a fixed-end module for the quick and simple fastening of the E-Chain® in the trough without holes

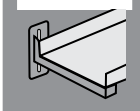
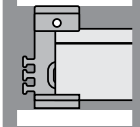
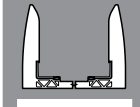
Installation Guide-PDF with detailed assembly information
➤ www.igus.com/installation-guide-pdf

Order example Based on Part No. 973-30-SL / 973-31-SL

Order example: Length of travel 98.4 ft. (30 m) -
Center mounted for Series 3500-100-200-0 with B_{Ri} = 124

Guide trough set (set of 2 trough side parts, incl. glide strips) **without** glide bar	
Order text: 52.5 ft. (16 m) guide trough without glide bar (8 x 6.56 ft. (2 m) sections)	**Part No. 973-30-SL**
Guide trough set (set of 2 trough side parts, incl. glide strips) **with** glide bar	
Order text: 52.5 ft. (16 m) guide trough with glide bar (8 x 6.56 ft. (2 m) sections)	**Part No. 973-31-SL**
Installation set “Basic” complete **(guide trough-sets + 1)**	
Order text: 17 installation sets “Basic”	**Part No. 960-40-175**
Module for the fixed end	
Order text: 1 set	**Part No. 973-80-5**
Option: For an additional noise dampening with	
silencer profile, please add Index A Example:	**Part No. 973-30-SLA**

Calculation - travel center mounted: Half travel length, rounded down to full 2 m sections = X m guide trough length without glide bars + X m guide trough length with glide bars + installation sets Basic (number of trough pieces + 1)

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Guide Trough Systems Aluminum SuperTrough Fixed End Module

A quick fix for mounting the stationary end of an E-Chain®

Optimized fixed end module

- Lighter more cost-effective than previous metal solutions
- Mounting bracket attachment on the Aluminum SuperTrough without drilling
- Fixed end module is clamped to the trough
- Save installation time
- Minimize errors from drilling your own holes
- Available for many E2, E4 and E6 Series E-Chains®
- Stainless and cost-effective

A
Installation - fixed end module

B
Installation - KMA mounting bracket

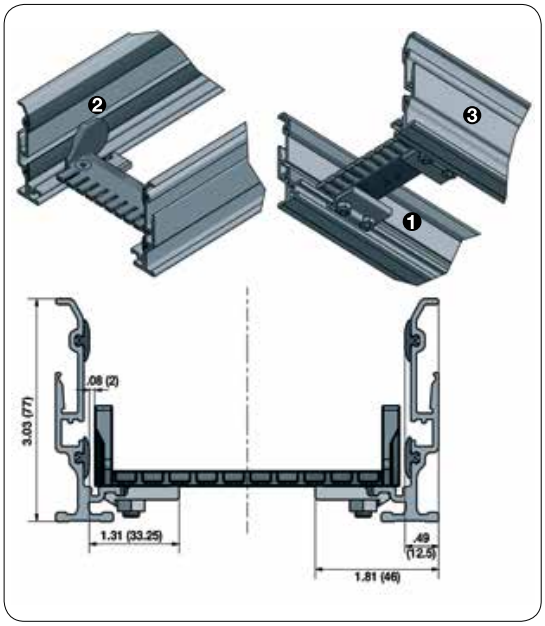
❶ Removing the pre-assembled metal bushings

❷ Insert the threaded bushings

❸ Insert the threaded bushings

❹ Mounting on KMA mounting bracket

❺ Mounting on Aluminum SuperTrough



Fixed end clamp to attach the E-Chain® into the smallest SuperTrough 970-30-SL

For mounting brackets from Series: 10, 15/R15, B15, 1500.
The fixed end clamp enables quick and simple attachment by clamping onto the Aluminum SuperTrough without drilling

- Quick attachment of the E-Chain® to the Aluminum SuperTrough
- The mounting point of the E-Chain® can be changed quickly
- Minimize errors from drilling your own holes
- Available for many E2, E4 and E6 Series E-Chains®
- Stainless and cost-effective

Fized end clamp design:

❶ Fixed end clamp 970-80
❷ Mounting bracket
❸ Aluminum SuperTrough 970-30-SL

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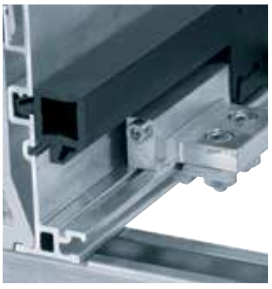
QuickSpec: http://www.igus.com/quickspec

Guide Trough Systems
Aluminum SuperTrough
Fixed End Module

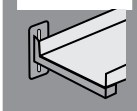
Part No.	For Aluminum SuperTrough	For E-Chain® Series	Application including inner width (*Bi*)	Mounting Bracket
970-80[1]	**970-30-SL | 970-31-SL**	10, B15, 15/R15	.050	one-piece
970-80[1]	**970-30-SL | 970-32-SL**	1500	.050	one-piece
971-80-4[1]	**971-30-SL | 971-31-SL**	2500, 255	.07	KMA
972-80-4[1]	**972-02-30-SL | 972-02-31-SL**	E4-28/R4-28, E6-35	.06	KMA
972-80-4[1]	**972-30-SL | 972-31-SL**	E4-32/H4-32/R4-32, E4-38L/R4-38L, E6-40/R6-40	.06	KMA
972-80-4[1]	**972-30-SL | 972-32-SL**	2700, R58	.06	KMA
973-81-5[1]	**973-30-SL | 973-31-SL**	E4-42/H4-42/R4-42, E4-48L/R4-48L, E6-52/R6-52	.10	KMA
973-80-5[1]	**973-30-SL | 973-31-SL**	3500, R68	.100	KMA
974-81-5[1]	**974-30-SL | 974-31-SL**	14040/14140/R18840, 14240/14340	.10	KMA
974-80-5[1]	**974-30-SL | 974-31-SL**	E4-56/H4-56/R4-56, E6-62	.10	KMA
975-80[2]	**975-30-SL | 975-31-SL**	E4-80/H4-80/R4-80, E6-80	.10	KMA
975-81[2]	**975-30-SL | 975-31-SL**	15050/15150/R19850, 15250/15350	.10	KMA

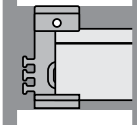
1) Material: plastic 2) Material: Aluminum AlMg3, seawater resistant
Material screw kits: Standard steel, galvanized. Optional stainless steel: V4A, material 1.4571 (AISI 316Ti)

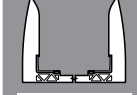


Fixed-end module - Simple fastening of the E-Chain® without drilling

The igus® aluminum SuperTrough has been tested since 2005.
Test “Axis 1”: Speed 4.92 ft/s (1.5 m/s), Travel: 59 ft (18m), Mileage to date: approximately 31,069 miles (50,000 km)







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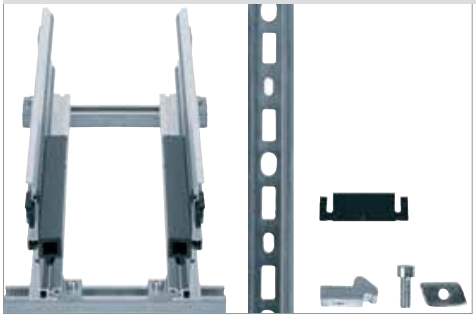
Installation Sets | Basic and Heavy Duty



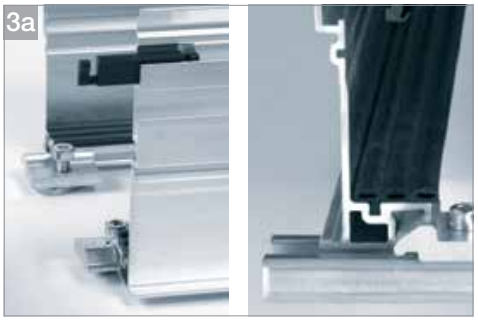
Installation Set Basic

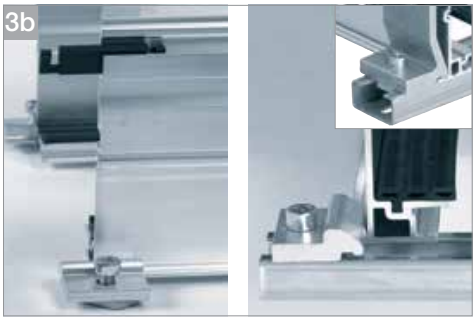
Installation Set Heavy Duty

Installation Set | Basic (Standard)

❶ Pre-assemble clamp and screw

❷ Clip in polymer connector on both sides of the designated support





Fasten Basic assembly set inside ❸a or outside ❸b (Please check if the stability of the attachment is adequate). Please note: half the length of the assembly set and connector must protrude out of the trough. The glide nut should be well fastened in the profile rail

Installation Set | Heavy Duty (Alternative)

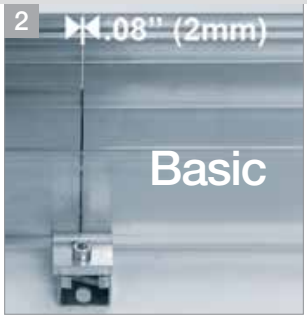
❶ Pre-assemble heavy duty bracket and screw set ❷ Fasten Heavy Duty assembly set outside. Please note: half the length of the assembly set and connector must protrude out of the trough.

Guide Trough Systems
Aluminum SuperTrough

Installing the silencer profile (optional)

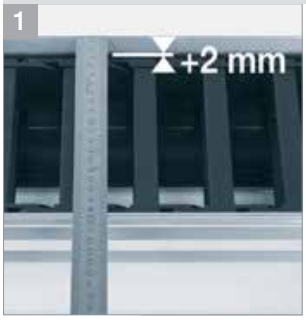
Cut the rubber profile in accordance to the length of the trough, standard 6.56 ft. (2 m), and press it into the designated groove. (Pictured: although this shows the left hand side, the instructions are the same for the right hand side. To be repeated for each trough section.)

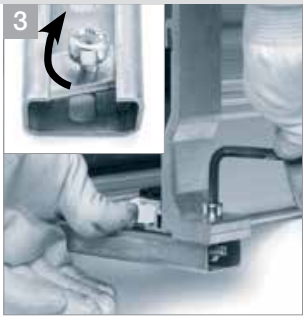
Connecting the trough sections



❶ Join the sides of the trough side parts by pushing them together (min. +.08 (2mm) gap!)
❷ + ❸ The pre-assembled parts join each trough section

Adjusting the tolerance and aligning trough sections



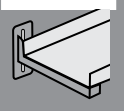
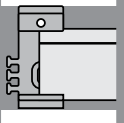
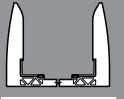


❶ Adjust the necessary minimum “chain/trough” tolerance of .08” (2mm) on both sides. Please note: the inner width B_{Ri} of the trough decreases .08” (2mm) per side with the assembled glide strip (pictured)

❷ Test to ensure the E-Chain® runs problem free and with low friction in the channel

❸ After adjusting the minimum tolerance and alignment of all trough sections, please tighten all trough connections. Pay attention to the correct installation direction of the sliding nut (see detail)
Starting torque of the assembly set’s fixing bolts: M6: 10 Nm / M8: 23 Nm.

Please consider health & safety regulations while handling sheet metals.
We recommend using protective Category II gloves to protect against cuts when handling the aluminum profiles.

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igus®

Guide Trough Systems
Aluminum SuperTrough

Part No. 970-30-SL and 970-31-SL - Trough Height: 3.03 in. (77 mm)

Aluminum SuperTrough — Basic Version

For the following E-Chains®/ E-Tubes

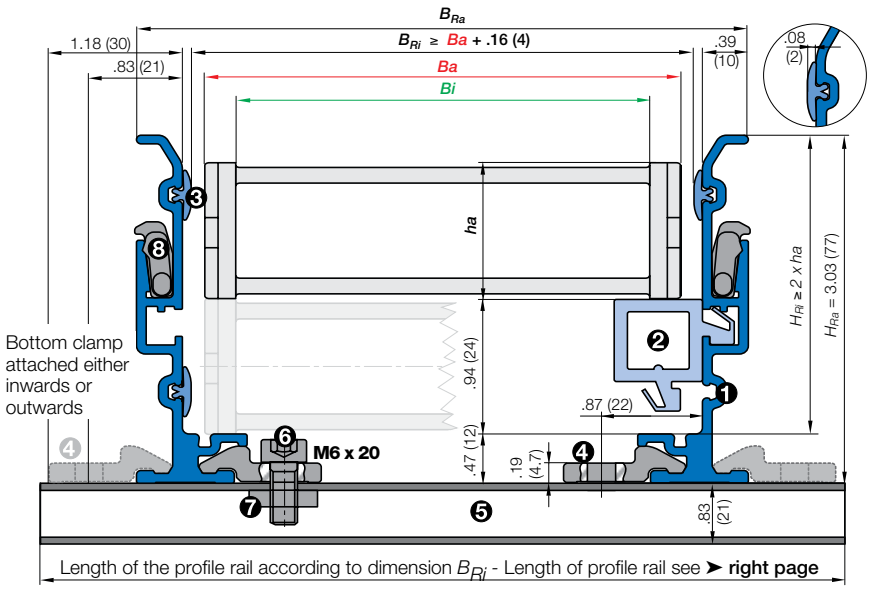
System E2 Series
- 10
- B15

Zipper Series
- 15/R15

Ba	=	Outer E-Chain® width
Bi	=	Inner E-Chain® width
ha	=	E-Chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 4$

- = Guide trough
- = Glide bar
- = Installation set “Basic”
- = profile rail



- **Components, trough “Basic”:**

❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
❹ Bottom clamp, aluminum
❺ profile rail, steel galvanized
❻ Screw M6 x20
❼ Sliding nut M6
❽ Interface connector, plastic

- **Components, installation set “Basic”:**

Basic Version: Components

Complete guide trough sets - description	Part No. (lbs)	Weight
Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft (2 m) sections	**970-30-SL**	9.26 lbs
Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) sections	**970-31-SL**	10.8 lbs
1 Installation set **“Basic”** without profile rail	**960-30**	.13 lbs
1 Installation set **“Basic”** with profile rail	**960-30-____**	
Single parts - description		
1 Glide strip, individual, 6.56 ft. (2m) section	**75-01**	.13 lbs
1 Bottom clamp, individual	**75-40**	0.07 lbs
1 Interface connector, individual	**75-60**	
1 Screw M6 x 20, individual	**M6X20SOCKETCAP**	
1 Sliding nut M6, individual	**ZBNUT-LG**	
2 Glide bars, 6.56 ft. (2m) sections	**81-79**	
1 profile rail, individual	**92-52G____**	.60 lbs/ft

Supplement Part No. with the indicated profile rail-length-index.
Example: 960-30-125 profile rail-length-index for your chosen trough inner width B_{Ri}
➤ See table on the right or the respective page for chosen series

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Internet: http://www.igus.com
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Guide Trough Systems
Aluminum SuperTrough

Lengths of profile rail - Basic Version - Bottom Clamp attached either **inwards** or **outwards**

10

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-015	1.18 (30)	*	**960-30-125**
-025	1.57 (40)	*	**960-30-150**
-038	2.09 (53)	*	**960-30-150**
-050	2.56 (65)	**960-30-125**	**960-30-175**
-5	3.15 (80)	**960-30-125**	**960-30-175**
-6	3.86 (98)	**960-30-150**	**960-30-200**
-7	4.61 (117)	**960-30-175**	**960-30-225**

* upon request

B15

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-015	1.18 (30)	*	**960-30-125**
-025	1.57 (40)	*	**960-30-150**
-038	2.09 (53)	*	**960-30-150**
-050	2.56 (65)	**960-30-125**	**960-30-175**
-5	3.15 (80)	**960-30-125**	**960-30-175**
-6	3.86 (98)	**960-30-150**	**960-30-200**
-7	4.61 (117)	**960-30-175**	**960-30-225**

* upon request

15

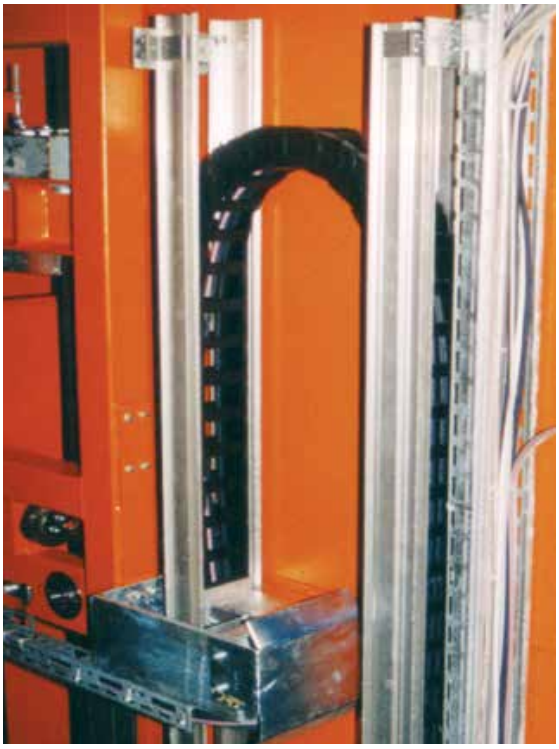
E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-015	1.18 (30)	*	**960-30-125**
-025	1.57 (40)	*	**960-30-150**
-038	2.09 (53)	*	**960-30-150**
-050	2.56 (65)	**960-30-125**	**960-30-175**
-5	3.15 (80)	**960-30-125**	**960-30-175**
-6	3.86 (98)	**960-30-150**	**960-30-200**
-7	4.61 (117)	**960-30-175**	**960-30-225**

* upon request

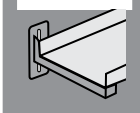
R15

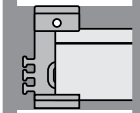
E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-025	1.57 (40)	*	**960-30-150**
-038	2.09 (53)	*	**960-30-150**
-063	3.15 (80)	*	**960-30-175**
-080	3.86 (98)	**960-30-150**	**960-30-200**

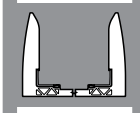
* upon request



E-Chain® on the tower of the storage and retrieval unit for high-bay warehouses rolls off from one aluminum guide trough to the opposite one







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Guide Trough Systems
Aluminum SuperTrough

Part No. 970-30-SL and 970-32-SL - Trough Height: 3.03 in. (77 mm)
Aluminum SuperTrough — Basic Version

For the following E-Chains®/ E-Tubes

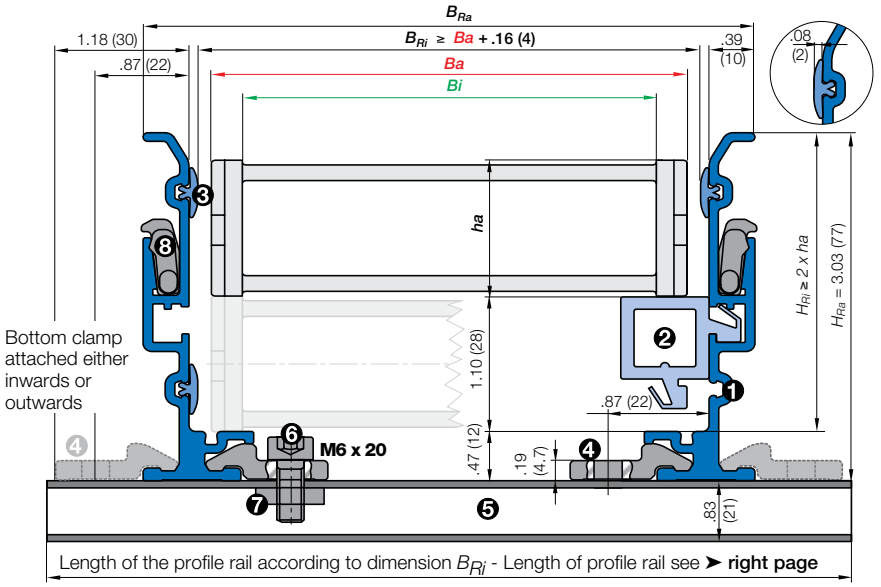
System E2 Series
- 1400/1450/1480/1500

System E4-1 Series
- E4-21

Ba	=	Outer E-Chain® width
Bi	=	Inner E-Chain® width
ha	=	E-Chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 4$

- = Guide trough
- = Glide bar
- = Installation set “Basic”
- = profile rail



- **Components, trough “Basic”:**
  - ❶ Trough side parts, aluminum, 6.56 ft. (2m)
  - ❷ Glide bar, plastic, 6.56 ft. (2m)
  - ❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
- **Components, installation set:**
  - ❹ Bottom clamp, aluminum
  - ❺ profile rail, steel galvanized
  - ❻ Screw M6 x20
  - ❼ Sliding nut M6
  - ❽ Interface connector, plastic

Basic Version: Components

Complete guide trough sets - description	Part No.	Weight
Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft (2 m) section	**970-30-SL**	9.26 lbs
Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section	**970-32-SL**	11.02 lbs
1 Installation set **“Basic”** without profile rail	**960-30**	.13 lbs
1 Installation set **“Basic”** with profile rail	**960-30-____**	
Single parts - description		
1 Glide strip, individual, 6.56 ft. (2m) section	**75-01**	.13 lbs
1 Bottom clamp, individual	**75-40**	0.07 lbs
1 Interface connector, individual	**75-60**	
1 Screw M6 x 20, individual	**M6X20SOCKETCAP**	
1 Sliding nut M6, individual	**ZBNUT-LG**	
2 Glide bars, 6.56 ft. (2m) sections	**82-79**	
1 profile rail, individual	**92-52G____**	.60 lbs/ft

Supplement Part No. with the indicated profile rail-length-index.
Example: 960-30-125 profile rail-length-index for your chosen trough inner width B_{Ri}
➤ See table on the right or the respective page for chosen series

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Guide Trough Systems
Aluminum SuperTrough

Lengths of profile rail - Basic Version - Bottom Clamp attached either **inwards** or **outwards**

1400/1500

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-015	1.30 (33)	*	**960-30-125**
-020	1.50 (38)	*	**960-30-125**
-025	1.69 (43)	*	**960-30-150**
-038	2.20 (56)	*	**960-30-150**
-050	2.68 (68)	**960-30-125**	**960-30-175**
-068	3.39 (86)	**960-30-150**	**960-30-175**
-080	3.86 (98)	**960-30-150**	**960-30-200**
-100	4.65 (118)	**960-30-175**	**960-30-225**
-125	5.63 (143)	**960-30-200**	**960-30-250**

* upon request

E4-21

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-030	1.89 (48)	*	**960-30-150**
-040	2.28 (58)	**960-30-125**	**960-30-150**
-050	2.68 (68)	**960-30-125**	**960-30-175**
-060	3.07 (78)	**960-30-125**	**960-30-175**
-070	3.46 (88)	**960-30-150**	**960-30-175**
-080	3.86 (98)	**960-30-150**	**960-30-200**
-100	4.65 (118)	**960-30-175**	**960-30-225**
-120	5.43 (138)	**960-30-200**	**960-30-225**

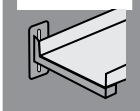
* upon request

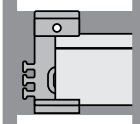
Seawater resistant aluminum SuperTrough in a RTG-crane. Long travel with the E4/4 E-Chain System®.

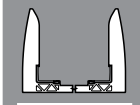
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

AL

ST







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Guide Trough Systems
Aluminum SuperTrough

Part No. 971-30-SL and 971-31-SL - Trough Height: 3.42 in. (87 mm)

Aluminum SuperTrough — Basic Version

For the following Series

System E2 Series:
- 2480
- 200/240/250

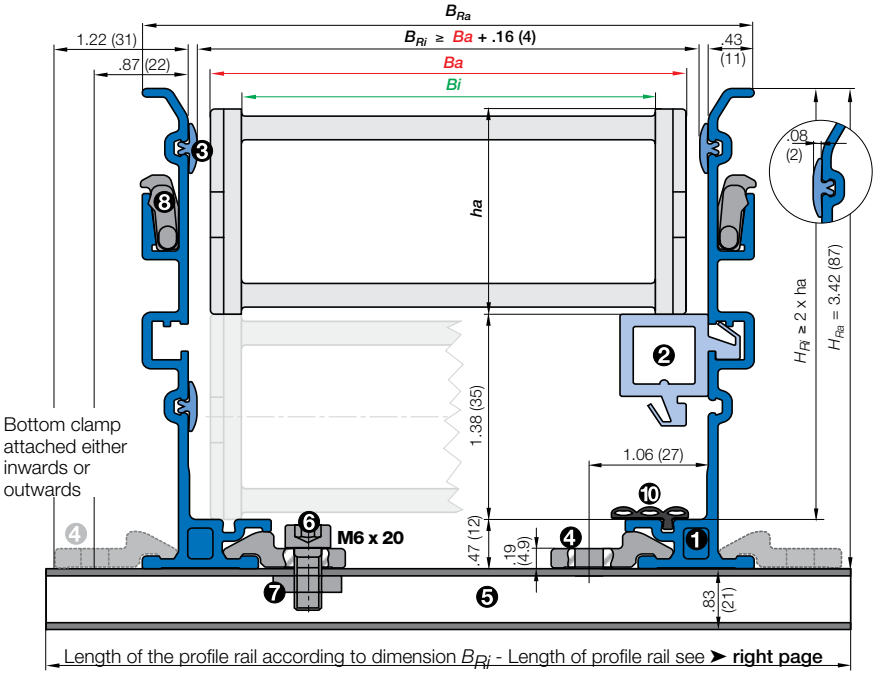
System E2 Tube Series:
- R48

System E6 Series:
- E6-29/R6-29

Ba	=	Outer E-Chain® width
Bi	=	Inner E-Chain® width
ha	=	E-Chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 4$

= Guide trough
= Glide bar
= Installation set "Basic"
= profile rail



● Components, trough:
❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
❿ Optional: Silencer profile, rubber

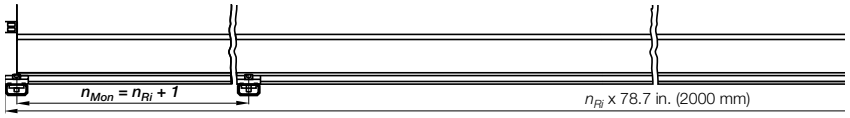
● Components, installation set:
❹ Bottom clamp, aluminum
❺ profile rail, steel galvanized
❻ Screw M6 x20
❼ Sliding nut M6
❽ Interface connector, plastic

Basic version: Aluminum SuperTrough components

Complete guide trough sets - description	Part No.	Weight
Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft. (2m) section	971-30-SL	≈11.02 lbs
Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section	971-31-SL	≈ 14.11 lbs
1 Installation set **"Basic"** without profile rail	960-30	≈ .13 lbs
1 Installation set **"Basic"** with profile rail	960-30-___	
Single parts - description		
1 Glide strip, individual, 6.56 ft. (2m) section	75-01	≈ .13 lbs
1 Bottom clamp, individual	75-40	≈ .07 lkbs
1 Interface connector, individual	75-60	
1 Screw M6 x 20, individual	M6X20SOCKETCAP	
1 Sliding nut M6, individual	ZBNUT-LG	
2 Glide bar, 6.56 ft. (2m) sections	82-79	≈
1 profile rail, individual	92-52G___	≈ .60 lbs/ft
Silencer profile	75-76-H	

Supplement Part No. with the indicated profile rail-length-index.
Example: 960-30-150 profile rail-length-index for your chosen trough inner width B_{Ri}
➤ See table on the right or the respective page for chosen series

Number of installation sets which have to be installed



Guide Trough Systems
Aluminum SuperTrough

Lengths of profile rail - Basic Version

Bottom Clamp can be attached either **inwards** or **outwards**

240/250/2400/2500

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-02	1.77 (45)	*	960-30-150
-03	2.28 (58)	*	960-30-150
-05	3.03 (77)	960-30-125	960-30-175
-07	3.82 (97)	960-30-150	960-30-200
-09	4.29 (109)	960-30-175	960-30-225
-10	4.84 (123)	960-30-175	960-30-225
-12	5.71 (145)	960-30-200	960-30-250

* upon request

255

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-03	2.28 (58)	*	960-30-150
-05	3.03 (77)	960-30-125	960-30-175
-07	3.82 (97)	960-30-150	960-30-200
-10	4.84 (123)	960-30-175	960-30-225

* upon request

R48

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-025	1.57 (40)	*	960-30-150
-050	2.56 (65)	*	960-30-175
-075	3.54 (90)	960-30-150	960-30-200
-100	4.53 (115)	960-30-175	960-30-225
-130	5.71 (145)	960-30-200	960-30-250

* upon request

For the “Heavy Duty” installation set:
Insert Part No. **971-50-____**
instead of **960-30-____**
on the right column “attached outwards”

E6-29

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-030	1.97 (50)	*	960-30-150
-040	2.36 (60)	*	960-30-175
-050	2.76 (70)	*	960-30-175
-060	3.15 (80)	960-30-150	960-30-175
-070	3.54 (90)	960-30-150	960-30-200
-080	3.94 (100)	960-30-150	960-30-200
-090	4.33 (110)	960-30-175	960-30-225
-100	4.72 (120)	960-30-175	960-30-225
-110	5.12 (130)	960-30-200	960-30-225
-120	5.51 (140)	960-30-200	960-30-250

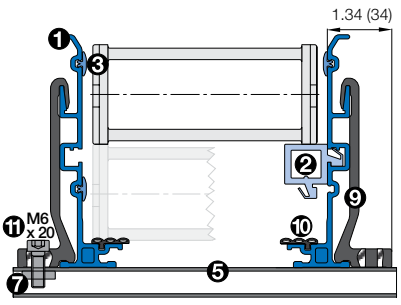
* upon request

R6-29

E-Chain®	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-030	1.97 (50)	*	960-30-150
-050	2.76 (70)	*	960-30-175
-060	3.15 (80)	960-30-150	960-30-175
-080	3.94 (100)	960-30-150	960-30-200
-100	4.72 (120)	960-30-175	960-30-225
-110	5.12 (130)	960-30-200	960-30-225
-120	5.51 (140)	960-30-200	960-30-250

* upon request

Heavy Duty Version - Installation Set Part No. 971-50

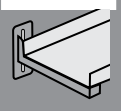
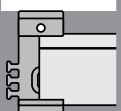
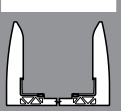


- **Components, trough “Heavy Duty”:**
- ❶ Trough side parts, aluminum, 6.56 ft. (2m)
- ❷ Glide bar, plastic, 6.56 ft. (2m)
- ❸ Glide strips, plastic 6.56 ft. (2m)
  (without glide strips on request)
- ❿ Optional: Silencer profile, rubber

- **Components, installation set “Heavy Duty”:**
- ❺ profile rail, steel galvanized
- ❼ Sliding nut M6
- ❾ Heavy duty bracket, aluminum
- ⓫ Screw M6 x 20

- = Guide trough
- = Glide bar
- = Installation set “Heavy duty”
- = profile rail

Note: Dimensions similar to Basic version!
Exception: Heavy duty bracket, see drawing

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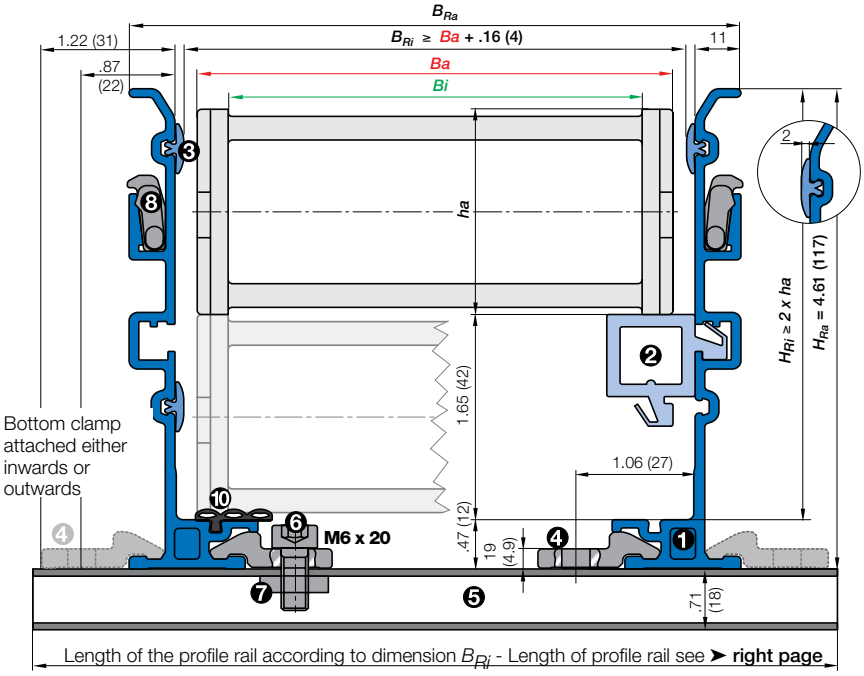
Guide Trough Systems
Aluminum SuperTrough

Part No. 972-02-30-SL and 972-02-31-SL
Trough Height: 4.61 in. (117 mm)
Aluminum SuperTrough — Basic Version

For the following Series

System E4-1 Series
● E4-28/R4-28
System E4 Series:
● 220/R760
System E6 Series:
● E6-35

Ba	=	Outer E-Chain® width
Bi	=	Inner E-Chain® width
ha	=	E-Chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)
		$H_{Ri} \geq 2 \bullet ha$
		$B_{Ri} \geq Ba + 4$
	=	Guide trough
	=	Glide bar
	=	Installation set “Basic”
	=	profile rail



● **Components, trough:**
❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
❿ Optional: Silencer profile, rubber

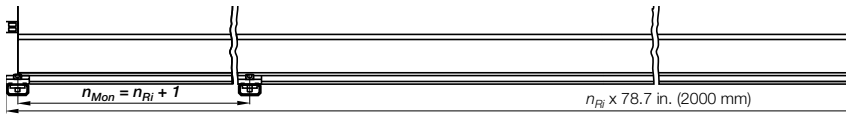
● **Components, installation set:**
❹ Bottom clamp, aluminum
❺ profile rail, steel galvanized
❻ Screw M6 x20
❼ Sliding nut M6
❽ Interface connector, plastic

Basic version: Aluminum SuperTrough components

Complete guide trough sets - description	Part No.	Weight
Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft. (2m) section	**972-02-30-SL**	≈ 13.23 lbs
Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section	**972-02-31-SL**	≈ 16.31 lbs
1 Installation set **“Basic”** without profile rail	**960-30**	≈ .13 lbs
1 Installation set **“Basic”** with profile rail	**960-30-____**	
Single parts - description		
1 Glide strip, individual, 6.56 ft. (2m) section	**75-01**	≈ .13 lbs
1 Bottom clamp, individual	**75.40**	≈ .07 lbs
1 Interface connector, individual	**75-60**	
1 Screw M6 x 20, individual	**M6X20SOCKETCAP**	
1 Sliding nut M6, individual	**ZBNUT-LG**	
2 Glide bars, 6.56 ft. (2m) sections	**82-79**	≈
1 profile rail, individual	**92-52G____**	≈ .60 lbs/ft.
Silencer profile	**75-67H**	

Supplement Part No. with the indicated profile rail-length-index.
Example: 960-30-175 profile rail-length-index for your chosen trough inner width B_{Ri}
➤ See table on the right or the respective page for chosen series

Number of installation sets which have to be installed



Guide Trough Systems
Aluminum SuperTrough
Lengths of profile rail - Basic Version
Bottom Clamp can be attached either **inwards** or **outwards**

E4-28/R4-28

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-040	2.52 (64)	*	**960-30-175**
-050	2.91 (74)	**960-30-125**	**960-30-175**
-062	3.39 (86)	**960-30-150**	**960-30-200**
-070	3.31 (94)	**960-30-150**	**960-30-200**
-075	3.90 (99)	**960-30-175**	**960-30-225**
-087	4.37 (111)	**960-30-175**	**960-30-225**
-100	4.88 (124)	**960-30-200**	**960-30-250**
-125	5.87 (149)	**960-30-200**	**960-30-250**
-150	6.85 (174)	**960-30-200**	**960-30-250**
-175	7.83 (199)	**960-30-225**	**960-30-275**
-200	8.82 (224)	**960-30-225**	**960-30-275**
-225	9.80 (249)	**960-30-250**	**960-30-300**
-250	10.78 (274)	**960-30-250**	**960-30-300**
-275	11.77 (299)	**960-30-250**	**960-30-300**
-300	12.76 (324)	**960-30-275**	**960-30-325**

220/R760

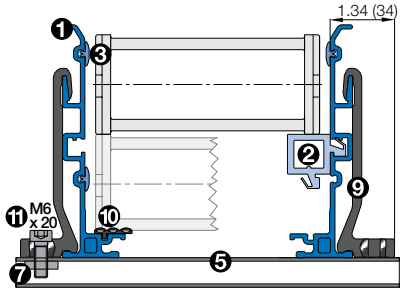
E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-040	2.52 (64)	*	**960-30-175**
-050	2.91 (74)	**960-30-125**	**960-30-175**
-062	3.39 (86)	**960-30-150**	**960-30-200**
-070	3.31 (94)	**960-30-150**	**960-30-200**
-075	3.90 (99)	**960-30-175**	**960-30-225**
-087	4.37 (111)	**960-30-175**	**960-30-225**
-100	4.88 (124)	**960-30-200**	**960-30-250**
-125	5.87 (149)	**960-30-200**	**960-30-250**
-150	6.85 (174)	**960-30-200**	**960-30-250**
-175	7.83 (199)	**960-30-225**	**960-30-275**
-200	8.82 (224)	**960-30-225**	**960-30-275**
-225	9.80 (249)	**960-30-250**	**960-30-300**
-250	10.78 (274)	**960-30-250**	**960-30-300**
-275	11.77 (299)	**960-30-250**	**960-30-300**
-300	12.76 (324)	**960-30-275**	**960-30-325**

E6-35

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-030	2.13 (54)	*	**960-30-150**
-040	2.52 (64)	*	**960-30-175**
-050	2.91 (74)	**960-30-125**	**960-30-175**
-060	3.31 (84)	**960-30-150**	**960-30-200**
-070	3.70 (94)	**960-30-150**	**960-30-200**
-080	4.09 (104)	**960-30-150**	**960-30-200**
-090	4.49 (114)	**960-30-175**	**960-30-225**
-100	4.88 (124)	**960-30-175**	**960-30-225**
-110	5.28 (134)	**960-30-200**	**960-30-250**
-120	5.67 (144)	**960-30-200**	**960-30-250**

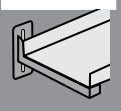
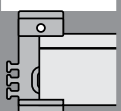
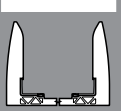
- For the “Heavy Duty” installation set: Insert Part No. **972-50-____** instead of **960-30-____** on the right column “attached outwards”

Heavy Duty Version - Installation Set Part No. 972-50



- **Components, trough “Heavy Duty”:**
  - ❶ Trough side parts, aluminum, 6.56 ft. (2m)
  - ❷ Glide bar, plastic, 6.56 ft. (2m)
  - ❸ Glide strips, plastic 6.56 ft. (2m) (without glide strips on request)
  - ❿ Optional: Silencer profile, rubber
- **Components, installation set “Heavy Duty”:**
  - ❺ profile rail, steel galvanized
  - ❼ Sliding nut M6
  - ❾ Heavy duty bracket, aluminum
  - ⓫ Screw M6 x 20

- = Guide trough
- = Glide bar
- = Installation set “Heavy duty”
- = profile rail

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Guide Trough Systems
Aluminum SuperTrough

Part No. 972-30-SL and 972-31-SL Trough Height: 4.61 in. (117 mm)

Aluminum SuperTrough — Basic Version

For the following Series

System E4 Series:
- 280/290/R770
- 2828/2928/R7728

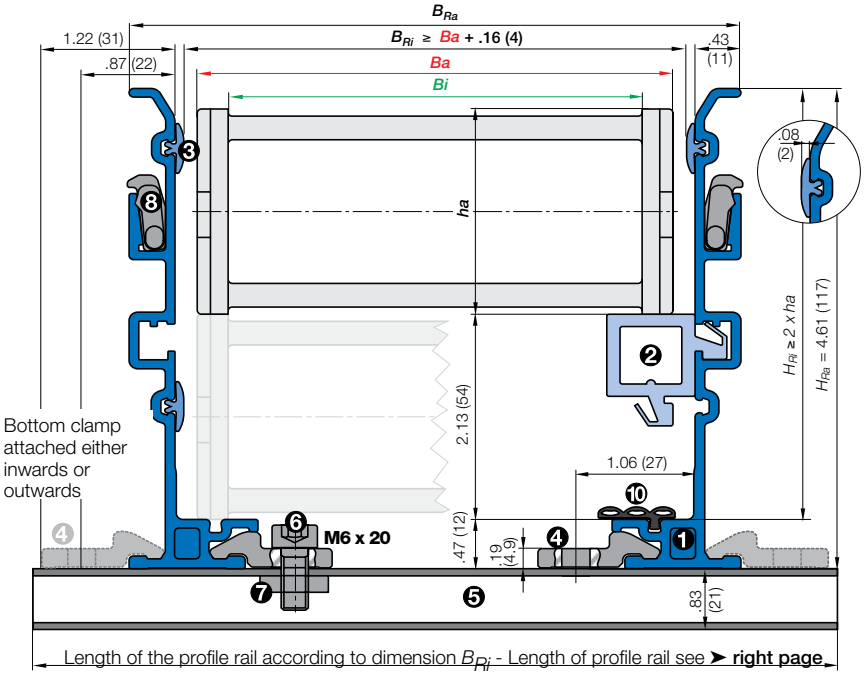
System E6 Series:
- E6-40/R6-40

System E4-1 Series
- E4-32/H4-32/R4-32

Ba	=	Outer E-Chain® width
Bi	=	Inner E-Chain® width
ha	=	E-Chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 4$

= Guide trough
= Glide bar
= Installation set “Basic”
= profile rail



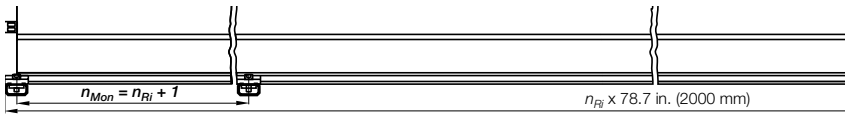
- **Components, trough:**
  - ❶ Trough side parts, aluminum, 6.56 ft. (2m)
  - ❷ Glide bar, plastic, 6.56 ft. (2m)
  - ❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
  - ❿ Optional: Silencer profile, rubber
- **Components, installation set:**
  - ❹ Bottom clamp, aluminum
  - ❺ profile rail, steel galvanized
  - ❻ Screw M6 x20
  - ❼ Sliding nut M6
  - ❽ Interface connector, plastic

Basic version: Aluminum SuperTrough components

Complete guide trough sets - description	Part No.	Weight
Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft. (2m) section	972-30-SL	≈ 13.23 lbs
Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section	972-31-SL	≈ 16.31 lbs
1 Installation set **“Basic”** without profile rail	960-30	≈ .13 lbs
1 Installation set **“Basic”** with profile rail	960-30-____	
Single parts - description		
1 Glide strip, individual, 6.56 ft. (2m) section	75-01	≈ .13 lbs
1 Bottom clamp, individual	75.40	≈ .07 lbs
1 Interface connector, individual	75-60	
1 Screw M6 x 20, individual	M6X20SOCKETCAP	
1 Sliding nut M6, individual	ZBNUT-LG	
2 Glide bars, 6.56 ft. (2m) sections	82-79	≈
1 profile rail, individual	92-52G____	≈ .60 lbs/ft.
Silencer profile	75-67H	

Supplement Part No. with the indicated profile rail-length-index.
Example: 960-30-150 profile rail-length-index for your chosen trough inner width B_{Ri}
➤ See table on the right or the respective page for chosen series

Number of installation sets which have to be installed



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Guide Trough Systems
Aluminum SuperTrough

Lengths of profile rail - Basic Version
Bottom Clamp can be attached either **inwards** or **outwards**

280/290/R770
E4-32/H4-32/R4-32

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-05	3.03 (77)	960-30-125	960-30-175
-06	3.74 (95)	960-30-150	960-30-200
-07	4.02 (102)	960-30-150	960-30-200
-087	4.49 (114)	960-30-175	960-30-225
-10	5.00 (127)	960-30-175	960-30-225
-11	5.31 (135)	960-30-200	960-30-250
-112	5.51 (140)	960-30-200	960-30-250
-12	5.98 (152)	960-30-200	960-30-250
-137	6.50 (165)	960-30-225	960-30-275
-15	6.97 (177)	960-30-225	960-30-275
-162	7.48 (190)	960-30-250	960-30-300
-17	7.68 (195)	960-30-250	960-30-300
-18	7.95 (202)	960-30-250	960-30-300
-187	8.46 (215)	960-30-275	960-30-325
-20	8.94 (227)	960-30-275	960-30-325
-212	9.45 (240)	960-30-300	960-30-350
-23	9.92 (252)	960-30-300	960-30-350
-237	10.43 (265)	960-30-325	960-30-375
-25	10.91 (277)	960-30-325	960-30-375
-262	11.42 (290)	960-30-350	960-30-400
-28	11.89 (302)	960-30-350	960-30-400
-29	12.40 (315)	960-30-375	960-30-425
-30	12.87 (327)	960-30-375	960-30-425
-312	13.39 (340)	960-30-400	960-30-450
-325	13.86 (352)	960-30-400	960-30-450
-337	14.37 (365)	960-30-425	960-30-475
-350	14.84 (377)	960-30-425	960-30-475
-362	15.35 (390)	960-30-450	960-30-500
-375	15.83 (402)	960-30-450	960-30-500
-387	16.34 (415)	960-30-475	960-30-525
-400	16.81 (427)	960-30-475	960-30-525

2828/2928/R7728

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-05	3.07 (78)	960-30-125	960-30-175
-06	3.78 (96)	960-30-150	960-30-200
-07	4.06 (103)	960-30-150	960-30-200
-087	4.53 (115)	960-30-175	960-30-225
-10	5.04 (128)	960-30-175	960-30-225
-11	5.35 (136)	960-30-200	960-30-225
-112	5.55 (141)	960-30-200	960-30-250
-12	6.02 (153)	960-30-200	960-30-250
-137	6.54 (166)	960-30-225	960-30-275
-15	7.01 (178)	960-30-225	960-30-275
-162	7.52 (191)	960-30-250	960-30-300
-17	7.72 (196)	960-30-250	960-30-300
-18	7.99 (203)	960-30-250	960-30-300
-187	8.50 (216)	960-30-275	960-30-325
-20	8.98 (228)	960-30-275	960-30-325
-212	9.49 (241)	960-30-300	960-30-350
-23	9.96 (253)	960-30-300	960-30-350
-237	10.47 (266)	960-30-325	960-30-375
-25	10.94 (278)	960-30-325	960-30-375
-262	11.46 (291)	960-30-350	960-30-400
-28	11.93 (303)	960-30-350	960-30-400
-29	12.44 (316)	960-30-375	960-30-425
-30	12.91 (328)	960-30-375	960-30-425
-312	13.43 (341)	960-30-400	960-30-450
-325	13.90 (353)	960-30-400	960-30-450
-337	14.41 (366)	960-30-425	960-30-475
-350	14.88 (378)	960-30-425	960-30-475
-362	15.39 (391)	960-30-450	960-30-500
-375	15.87 (403)	960-30-450	960-30-500
-387	16.38 (416)	960-30-475	960-30-525
-400	16.85 (428)	960-30-475	960-30-525

- For the “Heavy Duty” installation set: Insert Part No. **972-50-____** instead of **960-30-____** on the right column “attached outwards”

E6-40/R6-40

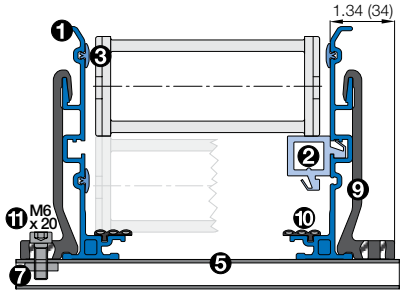
E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-040	2.52 (64)	*	960-30-175
-050	2.91 (74)	960-30-125	960-30-175
-062	3.39 (86)	960-30-150	960-30-200
-070	3.70 (94)	960-30-150	960-30-200
-075	3.90 (99)	960-30-150	960-30-200
-087	4.37 (111)	960-30-175	960-30-225
-100	4.88 (124)	960-30-175	960-30-225
-125	5.87 (149)	960-30-200	960-30-250
-150	6.85 (174)	960-30-225	960-30-275
-175	7.83 (199)	960-30-250	960-30-300
-200	8.82 (224)	960-30-275	960-30-325
-225	9.80 (249)	960-30-300	960-30-350
-250	10.78 (274)	960-30-325	960-30-375
-275	11.77 (299)	960-30-350	960-30-400
-300	12.76 (324)	960-30-375	960-30-425

E4-38L/R4-38L

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-050	2.76 (70)	*	960-30-200
-062	3.23 (82)	*	960-30-200
-075	3.74 (95)	*	960-30-225
-087	4.21 (107)	*	960-30-225
-100	4.72 (120)	960-30-175	960-30-250
-112	5.20 (132)	960-30-200	960-30-250
-125	5.71 (145)	960-30-200	960-30-275
-137	6.18 (157)	960-30-225	960-30-275
-150	6.69 (170)	960-30-225	960-30-300
-162	7.17 (182)	960-30-250	960-30-300
-175	7.68 (195)	960-30-250	960-30-325
-200	8.66 (220)	960-30-275	960-30-350
-250	10.63 (270)	960-30-325	960-30-400

*upon request

Heavy Duty Version - Installation Set Part No. 972-50



- **Components, trough “Heavy Duty”:**

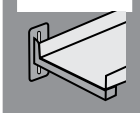
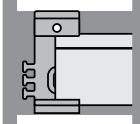
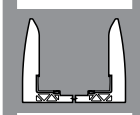
❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic 6.56 ft. (2m) (without glide strips on request)
❿ Optional: Silencer profile, rubber

- **Components, installation set “Heavy Duty”:**

❺ profile rail, steel galvanized
❼ Sliding nut M6
❾ Heavy duty bracket, aluminum
⓫ Screw M6 x 20

Note: Dimensions similar to Basic version!
Exception: Heavy duty bracket, see drawing

= Guide trough
= Glide bar
= Installation set “Heavy duty”
= profile rail

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Guide Trough Systems
Aluminum SuperTrough

Part No. 972-30-SL and 972-32-SL Trough Height: 4.61 in. (117 mm)
Aluminum SuperTrough — Basic Version

For the following Series

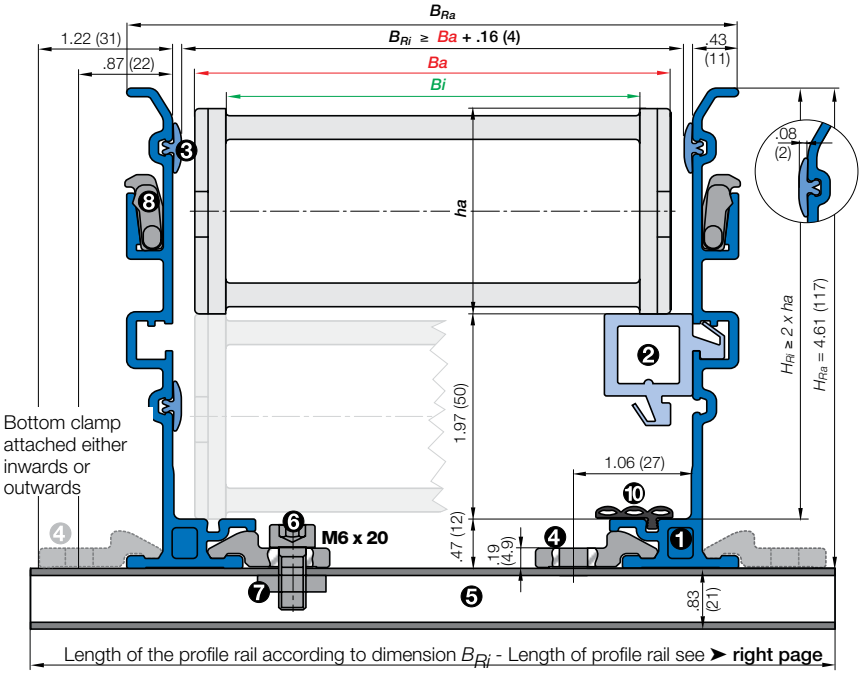
System E2 Series:
- 2680
- 26/27i/27

System E2 Tube Series:
- R58

Ba	=	Outer E-Chain® width
Bi	=	Inner E-Chain® width
ha	=	E-Chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 4$

= Guide trough
= Glide bar
= Installation set “Basic”
= profile rail



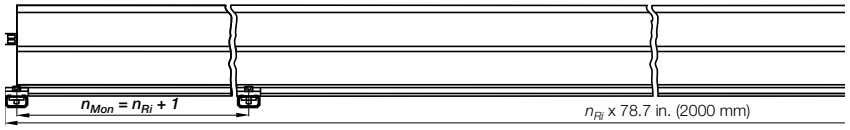
- **Components, trough:**
  - ❶ Trough side parts, aluminum, 6.56 ft. (2m)
  - ❷ Glide bar, plastic, 6.56 ft. (2m)
  - ❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
  - ❿ Optional: Silencer profile, rubber
- **Components, installation set:**
  - ❹ Bottom clamp, aluminum
  - ❺ profile rail, steel galvanized
  - ❻ Screw M6 x20
  - ❼ Sliding nut M6
  - ❽ Interface connector, plastic

Basic version: Aluminum SuperTrough components

Complete guide trough sets - description	Part No.	Weight
Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft. (2m) section	**972-30-SL**	≈ 13.23 lbs
Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section	**972-32-SL**	≈ 16.31lbs
1 Installation set **“Basic”** without profile rail	**960-30**	≈ .13 lbs
1 Installation set **“Basic”** with profile rail	**960-30-____**	
Single parts - description		
1 Glide strip, individual, 6.56 ft. (2m) section	**75-01**	≈ .13 lbs
1 Bottom clamp, individual	**75-40**	≈ .07 lbs
1 Interface connector, individual	**75-60**	
1 Screw M6 x 20, individual	**M6X20SOCKETCAP**	
1 Sliding nut M6, individual	**ZBNUT-LG**	
2 Glide bars, 6.56 ft. (2m) sections	**82-79**	≈
1 profile rail, individual	**92-52G____**	≈ .60 lbs/ft.
Silencer profile	**75-67H**	

Supplement Part No. with the indicated profile rail-length-index.
Example: 960-30-150 profile rail-length-index for your chosen trough inner width B_{Ri}
➤ See table on the right or the respective page for chosen series

Number of installation sets which have to be installed



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Guide Trough Systems
Aluminum SuperTrough

Lengths of profile rail - Basic Version
Bottom Clamp can be attached either **inwards** or **outwards**

2600/2700

2680-**05**-200-0

	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-05	2.76 (70)	*	**960-30-175**
-06	3.35 (85)	**960-30-150**	**960-30-200**
-07	3.74 (95)	**960-30-150**	**960-30-200**
-09	4.33 (110)	**960-30-175**	**960-30-225**
-10	4.72 (120)	**960-30-175**	**960-30-225**
-12	5.71 (145)	**960-30-200**	**960-30-250**
-15	6.69 (170)	**960-30-225**	**960-30-275**
-17	7.79 (198)	**960-30-250**	**960-30-300**

R58

58-**075**-200-0

	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-050	2.76 (70)	*	**960-30-175**
-075	3.74 (95)	**960-30-150**	**960-30-200**
-100	4.72 (120)	**960-30-175**	**960-30-225**
-125	5.71 (145)	**960-30-200**	**960-30-250**
-150	6.69 (170)	**960-30-225**	**960-30-275**
-175	7.58 (195)	**960-30-250**	**960-30-300**
-200	8.66 (220)	**960-30-275**	**960-30-325**

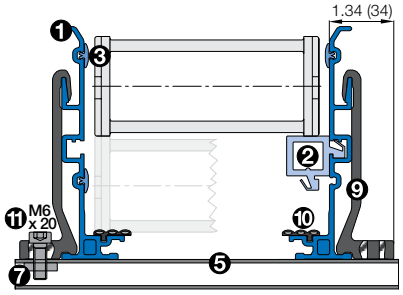
26/27i/27

26-**05**-200-0

	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-05	2.76 (70)	**960-30-125**	**960-30-175**
-07	3.74 (95)	**960-30-150**	**960-30-200**
-10	4.72 (120)	**960-30-175**	**960-30-225**
-12	5.71 (145)	**960-30-200**	**960-30-250**
-15	6.69 (170)	**960-30-225**	**960-30-275**
-17	7.79 (198)	**960-30-250**	**960-30-300**
-20	8.78 (223)	**960-30-275**	**960-30-325**

Stable guidance without oscillation. Because of the compact design of the aluminum SuperTrough the need for space along the travel path is small.
Travel 105 ft. (32 m) Crane operating speed 262 ft./min. (80 m/min).

Heavy Duty Version - Installation Set Part No. 972-50

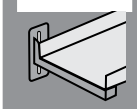
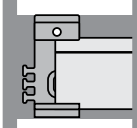
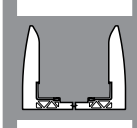


For the “Heavy Duty” installation set:
Insert Part No. **972-50-____** instead of **960-30-____** on the right column “attached outwards”

- **Components, trough “Heavy Duty”:**
- ❶ Trough side parts, aluminum, 6.56 ft. (2m)
- ❷ Glide bar, plastic, 6.56 ft. (2m)
- ❸ Glide strips, plastic 6.56 ft. (2m) (without glide strips on request)
- ❿ Optional: Silencer profile, rubber
- **Components, installation set “Heavy Duty”:**
- ❺ profile rail, steel galvanized
- ❼ Sliding nut M6
- ❾ Heavy duty bracket, aluminum
- ⓫ Screw M6 x 20

Note: Dimensions similar to Basic version!
Exception: Heavy duty bracket, see drawing

- = Guide trough
- = Glide bar
- = Installation set “Heavy duty”
- = profile rail

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Guide Trough

igus® E-Chain System®

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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Guide Trough Systems
Aluminum SuperTrough

Part No. 973-30-SL and 973-31-SL Trough Height: 5.67 in. (144 mm)
Aluminum SuperTrough — Basic Version

For the following Series

System E2 Series:
- 3480
- 340/350

System E2 Tube Series:
- R68

System E4 Series:
- 380/390/R780
- 3838/3938/R7838

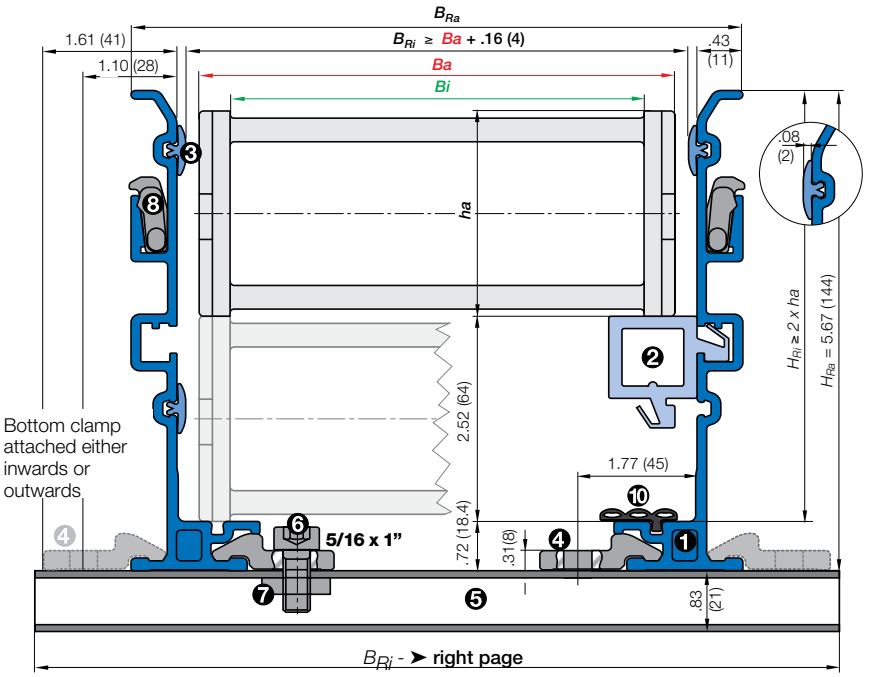
System E6 Series:
- E6-52/R6-52

System E4-1 Series
- E4-42/H4-42/R4-42

Ba	=	Outer E-Chain® width
Bi	=	Inner E-Chain® width
ha	=	E-Chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 4$

= Guide trough
= Glide bar
= Installation set “Basic”
= profile rail



Components, trough:
1. Trough side parts, aluminum, 6.56 ft. (2m)
2. Glide bar, plastic, 6.56 ft. (2m)
3. Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
10. Optional: Silencer profile, rubber

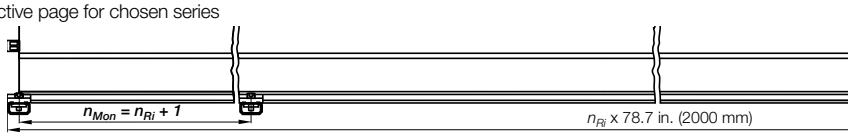
Components, installation set:
4. Bottom clamp, aluminum
5. profile rail, steel galvanized
6. Screw 5/16 x 1”
7. Sliding nut 5/16
8. Interface connector, plastic

Basic version: Aluminum SuperTrough components

Complete guide trough sets - description	Part No.	Weight
Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft. (2m) section	**973-30-SL**	≈ 17.64 lbs
Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section	**973-31-SL**	≈ 23.81 lbs
1 Installation set **“Basic”** without profile rail	**960-40**	≈ .18 lbs
1 Installation set **“Basic”** with profile rail	**960-40-____**	
Single parts - description		
1 Glide strip, individual, 6.56 ft. (2m) section	**75-01**	≈.13 lbs
1 Bottom clamp, individual	**75.50**	≈ .09 lbs
1 Interface connector, individual	**75-60**	
1 Screw 5/16 x 1”, individual	**82-55**	
1 Sliding nut 5/16, individual	**82-56**	
2 Glide bars, 6.56 ft. (2m) sections	**83-79**	≈
1 profile rail, individual	**92-52G____**	≈ .60 lbs/ft.
Silencer profile	**75-68H**	

Supplement Part No. with the indicated profile rail-length-index.
Example: 960-30-150 profile rail-length-index for your chosen trough inner width B_{Ri}
➤ See table on the right or the respective page for chosen series

Number of installation sets which have to be installed



Guide Trough Systems
Aluminum SuperTrough
Lengths of profile rail - Basic Version
Bottom Clamp can be attached either **inwards** or **outwards**

igus®

Guide Trough

340/350/3400/3500

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-050	2.91 (74)	*	960-40-200
-075	3.90 (99)	*	960-40-225
-100	4.88 (124)	960-40-175	960-40-250
-115	5.47 (139)	960-40-200	960-40-275
-125	5.87 (149)	960-40-200	960-40-275
-150	6.85 (174)	960-40-225	960-40-300
-175	7.83 (199)	960-40-250	960-40-325
-200	8.82 (224)	960-40-275	960-40-350
-225	9.80 (249)	960-40-300	960-40-375
-250	10.79 (274)	960-40-325	960-40-400

380/390/R780
E4-42/H4-42/R4-42

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-05	3.15 (80)	*	960-40-200
-06	3.86 (98)	*	960-40-225
-07	4.13 (105)	*	960-40-225
-087	4.65 (118)	960-40-175	960-40-250
-10	5.12 (130)	960-40-200	960-40-250
-11	5.43 (138)	960-40-200	960-40-275
-112	5.63 (143)	960-40-200	960-40-275
-12	6.10 (155)	960-40-225	960-40-275
-137	6.61 (168)	960-40-225	960-40-300
-15	7.09 (180)	960-40-250	960-40-300
-162	7.60 (193)	960-40-250	960-40-325
-17	7.80 (198)	960-40-250	960-40-325
-18	8.07 (205)	960-40-275	960-40-325
-187	8.58 (218)	960-40-275	960-40-350
-20	9.06 (230)	960-40-300	960-40-350
-212	9.57 (243)	960-40-300	960-40-375
-23	10.04 (255)	960-40-325	960-40-375
-237	10.55 (268)	960-40-325	960-40-400
-25	11.02 (280)	960-40-350	960-40-400
-262	11.54 (293)	960-40-350	960-40-425
-28	12.01 (305)	960-40-375	960-40-425
-29	12.52 (318)	960-40-375	960-40-450
-30	12.99 (330)	960-40-400	960-40-450
-312	13.50 (343)	960-40-400	960-40-475
-325	13.98 (355)	960-40-425	960-40-475
-337	14.49 (368)	960-40-425	960-40-500
-350	14.96 (380)	960-40-450	960-40-500
-362	15.47 (393)	960-40-450	960-40-525
-375	15.98 (406)	960-40-475	960-40-525
-387	16.46 (418)	960-40-475	960-40-550
-400	16.93 (430)	960-40-500	960-40-550

3838/3938/R7838

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-05	3.19 (81)	*	960-40-200
-06	3.90 (99)	*	960-40-225
-07	4.17 (106)	*	960-40-225
-087	4.69 (119)	960-40-175	960-40-250
-10	5.16 (131)	960-40-200	960-40-250
-11	5.47 (139)	960-40-200	960-40-275
-112	5.67 (144)	960-40-200	960-40-275
-12	6.14 (156)	960-40-225	960-40-275
-137	6.65 (169)	960-40-225	960-40-300
-15	7.13 (181)	960-40-250	960-40-300
-162	7.64 (194)	960-40-250	960-40-325
-17	7.83 (199)	960-40-250	960-40-325
-18	8.11 (206)	960-40-275	960-40-325
-187	8.62 (219)	960-40-275	960-40-350
-20	9.09 (231)	960-40-300	960-40-350
-212	9.61 (244)	960-40-300	960-40-375
-23	10.08 (256)	960-40-325	960-40-375
-237	10.59 (269)	960-40-325	960-40-400
-25	11.06 (281)	960-40-350	960-40-400
-262	11.57 (294)	960-40-350	960-40-425
-28	12.05 (306)	960-40-375	960-40-425
-29	12.56 (319)	960-40-375	960-40-450
-30	13.03 (331)	960-40-400	960-40-450
-312	13.54 (344)	960-40-400	960-40-475
-325	14.02 (356)	960-40-425	960-40-475
-337	14.53 (369)	960-40-425	960-40-500
-350	15.00 (381)	960-40-450	960-40-500
-362	15.51 (394)	960-40-450	960-40-525
-375	15.98 (406)	960-40-475	960-40-525
-387	16.50 (419)	960-40-475	960-40-550
-400	16.97 (431)	960-40-500	960-40-550

E6-52/R6-52

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-040	2.68 (68)	*	960-40-200
-050	3.07 (78)	*	960-40-200
-062	3.54 (90)	*	960-40-225
-070	3.86 (98)	*	960-40-225
-075	4.06 (103)	*	960-40-225
-100	5.04 (128)	960-40-175	960-40-250
-125	6.02 (153)	960-40-200	960-40-275
-150	7.01 (178)	960-40-225	960-40-300
-175	7.99 (203)	960-40-250	960-40-325
-200	8.98 (228)	960-40-275	960-40-350
-225	9.96 (253)	960-40-300	960-40-375
-250	10.94 (278)	960-40-325	960-40-400
-275	11.92 (303)	960-40-350	960-40-425
-300	12.91 (328)	960-40-375	960-40-450

R68

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-050	2.83 (72)	*	960-40-200
-075	3.82 (97)	*	960-40-225
-100	4.80 (122)	960-40-175	960-40-250
-115	5.39 (137)	960-40-200	960-40-275
-125	5.79 (147)	960-40-200	960-40-275
-150	6.77 (172)	960-40-225	960-40-300
-175	7.76 (197)	960-40-250	960-40-325
-200	8.74 (222)	960-40-275	960-40-350
-225	9.72 (247)	960-40-300	960-40-375
-250	10.71 (272)	960-40-325	960-40-400

E4-48L/R4-48L

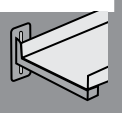
E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-050	2.91 (74)	*	960-30-200
-062	3.39 (86)	*	960-30-200
-075	3.90 (99)	*	960-30-225
-087	4.37 (111)	*	960-30-225
-100	4.88 (124)	960-30-175	960-30-250
-125	5.87 (149)	960-30-200	960-30-275
-150	6.85 (174)	960-30-225	960-30-300
-175	7.83 (199)	960-30-250	960-30-325
-200	8.82 (224)	960-30-275	960-30-350
-250	10.79 (274)	960-30-325	960-30-400

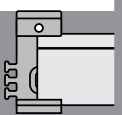
*upon request

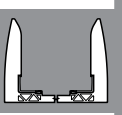
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

AL

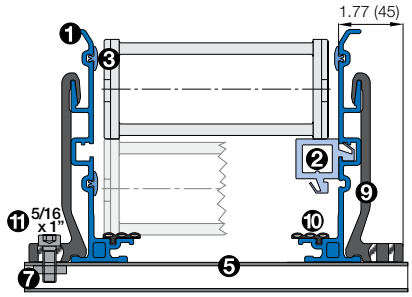
ST







Heavy Duty Version - Installation Set Part No. 973-50



For the “Heavy Duty” installation set:
Insert Part No. **973-40-____** instead of **960-40-____** on the right column “attached outwards”

- **Components, trough “Heavy Duty”:**

❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic 6.56 ft. (2m)
(without glide strips on request)
⑩ Optional: Silencer profile, rubber

- **Components, installation set “Heavy Duty”:**

❺ profile rail, steel galvanized
❼ Sliding nut 5/16
❾ Heavy duty bracket, aluminum
⑪ Screw 5/16 x 1”

Note: Dimensions similar to Basic version!
Exception: Heavy duty bracket, see drawing

● = Guide trough
● = Glide bar
● = Installation set “Heavy duty”
● = profile rail

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Guide Trough Systems
Aluminum SuperTrough

Part No. 974-30-SL and 974-31-SL Trough Height: 7.24 in. (184 mm)
Aluminum SuperTrough — Basic Version

For the following Series

System E4 Series:
- 14040/14140/R18840
- 14240/14340

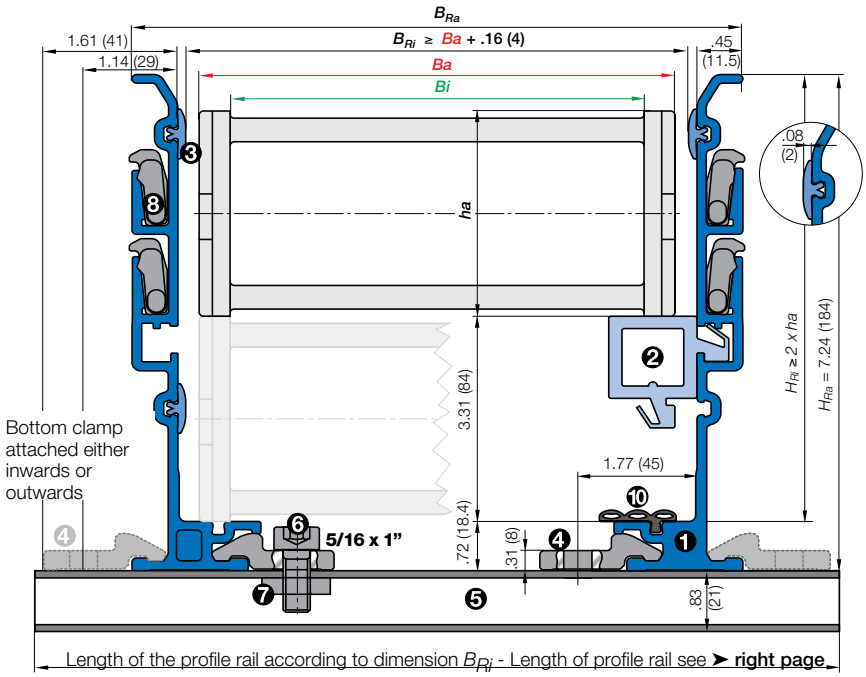
System E6 Series:
- E6-62

System E4-1 Series
- E4-56/H4-56/R4-56

Ba	=	Outer E-Chain® width
Bi	=	Inner E-Chain® width
ha	=	E-Chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 4$

= Guide trough
= Glide bar
= Installation set "Basic"
= profile rail



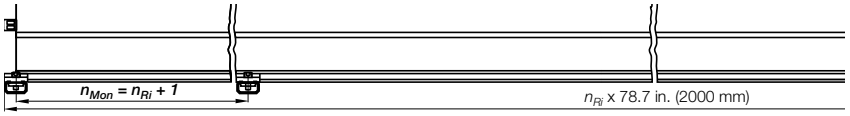
- **Components, trough:**
  - ❶ Trough side parts, aluminum, 6.56 ft. (2m)
  - ❷ Glide bar, plastic, 6.56 ft. (2m)
  - ❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
  - ❿ Optional: Silencer profile, rubber
- **Components, installation set:**
  - ❹ Bottom clamp, aluminum
  - ❺ profile rail, steel galvanized
  - ❻ Screw 5/16 x 1"
  - ❼ Sliding nut 5/16
  - ❽ Interface connector, plastic

Basic version: Aluminum SuperTrough components

Complete guide trough sets - description	Part No.	Weight
Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft. (2m) section	**974-30-SL**	≈ 22.05 lbs
Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section	**974-31-SL**	≈ 28.22 lbs
1 Installation set **"Basic"** without profile rail	**960-50**	≈ .18 lbs
1 Installation set **"Basic"** with profile rail	**960-50-____**	
Single parts - description		
1 Glide strip, individual, 6.56 ft. (2m) section	**75-01**	≈ .13 lbs
1 Bottom clamp, individual	**75.50**	≈ .09 lbs
1 Interface connector, individual	**75-60**	
1 Screw 5/16 x 1", individual	**82-55**	
1 Sliding nut 5/16, individual	**82-56**	
2 Glide bars, 6.56 ft. (2m) section	**83-79**	≈
1 profile rail, individual	**92-52G____**	≈ .60 lbs/ft.
Silencer profile	**75-68H**	

Supplement Part No. with the indicated profile rail-length-index.
Example: 960-30-150 profile rail-length-index for your chosen trough inner width B_{Ri}
➤ See table on the right or the respective page for chosen series

Number of installation sets which have to be installed



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Guide Trough Systems
Aluminum SuperTrough

igus®

E4-56/H4-56/R4-56

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-05	3.46 (88)	*	960-50-225
-06	4.06 (103)	*	960-50-225
-07	4.45 (113)	*	960-50-250
-10	5.43 (138)	960-50-200	960-50-275
-11	5.94 (151)	960-50-200	960-50-275
-12	6.42 (163)	960-50-225	960-50-300
-13	6.93 (176)	960-50-225	960-50-300
-15	7.40 (188)	960-50-250	960-50-325
-16	7.91 (201)	960-50-250	960-50-325
-17	8.39 (213)	960-50-275	960-50-350
-18	8.90 (226)	960-50-275	960-50-350
-20	9.37 (238)	960-50-300	960-50-375
-21-	9.88 (251)	960-50-300	960-50-375
-22	10.35 (263)	960-50-325	960-50-400
-23	10.87 (276)	960-50-325	960-50-400
-25	11.34 (288)	960-50-350	960-50-425
-26	11.85 (301)	960-50-350	960-50-425
-27	12.32 (313)	960-50-375	960-50-450
-28	12.83 (326)	960-50-375	960-50-450
-30	13.31 (338)	960-50-400	960-50-475
-31	13.82 (351)	960-50-400	960-50-475
-32	14.29 (363)	960-50-425	960-50-500
-33	14.80 (376)	960-50-425	960-50-500
-35	15.28 (388)	960-50-450	960-50-525
-36	15.79 (401)	960-50-450	960-50-525
-37	16.26 (413)	960-50-475	960-50-550
-38	16.77 (426)	960-50-475	960-50-550
-40	17.24 (438)	960-50-500	960-50-575
-41	17.76 (451)	960-50-500	960-50-575
-42	18.23 (463)	960-50-525	960-50-600
-43	18.74 (476)	960-50-525	960-50-600
-45	19.21 (488)	960-50-550	960-50-625
-46	19.72 (501)	960-50-550	960-50-625
-47	20.20 (513)	960-50-575	960-50-650
-48	20.71 (526)	960-50-575	960-50-650
-50	21.18 (538)	960-50-600	960-50-675
-51	21.69 (551)	960-50-600	960-50-675
-52	22.17 (563)	960-50-625	960-50-700
-53	22.68 (576)	960-50-625	960-50-700
-55	23.15 (588)	960-50-650	960-50-725
-60	25.12 (638)	960-50-700	960-50-775

14240/14340

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-05	3.15 (80)	*	960-50-200
-06	3.86 (98)	*	960-50-225
-07	4.13 (105)	*	960-50-225
-087	4.65 (118)	960-50-175	960-50-250
-10	5.12 (130)	960-50-200	960-50-250
-11	5.43 (138)	960-50-200	960-50-275
-112	5.63 (143)	960-50-200	960-50-275
-12	6.10 (155)	960-50-225	960-50-275
-137	6.61 (168)	960-50-225	960-50-300
-15	7.08 (180)	960-50-250	960-50-300
-162	7.60 (193)	960-50-250	960-50-325
-17	7.79 (198)	960-50-250	960-50-325
-18	8.07 (205)	960-50-275	960-50-325
-187	8.58 (218)	960-50-275	960-50-350
-20	9.05 (230)	960-50-300	960-50-350
-212	9.57 (243)	960-50-300	960-50-375
-23	10.04 (255)	960-50-325	960-50-375
-237	10.55 (268)	960-50-325	960-50-400
-25	11.02 (280)	960-50-350	960-50-400
-262	11.54 (293)	960-50-350	960-50-425
-28	12.01 (305)	960-50-375	960-50-425
-29	12.52 (318)	960-50-375	960-50-450
-30	12.99 (330)	960-50-400	960-50-450
-312	13.50 (343)	960-50-400	960-50-475
-325	13.98 (355)	960-50-425	960-50-475
-337	14.49 (368)	960-50-425	960-50-500
-350	14.96 (380)	960-50-450	960-50-500
-362	15.47 (393)	960-50-450	960-50-525
-375	15.94 (405)	960-50-475	960-50-525
-387	16.46 (418)	960-50-475	960-50-550
-400	16.93 (430)	960-50-500	960-50-550

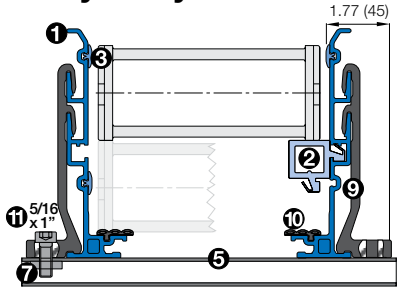
14040/14140/R18840

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-05	3.15 (80)	*	960-50-200
-06	3.74 (95)	*	960-50-225
-07	4.13 (105)	*	960-50-225
-10	5.12 (130)	960-50-200	960-50-250
-11	5.63 (143)	960-50-200	960-50-275
-12	6.10 (155)	960-50-225	960-50-275
-13	6.61 (168)	960-50-225	960-50-300
-15	7.09 (180)	960-50-250	960-50-300
-16	7.60 (193)	960-50-250	960-50-325
-17	8.07 (205)	960-50-275	960-50-325
-18	8.58 (218)	960-50-275	960-50-350
-20	9.39 (230)	960-50-300	960-50-350
-21	9.57 (243)	960-50-300	960-50-375
-22	10.04 (255)	960-50-325	960-50-375
-23	10.55 (268)	960-50-325	960-50-400
-25	11.02 (280)	960-50-350	960-50-400
-26	11.53 (293)	960-50-350	960-50-425
-27	12.01(305)	960-50-375	960-50-425
-28	12.52 (318)	960-50-375	960-50-450
-30	12.99 (330)	960-50-400	960-50-450
-31	13.50 (343)	960-50-400	960-50-475
-32	13.98 (355)	960-50-425	960-50-475
-33	14.49 (368)	960-50-425	960-50-500
-35	14.96 (380)	960-50-450	960-50-500
-36	15.47 (393)	960-50-450	960-50-525
-37	15.94 (405)	960-50-475	960-50-525
-38	16.46 (418)	960-50-475	960-50-550
-40	16.93 (430)	960-50-500	960-50-550
-41	17.44 (443)	960-50-500	960-50-575
-42	17.91 (455)	960-50-525	960-50-575
-43	18.43 (468)	960-50-525	960-50-600
-45	18.90 (480)	960-50-550	960-50-600
-46	19.41 (493)	960-50-550	960-50-625
-47	19.88 (505)	960-50-575	960-50-625
-48	20.39 (518)	960-50-575	960-50-650
-50	20.87 (530)	960-50-600	960-50-650
-51	21.38 (543)	960-50-600	960-50-675
-52	21.85 (555)	960-50-625	960-50-675
-53	22.36 (568)	960-50-625	960-50-700
-55	22.83 (580)	960-50-650	960-50-700
-60	24.80 (630)	960-50-700	960-50-750

E6-62

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-05	3.54 (90)	*	960-50-225
-06	4.25 (108)	*	960-50-225
-07	4.53 (115)	*	960-50-250
-087	5.00 (127)	960-50-175	960-50-250
-10	5.51 (140)	960-50-200	960-50-275
-11	5.83 (148)	960-50-200	960-50-275
-112	5.98 (152)	960-50-200	960-50-275
-12	6.50 (165)	960-50-225	960-50-300
-137	6.97 (177)	960-50-225	960-50-300
-15	7.48 (190)	960-50-250	960-50-325
-162	7.95 (202)	960-50-250	960-50-325
-17	8.19 (208)	960-50-275	960-50-325
-18	8.46 (215)	960-50-275	960-50-350
-187	8.94 (227)	960-50-275	960-50-350
-20	9.45 (240)	960-50-300	960-50-375
-212	9.92 (252)	960-50-300	960-50-375
-23	10.43 (265)	960-50-325	960-50-400
-237	10.91 (277)	960-50-325	960-50-400
-25	11.42 (290)	960-50-350	960-50-425
-262	11.89 (302)	960-50-350	960-50-425
-28	12.40 (315)	960-50-375	960-50-450
-29	12.87 (327)	960-50-375	960-50-450
-30	13.39 (340)	960-50-400	960-50-475
-312	13.86 (352)	960-50-400	960-50-475
-325	14.37 (365)	960-50-425	960-50-500
-337	14.84 (377)	960-50-425	960-50-500
-350	15.35 (390)	960-50-450	960-50-525
-362	15.83 (402)	960-50-450	960-50-525
-375	16.34 (415)	960-50-475	960-50-550
-387	16.81 (427)	960-50-475	960-50-550
-400	17.32 (440)	960-50-500	960-50-575

Heavy Duty Version - Installation Set Part No. 974-50



For the “Heavy Duty” installation set:
Insert Part No. **974-50-____** instead of **960-50-____** on the right column “attached outwards”

- **Components, trough “Heavy Duty”:**
- ❶ Trough side parts, aluminum, 6.56 ft. (2m)
- ❷ Glide bar, plastic, 6.56 ft. (2m)
- ❸ Glide strips, plastic 6.56 ft. (2m) (without glide strips on request)
- ⑩ Optional: Silencer profile, rubber
- **Components, installation set “Heavy Duty”:**
- ❺ profile rail, steel galvanized
- ❼ Sliding nut 5/16
- ❾ Heavy duty bracket, aluminum
- ⑪ Screw 5/16 x 1”

Note: Dimensions similar to Basic version!
Exception: Heavy duty bracket, see drawing

- = Guide trough
- = Glide bar
- = Installation set “Heavy duty”
- = profile rail

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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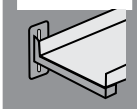

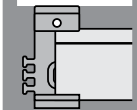

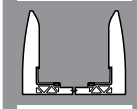

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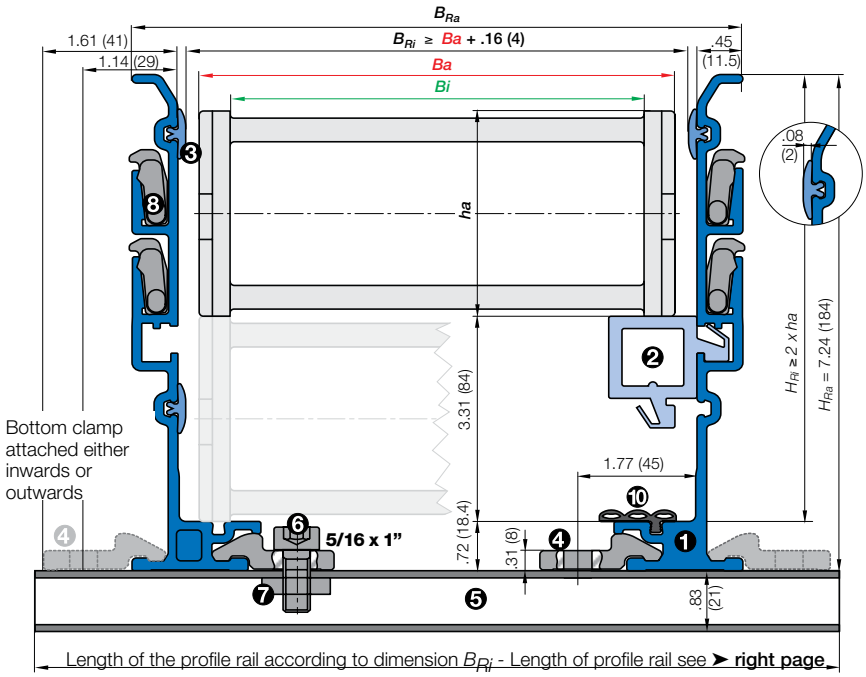
Guide Trough Systems
Aluminum SuperTrough

Part No. 974-30-SL and 974-31-SL Trough Height: 7.24 in. (184 mm)
Aluminum SuperTrough — Basic Version

For the following Series

System E4 Series:
- 400/410/R880
- 4040/4140/R8840



Ba	=	Outer E-Chain® width
Bi	=	Inner E-Chain® width
ha	=	E-Chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 4$

- = Guide trough
- = Glide bar
- = Installation set "Basic"
- = profile rail

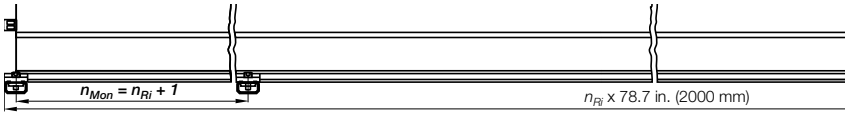
- **Components, trough:**
  - ❶ Trough side parts, aluminum, 6.56 ft. (2m)
  - ❷ Glide bar, plastic, 6.56 ft. (2m)
  - ❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
  - ❿ Optional: Silencer profile, rubber
- **Components, installation set:**
  - ❹ Bottom clamp, aluminum
  - ❺ profile rail, steel galvanized
  - ❻ Screw 5/16 x 1"
  - ❼ Sliding nut 5/16
  - ❽ Interface connector, plastic

Basic version: Aluminum SuperTrough components

Complete guide trough sets - description	Part No.	Weight
Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft. (2m) section	**974-30-SL**	≈ 22.05 lbs
Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section	**974-31-SL**	≈ 28.22 lbs
1 Installation set **"Basic"** without profile rail	**960-50**	≈ .18 lbs
1 Installation set **"Basic"** with profile rail	**960-50-____**	
Single parts - description		
1 Glide strip, individual, 6.56 ft. (2m) section	**75-01**	≈ .13 lbs
1 Bottom clamp, individual	**75.50**	≈ .09 lbs
1 Interface connector, individual	**75-60**	
1 Screw 5/16 x 1", individual	**82-55**	
1 Sliding nut 5/16, individual	**82-56**	
2 Glide bars, 6.56 ft. (2m) section	**83-79**	≈
1 profile rail, individual	**92-52G____**	≈ .60 lbs/ft.
Silencer profile	**75-68H**	

Supplement Part No. with the indicated profile rail-length-index.
Example: 960-30-150 profile rail-length-index for your chosen trough inner width B_{Ri}
➤ See table on the right or the respective page for chosen series

Number of installation sets which have to be installed



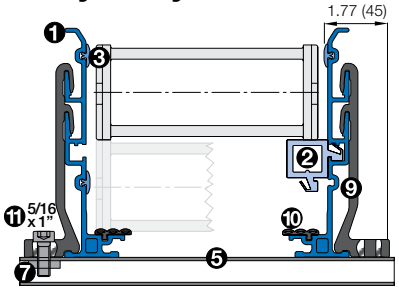
igus®

Guide Trough

Guide Trough Systems
Aluminum SuperTrough

400/410/R880				4040/4140/R8840			
E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards	E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-05	3.46 (88)	*	960-50-225	-05	3.54 (90)	*	960-50-225
-06	4.06 (103)	*	960-50-225	-06	4.13 (105)	*	960-50-225
-07	4.45 (113)	*	960-50-250	-07	4.53 (115)	*	960-50-250
-10	5.43 (138)	960-50-200	960-50-275	-10	5.51 (140)	960-50-200	960-50-275
-11	5.94 (151)	960-50-200	960-50-275	-11	6.02 (153)	960-50-200	960-50-275
-12	6.42 (163)	960-50-225	960-50-300	-12	6.50 (165)	960-50-225	960-50-300
-13	6.93 (176)	960-50-225	960-50-300	-13	7.01 (178)	960-50-225	960-50-300
-15	7.40 (188)	960-50-250	960-50-325	-15	7.48 (190)	960-50-250	960-50-325
-16	7.91 (201)	960-50-250	960-50-325	-16	7.99 (203)	960-50-250	960-50-325
-17	8.39 (213)	960-50-275	960-50-350	-17	8.46 (215)	960-50-275	960-50-350
-18	8.90 (226)	960-50-275	960-50-350	-18	8.98 (228)	960-50-275	960-50-350
-20	9.37 (238)	960-50-300	960-50-375	-20	9.45 (240)	960-50-300	960-50-375
-21-	9.88 (251)	960-50-300	960-50-375	-21	9.96 (253)	960-50-300	960-50-375
-22	10.35 (263)	960-50-325	960-50-400	-22	10.43 (265)	960-50-325	960-50-400
-23	10.87 (276)	960-50-325	960-50-400	-23	10.94 (278)	960-50-325	960-50-400
-25	11.34 (288)	960-50-350	960-50-425	-25	11.42 (290)	960-50-350	960-50-425
-26	11.85 (301)	960-50-350	960-50-425	-26	11.93 (303)	960-50-350	960-50-425
-27	12.32 (313)	960-50-375	960-50-450	-27	12.40 (315)	960-50-375	960-50-450
-28	12.83 (326)	960-50-375	960-50-450	-28	12.91 (328)	960-50-375	960-50-450
-30	13.31 (338)	960-50-400	960-50-475	-30	13.39 (340)	960-50-400	960-50-475
-31	13.82 (351)	960-50-400	960-50-475	-31	13.90 (353)	960-50-400	960-50-475
-32	14.29 (363)	960-50-425	960-50-500	-32	14.37 (365)	960-50-425	960-50-500
-33	14.80 (376)	960-50-425	960-50-500	-33	14.88 (378)	960-50-425	960-50-500
-35	15.28 (388)	960-50-450	960-50-525	-35	15.35 (390)	960-50-450	960-50-525
-36	15.79 (401)	960-50-450	960-50-525	-36	15.87 (403)	960-50-450	960-50-525
-37	16.26 (413)	960-50-475	960-50-550	-37	16.34 (415)	960-50-475	960-50-550
-38	16.77 (426)	960-50-475	960-50-550	-38	16.85 (428)	960-50-475	960-50-550
-40	17.24 (438)	960-50-500	960-50-575	-40	17.32 (440)	960-50-500	960-50-575
-41	17.76 (451)	960-50-500	960-50-575	-41	17.83 (453)	960-50-500	960-50-575
-42	18.23 (463)	960-50-525	960-50-600	-42	18.31 (465)	960-50-525	960-50-600
-43	18.74 (476)	960-50-525	960-50-600	-43	18.82 (478)	960-50-525	960-50-600
-45	19.21 (488)	960-50-550	960-50-625	-45	19.29 (490)	960-50-550	960-50-625
-46	19.72 (501)	960-50-550	960-50-625	-46	19.80 (503)	960-50-550	960-50-625
-47	20.20 (513)	960-50-575	960-50-650	-47	20.28 (515)	960-50-575	960-50-650
-48	20.71 (526)	960-50-575	960-50-650	-48	20.79 (528)	960-50-575	960-50-650
-50	21.18 (538)	960-50-600	960-50-675	-50	21.26 (540)	960-50-600	960-50-675
-51	21.69 (551)	960-50-600	960-50-675	-51	21.77 (553)	960-50-600	960-50-675
-52	22.17 (563)	960-50-625	960-50-700	-52	22.24 (565)	960-50-625	960-50-700
-53	22.68 (576)	960-50-625	960-50-700	-53	22.76 (578)	960-50-625	960-50-700
-55	23.15 (588)	960-50-650	960-50-725	-55	23.23 (590)	960-50-650	960-50-725
-60	25.12 (638)	960-50-700	960-50-775	-60	25.20 (640)	960-50-700	960-50-775

Heavy Duty Version - Installation Set Part No. 974-50



For the “Heavy Duty” installation set:
Insert Part No. **974-50-____** instead of **960-50-____** on the right column “attached outwards”

- **Components, trough “Heavy Duty”:**
- ❶ Trough side parts, aluminum, 6.56 ft. (2m)
- ❷ Glide bar, plastic, 6.56 ft. (2m)
- ❸ Glide strips, plastic 6.56 ft. (2m) (without glide strips on request)
- ❿ Optional: Silencer profile, rubber
- **Components, installation set “Heavy Duty”:**
- ❺ profile rail, steel galvanized
- ❼ Sliding nut 5/16
- ❾ Heavy duty bracket, aluminum
- ⓫ Screw 5/16 x 1”

Note: Dimensions similar to Basic version!
Exception: Heavy duty bracket, see drawing

- = Guide trough
- = Glide bar
- = Installation set “Heavy duty”
- = profile rail

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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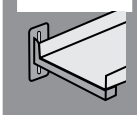

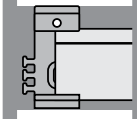

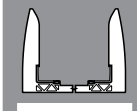

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Guide Trough Systems
Aluminum SuperTrough

Part No. 975-30-SL and 975-31-SL Trough Height: 9.29 in. (236 mm)

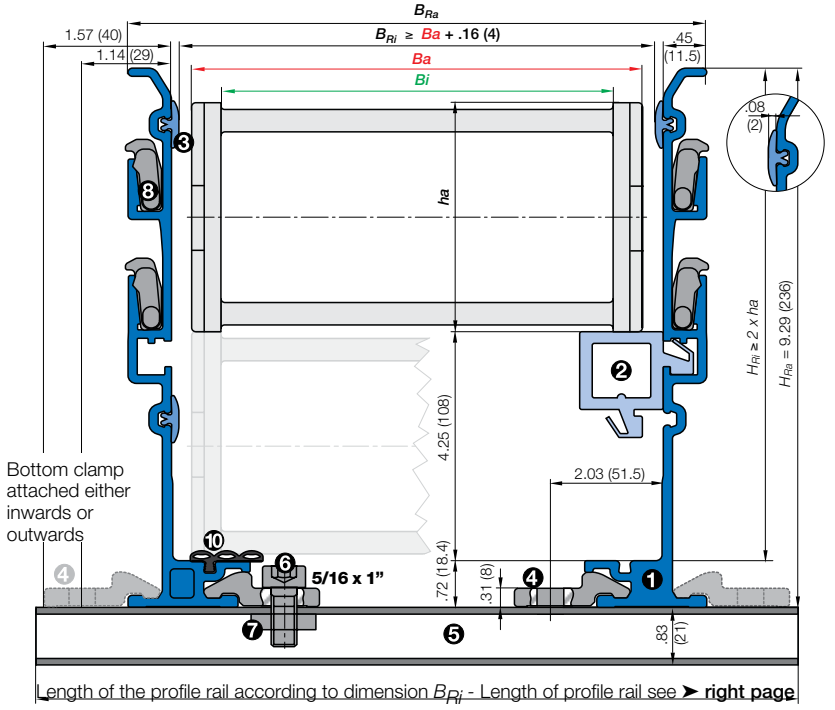
Aluminum SuperTrough — Basic Version

For the following Series

System E4 Series:
- 5050/5150/R9850
- 15050/15150/R19850

System E6 Series:
- E6-80

System E4-1 Series
- E4-80/H4-80/R4-80



Ba	=	Outer E-Chain® width
Bi	=	Inner E-Chain® width
ha	=	E-Chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 4$

- Guide trough
- Glide bar
- Installation set "Basic"
- profile rail

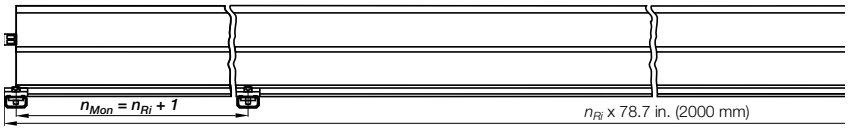
- **Components, trough:**
  - ❶ Trough side parts, aluminum, 6.56 ft. (2m)
  - ❷ Glide bar, plastic, 6.56 ft. (2m)
  - ❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
  - ❿ Optional: Silencer profile, rubber
- **Components, installation set:**
  - ❹ Bottom clamp, aluminum
  - ❺ profile rail, steel galvanized
  - ❻ Screw 5/16 x 1"
  - ❼ Sliding nut 5/16
  - ❽ Interface connector, plastic

Basic version: Aluminum SuperTrough components

Complete guide trough sets - description	Part No.	Weight
Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft. (2m) section	**975-30-SL**	≈ 30.87 lbs
Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section	**975-31-SL**	≈ 36.60 lbs
1 Installation set **"Basic"** without profile rail	**960-50**	≈ .18 lbs
1 Installation set **"Basic"** with profile rail	**960-50-____**	
Single parts - description		
1 Glide strip, individual, 6.56 ft. (2m) section	**75-01**	≈ .13 lbs
1 Bottom clamp, individual	**75.50**	≈ .09 lbs
1 Interface connector, individual	**75-60**	
1 Screw 5/16 x 1" individual	**82-55**	
1 Sliding nut 5/16, individual	**82-56**	
2 Glide bars, 6.56 ft. (2m) section	**83-79**	≈
1 profile rail, individual	**92-52-____**	≈ .60 lbs/ft.
Silencer profile	**75-68H**	

Supplement Part No. with the indicated profile rail-length-index.
Example: 960-30-150 profile rail-length-index for your chosen trough inner width B_{Ri}
➤ See table on the right or the respective page for chosen series

Number of installation sets which have to be installed



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Guide Trough Systems
Aluminum SuperTrough

5050/5150/R9850 E4-80/H4-80/R4-80

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-05	4.09 (104)	*	960-50-225
-06	4.68 (119)	*	960-50-250
-07	5.08 (129)	*	960-50-250
-10	6.06 (154)	960-50-225	960-50-275
-11	6.57 (167)	960-50-225	960-50-300
-12	7.05 (179)	960-50-250	960-50-300
-13	7.56 (192)	960-50-250	960-50-325
-15	8.03 (204)	960-50-275	960-50-325
-16	8.54 (217)	960-50-275	960-50-350
-17	9.02 (229)	960-50-300	960-50-350
-18	9.53 (242)	960-50-300	960-50-375
-20	10.00 (254)	960-50-325	960-50-375
-21	10.51 (267)	960-50-325	960-50-400
-22	10.98 (279)	960-50-350	960-50-400
-23	11.50 (292)	960-50-350	960-50-425
-25	11.97 (304)	960-50-375	960-50-425
-26	12.48 (317)	960-50-375	960-50-450
-27	12.95 (329)	960-50-400	960-50-450
-28	13.46 (342)	960-50-400	960-50-475
-30	13.94 (354)	960-50-425	960-50-475
-31	14.45 (367)	960-50-425	960-50-500
-32	14.92 (379)	960-50-450	960-50-500
-33	15.43 (392)	960-50-450	960-50-525
-35	15.91 (404)	960-50-475	960-50-525
-36	16.42 (417)	960-50-475	960-50-550
-37	16.89 (429)	960-50-500	960-50-550
-38	17.40 (442)	960-50-500	960-50-575
-40	17.87 (454)	960-50-525	960-50-575
-41	18.39 (467)	960-50-525	960-50-600
-42	18.86 (479)	960-50-550	960-50-600
-43	19.37 (492)	960-50-550	960-50-625
-45	19.84 (504)	960-50-575	960-50-625
-46	20.35 (517)	960-50-575	960-50-650
-47	20.83 (529)	960-50-600	960-50-650
-48	21.34 (542)	960-50-600	960-50-675
-50	21.81 (554)	960-50-625	960-50-675
-51	22.32 (567)	960-50-625	960-50-700
-52	22.80 (579)	960-50-650	960-50-700
-53	23.31 (592)	960-50-650	960-50-725
-55	24.17 (604)	960-50-675	960-50-725
-60	25.75 (654)	960-50-725	960-50-775

15050/15150/R19850

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-05	3.31 (84)	*	960-50-200
-07	4.29 (109)	*	960-50-225
-10	5.28 (134)	*	960-50-250
-11	5.75 (146)	960-50-200	960-50-275
-12	6.26 (159)	960-50-225	960-50-275
-13	6.73 (171)	960-50-225	960-50-300
-15	7.24 (184)	960-50-250	960-50-300
-16	7.72 (196)	960-50-250	960-50-325
-17	8.23 (209)	960-50-275	960-50-325
-18	8.70 (221)	960-50-275	960-50-350
-20	9.21 (234)	960-50-300	960-50-350
-21	9.69 (246)	960-50-300	960-50-375
-22	10.20 (259)	960-50-325	960-50-375
-23	10.67 (271)	960-50-325	960-50-400
-25	11.18 (284)	960-50-350	960-50-400
-26	11.65 (296)	960-50-350	960-50-425
-27	12.16 (309)	960-50-375	960-50-425
-28	12.64 (321)	960-50-375	960-50-450
-30	13.15 (334)	960-50-400	960-50-450
-31	13.62 (346)	960-50-400	960-50-475
-32	14.13 (359)	960-50-425	960-50-475
-33	14.61 (371)	960-50-425	960-50-500
-35	15.12 (384)	960-50-450	960-50-500
-36	15.59 (396)	960-50-450	960-50-525
-37	16.10 (409)	960-50-475	960-50-525
-38	16.57 (421)	960-50-475	960-50-550
-40	17.07 (434)	960-50-500	960-50-550
-41	17.56 (446)	960-50-500	960-50-575
-42	18.07 (459)	960-50-525	960-50-575
-43	18.54 (471)	960-50-525	960-50-600
-45	19.06 (484)	960-50-550	960-50-600
-46	19.53 (496)	960-50-550	960-50-625
-47	20.04 (509)	960-50-575	960-50-625
-48	20.51 (521)	960-50-575	960-50-650
-50	21.02 (534)	960-50-600	960-50-650
-51	21.50 (546)	960-50-600	960-50-675
-52	22.01 (559)	960-50-625	960-50-675
-53	22.48 (571)	960-50-625	960-50-700
-55	22.99 (584)	960-50-650	960-50-700
-60	24.96 (634)	960-50-700	960-50-750

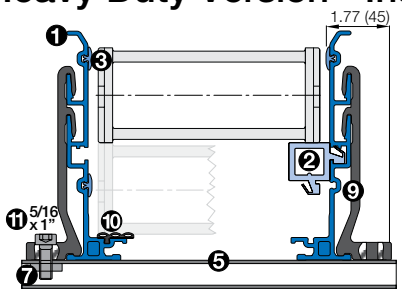
E6-80

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-05	4.09 (104)	*	960-50-225
-06	4.68 (119)	*	960-50-250
-07	5.08 (129)	*	960-50-250
-10	6.06 (154)	960-50-225	960-50-275
-11	6.57 (167)	960-50-225	960-50-300
-12	7.05 (179)	960-50-250	960-50-300
-13	7.56 (192)	960-50-250	960-50-325
-15	8.03 (204)	960-50-275	960-50-325
-16	8.54 (217)	960-50-275	960-50-350
-17	9.02 (229)	960-50-300	960-50-350
-18	9.53 (242)	960-50-300	960-50-375
-20	10.00 (254)	960-50-325	960-50-375
-21	10.51 (267)	960-50-325	960-50-400
-22	10.98 (279)	960-50-350	960-50-400
-23	11.50 (292)	960-50-350	960-50-425
-25	11.97 (304)	960-50-375	960-50-425
-26	12.48 (317)	960-50-375	960-50-450
-27	12.95 (329)	960-50-400	960-50-450
-28	13.46 (342)	960-50-400	960-50-475
-30	13.94 (354)	960-50-425	960-50-475
-31	14.45 (367)	960-50-425	960-50-500
-32	14.92 (379)	960-50-450	960-50-500
-33	15.43 (392)	960-50-450	960-50-525
-35	15.91 (404)	960-50-475	960-50-525
-36	16.42 (417)	960-50-475	960-50-550
-37	16.89 (429)	960-50-500	960-50-550
-38	17.40 (442)	960-50-500	960-50-575
-40	17.87 (454)	960-50-525	960-50-575
-41	18.39 (467)	960-50-525	960-50-600
-42	18.86 (479)	960-50-550	960-50-600
-43	19.37 (492)	960-50-550	960-50-625
-45	19.84 (504)	960-50-575	960-50-625
-46	20.35 (517)	960-50-575	960-50-650
-47	20.83 (529)	960-50-600	960-50-650
-48	21.34 (542)	960-50-600	960-50-675
-50	21.81 (554)	960-50-625	960-50-675
-51	22.32 (567)	960-50-625	960-50-700
-52	22.80 (579)	960-50-650	960-50-700
-53	23.31 (592)	960-50-650	960-50-725
-55	24.17 (604)	960-50-675	960-50-725
-60	25.75 (654)	960-50-725	960-50-775

15250/15350

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-05	3.31 (84)	*	960-50-200
-06	4.02 (102)	*	960-50-225
-07	4.29 (109)	*	960-50-225
-087	4.76 (121)	*	960-50-250
-09	5.16 (131)	*	960-50-250
-10	5.28 (134)	*	960-50-250
-11	5.59 (142)	960-50-200	960-50-250
-112	5.79 (147)	960-50-200	960-50-275
-12	6.26 (159)	960-50-225	960-50-275
-137	6.73 (171)	960-50-225	960-50-300
-15	7.24 (184)	960-50-250	960-50-300
-162	7.76 (197)	960-50-250	960-50-325
-17	7.95 (202)	960-50-250	960-50-325
-18	8.23 (209)	960-50-275	960-50-325
-187	8.74 (222)	960-50-275	960-50-350
-20	9.21 (234)	960-50-300	960-50-350
-212	9.72 (247)	960-50-300	960-50-375
-23	10.20 (259)	960-50-325	960-50-375
-237	10.71 (272)	960-50-325	960-50-400
-25	11.18 (284)	960-50-350	960-50-400
-262	11.69 (297)	960-50-350	960-50-425
-28	12.16 (309)	960-50-375	960-50-425
-29	12.68 (322)	960-50-375	960-50-450
-30	13.15 (334)	960-50-400	960-50-450
-312	13.66 (347)	960-50-400	960-50-475
-325	14.13 (359)	960-50-425	960-50-475
-337	14.65 (372)	960-50-425	960-50-500
-350	15.12 (384)	960-50-450	960-50-500
-362	15.63 (397)	960-50-450	960-50-525
-375	16.10 (409)	960-50-475	960-50-525
-387	16.61 (422)	960-50-475	960-50-550
-400	17.09 (434)	960-50-500	960-50-550

Heavy Duty Version - Installation Set Part No. 975-50



For the “Heavy Duty” installation set:
Insert Part No. **975-50-____** instead of **960-50-____** on the right column “attached outwards”

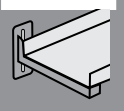
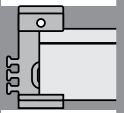
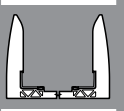
- **Components, trough “Heavy Duty”:**
- ❶ Trough side parts, aluminum, 6.56 ft. (2m)
- ❷ Glide bar, plastic, 6.56 ft. (2m)
- ❸ Glide strips, plastic 6.56 ft. (2m) (without glide strips on request)
- ⑩ Optional: Silencer profile, rubber
- **Components, installation set “Heavy Duty”:**
- ❺ profile rail, steel galvanized
- ❼ Sliding nut 5/16
- ❾ Heavy duty bracket, aluminum
- ⑪ Screw 5/16 x 1”

Note: Dimensions similar to Basic version!
Exception: Heavy duty bracket, see drawing

- = Guide trough
- = Glide bar
- = Installation set “Heavy duty”
- = profile rail

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

AL
ST

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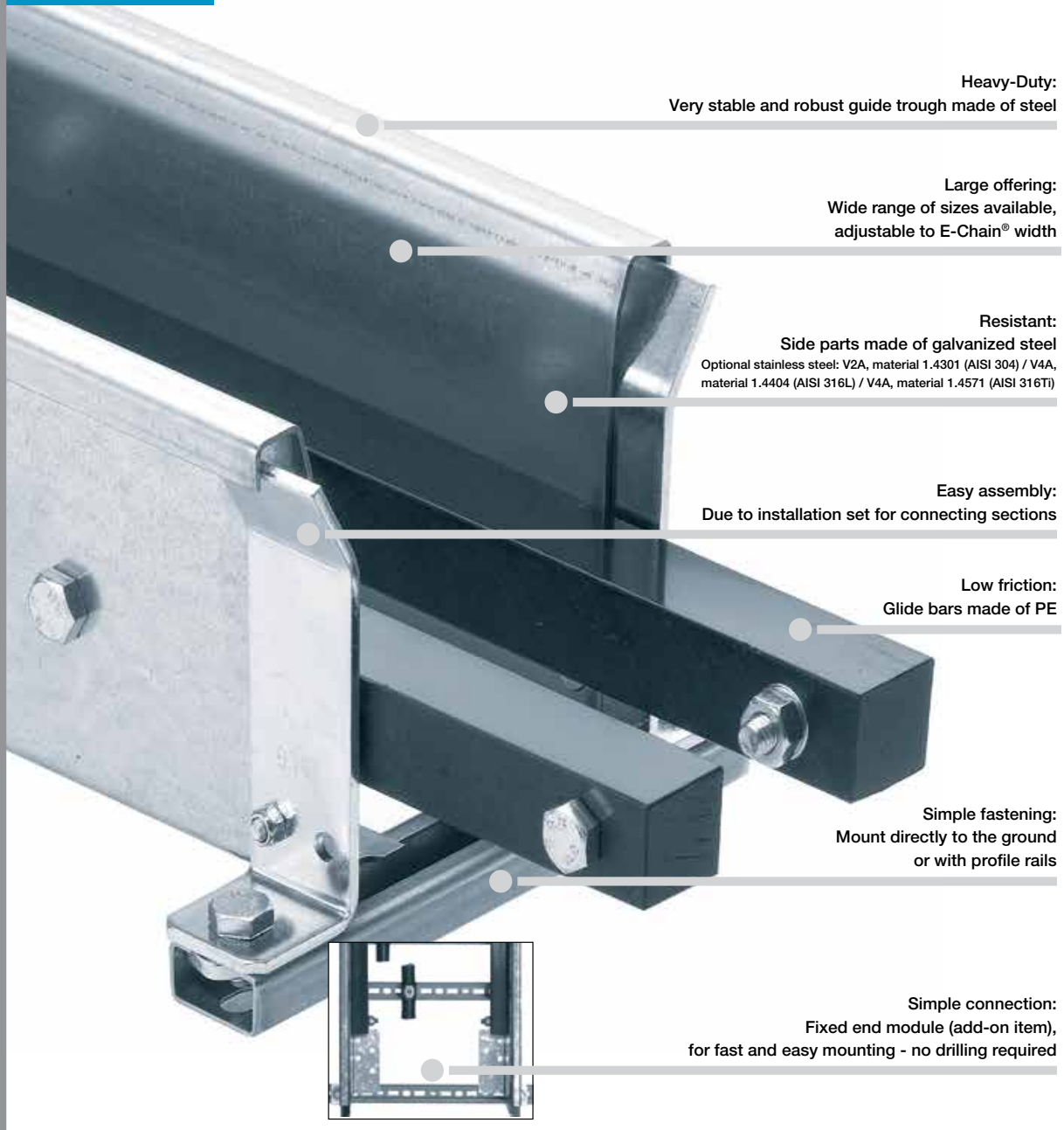
Guide Trough

igus®

Guide Trough Systems
Steel Guide Trough



Heavy-Duty:
Very stable and robust guide trough made of steel

Large offering:
Wide range of sizes available,
adjustable to E-Chain® width

Resistant:
Side parts made of galvanized steel
Optional stainless steel: V2A, material 1.4301 (AISI 304) / V4A, material 1.4404 (AISI 316L) / V4A, material 1.4571 (AISI 316Ti)

Easy assembly:
Due to installation set for connecting sections

Low friction:
Glide bars made of PE

Simple fastening:
Mount directly to the ground
or with profile rails

Simple connection:
Fixed end module (add-on item),
for fast and easy mounting - no drilling required

igus® E-Chain System®

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Very stable and rugged for Heavy-Duty applications - Steel guide trough

If the igus® installation sets are used, the guide troughs are particularly easy to assemble. All steel guide troughs are constructed according to the same basic principle. On the following pages, you will find information about dimensions, weights and accessories according to the trough size. All sizes use a common profile rail on which the guide parts are assembled. The assembly brackets used vary in height only.

Installation Guide-PDF with detailed assembly information ➤ www.igus.com/installation-guide-pdf

Guide Trough Systems
Steel Guide Trough
Overview - Sizes

Steel guide troughs

Very stable and rugged for Heavy-Duty applications

Standard in Galvanized Steel

Optional in stainless steel:

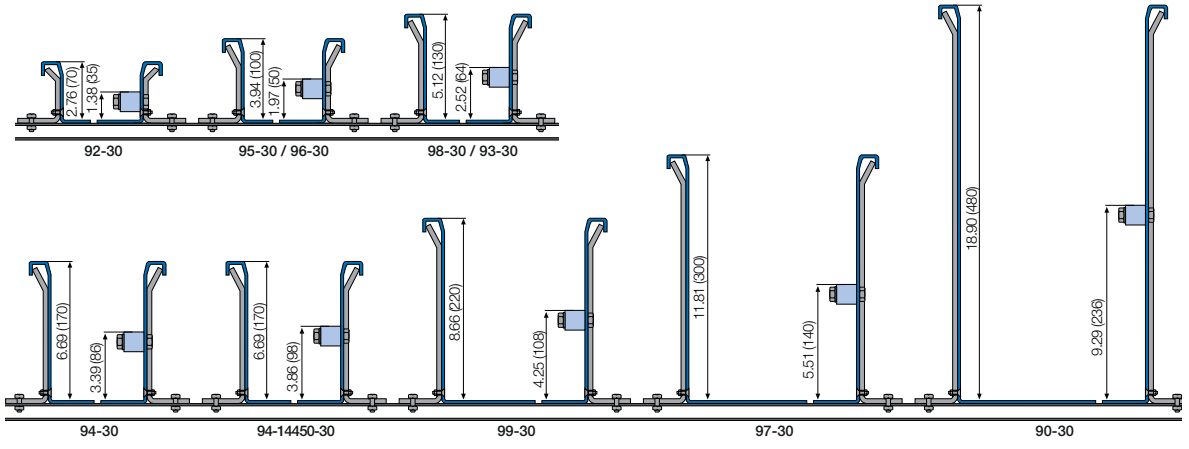
V2A, material 1.4301 (AISI 304)

V4A, material 1.4404 (AISI 316L)

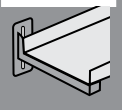
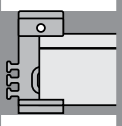
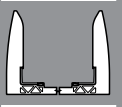
V4A, material 1.4571 (AISI 316Ti)

Trough Part No.	For E-Chain® Series			Outer trough height H_{Ra} in. (mm)	Installation set* Part No.
	E2 Series	E4 Series	E6 Series		
92-30	2400/2500		E6-29/R6-29	2.76 (70)	**92.50**
	200/240/250, 255				
95-30	26/27/27i			3.94 (100)	**95.50**
	2600/2700				
	R58				
96-30		E4-28/R4-28	E6-35	3.94 (100)	**95.50**
		220			
98-30		E4-32/H4-32/R4-32	E6-40/R6-40	5.12 (130)	**93.50**
		280/290/R770			
		2828/2928/R7728			
93-30	3400/3500	E4-42/H4-42/R4-42	E6-52/R6-52	5.12 (130)	**93.50**
	340/350	380/390/R780			
	R68	3838/3938/R7838			
94-30		E4-56/H4-56/R4-56	E6-62	6.69 (170)	**94-50**
		400/410/R880			
		4040/4140/R8840			
		14040/14140/R18840			
		14240/14340			
94-14550-30		14550/14650/R19050		6.69 (170)	**94-50**
99-30		15050/15150/R19850	E6-80	8.66 (220)	**96-50**
		15250/15350			
97-30		E4-112/H4-112/R4-112		11.81 (300)	**98.50**
		600/601/R608			
		640, 1640/1608			
90-30		800, 840		18.90 (480)	**90.50**

One-Piece Steel Trough - Only for series 10, 15 and B15 - Galvanized Steel only		
91-10 - 91-71 [2]	1.89 (48)	–



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

Guide Trough Systems
Steel Guide Trough - Components

Telephone 1-800-521-2747
Fax 1-401-438-7270

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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

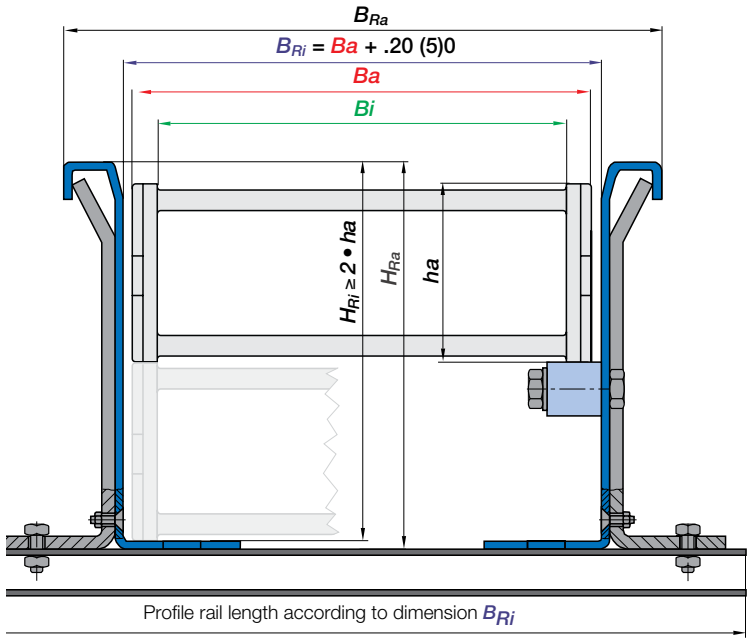
Components

- Guide trough [1]
- Glide bar
- Installation set
- Profile rail [2]

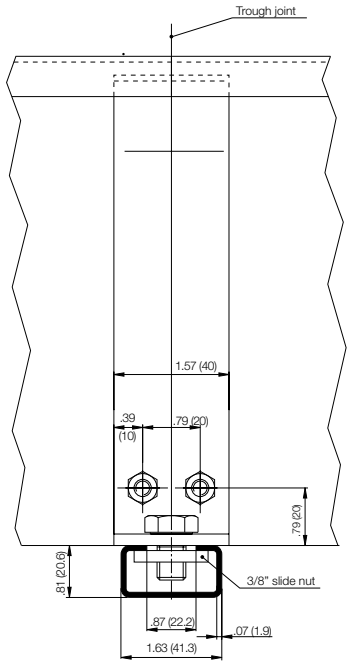
Ba	=	Outer E-Chain® width
Bi	=	Inner E-Chain® width
ha	=	E-Chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width
B_{Ra}	=	Outer trough width
n_{Mon}	=	Number of installation sets (left/right)
n_{Ri}	=	Number of trough sets (left/right)

H_{Ri} ≥ 2 x ha

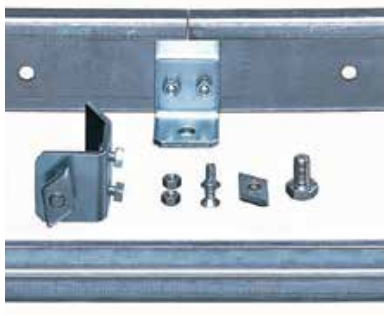
B_{Ri} = Ba + 5



1) Guide trough side parts, galvanized steel. Optional stainless steel: V2A, material 1.4301 (AISI 304) / V4A, material 1.4404 (AISI 316L) / V4A, material 1.4571 (AISI 316Ti)
2) Profile rail also available in stainless steel V2A, material 1.4301 (AISI 304)



Side view of trough joint. All the dimensions, apart from the height, apply to all sizes.

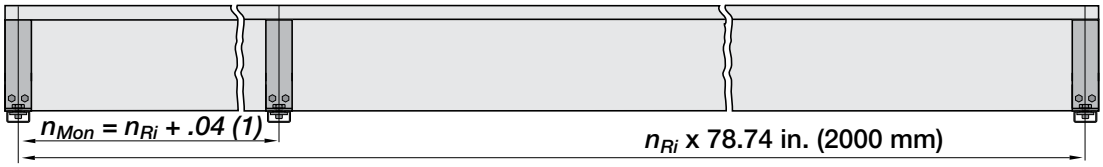


Installation set for joint and attachment surface connections, secure connection without misalignment and without welding.

Guide Trough Systems
Steel Guide Troughs

Steel Guide Trough - Configured according to your requirements
Quick and easy assemble the right trough for your application

- Selection of the suitable guide trough according to the E-Chain® Series and E-Chain® width *Bi*
- Determine the feeding point of the cables
- Determine travel distance and thus the length of the required guide trough and the number of trough pieces. Standard length of a trough side plate: 78.7" (2000 mm). The length of the guide trough - for axial feeding - is calculated from half the travel length with and half the travel length without the glide bar
- Number and selection of the assembly kit
  The quantity of the assembly kit is calculated from the number of the trough pieces + 1 kit:



- The assembly kit matches the igus® profile rail option
- If you have opted for an E-Chain® with KMA mounting brackets, we offer you a fixed-end module for the quick and simple fastening of the E-Chain® in the trough without holes

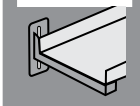
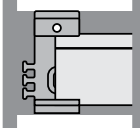
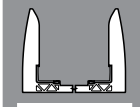
Installation Guide-PDF with detailed assembly information
➤ www.igus.com/installation-guide-pdf

Order example Based on Part No. 94-30

Order example: Length of travel 98.4 ft. (30 m) -
Center mounted for Series E4-56-20-300-0 with B_{Ri} = 239

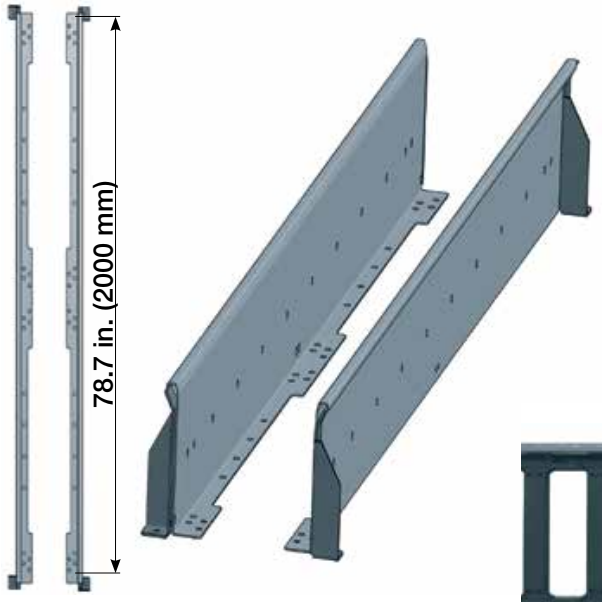
Guide trough set (set of 2 trough side parts, incl. glide strips) **without** glide bar	
Order text: 52.5 ft. (16 m) guide trough without glide bar (8 x 6.56 ft. (2 m) sections)	**Part No. 94-30**
Guide trough set (set of 2 trough side parts, incl. glide strips) **with** glide bar	
Order text: 52.5 ft. (16 m) guide trough with glide bar (8 x 6.56 ft. (2 m) sections)	**Part No. 94-31**
Installation set “Basic” complete **(guide trough-sets + 1)**	
Order text: 17 installation sets “Basic”	**Part No. 94-50-350**
Module for the fixed end	
Order text: 1 set	**Part No. 94-80-01**

Calculation - travel center mounted: Half travel length, rounded down to full 2 m sections = X m guide trough length without glide bars + X m guide trough length with glide bars + installation sets Basic (number of trough pieces + 1)

Guide Trough Systems
Steel Guide Trough - Fixed End Module

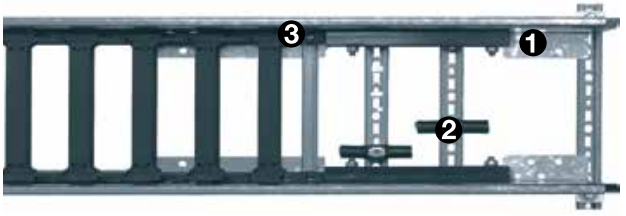
Fixed end module - Quick and simple fastening onto the steel guide trough



Until now, the steel trough had to be modified on site to fit the mounting brackets at the stationary end of the E-Chain®. That is now history. With its prefabricated boreholes, the 78.7" (2,000 mm) long kit can be used for middle-feed, end-feed and opposed installation.

❶ Fast fixation of mounting brackets thanks to prefabricated boreholes
❷ Fast installation of profile rail for strain relief
❸ Fast bolting of glide bars

Industries: Power plants, coal conveyors, mining, composting plants, raw material storage, gypsum plants, etc.



Part No.	For Steel Guide Troughs	For E-Chain® Series
90-80-01*	90-30 | 90-31	800, 840
92-80-01*	92-30 | 92-31	2500, 255, E6-29/R6-29
93-80-01	93-30 | 93-31	3500, R68, E4-42/H4-42/R4-42, E4-48L/R4-48L, E6-52/R6-52
94-80-01	94-30 | 94-31	E4-56/H4-56/R4-56, 14040/14140 /R18840, 14240/14340, E6-62
95-80-01*	95-30 | 95-31	2700
96-80-01	96-30 | 96-31	E4-80/H4-80/R4-80, 15050/5150/R19850, E6-80
97-80-01	97-30 | 97-31	E4-32/H4-32/R4-32, E4-38L/R4-38L, E6-40/R6-40
98-80-01	98-30 | 98-31	E4-112/H4-112/R4-112, 1640/R1608
99-80-01	99-30 | 99-31	E4-28/R4-28, E6-35
94-14550-80-01*	94-14550-30 | 94-14550-31	14550/14650/R19050

*Available upon request, please consult igus® for delivery time!

Fxed end module - length 78.7 in. (2000 mm)

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Guide Trough Systems
Steel Guide Troughs - One-Piece - U-Shaped
Special solutions for Series 10, 15 and B15

igus®

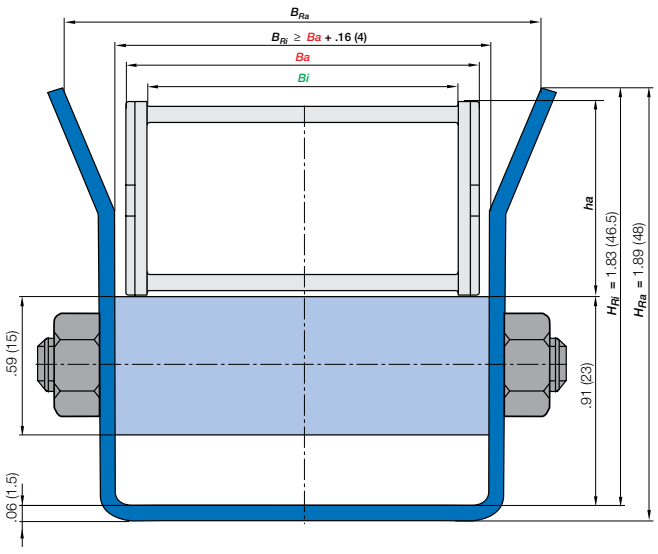
Guide Trough

One-piece guide troughs made of steel are available for the following Energy Chains®: Series 10, 15 and B15. These guide troughs are available from stock for outer chain widths up to 2.36 in. (60 mm). For wider E-Chains® and Tubes, special solutions are possible with short lead times.
No installation sets are required for these trough sizes since the guide troughs consist of a one-piece U-profile. The joint connection with this type of guide trough is specified individually for every application.

For the following Series

System E2 Series:
- 10
- B15

System Zipper Series:
- 15



Ba = Outer E-Chain® width
Bi = Inner E-Chain® width
ha = E-Chain® outer height
H_{Ri} = Inner trough height
H_{Ra} = Outer trough height
B_{Ri} = Inner trough width
B_{Ra} = Outer trough width

Dimensions Guide troughs 91-10 — 91-71

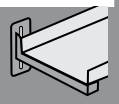
For Series	Part No.	B_{Ra} in.	B_{Ra} (mm)	B_{Ri} in.	B_{Ri} (mm)	Weight lbs/ft	Weight (kg/m)
10-015/15-015/B15-015							
Trough **without** glide bar 6.56 ft. (2m section)	**91-10**	1.59	(40.5)	1.18	(30)	1.01	(1.50)
Glide bar 6.56 ft. (2m section)	**91-11**	1.59	(40.5)	1.18	(30)	.30	(.45)
10-025/15-025/B15-025							
Trough **without** glide bar 6.56 ft. (2m section)	**91-20**	1.99	(50.5)	1.57	(40)	1.11	(1.65)
Glide bar 6.56 ft. (2m section)	**91-21**	1.99	(50.5)	1.57	(40)	.38	(.57)
10-038/15-038/B15-038							
Trough **without** glide bar 6.56 ft. (2m section)	**91-30**	2.46	(62.5)	2.05	(52)	1.21	(1.80)
Glide bar 6.56 ft. (2m section)	**91-31**	2.46	(62.5)	2.05	(52)	.46	(.68)
10-050/15-050/B15-050							
Trough **without** glide bar 6.56 ft. (2m section)	**91-40**	2.85	(72.5)	2.44	(62)	1.28	(1.90)
Glide bar 6.56 ft. (2m section)	**91-41**	2.85	(72.5)	2.44	(62)	.61	(.91)
10-5/15-5/B15-5							
Trough **without** glide bar 6.56 ft. (2m section)	**91-50**	3.60	(91.5)	3.19	(81)	1.52	(2.26)
Glide bar 6.56 ft. (2m section)	**91-51**	3.60	(91.5)	3.19	(81)	.84	(1.25)
10-6/15-6/B15-6							
Trough **without** glide bar 6.56 ft. (2m section)	**91-60**	4.27	(108.5)	3.86	(98)	1.83	(2.72)
Glide bar 6.56 ft. (2m section)	**91-61**	4.27	(108.5)	3.86	(98)	.91	(1.35)
10-7/15-7/B15-7							
Trough **without** glide bar 6.56 ft. (2m section)	**91-70**	5.06	(128.5)	4.65	(118)	2.13	(3.17)
Glide bar 6.56 ft. (2m section)	**91-71**	5.06	(128.5)	4.65	(118)	1.14	(1.70)

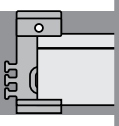
Trough material in general: St 1203 galvanized

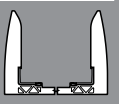
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

AL

ST







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igus®

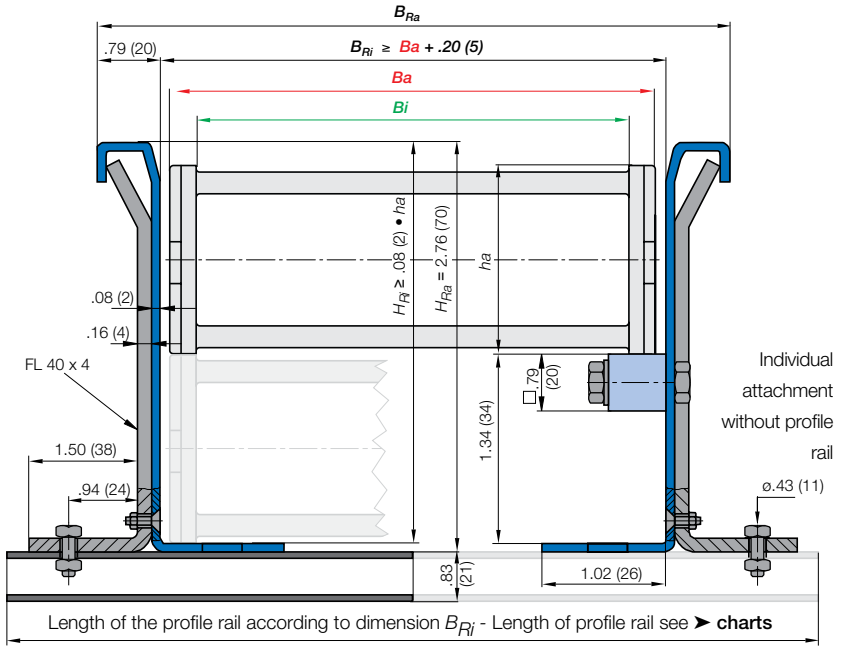
Guide Trough Systems
Steel Guide Troughs

Part No. **92-30** - Trough Height: 2.76 in. (70 mm)

For the following Series

System E2/000 Series:
● 2400/2500
● 255
System E2 Series:
● 200/240/250
System E6 Series:
● E6-29/R6-29

Ba	=	Outer E-Chain® width
Bi	=	Inner E-Chain® width
ha	=	E-Chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)
!		$H_{Ri} \geq 2 \bullet ha$ $B_{Ri} \geq Ba + 5$
●	=	Guide trough
●	=	Glide bar
●	=	Installation set “Basic”
●	=	profile rail



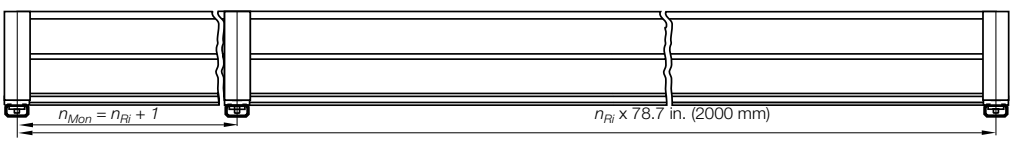
Steel Guide Trough components - Sets and single parts

Complete guide trough sets - description	Part No.	Weight lbs
Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m)	**92-30**	**19.85**
1 Installation set “Basic” **with** profile rail	**92-50-___**	
1 Installation set “Basic” **without** profile rail	**92-50**	**.84**
1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts	**92-01**	**4.52**

Single parts - description		
1 profile rail, individual	**92-52-___**	**.60 lbs/ft.**
1 Clamping brackets, 2 pcs	**92-51**	**.31**
4 Flat-head screws M6 x 20	**92-53**	
4 Lock nuts M6	**92-55**	
2 3/8 Slide nuts	**92-56**	
2 Hex-head bolts 3/8 x 3/4	**92-57**	
Glide bar hardware only, 22 pcs.	**92-21**	**1.21**

Supplement Part No. with the indicated profile rail-length-index. **Example: 92-50-175**
profile rail-length-index for your chosen trough inner width B_{Ri} ➤ **opposite page**

Design sketch: Number of installation sets which have to be installed



igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Guide Trough Systems
Steel Guide Troughs

Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

2400/2500

Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-02	1.81	(46)	*
-03	2.32	(59)	92-50-175
-05	3.07	(78)	92-50-200
-07	3.86	(98)	92-50-225
-09	4.33	(110)	92-50-225
-10	4.88	(124)	92-50-250
-12	5.75	(146)	92-50-275

200/240/250

Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-02	1.81	(46)	*
-03	2.32	(59)	92-50-175
-05	3.07	(78)	92-50-175
-07	3.86	(98)	92-50-200
-09	4.37	(111)	92-50-250
-10	4.88	(124)	92-50-250
-12	5.75	(146)	92-50-300

*upon request

E6-29

Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-030	2.01	(51)	*
-040	2.40	(61)	92-50-175
-050	2.80	(71)	92-50-200
-060	3.19	(81)	92-50-200
-070	3.58	(91)	92-50-200
-080	3.98	(101)	92-50-225
-090	4.37	(111)	92-50-225
-100	4.76	(121)	92-50-250
-110	5.16	(131)	92-50-250
-120	5.55	(141)	92-50-250

*upon request

R6-29

Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-030	2.01	(51)	*
-050	2.80	(71)	92-50-200
-060	3.19	(81)	92-50-200
-080	3.98	(101)	92-50-225
-110	5.16	(131)	92-50-250
-120	5.55	(141)	92-50-250

*upon request

255

Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-03	2.32	(59)	92-50-175
-05	3.07	(78)	92-50-200
-07	3.86	(98)	92-50-225
-10	4.88	(124)	92-50-250

igus® steel guide trough used in a robotics application

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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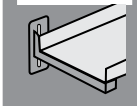

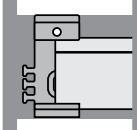

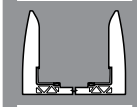

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Guide Trough Systems
Steel Guide Troughs

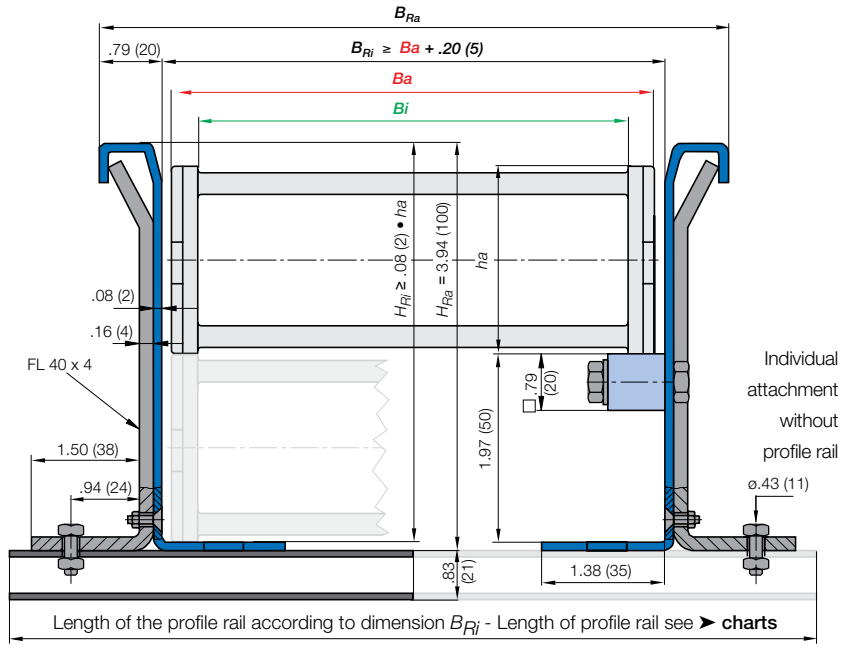
For the following Series

System E2/000 Series:
- 2600/2700

System E2 Series:
- 26/27/27I

System E2 Tube Series:
- R58

Part No. **95-30** - Trough Height: 3.94 in. (100 mm)



Ba	=	Outer E-Chain® width
Bi	=	Inner E-Chain® width
ha	=	E-Chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

- = Guide trough
- = Glide bar
- = Installation set “Basic”
- = profile rail

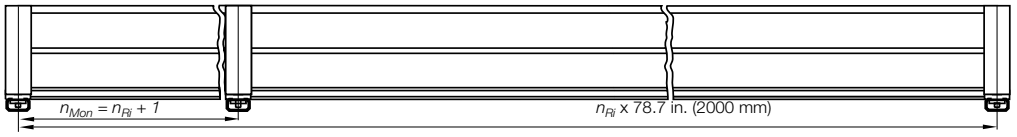
Steel Guide Trough components - Sets and single parts

Complete guide trough sets - description	Part No.	Weight lbs
Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m)	**95-30**	**23.81**
1 Installation set “Basic” **with** profile rail	**95-50-____**	
1 Installation set “Basic” **without** profile rail	**95-50**	**1.01**
1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts	**92-01**	**4.52**

Single parts - description		
1 profile rail, individual	**92-52-____**	**.60 lbs/ft**
1 Clamping brackets, 2 pcs	**95-51**	**.40**
4 Flat-head screws M6 x 20	**92-53**	
4 Lock nuts M6	**92-55**	
2 3/8 Slide nuts	**92-56**	
2 Hex-head bolts 3/8 x 3/4	**92-57**	
Glide bar hardware only, 22 pcs	**92-21**	**1.21**

Supplement Part No. with the indicated profile rail-length-index. **Example: 95-50-175**
profile rail-length-index for your chosen trough inner width B_{Ri} ➤ **opposite page**

Design sketch: Number of installation sets which have to be installed



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Guide Trough Systems
Steel Guide Troughs

Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

26/27/27i

Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-05	2.80	(71)	95-50-200
-07	3.78	(96)	95-50-200
-10	4.76	(121)	95-50-250
-12	5.75	(146)	95-50-250
-15	6.73	(171)	95-50-300
-17	7.83	(199)	95-50-300
-20	8.82	(224)	95-50-350

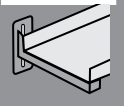
2600/2700

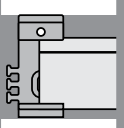
Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-05	2.80	(71)	95-50-200
-06	3.39	(86)	95-50-200
-07	3.78	(96)	95-50-225
-09	4.37	(111)	95-50-225
-10	4.76	(121)	95-50-250
-12	5.75	(146)	95-50-275
-15	6.73	(171)	95-50-300
-17	7.83	(199)	95-50-300

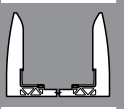
R58

Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-050	2.80	(71)	95-50-200
-075	3.78	(96)	95-50-225
-100	4.76	(121)	95-50-250
-125	5.75	(146)	95-50-275
-150	6.73	(171)	95-50-300
-175	7.72	(196)	95-50-325
-200	8.70	(221)	95-50-350

igus® steel guide trough used in a shelf conveyor application, Series E2/000 and Chainflex® cables







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igus®

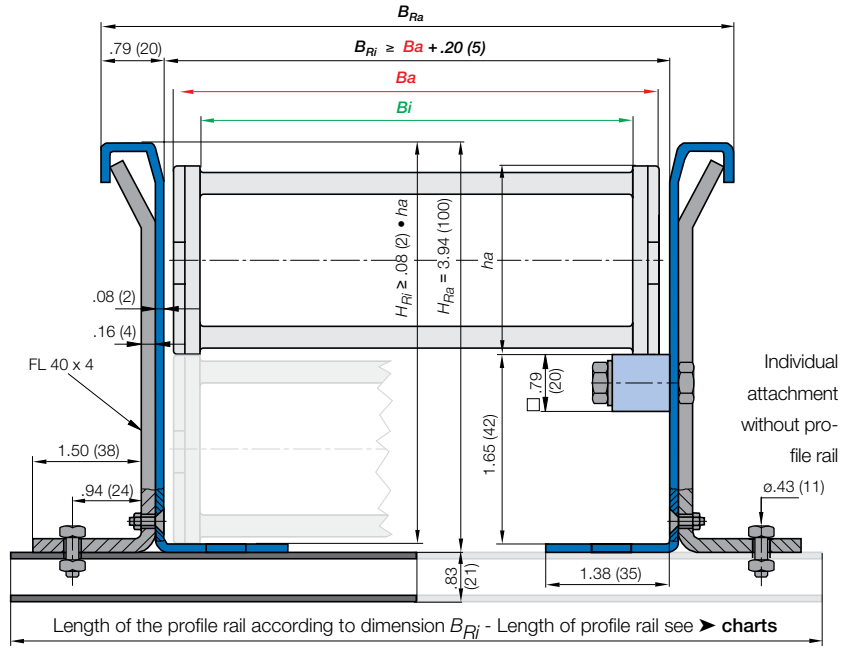
Guide Trough Systems
Steel Guide Troughs

For the following Series

System E4 Series:
- 220/R760
- E6-35

System E4-1 Series
- E4-28/R4-28

Part No. **96-30** - Trough Height: 3.94 in. (100 mm)



Ba	=	Outer E-Chain® width
Bi	=	Inner E-Chain® width
ha	=	E-Chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

- = Guide trough
- = Glide bar
- = Installation set “Basic”
- = profile rail

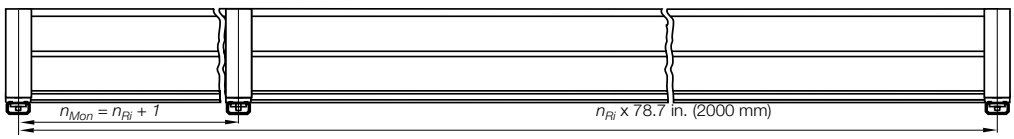
Steel Guide Trough components - Sets and single parts

Complete guide trough sets - description	Part No.	Weight lbs
Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m)	**96-30**	**23.81**
1 Installation set “Basic” **with** profile rail	**95-50-____**	
1 Installation set “Basic” **without** profile rail	**96-50**	**1.01**
1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts	**92-01**	**4.52**

Single parts - description		
1 profile rail, individual	**92-52-____**	**.60 lbs/ft**
1 Clamping brackets, 2 pcs	**95-51**	**.40**
4 Flat-head screws M6 x 20	**92-53**	
4 Lock nuts M6	**92-55**	
2 3/8 Slide nuts	**92-56**	
2 Hex-head bolts 3/8 x 3/4	**92-57**	
Glide bar hardware only, 22 pcs	**92-21**	**1.21**

Supplement Part No. with the indicated profile rail-length-index. **Example: 95-50-175**
profile rail-length-index for your chosen trough inner width B_{Ri} ➤ **opposite page**

Design sketch: Number of installation sets which have to be installed



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Guide Trough Systems
Steel Guide Troughs

Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

220/R760
E4-28/R4-28

Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-040	2.56	(65)	*
-050	2.95	(75)	**95-50-200**
-062	3.43	(87)	**95-50-200**
-070	3.74	(95)	**95-50-200**
-075	3.94	(100)	**95-50-225**
-100	4.92	(125)	**95-50-250**
-125	5.91	(150)	**95-50-275**
-150	6.89	(175)	**95-50-300**
-175	7.87	(200)	**95-50-325**
-200	8.86	(225)	**95-50-350**
-225	9.84	(250)	**95-50-375**
-250	10.83	(275)	**95-50-400**
-275	11.81	(300)	**95-50-425**
-300	12.80	(325)	**95-50-450**

*upon request

E6-35

Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-030	2.01	(55)	*
-040	2.40	(65)	*
-050	2.80	(75)	**95-50-200**
-060	3.19	(85)	**95-50-200**
-070	3.58	(95)	**95-50-200**
-080	3.98	(105)	**95-50-225**
-090	4.37	(115)	**95-50-225**
-100	4.76	(125)	**95-50-250**
-110	5.16	(135)	**95-50-250**
-120	5.55	(145)	**95-50-250**

*upon request

Lightweight and high stability: igus® E-Chain® tames stiff hydraulic hoses

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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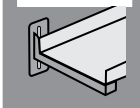
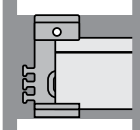
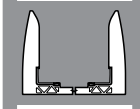
ST







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igus®

Guide Trough Systems
Steel Guide Troughs

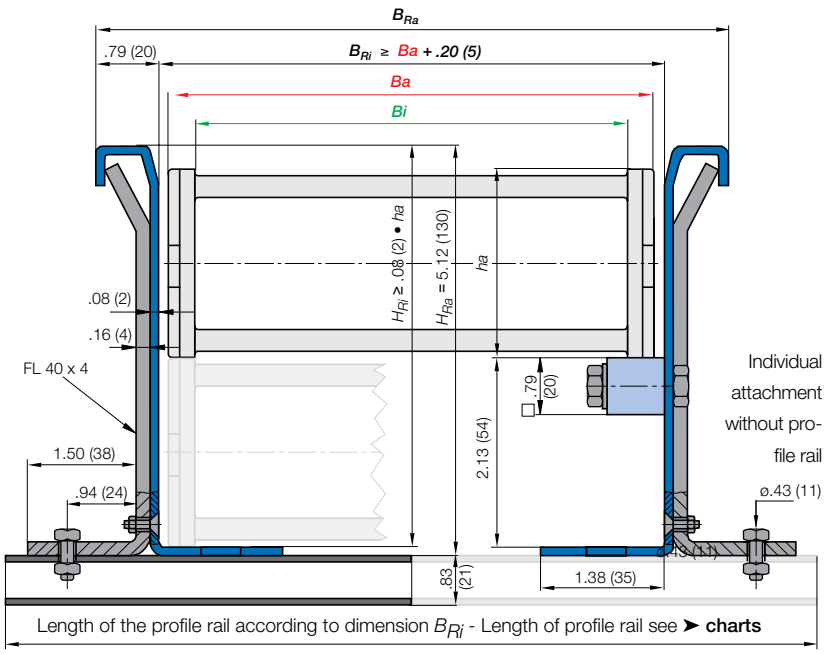
For the following Series

System E4 Series:
- 280/290/R770
- 2828/2928/R7728

System E6 Series:
- E6-40/R6-40

System E4-1 Series
- E4-32/H4-320/R4-32

Part No. **98-30** - Trough Height: 5.12 in. (130 mm)



Ba	=	Outer E-Chain® width
Bi	=	Inner E-Chain® width
ha	=	E-Chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

= Guide trough
= Glide bar
= Installation set “Basic”
= profile rail

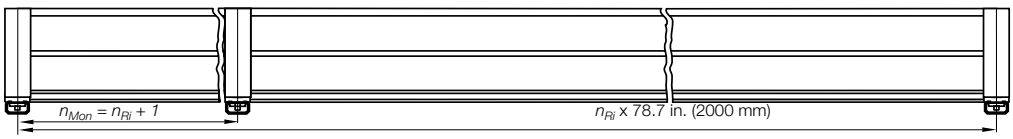
Steel Guide Trough components - Sets and single parts

Complete guide trough sets - description	Part No.	Weight lbs
Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m)	**98-30**	**28.22**
1 Installation set “Basic” **with** profile rail	**93-50-____**	
1 Installation set “Basic” **without** profile rail	**93-50**	**1.19**
1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts	**92-01**	**4.52**

Single parts - description		
1 profile rail, individual	**92-52-____**	**.60 lbs/ft**
1 Clamping brackets, 2 pcs	**93-51**	**.49**
4 Flat-head screws M6 x 20	**92-53**	
4 Lock nuts M6	**92-55**	
2 3/8 Slide nuts	**92-56**	
2 Hex-head bolts 3/8 x 3/4	**92-57**	
Glide bar hardware only, 22 pcs	**93-21**	**1.21**

Supplement Part No. with the indicated profile rail-length-index. **Example: 93-50-175**
profile rail-length-index for your chosen trough inner width B_{Ri} ➤ **opposite page**

Design sketch: Number of installation sets which have to be installed



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Guide Trough Systems
Steel Guide Troughs

Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

280/290/R770 E4-32/H4-32/R4-32

Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-05	3.15	(78)	93-50-200
-06	3.86	(96)	93-50-225
-07	4.13	(103)	93-50-225
-087	4.61	(115)	93-50-225
-10	5.12	(128)	93-50-250
-11	5.43	(136)	93-50-250
-112	5.59	(141)	93-50-250
-12	6.10	(153)	93-50-275
-137	6.57	(166)	93-50-275
-15	7.09	(178)	93-50-300
-162	7.56	(191)	93-50-300
-17	7.80	(196)	93-50-325
-18	8.07	(203)	93-50-325
-187	8.54	(216)	93-50-325
-20	9.06	(228)	93-50-350
-212	9.53	(241)	93-50-350
-23	10.04	(253)	93-50-375
-237	10.51	(266)	93-50-375
-25	11.02	(278)	93-50-400
-262	11.50	(291)	93-50-400
-28	12.01	(303)	93-50-425
-29	12.48	(316)	93-50-425
-30	12.99	(328)	93-50-450
-312	13.46	(341)	93-50-450
-325	13.98	(353)	93-50-475
-337	14.45	(366)	93-50-475
-350	14.96	(378)	93-50-500
-362	15.43	(391)	93-50-500
-375	15.94	(403)	93-50-525
-387	16.42	(416)	93-50-525
-400	16-93	(428)	93-50-550

2828/2928/R7728

Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-05	3.11	(79)	93-50-200
-06	3.82	(97)	93-50-225
-07	4.09	(104)	93-50-225
-087	4.57	(116)	93-50-225
-10	5.08	(129)	93-50-250
-11	5.39	(137)	93-50-250
-112	5.59	(142)	93-50-250
-12	6.06	(154)	93-50-275
-137	6.57	(167)	93-50-275
-15	7.05	(179)	93-50-300
-162	7.56	(192)	93-50-300
-17	7.76	(197)	93-50-325
-18	8.03	(204)	93-50-325
-187	8.54	(217)	93-50-325
-20	9.02	(229)	93-50-350
-212	9.53	(242)	93-50-350
-23	10.00	(254)	93-50-375
-237	10.51	(267)	93-50-375
-25	10.98	(279)	93-50-400
-262	11.50	(292)	93-50-400
-28	11.97	(304)	93-50-425
-29	12.48	(317)	93-50-425
-30	12.95	(329)	93-50-450
-312	13.46	(342)	93-50-450
-325	13.94	(354)	93-50-475
-337	14.45	(367)	93-50-475
-350	14.92	(379)	93-50-500
-362	15.43	(392)	93-50-500
-375	15.91	(404)	93-50-525
-387	16.42	(417)	93-50-525
-400	16.89	(429)	93-50-550

E6-40

Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-040	2.56	(65)	*
-050	2.95	(75)	93-50-200
-062	3.43	(87)	93-50-200
-070	3.74	(95)	93-50-225
-075	3.94	(100)	93-50-225
-100	4.92	(125)	93-50-250
-125	5.91	(150)	93-50-275
-150	6.89	(175)	93-50-300
-175	7.87	(200)	93-50-325
-200	8.86	(225)	93-50-350
-225	9.84	(250)	93-50-375
-250	10.83	(275)	93-50-400
-275	11.81	(300)	93-50-425
-300	12.80	(325)	93-50-450

*upon request

E4-38L/R4-38L

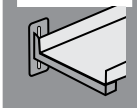
Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-050	2.80	(71)	93-50-200
-062	3.27	(83)	93-50-200
-075	3.78	(96)	93-50-225
-087	4.25	(108)	93-50-225
-100	4.76	(121)	93-50-250
-112	5.24	(133)	93-50-250
-125	5.75	(146)	93-50-275
-137	6.22	(158)	93-50-275
-150	6.73	(171)	93-50-300
-162	7.21	(183)	93-50-300
-175	7.72	(196)	93-50-325
-200	8.70	(221)	93-50-350
-250	10.67	(271)	93-50-400

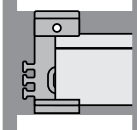
R6-40

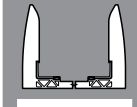
Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-062	3.43	(87)	93-50-200
-075	3.94	(100)	93-50-225

igus® System E4 with extension link at a ship loader for the coal unloading.
Travel 344.5 ft.(105 m), speed 787 ft/min (240 m/min), load 35.6 lbs/ft (53 kg/m)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS







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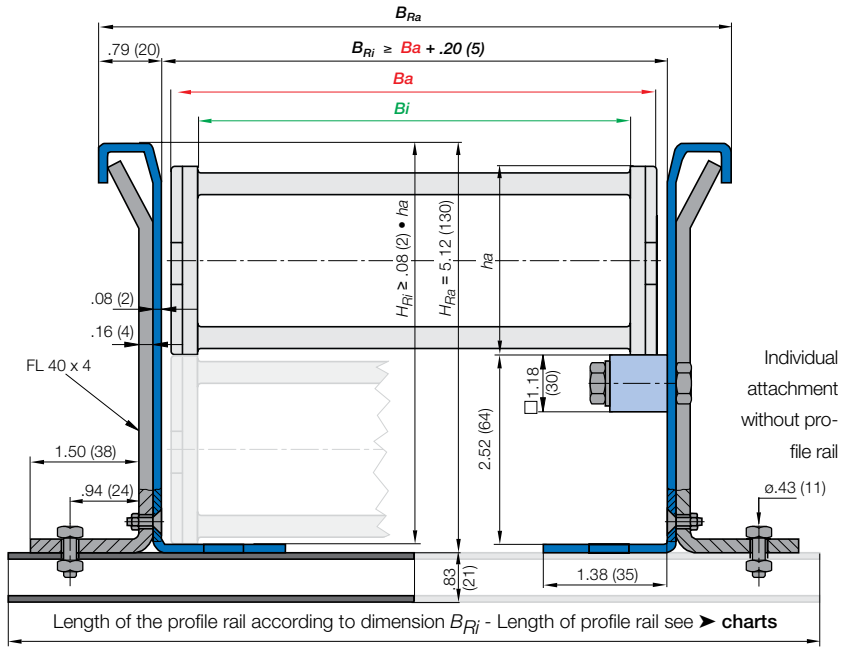
Guide Trough Systems
Steel Guide Troughs

For the following Series

- **System E2/000 Series:**
- 3400/3500
- **System E2 Series:**
- 340/350
- **System E2 Tube Series:**
- R68
- **System E4 Series:**
- 380/390
- 3838/3938/R7838
- **System E6 Series:**
- E6-52/R6-52
- **System E4-1 Series**
- E4-42/H4-42/R4-42
- **System E4-1 Light Series:**
- E4-38L/R4-38L
- 255

Part No. **93-30** - Trough Height: 5.12 in. (130 mm)



Ba	=	Outer E-Chain® width
Bi	=	Inner E-Chain® width
ha	=	E-Chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

= Guide trough
= Glide bar
= Installation set “Basic”
= profile rail

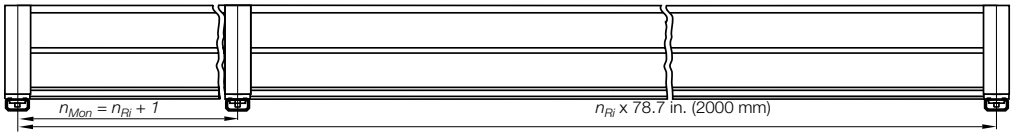
Steel Guide Trough components - Sets and single parts

Complete guide trough sets - description	Part No.	Weight lbs
Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m)	**93-30**	**28.22**
1 Installation set “Basic” **with** profile rail	**93-50-**___	
1 Installation set “Basic” **without** profile rail	**93-50**	**1.19**
1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts	**93-01**	**9.95**

Single parts - description		
1 profile rail, individual	**92-52-**___	**.60 lbs/ft.**
1 Clamping brackets, 2 pcs	**93-51**	**.49**
4 Flat-head screws M6 x 20	**92-53**	
4 Lock nuts M6	**92-55**	
2 3/8 Slide nuts	**92-56**	
2 Hex-head bolts 3/8 x 3/4	**92-57**	
Glide bar hardware only, 22 pcs	**93-21**	**2.67**

Supplement Part No. with the indicated profile rail-length-index. **Example: 93-50-175**
profile rail-length-index for your chosen trough inner width B_{Ri} ➤ **opposite page**

Design sketch: Number of installation sets which have to be installed



Guide Trough Systems
Steel Guide Troughs

Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

3400/3500

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-075	3.94 (100)	93-50-225
-115	5.51 (140)	93-50-250
-175	7.87 (200)	93-50-300

340/350

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-050	2.95 (75)	93-50-150
-075	3.94 (100)	93-50-200
-100	4.92 (125)	93-50-250
-115	5.51 (140)	93-50-250
-125	5.91 (150)	93-50-300
-150	6.89 (175)	93-50-300
-175	7.87 (200)	93-50-300
-200	8.86 (225)	93-50-350
-225	9.84 (250)	93-50-350
-250	10.83 (275)	93-50-400

R68

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-050	2.87 (73)	93-50-200
-075	3.86 (98)	93-50-225
-100	4.84 (123)	93-50-250
-115	5.43 (138)	93-50-250
-125	5.83 (148)	93-50-275
-150	6.81 (173)	93-50-300
-175	7.80 (198)	93-50-325
-200	8.78 (223)	93-50-350
-225	9.76 (248)	93-50-375
-250	10.75 (273)	93-50-400

380/390/R780 E4-42/H4-42/R4-42

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-05	3.19 (81)	93-50-200
-06	3.90 (99)	93-50-225
-07	4.17 (106)	93-50-225
-087	4.69 (119)	93-50-250
-10	5.16 (131)	93-50-250
-11	5.47 (139)	93-50-250
-112	5.67 (144)	93-50-275
-12	6.14 (156)	93-50-275
-137	6.65 (169)	93-50-300
-15	7.12 (181)	93-50-300
-162	7.64 (194)	93-50-325
-17	7.83 (199)	93-50-325
-18	8.11 (206)	93-50-325
-187	8.62 (219)	93-50-350
-20	9.09 (231)	93-50-350
-212	9.61 (244)	93-50-375
-23	10.08 (256)	93-50-375
-237	10.59 (269)	93-50-400
-25	11.06 (281)	93-50-400
-262	11.57 (294)	93-50-425
-28	12.05 (306)	93-50-425
-29	12.56 (319)	93-50-450
-30	13.03 (331)	93-50-450
-312	13.54 (344)	93-50-475
-325	14.01 (356)	93-50-475
-337	14.52 (369)	93-50-500
-350	15.00 (381)	93-50-500
-362	15.51 (394)	93-50-525
-375	16.02 (407)	93-50-525
-387	16.50 (419)	93-50-550
-400	16.97 (431)	93-50-550

E4-38L/R4-38L

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-050	2.95 (75)	93-50-200
-062	3.43 (87)	93-50-200
-075	3.94 (100)	93-50-225
-087	4.41 (112)	93-50-225
-100	4.92 (125)	93-50-250
-125	5.91 (150)	93-50-275
-150	6.89 (175)	93-50-300
-175	7.87 (200)	93-50-325
-200	8.86 (225)	93-50-350

3838/3938/R7838

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-05	3.23 (82)	93-50-200
-06	3.94 (100)	93-50-225
-07	4.21 (107)	93-50-225
-087	4.72 (120)	93-50-250
-10	5.20 (132)	93-50-250
-11	5.51 (140)	93-50-250
-112	5.71 (145)	93-50-275
-12	6.18 (157)	93-50-275
-137	6.69 (170)	93-50-300
-15	7.16 (182)	93-50-300
-162	7.68 (195)	93-50-325
-17	7.87 (200)	93-50-325
-18	8.15 (207)	93-50-325
-187	8.66 (220)	93-50-350
-20	9.13 (232)	93-50-350
-212	9.65 (245)	93-50-375
-23	10.12 (257)	93-50-375
-237	10.63 (270)	93-50-400
-25	11.10 (282)	93-50-400
-262	11.61 (295)	93-50-425
-28	12.09 (307)	93-50-425
-29	12.60 (320)	93-50-450
-30	13.07 (332)	93-50-450
-312	13.58 (345)	93-50-475
-325	14.06 (357)	93-50-475
-337	14.57 (370)	93-50-500
-350	15.04 (382)	93-50-500
-362	15.55 (395)	93-50-525
-375	16.02 (407)	93-50-525
-387	16.53 (420)	93-50-550
-400	17.01 (432)	93-50-550

E6-52

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-040	2.72 (69)	*
-050	3.11 (79)	93-50-200
-075	4.09 (104)	93-50-225
-100	5.08 (129)	93-50-250
-125	6.06 (154)	93-50-275
-150	7.04 (179)	93-50-300
-175	8.03 (204)	93-50-325
-200	9.01 (229)	93-50-350
-225	10.00 (254)	93-50-375
-250	10.98 (279)	93-50-400
-275	11.97 (304)	93-50-425
-300	12.95 (329)	93-50-450

*upon request

R6-52

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-050	3.11 (79)	93-50-200
-075	4.09 (104)	93-50-225
-100	5.08 (129)	93-50-250
-125	6.06 (154)	93-50-275
-150	7.04 (179)	93-50-300
-175	8.03 (204)	93-50-325

Travel up to 639.7 ft. (195 m) with the igus® System E4, safely guided in an igus® steel trough

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
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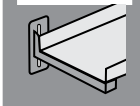

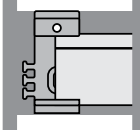

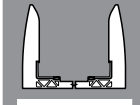

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For the following Series

System E4 Series:
- 400/410/R880
- 4040/4140/R8840
- 14040/14140/R18840
- 14240/14340

System E6 Series:
- E6-62

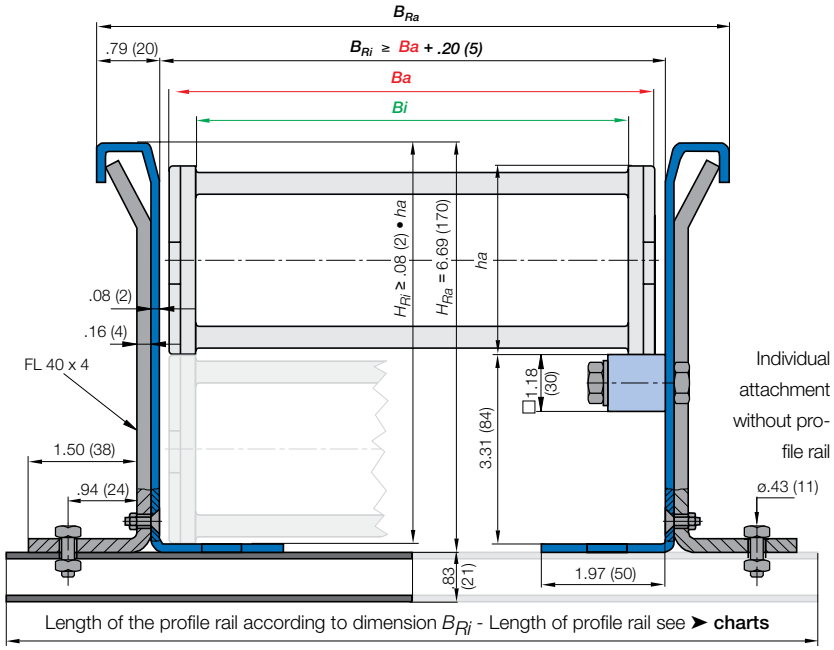
System E4-1 Series
- E4-56/H4-56/R4-56

Ba	=	Outer E-Chain® width
Bi	=	Inner E-Chain® width
ha	=	E-Chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

! $H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

● = Guide trough
● = Glide bar
● = Installation set “Basic”
● = profile rail

Part No. **94-30** - Trough Height: 6.69 in. (170 mm)



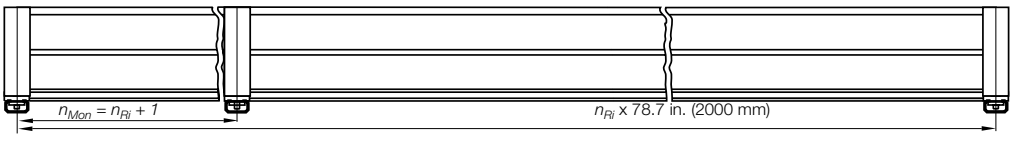
Steel Guide Trough components - Sets and single parts

Complete guide trough sets - description	Part No.	Weight lbs
Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m)	**94-30**	**37.04**
1 Installation set “Basic” **with** profile rail	**94-50-____**	
1 Installation set “Basic” **without** profile rail	**94-50**	**1.41**
1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts	**93-01**	**4.30**

Single parts - description		
1 profile rail, individual	**92-52-____**	**.60 lbs/ft**
1 Clamping brackets, 2 pcs	**94-51**	**.60**
4 Flat-head screws M6 x 20	**92-53**	
4 Lock nuts M6	**92-55**	
2 3/8 Slide nuts	**92-56**	
2 Hex-head bolts 3/8 x 3/4	**92-57**	
Glide bar hardware only, 22 pcs	**93-21**	**2.65**

Supplement Part No. with the indicated profile rail-length-index. **Example: 94-50-175**
profile rail-length-index for your chosen trough inner width B_{Ri} ➤ **opposite page**

Design sketch: Number of installation sets which have to be installed



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Guide Trough Systems
Steel Guide Troughs

Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

400/410/R880 4040/4140 E4-56/H4-56/R4-56

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-05	3.50 (89)	*
-06	4.23 (104)	94-50-225
-07	4.49 (114)	94-50-225
-08	4.76 (121)	94-50-225
-10	5.47 (139)	94-50-250
-11	5.98 (152)	94-50-275
-12	6.46 (164)	94-50-275
-13	6.97 (177)	94-50-300
-15	7.44 (189)	94-50-300
-16	7.95 (202)	94-50-325
-17	8.42 (214)	94-50-325
-18	8.94 (227)	94-50-350
-20	9.41 (239)	94-50-350
-21	9.92 (252)	94-50-375
-22	10.39 (264)	94-50-375
-23	10.91 (277)	94-50-400
-25	11.38 (289)	94-50-400
-26	11.89 (302)	94-50-425
-27	12.36 (314)	94-50-425
-28	12.87 (327)	94-50-450
-30	13.35 (339)	94-50-450
-31	13.86 (352)	94-50-475
-32	14.33 (364)	94-50-475
-33	14.84 (377)	94-50-500
-35	15.31 (389)	94-50-500
-36	15.82 (402)	94-50-525
-37	16.30 (414)	94-50-525
-38	16.81 (427)	94-50-550
-40	17.28 (439)	94-50-550
-41	17.79 (452)	94-50-575
-42	18.27 (464)	94-50-575
-43	18.78 (477)	94-50-600
-45	19.25 (489)	94-50-600
-46	19.76 (502)	94-50-625
-47	20.24 (514)	94-50-625
-48	20.75 (527)	94-50-650
-50	21.22 (539)	94-50-650
-51	21.73 (552)	94-50-675
-52	22.20 (564)	94-50-675
-53	22.72 (577)	94-50-700
-55	23.19 (589)	94-50-700
-60	25.28 (639)	94-50-750

14040/14140/R18840

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-05	3.19 (81)	*
-06	3.78 (96)	*
-07	4.17 (106)	94-50-225
-10	5.16 (131)	94-50-250
-11	5.63 (143)	94-50-275
-12	6.14 (156)	94-50-275
-13	6.61 (168)	94-50-300
-15	7.13 (181)	94-50-300
-16	7.60 (193)	94-50-325
-17	8.11 (206)	94-50-325
-18	8.58 (218)	94-50-350
-20	9.09 (231)	94-50-350
-21	9.57 (243)	94-50-375
-22	10.08 (256)	94-50-375
-23	10.55 (268)	94-50-400
-25	11.06 (281)	94-50-400
-26	11.54 (293)	94-50-425
-27	12.05 (306)	94-50-425
-28	12.52 (318)	94-50-450
-30	13.03 (331)	94-50-450
-31	13.50 (343)	94-50-475
-32	14.02 (356)	94-50-475
-33	14.49 (368)	94-50-500
-35	15.00 (381)	94-50-500
-36	15.47 (393)	94-50-525
-37	15.98 (406)	94-50-525
-38	16.46 (418)	94-50-550
-40	16.97 (431)	94-50-550
-41	17.44 (443)	94-50-575
-42	17.95 (456)	94-50-575
-43	18.43 (468)	94-50-600
-45	18.94 (481)	94-50-600
-46	19.41 (493)	94-50-625
-47	19.92 (506)	94-50-625
-48	20.59 (518)	94-50-650
-50	20.91 (531)	94-50-650
-51	21.38 (543)	94-50-675
-52	21.89 (556)	94-50-675
-53	22.36 (568)	94-50-700
-55	22.87 (581)	94-50-700
-60	24.84 (631)	94-50-750

14240/14340

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-05	3.19 (81)	*
-06	3.90 (99)	*
-07	4.17 (106)	94-50-225
-087	4.65 (118)	94-50-250
-10	5.16 (131)	94-50-250
-11	5.47 (139)	94-50-250
-112	5.63 (143)	94-50-275
-12	6.14 (156)	94-50-275
-137	6.61 (168)	94-50-300
-15	7.12 (181)	94-50-300
-162	7.60 (193)	94-50-325
-17	7.83 (199)	94-50-325
-18	8.11 (206)	94-50-325
-187	8.58 (218)	94-50-350
-20	9.09 (231)	94-50-350
-212	9.57 (243)	94-50-375
-23	10.08 (256)	94-50-375
-237	10.55 (268)	94-50-400
-25	11.06 (281)	94-50-400
-262	11.54 (293)	94-50-425
-28	12.05 (306)	94-50-425
-29	12.52 (318)	94-50-450
-30	13.03 (331)	94-50-450
-312	13.50 (343)	94-50-475
-325	14.02 (356)	94-50-475
-337	14.49 (368)	94-50-500
-350	15.00 (381)	94-50-500
-362	15.47 (393)	94-50-525
-375	15.98 (406)	94-50-525
-387	16.46 (418)	94-50-550
-400	16.97 (431)	94-50-550

E6-62

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-05	3.58 (91)	*
-06	4.29 (109)	94-50-225
-07	4.57 (116)	94-50-225
-087	5.04 (128)	94-50-250
-10	5.55 (141)	94-50-250
-11	5.87 (149)	94-50-275
-112	6.02 (153)	94-50-275
-12	6.54 (165)	94-50-275
-137	7.01 (178)	94-50-300
-15	7.52 (191)	94-50-300
-162	7.99 (203)	94-50-325
-17	8.23 (209)	94-50-325
-18	8.50 (216)	94-50-325
-187	8.98 (228)	94-50-350
-20	9.49 (241)	94-50-350
-212	9.96 (253)	94-50-375
-23	10.47 (266)	94-50-375
-237	10.95 (278)	94-50-400
-25	11.46 (291)	94-50-400
-262	11.93 (303)	94-50-425
-28	12.44 (316)	94-50-425
-29	12.91 (328)	94-50-450
-30	13.43 (341)	94-50-450
-312	13.90 (353)	94-50-475
-325	14.41 (366)	94-50-475
-337	14.88 (378)	94-50-500
-350	15.39 (391)	94-50-500
-362	15.87 (403)	94-50-525
-375	16.38 (416)	94-50-525
-387	16.85 (428)	94-50-550
-400	17.36 (441)	94-50-550

*upon request

590.5 ft. (180 m) travel, 20.2 lbs/ft (30 kg/m) fill weight.
Two igus® E4 RoI E-Chains®

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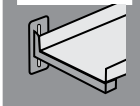
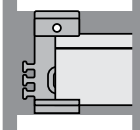
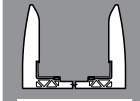
RoHS info: www.igus.com/RoHS







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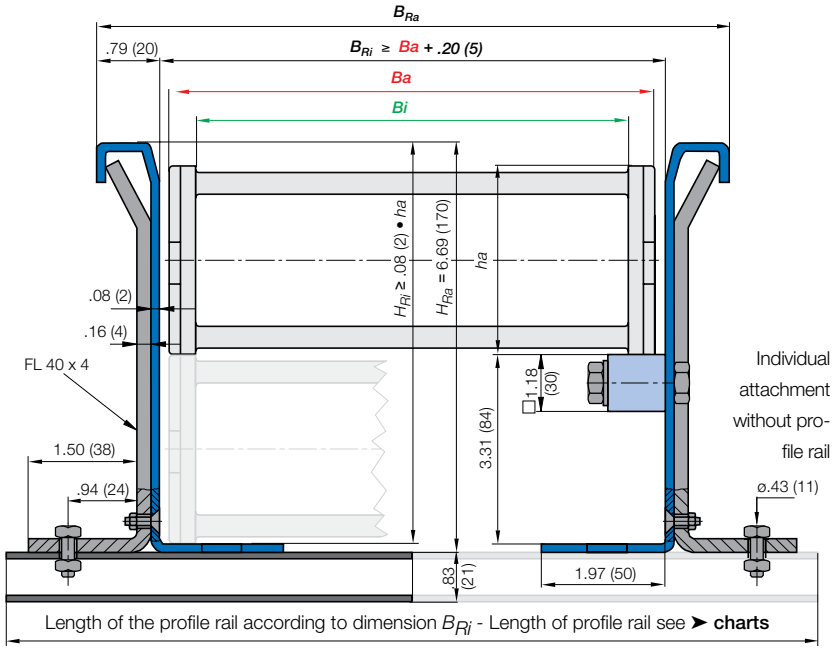
Guide Trough Systems
Steel Guide Troughs

For the following Series

System E4 Series:
● 14550/14650/R19050

Part No. **94-14550-30** - Trough Height: 6.69 in. (170 mm)



Ba	=	Outer E-Chain® width
Bi	=	Inner E-Chain® width
ha	=	E-Chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

! $H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

● = Guide trough
● = Glide bar
● = Installation set “Basic”
● = profile rail

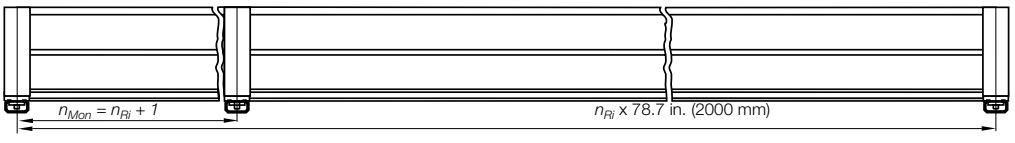
Steel Guide Trough components - Sets and single parts

Complete guide trough sets - description	Part No.	Weight lbs
Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m)	**94-14550-30**	**37.04**
1 Installation set “Basic” **with** profile rail	**94-50-____**	
1 Installation set “Basic” **without** profile rail	**94-50**	**1.41**
1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts	**93-01**	**4.30**

Single parts - description		
1 profile rail, individual	**92-52-____**	**.60 lbs/ft**
1 Clamping brackets, 2 pcs	**94-51**	**.60**
4 Flat-head screws M6 x 20	**92-53**	
4 Lock nuts M6	**92-55**	
2 3/8 Slide nuts	**92-56**	
2 Hex-head bolts 3/8 x 3/4	**92-57**	
Glide bar hardware only, 22 pcs	**93-21**	**2.65**

Supplement Part No. with the indicated profile rail-length-index. **Example: 94-50-175**
profile rail-length-index for your chosen trough inner width B_{Ri} ➤ **opposite page**

Design sketch: Number of installation sets which have to be installed



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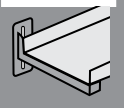
Guide Trough Systems
Steel Guide Troughs

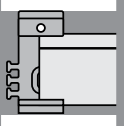
Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

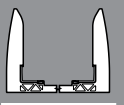
14550/14650/R19050

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-05	3.19 (81)	*
-06	3.78 (96)	*
-07	4.17 (106)	94-50-225
-10	5.16 (131)	94-50-250
-11	5.63 (143)	94-50-275
-12	6.14 (156)	94-50-275
-13	6.61 (168)	94-50-300
-15	7.13 (181)	94-50-300
-16	7.60 (193)	94-50-325
-17	8.11 (206)	94-50-325
-18	8.58 (218)	94-50-350
-20	9.09 (231)	94-50-350
-21	9.57 (243)	94-50-375
-22	10.08 (256)	94-50-375
-23	10.55 (268)	94-50-400
-25	11.06 (281)	94-50-400
-26	11.54 (293)	94-50-425
-27	12.05 (306)	94-50-425
-28	12.52 (318)	94-50-450
-30	13.03 (331)	94-50-450
-31	13.50 (343)	94-50-475
-32	14.02 (356)	94-50-475
-33	14.49 (368)	94-50-500
-35	15.00 (381)	94-50-500
-36	15.47 (393)	94-50-525
-37	15.98 (406)	94-50-525
-38	16.46 (418)	94-50-550
-40	16.97 (431)	94-50-550
-41	17.44 (443)	94-50-575
-42	17.95 (456)	94-50-575
-43	18.43 (468)	94-50-600
-45	18.94 (481)	94-50-600
-46	19.41 (493)	94-50-625
-47	19.92 (506)	94-50-625
-48	20.59 (518)	94-50-650
-50	20.91 (531)	94-50-650
-51	21.38 (543)	94-50-675
-52	21.89 (556)	94-50-675
-53	22.36 (568)	94-50-700
-55	22.87 (581)	94-50-700
-60	24.84 (631)	94-50-750

System E4 with extension links, long travel application on board West Navigator (Norway)







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igus®

Guide Trough Systems
Steel Guide Troughs

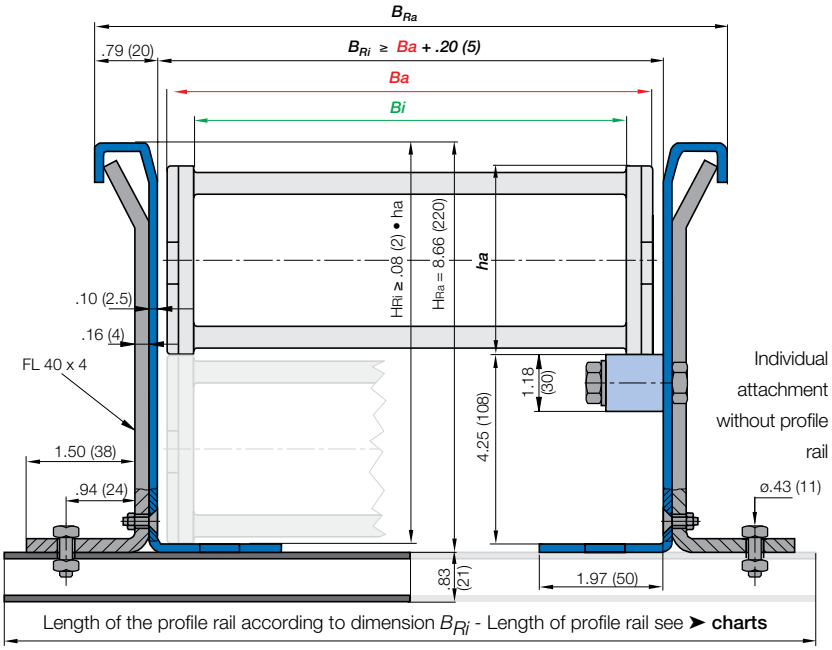
For the following Series

System E4 Series:
- 5050/5150/R9850
- 15050/15150/R19850

System E6 Series:
- E6-80/E6-80L

System E4-1 Series
- E4-80/H4-80/R4-80

Part No. **99-30** - Trough Height: 6.69 in. (170 mm)



Ba	=	Outer E-Chain® width
Bi	=	Inner E-Chain® width
ha	=	E-Chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

- Guide trough
- Glide bar
- Installation set “Basic”
- profile rail

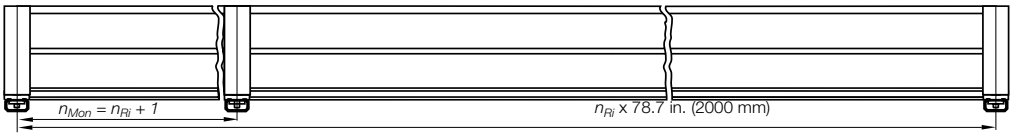
Steel Guide Trough components - Sets and single parts

Complete guide trough sets - description	Part No.	Weight lbs
Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m)	**99-30**	**43.66**
1 Installation set “Basic” **with** profile rail	**96-50-____**	
1 Installation set “Basic” **without** profile rail	**96-50**	**1.63**
1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts	**93-01**	**9.95**

Single parts - description		
1 profile rail, individual	**92-52-____**	**.60 lbs/ft**
1 Clamping brackets, 2 pcs	**96-51**	**.69**
4 Flat-head screws M6 x 20	**92-53**	
4 Lock nuts M6	**92-55**	
2 3/8 Slide nuts	**92-56**	
2 Hex-head bolts 3/8 x 3/4	**92-57**	
Glide bar hardware only, 22 pcs	**93-21**	**2.67**

Supplement Part No. with the indicated profile rail-length-index. **Example: 96-50-175**
profile rail-length-index for your chosen trough inner width B_{Ri} ➤ **opposite page**

Design sketch: Number of installation sets which have to be installed



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Guide Trough Systems
Steel Guide Troughs

Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

5050/5150/R9850 E4-80/H4-80/R4-80

Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-05	4.13	(105)	96-50-225
-06	4.72	(120)	96-50-250
-07	5.12	(130)	96-50-250
-10	6.10	(155)	96-50-275
-11	6.61	(168)	96-50-300
-12	7.09	(180)	96-50-300
-13	7.60	(193)	96-50-325
-15	8.07	(205)	96-50-325
-16	8.58	(218)	96-50-350
-17	9.06	(230)	96-50-350
-18	9.57	(243)	96-50-375
-20	10.04	(255)	96-50-375
-21	10.55	(268)	96-50-400
-22	11.02	(280)	96-50-400
-23	11.54	(293)	96-50-425
-25	12.01	(305)	96-50-425
-26	12.52	(318)	96-50-450
-27	12.99	(330)	96-50-450
-28	13.50	(343)	96-50-475
-30	13.98	(355)	96-50-475
-31	14.49	(368)	96-50-500
-32	14.96	(380)	96-50-500
-33	15.47	(393)	96-50-525
-35	15.94	(405)	96-50-525
-36	16.46	(418)	96-50-550
-37	16.93	(430)	96-50-550
-38	17.44	(443)	96-50-575
-40	17.91	(455)	96-50-575
-41	18.43	(468)	96-50-600
-42	18.90	(480)	96-50-600
-43	19.41	(493)	96-50-625
-45	19.88	(505)	96-50-625
-46	20.39	(518)	96-50-650
-47	20.87	(530)	96-50-650
-48	21.38	(543)	96-50-675
-50	21.85	(555)	96-50-675
-51	22.36	(568)	96-50-700
-52	22.83	(580)	96-50-700
-53	23.35	(593)	96-50-725
-55	23.82	(605)	96-50-725
-60	25.79	(655)	96-50-775

15050/15150/R19850

Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-05	3.35	(85)	*
-07	4.33	(110)	96-50-225
-10	5.31	(135)	96-50-250
-11	5.83	(148)	96-50-275
-12	6.30	(160)	96-50-275
-13	6.81	(173)	96-50-300
-15	7.28	(185)	96-50-300
-16	7.80	(198)	96-50-325
-17	8.27	(210)	96-50-325
-18	8.78	(223)	96-50-350
-20	9.25	(235)	96-50-350
-21	9.76	(248)	96-50-375
-22	10.24	(260)	96-50-375
-23	10.75	(273)	96-50-400
-25	11.22	(285)	96-50-400
-26	11.73	(298)	96-50-425
-27	12.20	(310)	96-50-425
-28	12.72	(323)	96-50-450
-30	13.19	(335)	96-50-450
-31	13.70	(348)	96-50-475
-32	14.17	(360)	96-50-475
-33	14.69	(373)	96-50-500
-35	15.16	(385)	96-50-500
-36	15.67	(398)	96-50-525
-37	16.14	(410)	96-50-525
-38	16.65	(423)	96-50-550
-40	17.13	(435)	96-50-550
-41	17.63	(448)	96-50-575
-42	18.11	(460)	96-50-575
-43	18.62	(473)	96-50-600
-45	19.09	(485)	96-50-600
-46	19.61	(498)	96-50-625
-47	20.08	(510)	96-50-625
-48	20.59	(523)	96-50-650
-50	21.06	(535)	96-50-650
-51	21.57	(548)	96-50-675
-52	22.04	(560)	96-50-675
-53	22.56	(573)	96-50-700
-55	23.03	(585)	96-50-700
-60	25.00	(635)	96-50-750

*upon request

15250/15350

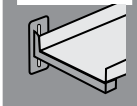
Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-05	3.35	(85)	*
-06	4.06	(103)	96-50-225
-07	4.33	(110)	96-50-225
-087	4.80	(122)	96-50-250
-09	5.20	(132)	96-50-250
-10	5.31	(135)	96-50-250
-11	5.63	(143)	96-50-275
-112	5.83	(148)	96-50-275
-12	6.30	(160)	96-50-275
-137	6.77	(172)	96-50-300
-15	7.28	(185)	96-50-300
-162	7.80	(198)	96-50-325
-17	7.99	(203)	96-50-325
-18	8.27	(210)	96-50-325
-187	8.78	(223)	96-50-350
-20	9.25	(235)	96-50-350
-212	9.76	(248)	96-50-375
-23	10.24	(260)	96-50-375
-237	10.75	(273)	96-50-400
-25	11.22	(285)	96-50-400
-262	11.73	(298)	96-50-425
-28	12.20	(310)	96-50-425
-29	12.72	(323)	96-50-450
-30	13.19	(335)	96-50-450
-312	13.70	(348)	96-50-475
-325	14.17	(360)	96-50-475
-337	14.69	(373)	96-50-500
-350	15.16	(385)	96-50-500
-362	15.67	(398)	96-50-525
-375	16.14	(410)	96-50-525
-387	16.65	(423)	96-50-550
-400	17.13	(435)	96-50-550

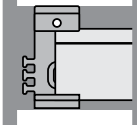
*upon request

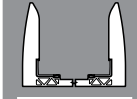
E6-80

Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-05	4.13	(105)	96-50-225
-06	4.72	(120)	96-50-250
-07	5.12	(130)	96-50-250
-10	6.10	(155)	96-50-275
-11	6.57	(167)	96-50-300
-12	7.09	(180)	96-50-300
-13	7.56	(192)	96-50-325
-15	8.07	(205)	96-50-325
-16	8.54	(217)	96-50-350
-17	9.06	(230)	96-50-350
-18	9.53	(242)	96-50-375
-20	10.04	(255)	96-50-375
-21	10.51	(267)	96-50-400
-22	11.02	(280)	96-50-400
-23	11.50	(292)	96-50-425
-25	12.01	(305)	96-50-425
-26	12.48	(317)	96-50-450
-27	12.99	(330)	96-50-450
-28	13.46	(342)	96-50-475
-30	13.98	(355)	96-50-475
-31	14.45	(367)	96-50-500
-32	14.96	(380)	96-50-500
-33	15.43	(392)	96-50-525
-35	15.94	(405)	96-50-525
-36	16.42	(417)	96-50-550
-37	16.93	(430)	96-50-550
-38	17.40	(442)	96-50-575
-40	17.91	(455)	96-50-575
-41	18.39	(467)	96-50-600
-42	18.90	(480)	96-50-600
-43	19.37	(492)	96-50-625
-45	19.88	(505)	96-50-625
-46	20.35	(517)	96-50-650
-47	20.87	(530)	96-50-650
-48	21.34	(542)	96-50-675
-50	21.85	(555)	96-50-675
-51	22.32	(567)	96-50-700
-52	22.83	(580)	96-50-700
-53	23.31	(592)	96-50-725
-55	23.82	(605)	96-50-725
-60	25.79	(655)	96-50-775

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS







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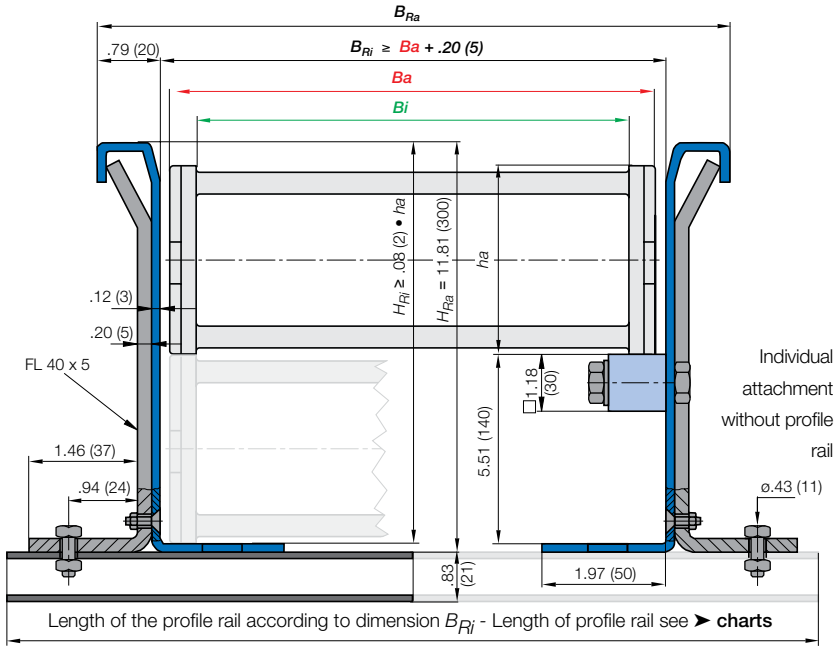
Guide Trough Systems
Steel Guide Troughs

For the following Series

System E4-1 Series:
- E4-112/H4-112/R4-112

System E4 Series:
- 600/601/R608
- 640
- 1640/R1608

Part No. **97-30** - Trough Height: 11.81 in. (300 mm)



Ba	=	Outer E-Chain® width
Bi	=	Inner E-Chain® width
ha	=	E-Chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

- = Guide trough
- = Glide bar
- = Installation set “Basic”
- = profile rail

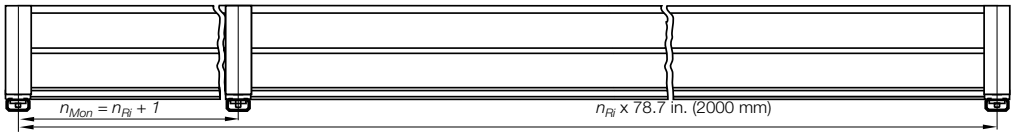
Steel Guide Trough components - Sets and single parts

Complete guide trough sets - description	Part No.	Weight lbs
Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m)	**97-30**	**60.42**
1 Installation set “Basic” **with** profile rail	**97-50-____**	
1 Installation set “Basic” **without** profile rail	**97-50**	**2.47**
1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts	**93-01**	**9.95**

Single parts - description		
1 profile rail, individual	**92-52-____**	**.60 lbs/ft**
1 Clamping brackets, 2 pcs	**97-51**	**1.12**
4 Flat-head screws M6 x 20	**98-52**	
4 Lock nuts M8	**98-53**	
2 3/8 Slide nuts	**92-56**	
2 Hex-head bolts 3/8 x 3/4	**92-57**	
Glide bar hardware only, 22 pcs	**93-21**	**2.67**

Supplement Part No. with the indicated profile rail-length-index. **Example: 94-50-175**
profile rail-length-index for your chosen trough inner width B_{Ri} ➤ **opposite page**

Design sketch: Number of installation sets which have to be installed



Guide Trough Systems
Steel Guide Troughs

Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

E4-112/H4-112/R4-112

Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-05	4.21	(107)	97-50-225
-06	4.80	(122)	97-50-250
-07	5.20	(132)	97-50-250
-10	6.18	(157)	97-50-275
-11	6.65	(169)	97-50-300
-12	7.17	(182)	97-50-300
-13	7.64	(194)	97-50-325
-15	8.15	(207)	97-50-325
-16	8.62	(219)	97-50-350
-17	9.13	(232)	97-50-350
-18	9.61	(244)	97-50-375
-20	10.12	(257)	97-50-375
-21	10.59	(269)	97-50-400
-22	11.10	(282)	97-50-400
-23	11.57	(294)	97-50-425
-25	12.09	(307)	97-50-425
-26	12.56	(319)	97-50-450
-27	13.07	(332)	97-50-450
-28	13.54	(344)	97-50-475
-30	14.06	(357)	97-50-475
-31	14.53	(369)	97-50-500
-32	15.04	(382)	97-50-500
-33	15.51	(394)	97-50-525
-35	16.02	(407)	97-50-525
-36	16.50	(419)	97-50-550
-37	17.01	(432)	97-50-550
-38	17.48	(444)	97-50-575
-40	17.99	(457)	97-50-575
-41	18.46	(469)	97-50-600
-42	18.98	(482)	97-50-600
-43	19.45	(494)	97-50-625
-45	19.96	(507)	97-50-625
-46	20.43	(519)	97-50-650
-47	20.94	(532)	97-50-650
-48	21.42	(544)	97-50-675
-50	21.93	(557)	97-50-675
-51	22.40	(569)	97-50-700
-52	22.91	(582)	97-50-700
-53	23.39	(594)	97-50-725
-55	23.90	(607)	97-50-725
-60	25.87	(657)	97-50-775

*upon request

640

Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-12	5.67	(144)	97-50-275
-13	6.18	(157)	97-50-275
-15	6.65	(169)	97-50-300
-16	7.16	(182)	97-50-300
-17	6.46	(164)	97-50-325
-18	8.15	(207)	97-50-325
-20	8.62	(219)	97-50-350
-21	9.13	(232)	97-50-350
-22	9.61	(244)	97-50-375
-23	10.12	(257)	97-50-375
-25	10.59	(269)	97-50-400
-26	11.10	(282)	97-50-400
-27	11.57	(294)	97-50-425
-28	12.09	(307)	97-50-425
-30	12.56	(319)	97-50-450
-31	13.07	(332)	97-50-450
-32	13.54	(344)	97-50-475
-33	14.06	(357)	97-50-475
-35	14.53	(369)	97-50-500
-36	15.04	(382)	97-50-500
-37	15.51	(394)	97-50-525
-38	16.02	(407)	97-50-525
-40	16.50	(419)	97-50-550
-41	17.01	(432)	97-50-550
-42	17.48	(444)	97-50-575
-43	17.99	(457)	97-50-575
-45	18.46	(469)	97-50-600
-46	18.98	(482)	97-50-600
-47	19.45	(494)	97-50-625
-48	19.96	(507)	97-50-625
-50	20.43	(519)	97-50-650
-51	20.94	(532)	97-50-650
-52	21.42	(544)	97-50-675
-53	21.93	(557)	97-50-675
-55	22.40	(569)	97-50-700
-60	24.37	(619)	97-50-750

1640/1608

Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-05	3.50	(89)	*
-06	4.09	(104)	97-50-225
-07	4.49	(114)	97-50-250
-10	5.47	(139)	97-50-275
-11	5.94	(151)	97-50-275
-12	6.46	(164)	97-50-300
-13	6.93	(176)	97-50-300
-15	7.44	(189)	97-50-325
-16	7.91	(201)	97-50-325
-17	8.43	(214)	97-50-350
-18	8.90	(226)	97-50-350
-20	9.41	(239)	97-50-375
-21	9.88	(251)	97-50-375
-22	10.39	(264)	97-50-400
-23	10.87	(276)	97-50-400
-25	11.38	(289)	97-50-425
-26	11.85	(301)	97-50-425
-27	12.36	(314)	97-50-450
-28	12.83	(326)	97-50-450
-30	13.35	(339)	97-50-475
-31	13.82	(351)	97-50-475
-32	14.33	(364)	97-50-500
-33	14.80	(376)	97-50-500
-35	15.31	(389)	97-50-525
-36	15.79	(401)	97-50-525
-37	16.30	(414)	97-50-550
-38	16.77	(426)	97-50-550
-40	17.28	(439)	97-50-575
-41	17.76	(451)	97-50-575
-42	18.27	(464)	97-50-600
-43	18.74	(476)	97-50-600
-45	19.25	(489)	97-50-625
-46	19.72	(501)	97-50-625
-47	20.24	(514)	97-50-650
-48	20.71	(526)	97-50-650
-50	21.22	(539)	97-50-675
-51	21.69	(551)	97-50-675
-52	22.20	(564)	97-50-700
-53	22.68	(576)	97-50-700
-55	23.19	(589)	97-50-725
-60	25.16	(639)	97-50-775

*upon request

600/601/R608

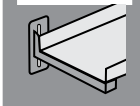
Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-20	10.12	(257)	97-50-375
-25	12.09	(307)	97-50-425
-30	14.06	(357)	97-50-475
-32	14.84	(377)	97-50-500
-35	16.02	(407)	97-50-525
-40	17.99	(457)	97-50-575
-45	19.96	(507)	97-50-625
-50	21.93	(557)	97-50-675
-55	23.90	(607)	97-50-725
-60	25.87	(657)	97-50-775

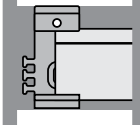
Rig skidding application on the Claymore, North Sea

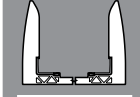
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

AL

ST







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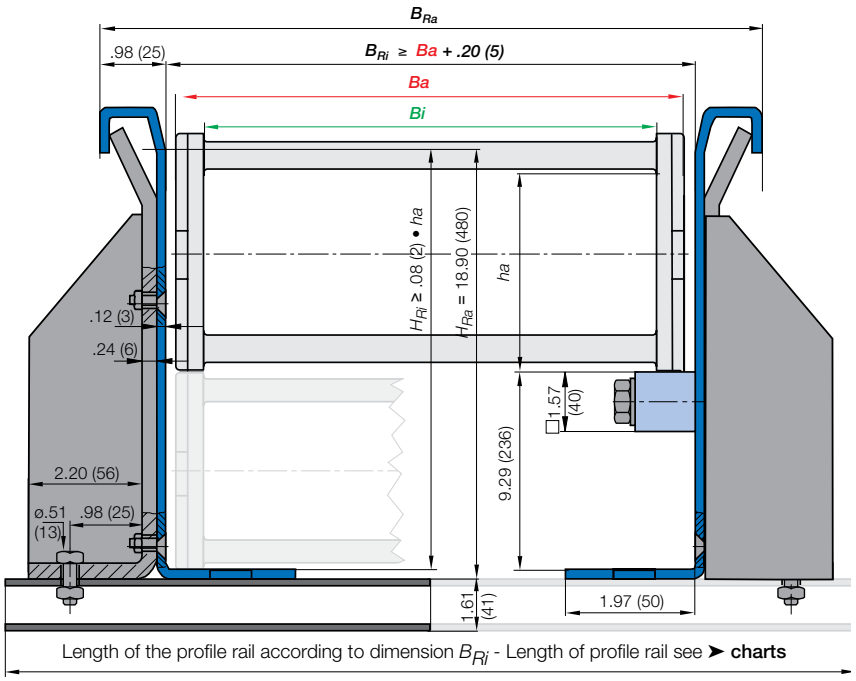
Guide Trough Systems
Steel Guide Troughs

Part No. **90-30** - Trough Height: 18.90 in. (480 mm)

For the following Series

System E4 Series:
● 800
System E4-1 Series
● 840



Ba	=	Outer E-Chain® width
Bi	=	Inner E-Chain® width
ha	=	E-Chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

! $H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

● = Guide trough
● = Glide bar
● = Installation set “Basic”
● = profile rail

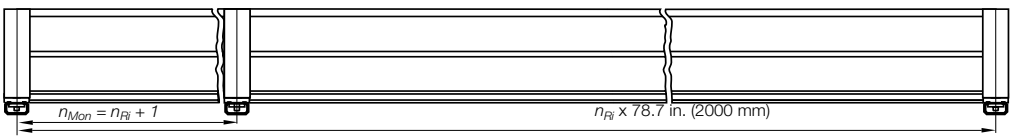
Steel Guide Trough components - Sets and single parts

Complete guide trough sets - description	Part No.	Weight lbs
Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m)	**90-30**	
1 Installation set “Basic” **with** profile rail	**90-50-___**	
1 Installation set “Basic” **without** profile rail	**90-50**	
1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts	**90-01**	

Single parts - description		
1 profile rail, individual	**92-52-___**	
1 Clamping brackets, 2 pcs	**90-51**	
4 Flat-head screws M8 x 25	**92-53**	
4 Lock nuts M6	**92-55**	
2 3/8 Slide nuts	**92-56**	
2 Hex-head bolts 3/8 x 3/4	**92-57**	
Glide bar hardware only, 22 pcs.	**92-21**	

Supplement Part No. with the indicated profile rail-length-index. **Example: 90-50-200**
profile rail-length-index for your chosen trough inner width B_{Ri} ➤ **opposite page**

Design sketch: Number of installation sets which have to be installed



Guide Trough Systems
Steel Guide Troughs

Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

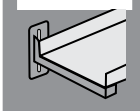
800

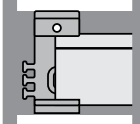
Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-20	10.43	(265)	90-50-450
-25	12.40	(315)	90-50-500
-30	14.37	(365)	90-50-550
-32	15.35	(390)	90-50-575
-35	16.34	(415)	90-50-600
-40	18.31	(465)	90-50-650
-45	20.27	(515)	90-50-700
-50	22.24	(565)	90-50-750
-55	24.21	(615)	90-50-800
-60	26.18	(665)	90-50-850

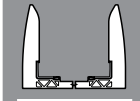
840

Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-13	6.49	(165)	90-50-350
-15	7.01	(178)	90-50-350
-16	7.48	(190)	90-50-375
-17	7.99	(203)	90-50-375
-18	8.46	(215)	90-50-400
-20	8.98	(228)	90-50-400
-21	9.45	(240)	90-50-425
-22	9.96	(253)	90-50-425
-23	10.43	(265)	90-50-450
-25	10.94	(278)	90-50-450
-26	11.42	(290)	90-50-475
-27	11.93	(303)	90-50-475
-28	12.40	(315)	90-50-500
-30	12.91	(328)	90-50-500
-31	13.39	(340)	90-50-525
-32	13.90	(353)	90-50-525
-33	14.37	(365)	90-50-550
-35	14.88	(378)	90-50-550
-36	15.35	(390)	90-50-575
-37	15.87	(403)	90-50-575
-38	16.34	(415)	90-50-600
-40	16.85	(428)	90-50-600
-41	17.32	(440)	90-50-625
-42	17.83	(453)	90-50-625
-43	18.31	(465)	90-50-650
-45	18.82	(478)	90-50-650
-46	19.29	(490)	90-50-675
-47	19.80	(503)	90-50-675
-48	20.20	(513)	90-50-700
-50	20.79	(528)	90-50-700
-51	21.26	(540)	90-50-725
-52	21.77	(553)	90-50-725
-53	22.24	(565)	90-50-750
-55	22.76	(578)	90-50-750
-60	26.18	(665)	90-50-800

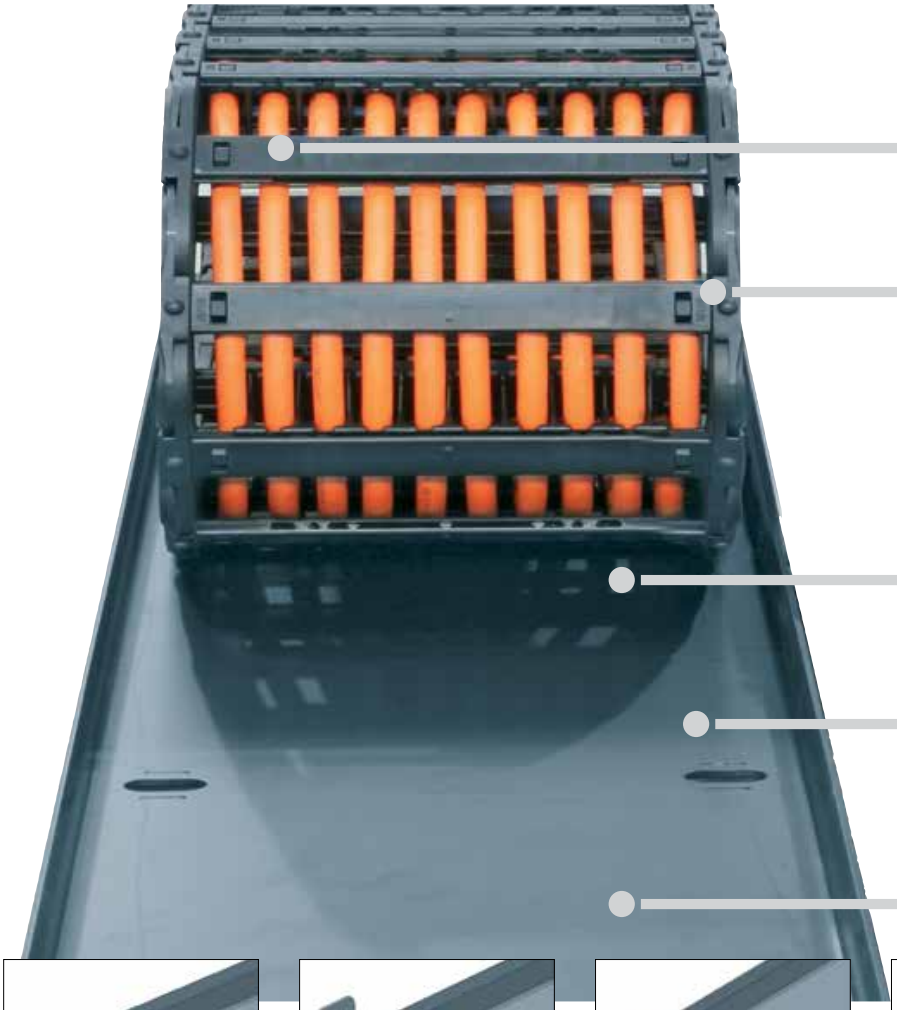
Assembling of an E4 E-Chain® Series 800 in an igus® steel guide trough







Support Tray
For support of the lower run



Noise and wear reducing, safe guiding of the lower run of your E-Chain® in standard applications

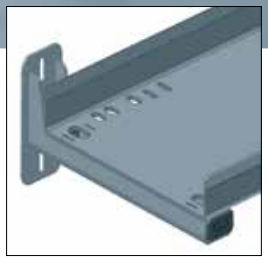
Flexible one-piece solution, for a large selection of igus® E2/000 and E4-1 series E-Chains

Simple design - easy mounting to all types of profiles and wall brackets

Complete system with all needed parts as one unit

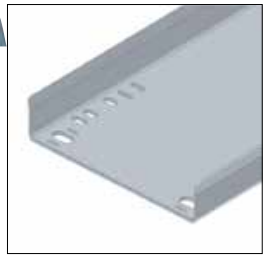
Lightweight material - available in the color of your choice

Option 01 - with connection-rail



Option 02 - with bracket

Option 03 - without rail (upon request)



Option 04 - customized (upon request)

For support of the lower run - Support tray tool kit

Simple one-piece support trays for the lower E-Chain® run, according with your requirements and specification. Your width, height and color - we supply the fitting E-Chain®, together with the support tray system. Ready to install onto your machine or application. Save on procurement and design time.

- Complete system, ready to install
- No more costly self-made designs
- Easy installation onto your machine, on profiles or wall-mount brackets
- igus® support tray - in 2 types and 4 options available
- For many widths available from stock, with many mounting possibilities

Support Tray Selection Table

Support Tray - Type 01 for Series:

- 2400/2450/2480/2500
- 2600/2650/2680/2700
- E4-21
- E4-28/R4-28
- E4-31L/R4-31L
- E4-32/H4-32/R4-32
- E4-38L/R4-38L
- 220/R760
- 280/290/R770
- 2828/2928/R7728
- E6-29/R6-29
- E6-35
- E6-40/R6-40
- E61-29

Support tray Part No.	Width E-Chain®*	Outer trough width B_{Ra} in. (mm)	Inner trough width B_{Ri} in. (mm)	Material
S9-010/011-05-XXXX-0	-05 / -050	3.50 (89)	3.15 (80)	Steel, black
S9-010/011-07-XXXX-0	-07 / -070	4.49 (114)	4.13 (105)	Steel, black
S9-010/011-10-XXXX-0	-10 / -100	5.47 (139)	5.12 (130)	Steel, black
S9-010/011-15-XXXX-0	-15 / -150	7.28 (185)	6.89 (175)	Steel, black

*depends on width-index

Support Tray - Type 02 for Series:

- 3400/3450/3480/3500
- E4-42/H4-42/R4-42
- E4-48L/R4-48L
- E4-56/H4-56/R4-56
- E4-80/H4-80/R4-80
- 14040/14140/R18840
- 14240/14340
- 14550/14650/19050
- 15050/15150/R19850
- 15250/15350
- 380/390/R780
- 400/410/R880
- 3838/3938/R7838
- 4040/4140/R8840
- 5050/5150/R9850
- E6-52/R6-52
- E6-62
- E6-80

Support tray Part No.	Width E-Chain®*	Outer trough width B_{Ra} in. (mm)	Inner trough width B_{Ri} in. (mm)	Material
S9-020/021-10-XXXX-0	-10 / -100	6.57 (167)	6.14 (156)	Steel, black
S9-020/021-15-XXXX-0	-15 / -150	8.54 (217)	8.11 (206)	Steel, black
S9-020/021-20-XXXX-0	-20 / -200	10.51 (267)	10.08 (256)	Steel, black
S9-020/021-25-XXXX-0	-25 / -250	12.48 (317)	12.05 (306)	Steel, black

*depends on width-index

Support tray with bracket for easy mounting on your application

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942 25 27 50
edf@edfluidos.com
www.edfluidos.com

Support Tray
Support Tray Tool Kit - Type 01

For the following Series

System E2/000 Series:
- 2400/2450/2480/2500
- 2600/2650/2680/2700

System E4-1 Series:
- E4-21
- E4-28/R4-28
- E4-32/H4-32/R4-28

System E4-1 Light Series:
- E4-38L/R4-38L

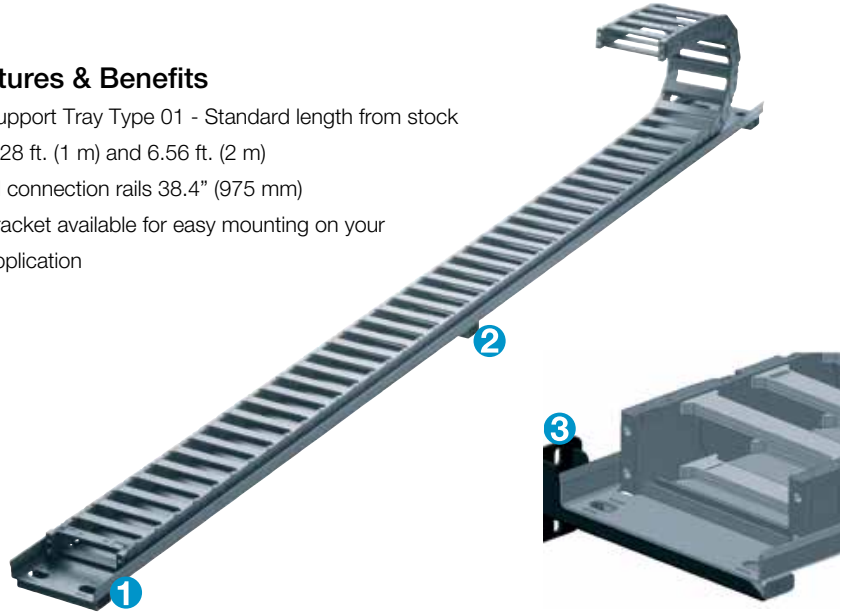
System E4/00 Series:
- 220/R760
- 280/290/R770

System E4/4 Series:
- 2828/2928/R7728

System E6 Series:
- E6-29/R6-29
- E6-35
- E6-40/R6-40

Features & Benefits

1. Support Tray Type 01 - Standard length from stock 3.28 ft. (1 m) and 6.56 ft. (2 m)
2. All connection rails 38.4" (975 mm)
3. Bracket available for easy mounting on your application



Product Range*

System	Suitable for the following series ▼	Widths-index	B_{Ra} in. (mm)	B_{Ri} in. (mm)	Part No. Support-tray, single	Part No. Support-tray with bracket	Part No. single bracket
E2/000	2400/2450/2480/2500	-05	3.50 (89)	3.15 (80)	S9-010-05-XXXX-0	S9-011-05-XXXX-0	907-724-05
		-07	4.49 (114)	4.13 (105)	S9-010-07-XXXX-0	S9-011-07-XXXX-0	907-724-07
		-10	5.47 (139)	5.12 (130)	S9-010-10-XXXX-0	S9-011-10-XXXX-0	907-724-10
E2/000 E4-1 E4/4 E4/00 E4-1 Light	2600/2650/2680/2700 E4-32/H4-32/R4-32 2828/2928/R7728 280/290/R770 E4-38L/R4-38L	-05	3.50 (89)	3.15 (80)	S9-010-05-XXXX-0	S9-011-05-XXXX-0	907-724-05
		-07	4.49 (114)	(105)	S9-010-07-XXXX-0	S9-011-07-XXXX-0	907-724-07
		-10	5.47 (139)	(130)	S9-010-10-XXXX-0	S9-011-10-XXXX-0	907-724-10
		-15	7.28 (185)	6.89 (175)	S9-010-15-XXXX-0	S9-011-15-XXXX-0	907-724-15
E4-1 E6 E6 E6-1	E4-21 E6-29/R6-29 E6-35 E61-29	-050	3.50 (89)	3.15 (80)	S9-010-05-XXXX-0	S9-011-05-XXXX-0	907-724-05
		-070	4.49 (114)	4.13 (105)	S9-010-07-XXXX-0	S9-011-07-XXXX-0	907-724-07
		-100	5.47 (139)	5.12 (130)	S9-010-10-XXXX-0	S9-011-10-XXXX-0	907-724-10
E4-1 E4/00 E6	E4-28/R4-28 220/R760 E6-40/R6-40	-050	3.50 (89)	3.15 (80)	S9-010-05-XXXX-0	S9-011-05-XXXX-0	907-724-05
		-070	4.49 (114)	4.13 (105)	S9-010-07-XXXX-0	S9-011-07-XXXX-0	907-724-07
		-100	5.47 (139)	5.12 (130)	S9-010-10-XXXX-0	S9-011-10-XXXX-0	907-724-10
		-150	7.28 (185)	6.89 (175)	S9-010-15-XXXX-0	S9-011-15-XXXX-0	907-724-15

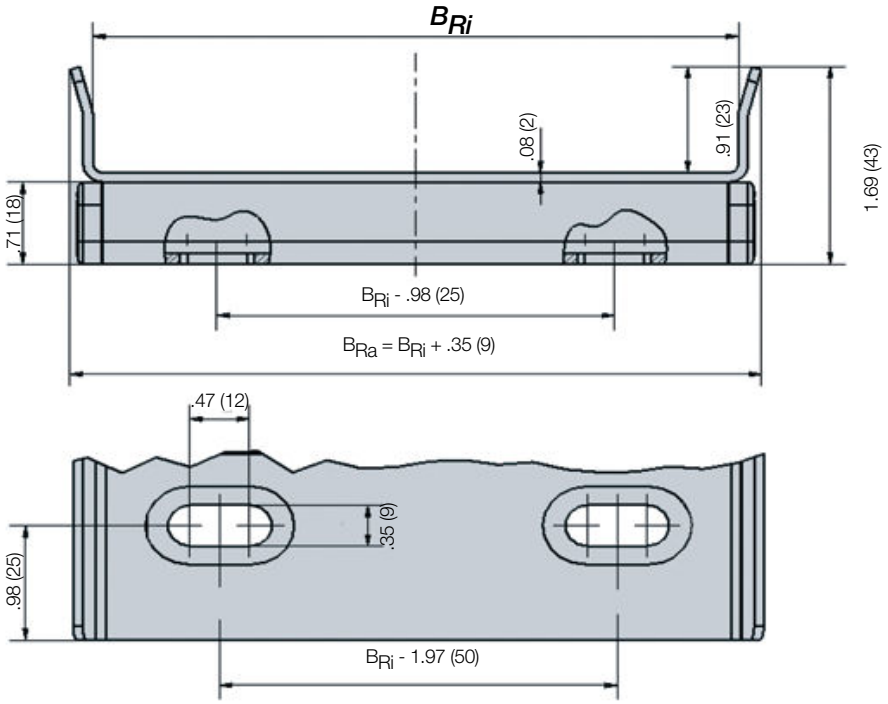
Please replace XXXX by the standard lengths 1000 or 2000 mm available from stock!

*The lengths and widths mentioned here are available from stock in the standard black color. For other lengths, widths and colors, please contact igus®.

Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Support Tray
Support Tray Tool Kit - Type 01 - Technical Data

Mounting holes of the trough system



Standard lengths from stock 3.28 ft. and 6.56 ft. (1 m and 2 m) - All connection rails 38.4” (975 mm)

Part No. structure without bracket 39.4” (1000 mm)

S9-	010-	07-	1000-	0

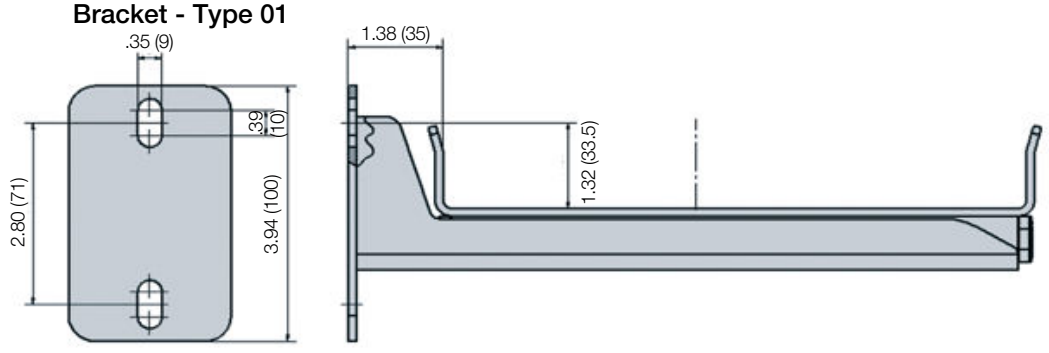
- 0 – Color, powdered black
- 1000- – Length 1000 mm
- 07- – E-Chain®- width
- 010- – without bracket
- S9- – Support tray

Part No. structure with bracket 78.7” (2000 mm)

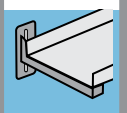
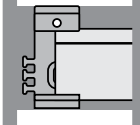
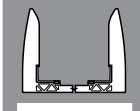
S9-	011-	07-	2000-	0

- 0 – Color, powdered black
- 2000- – Length 2000 mm
- 07- – E-Chain®- width
- 011- – with bracket
- S9- – Support tray

Bracket - Type 01



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

Support Tray
Support Tray Tool Kit - Type 02

For the following Series

System E2/000 Series:
- 3400/3450/3480/3500

System E4-1 Series:
- E4-42/H4-42/R4-42
- E4-56/H4-56/R4-56
- E4-80/H4-80/R4-80

System E4-1 Light Series:
- E4-48L/R4-48L

System E4/00 Series:
- 380/390/R780
- 400/410/R880

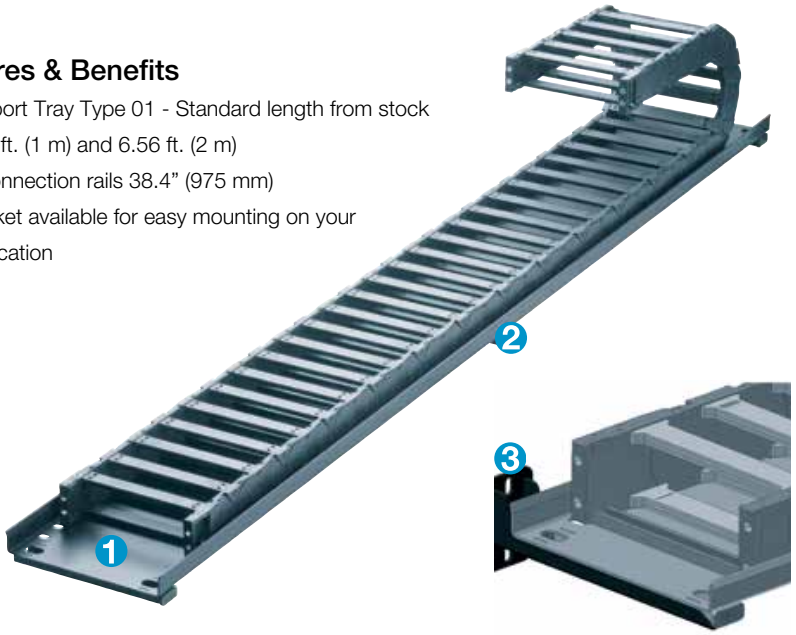
System E4/4 Series:
- 3838/3938/R7838
- 4040/4140/R8840
- 5050/5150/R9850

System E4/Light Series:
- 14040/14140/R18840
- 14240/14340
- 14550/14650/19050
- 15050/15150/R19850
- 15250/15350

System E6 Series:
- E6-52/R6-52
- E6-62
- E6-80

Features & Benefits

1. Support Tray Type 01 - Standard length from stock 3.28 ft. (1 m) and 6.56 ft. (2 m)
2. All connection rails 38.4" (975 mm)
3. Bracket available for easy mounting on your application



Product Range*

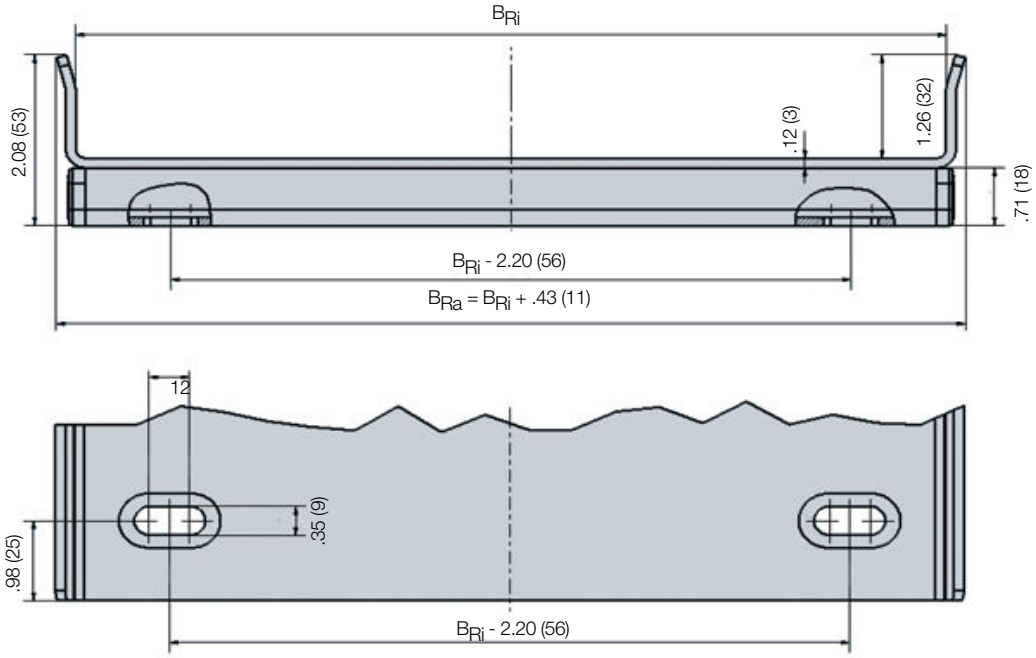
System	Suitable for the following series ▼	Widths-index	B_{Ra} in. (mm)	B_{Ri} in. (mm)	Part No. Support-tray, single	Part No. Support-tray with bracket	Part No. single bracket
E4-1	E4-42/H4-42/R4-42	-10	6.57 (167)	6.14 (156)	S9-020-10-XXXX-0	S9-021-10-XXXX-0	907-759-10-0
	E4-56/H4-56/R4-56	-15	8.54 (217)	8.11 (206)	S9-020-15-XXXX-0	S9-021-15-XXXX-0	907-759-15-0
	E4-80/H4-80/R4-80	-20	10.51 (267)	10.08 (256)	S9-020-20-XXXX-0	S9-021-20-XXXX-0	907-759-20-0
E4-1 Light	E4-42/H4-42/R4-42	-25	12.48 (317)	12.05 (306)	S9-020-25-XXXX-0	S9-021-25-XXXX-0	907-759-25-0
E4/00	380/390/R780						
	400/410/R880						
E4/4	3838/3938/R7838						
	4040/4140/R8840						
	5050/5150/R9850						
E4/light	14040/14140/R18840						
	14240/14340						
	14550/14650/19050						
	15050/15150/R19850						
E6	E6-62, E6-80						
E4/00 E6	3400/3450/3480/3500 E6-52/R6-52	-100	6.57 (167)	6.14 (156)	S9-020-10-XXXX-0	S9-021-10-XXXX-0	907-759-10
		-150	8.54 (217)	8.11 (206)	S9-020-15-XXXX-0	S9-021-15-XXXX-0	907-759-15
		-200	10.51 (267)	10.08 (256)	S9-020-20-XXXX-0	S9-021-20-XXXX-0	907-759-20
		-250	12.48 (317)	12.05 (306)	S9-020-25-XXXX-0	S9-021-25-XXXX-0	907-759-25

Please replace XXXX by the standard lengths 1000 or 2000 mm available from stock!

*The lengths and widths mentioned here are available from stock in the standard black color. For other lengths, widths and colors, please contact igus®.

Support Tray
Support Tray Tool Kit - Type 02 - Technical Data

Mounting holes of the trough system



Standard lengths from stock 3.28 ft. and 6.56 ft. (1 m and 2 m) - All connection rails 38.4” (975 mm)

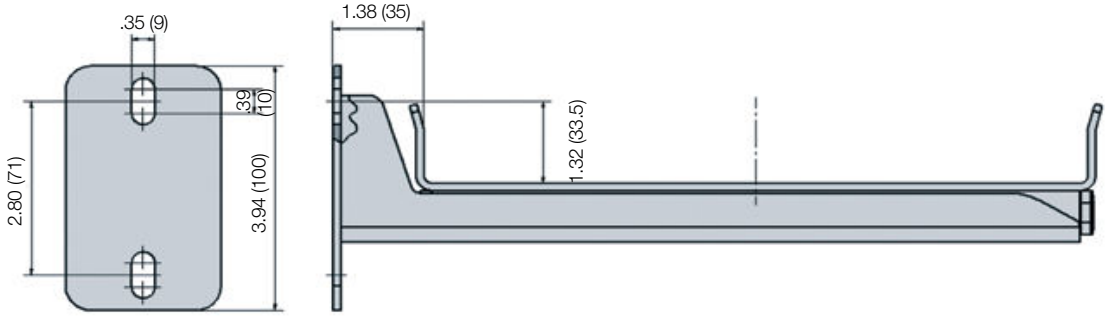
Part No. structure without bracket 39.4” (1000 mm)

S9-	020-	20-	1000-	0
				Color, powdered black
			Length 1000 mm	
		E-Chain®- width		
	without bracket			
Support tray				

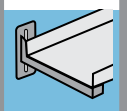
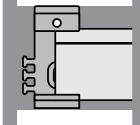
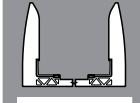
Part No. structure with bracket 78.7” (2000 mm)

S9-	021-	20-	2000-	0
				Color, powdered black
			Length 2000 mm	
		E-Chain®- width		
	with bracket			
Support tray				

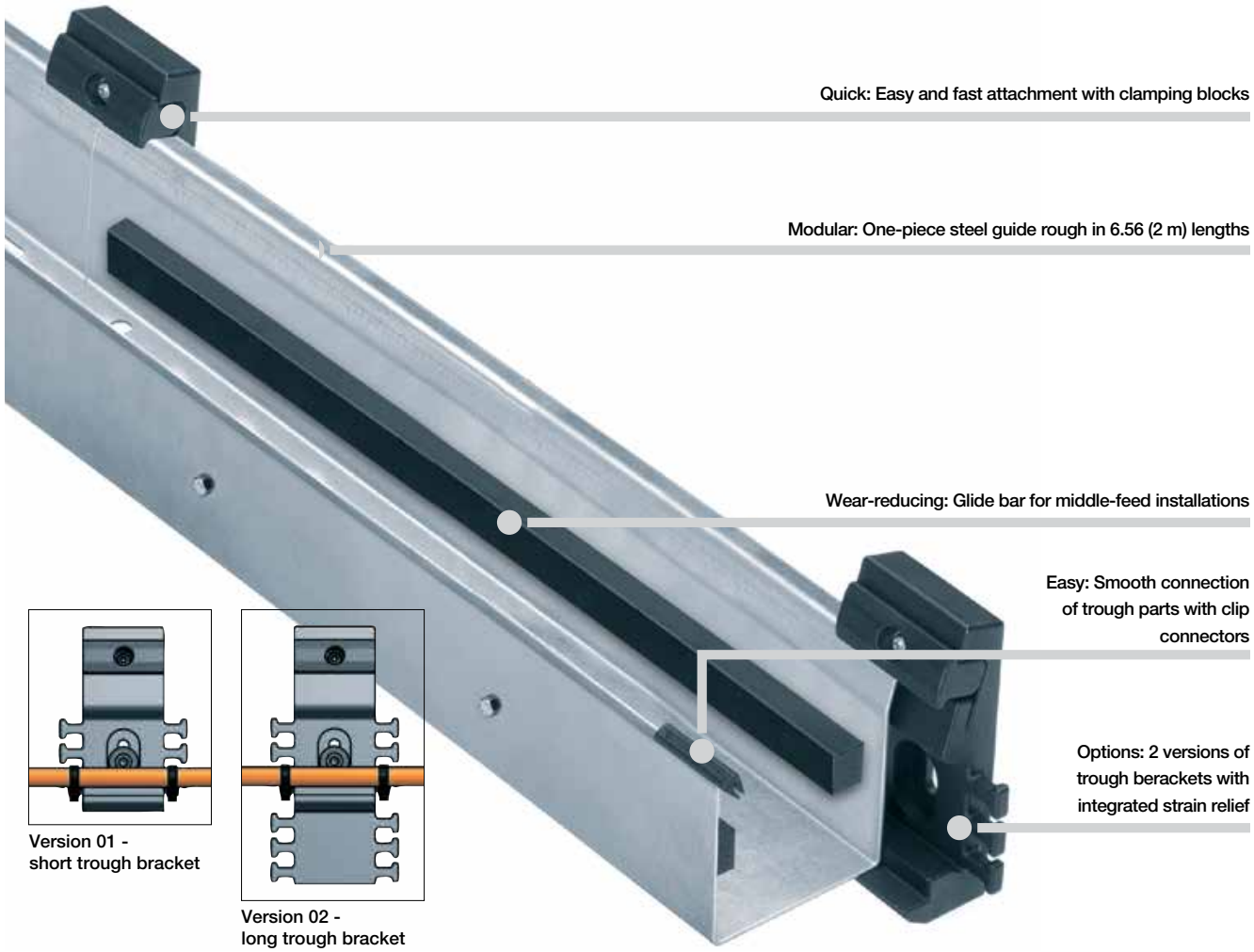
Bracket - Type 02



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

Guidefast Guide Trough
Introduction - Advantages



Version 01 -
short trough bracket

Version 02 -
long trough bracket

Quickly installed as a modular kit solution for crane girders and indoor cranes

The guidefast guide trough is mounted on the side of the crane girder, in case of installation on crane girders, the welding of brackets onto the girder can be omitted. Installation time is kept very short, the guide trough is only attached to the previously installed brackets and then fixed with clamping blocks. The small amount of different components and trough design contribute to a simple installation.

- Save up to 80% installation time compared to standard trough systems
- Fits virtually any standard crane girder
- 2 versions of brackets with integrated strain relief for assembly of static cables on the crane girder - possible ± .20" (5 mm) vertical adjustment of brackets
- Standard trough length of 6.56 ft. (2.0 m) - with or without glide bar
- Suitable for any side-mounted application - not only on cranes
- Easy to install due to preassembled hole patterns of E-Chain® brackets
- Standard material: galvanized steel, optional: stainless steel V2A, material 1.4301 (AiSI 304) or black powder coating
- Long-term tested to withstand vibration and rough environment

Typical industries and applications

- Crane manufacturers (mainly indoor cranes)
- Applications where the lateral installation of the guide trough is beneficial

Guidefast Guide Trough Selection Table

Guidefast - **without** glide bar for E2/000 Series:

- 1500
- 2500
- 2700

Trough profile Part No.	For E2/000 E-Chain®	Inner trough width B_{Ri} in. (mm)	Complete width in. (mm)	Material
GF91-30-025-2000	1500-025-	1.67 (42.5)	3.19 (81)	Galvanized steel*
GF91-30-050-2000	1500-050-	2.66 (67.5)	4.17 (106)	Galvanized steel*
GF92-30-05-2000	2500-05-	3.03 (77)	4.55 (115.5)	Galvanized steel*
GF92-30-07-2000	2500-07-	3.82 (97)	5.33 (135.5)	Galvanized steel*
GF92-30-10-2000	2500-10-	4.84 (123)	6.36 (161.5)	Galvanized steel*
GF95-30-05-2000	2700-05-	2.76 (70)	4.27 (108.5)	Galvanized steel*
GF95-30-07-2000	2700-07-	3.89 (96)	5.26 (133.5)	Galvanized steel*
GF95-30-10-2000	2700-10-	4.72 (120)	6.24 (158.5)	Galvanized steel*

*Standard material: Galvanized steel. Also available as stainless steel version V2A, material 1.4301 (AISI 304) or black powder coating

Guidefast - **with** glide bar for E2/000 Series:

- 1500
- 2500
- 2700

Support tray Part No.	For E2/000 E-Chain®	Inner trough width B_{Ri} in. (mm)	Complete width in. (mm)	Material
GF91-31-025-2000	1500-025-	1.67 (42.5)	3.19 (81)	Galvanized steel*
GF91-31-050-2000	1500-050-	2.66 (67.5)	4.17 (106)	Galvanized steel*
GF92-31-05-2000	2500-05-	3.03 (77)	4.55 (115.5)	Galvanized steel*
GF92-31-07-2000	2500-07-	3.82 (97)	5.33 (135.5)	Galvanized steel*
GF92-31-10-2000	2500-10-	4.84 (123)	6.36 (161.5)	Galvanized steel*
GF95-31-05-2000	2700-05-	2.76 (70)	4.27 (108.5)	Galvanized steel*
GF95-31-07-2000	2700-07-	3.89 (96)	5.26 (133.5)	Galvanized steel*
GF95-31-10-2000	2700-10-	4.72 (120)	6.24 (158.5)	Galvanized steel*

Support tray with bracket for easy mounting on your application

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www.edfluidos.com

Guidefast Guide Trough Components

For the following Series

System E2/000 Series:

- 1500
- 2500
- 2700

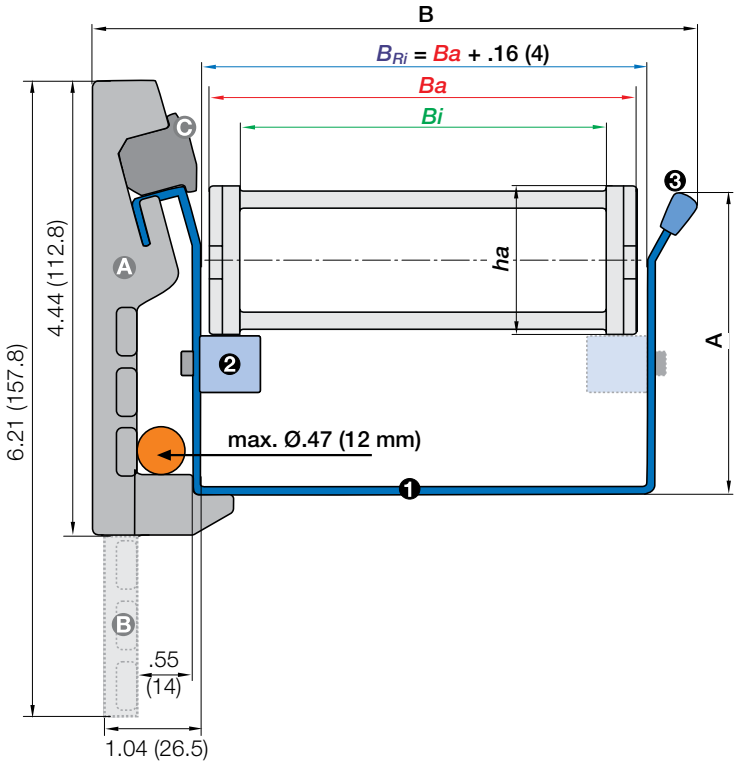
Components - Set guidefast guide trough

1. Trough profile, 6.56 ft. (2 m) section
2. Glide bar, 6.56 ft. (2 m) section, optional
3. Clip connector, Part No. 908-467

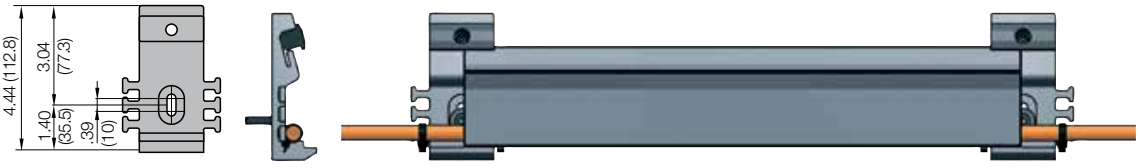
Components - Set trough bracket

- A Version 01 - short trough bracket
- B Version 02 - long trough bracket
- C Clamping blocks, Part No. G9-2-10

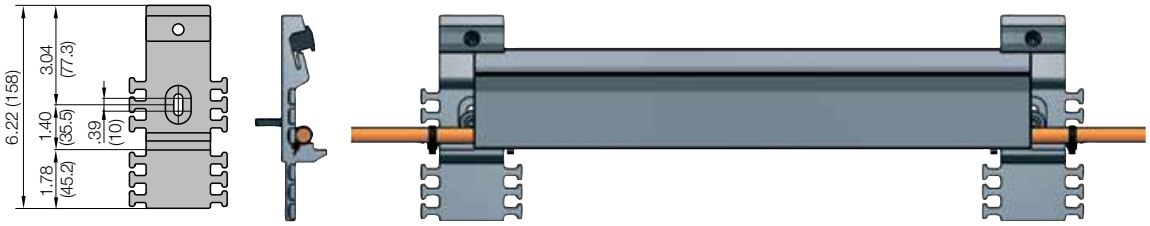
Ba = Outer E-Chain® width
Bi = Inner E-Chain® width
ha = E-Chain® outer height
B_{Ri} = Inner trough width = B_{Ri} = Ba + 4



2 Versions of trough brackets with integrated strain relief



Version 01 - short trough bracket Part No. GF9.2.12 with integrated strain relief, possible ± .20" (5 mm) vertical adjustment



Version 02 - long trough bracket Part No. GF9-2-11 with integrated strain relief, possible ± .20" (5 mm) vertical adjustment

Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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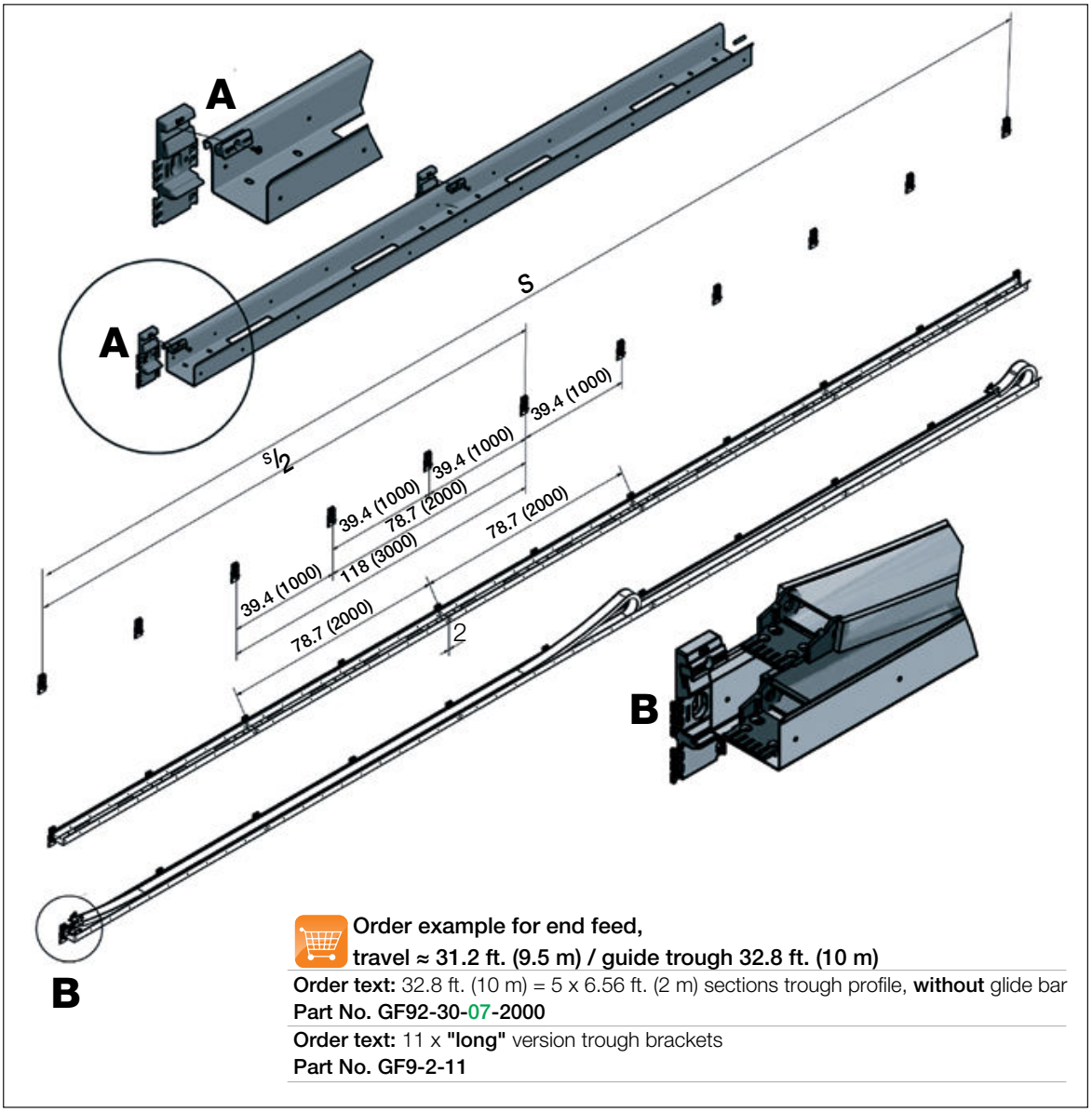
Guidefast Guide Trough Product Range

igus®

Guide-fast

For E2/000 E-Chain®	Trough Profile* without glide bar (includes clip connectors)	Trough profile* with glide bar (includes clip connectors)	Short Bracket Version 01 (includes clamping blocks)	Long Bracket Version 02 (includes clamping blocks)	Inner trough width B_{Ri}	Dim. A in. (mm)	Dim. B in. (mm)
1500-025- ➤	GF91-30-025-2000	GF91-31-025-2000	GF9-2-12	GF9-2-11	1.67 (42.5)	2.40 (61)	3.19 (81)
1500-050- ➤	GF91-30-050-2000	GF91-31-050-2000	GF9-2-12	GF9-2-11	2.66 (67.5)	2.40 (61)	4.17 (106)
2500-05- ➤	GF92-30-05-2000	GF92-31-05-2000	GF9-2-12	GF9-2-11	3.03 (77)	2.95 (75)	4.55 (115.5)
2500-07- ➤	GF92-30-07-2000	GF92-31-07-2000	GF9-2-12	GF9-2-11	3.82 (97)	2.95 (75)	5.33 (135.5)
2500-10- ➤	GF92-30-10-2000	GF92-31-10-2000	GF9-2-12	GF9-2-11	4.84 (123)	2.95 (75)	6.36 (161.5)
2700-05- ➤	GF95-30-05-2000	GF95-31-05-2000	GF9-2-12	GF9-2-11	2.76 (70)	4.13 (105)	4.27 (108.5)
2700-07- ➤	GF95-30-07-2000	GF95-31-07-2000	GF9-2-12	GF9-2-11	3.89 (96)	4.13 (105)	5.26 (133.5)
2700-10- ➤	GF95-30-10-2000	GF95-31-10-2000	GF9-2-12	GF9-2-11	4.72 (120)	4.13 (105)	6.24 (158.5)

*Standard material: Galvanized steel. Also available as stainless steel version V2A, material 1.4301 (AISI 304) or black powder coating



Order example for end feed,
travel ≈ 31.2 ft. (9.5 m) / guide trough 32.8 ft. (10 m)

Order text: 32.8 ft. (10 m) = 5 x 6.56 ft. (2 m) sections trough profile, **without** glide bar
Part No. GF92-30-07-2000

Order text: 11 x **"long"** version trough brackets
Part No. GF9-2-11

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

AL

ST

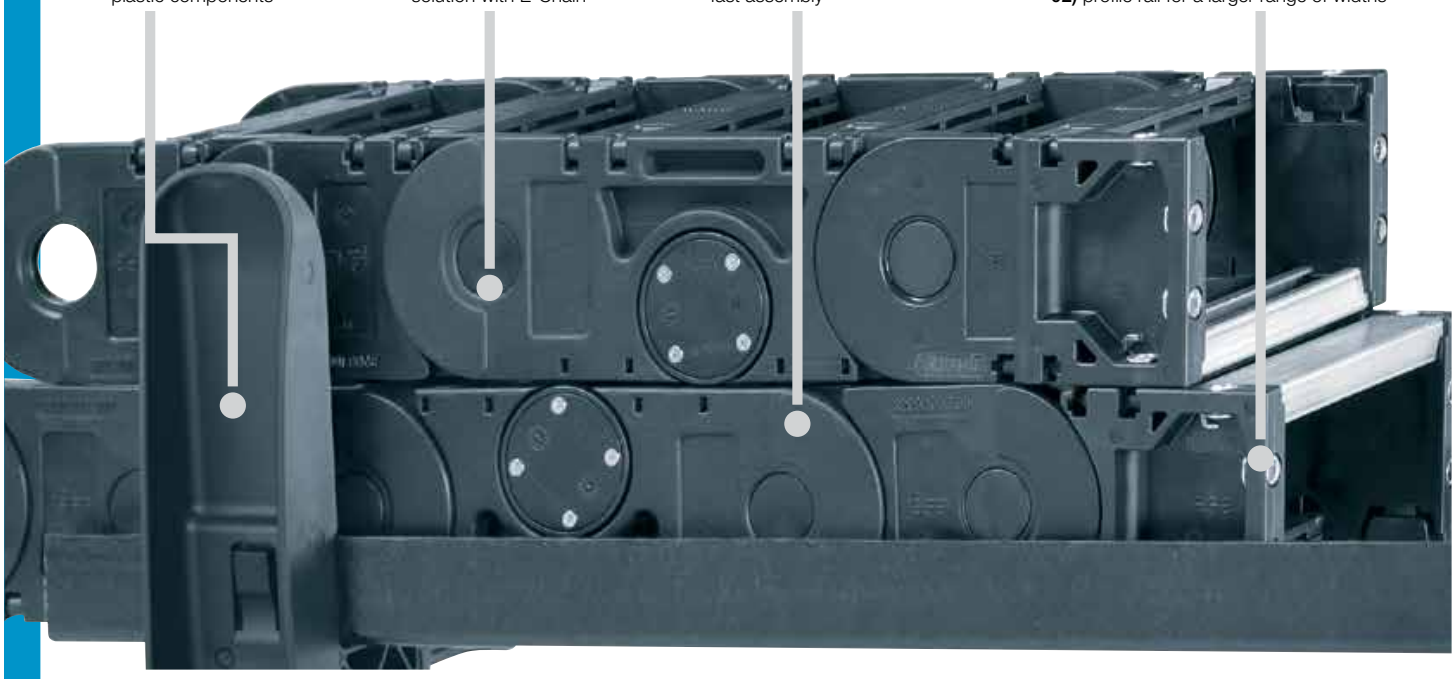
Guidelite Guide Trough
Introduction - Advantages

Corrosion-resistant:
Made completely from plastic components

Cost-effective:
Construction kit solution with E-Chain®

Save time:
Easy and fast assembly

2 Versions installation sets:
01) with crossbar for a fixed width or
02) profile rail for a larger range of widths



Realize long travels up to 492 ft. (150 m), quick and cost-effective - Guidelite

As construction kit system primarily for slow applications with low cycle counts. The lower run of the E-Chain® is guided in two L-shaped guide rails made from fibreglass reinforced plastics. The upper run of the E-Chain® is partially guided by guide angle brackets that are installed at distances of 3.28 ft. (1m). One option to obtain the correct width is to install clip-on crossbars (Version 01) between the retainers. This greatly simplifies the installation since no retroactive adjustments are needed. Another option, which facilitates a greater range of widths, is to mount the guide angle brackets on a profile rail (Version 02).

- Save up to 80% installation time compared to standard trough systems
- Saving time through fast assembly
- Very lightweight polymer components - more quieter than troughs made from steel
- Cost-effective
- Corrosion-resistant
- Gliding application: maximum speed 3.28 ft/s (1 m/s)
- Unsupported application (Guidelite as support tray): maximum speed 16.41 ft/s (5 m/s)
  (Higher speeds can be attained. Please contact us for details)
- Construction kit solution

Typical industries and applications

- Watering cars (irrigation of potted plants)
- For applications with low number of cycles, low speed and additional load
- As cost-effective support tray for unsupported applications

Guidelite Guide Trough Selection Table

Guidelite - Version 01
Installation set with crossbar, standard

Fixed width due to clip-on crossbars, no retroactive adjustments needed

Part No. Assembly set - Guide Angles	For E-Chain® Series
9GL-64-50-450-XX	• 2500 • 2700 • 3500 • E4-21 • E4-28 • E4-32

Guidelite - Version 02
Installation set with profile rail

Guide angle brackets are assembled on a profile rail for a larger range of widths

Part No. Assembly set - Guide Angles	For E-Chain® Series
9GL-64-50-450-XX	• 1500 • 2500 • 2700 • 3500 • E4-21 • E4-28 • E4-32

E2/000 Rol E-Chain® in a Guidelite guide trough of an irigation plant

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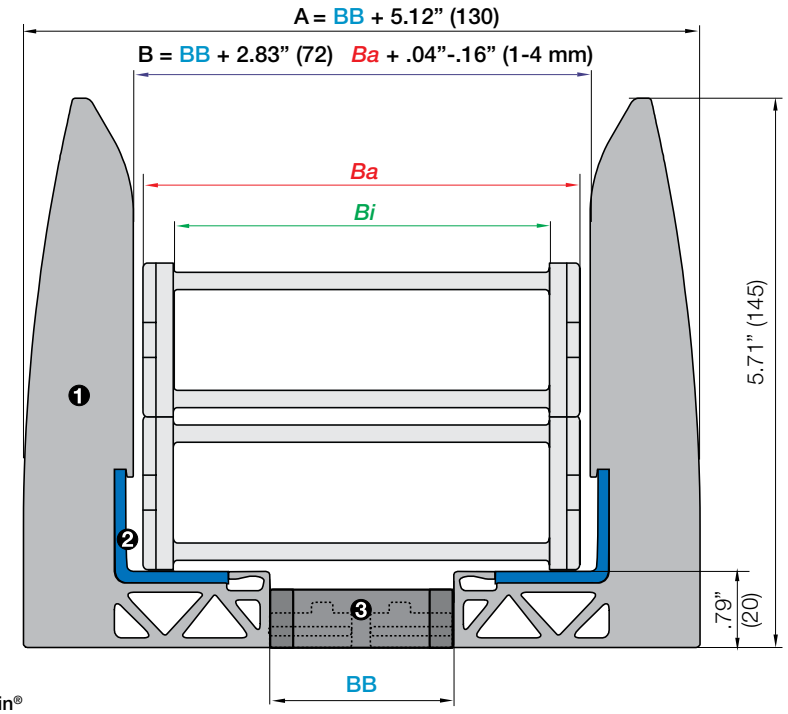
Guidelite Guide Trough Components - Version 01

For the following Series

System E2/000 Series:
● 2500
● 2700
● 3500
System E4-1 Series:
● E4-21
● E4-28
● E4-32



Components - Version 01

❶ Guide angles
❷ Plastic guide rail
❸ Crossbar, clip-on
Ba = Outer E-Chain® width
Bi = Inner E-Chain® width
BB = Length of crossbar
A = Outer guide angle distance
B = Inner guide angle distance

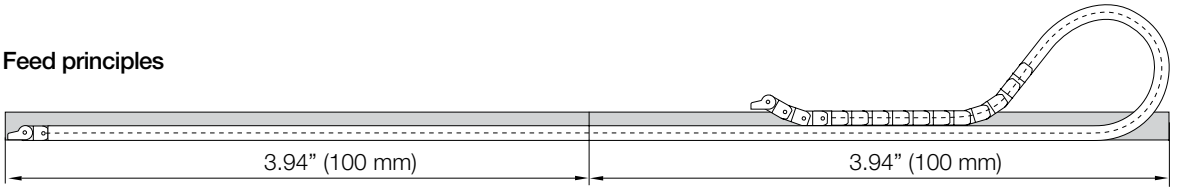
Dimension B must always be .04" to .16" (1 to 4 mm) larger than the *Ba* of the E-Chain®

guidelite | Version 01

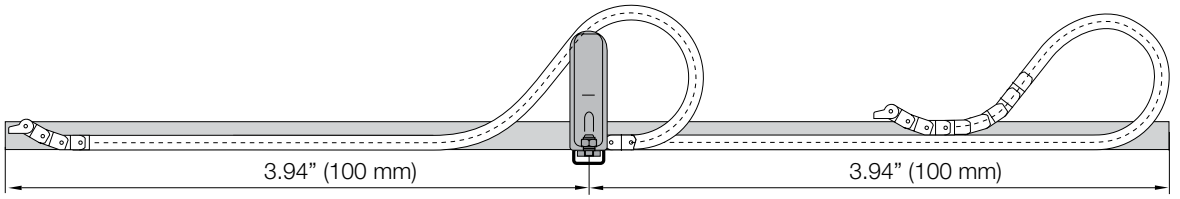
Description	Part No.
Installation set with crossbar for a fixed width, consisting of	9GL-64-50-450-XX
2 x plastic guide rails + 1 x crossbar	(XX = crossbar width-index)
Set plastic guide rails (left and right)	9GL-64-30-2000
in specified lengths: standard 78.7" (2000 mm)	
Feed module that guides the upper run of the E-Chain® down, 78.7" (2000 mm)	9GL-64-80-Series-450-XX
Only for Series 2700R and 3500R RoI E-Chain® with center feed	(XX = crossbar width-index

Please add the crossbar width-index XX as shown on the tables on the right page. Example: 9GL-64-50-450-05

Feed principles



End feed is recommended for all E-Chains® in combination with guidelite



Center feed is only used with RoI E-Chains® of Series 2700R and Series 3500R.
Please use the feed module 9GL-64-80 of Series 450-XX, which guides the upper run of the E-Chain® down.

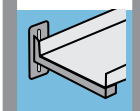
More information and assembly instructions ➤ www.igus.com/guidelite

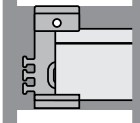
Guidelite Guide Trough
Product Range - Version 01

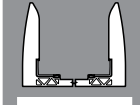
Part No. Installation Set	For E-Chain® Series	For RoI E-Chain® Series	Length of Crossbar BB		Outer guide angle Distance A		Inner guide angle Distance B	
			in.	(mm)	in.	(mm)	in.	(mm)
9GL-64-50-450-05	2500-10-*R*-0	–	1.97	(50)	7.09	(180)	4.80	(122)
9GL-64-50-450-12	2700-17-*R*-0	2700R-17-*R*-0	4.92	(125)	10.04	(255)	7.76	(197)
9GL-64-50-450-05	3500-100-*R*-0	3500R-100-*R*-0	1.97	(50)	7.09	(180)	4.80	(122)
9GL-64-50-450-06	3500-115-*R*-0	3500R-115-*R*-0	2.56	(65)	7.68	(195)	5.39	(137)
9GL-64-50-450-07	3500-125-*R*-0	3500R-125-*R*-0	2.95	(75)	8.07	(205)	5.79	(147)
9GL-64-50-450-10	3500-150-*R*-0	3500R-150-*R*-0	3.94	(100)	9.06	(230)	6.77	(172)
9GL-64-50-450-12	3500-175-*R*-0	3500R-175-*R*-0	4.92	(125)	10.04	(255)	7.76	(197)
9GL-64-50-450-15	3500-200-*R*-0	3500R-200-*R*-0	5.91	(150)	11.02	(280)	8.74	(222)
9GL-64-50-450-17	3500-225-*R*-0	3500R-225-*R*-0	6.89	(175)	12.01	(305)	9.72	(247)
9GL-64-50-450-20	3500-250-*R*-0	3500R-250-*R*-0	7.87	(200)	12.99	(330)	10.71	(272)
9GL-64-50-450-06	E4-21-120-*R*-0	–	2.56	(65)	7.68	(195)	5.39	(137)
9GL-64-50-450-05	E4-28-100-*R*-0	–	1.97	(50)	7.09	(180)	4.80	(122)
9GL-64-50-450-07	E4-28-125-*R*-0	–	2.95	(75)	8.07	(205)	5.79	(147)
9GL-64-50-450-05	E4-32-097-*R*-0	–	1.97	(50)	7.09	(180)	4.80	(122)
9GL-64-50-450-06	E4-32-112-*R*-0	–	2.56	(65)	7.68	(195)	5.39	(137)

Dimension B must always be .04" to .16" (1 to 4 mm) larger than the *Ba* of the E-Chain®

Ideal for outdoor applications - UV resistant, corrosion-free, allows dirt to pass through







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Guidelite

igus®

Guidelite Guide Trough Components - Version 02

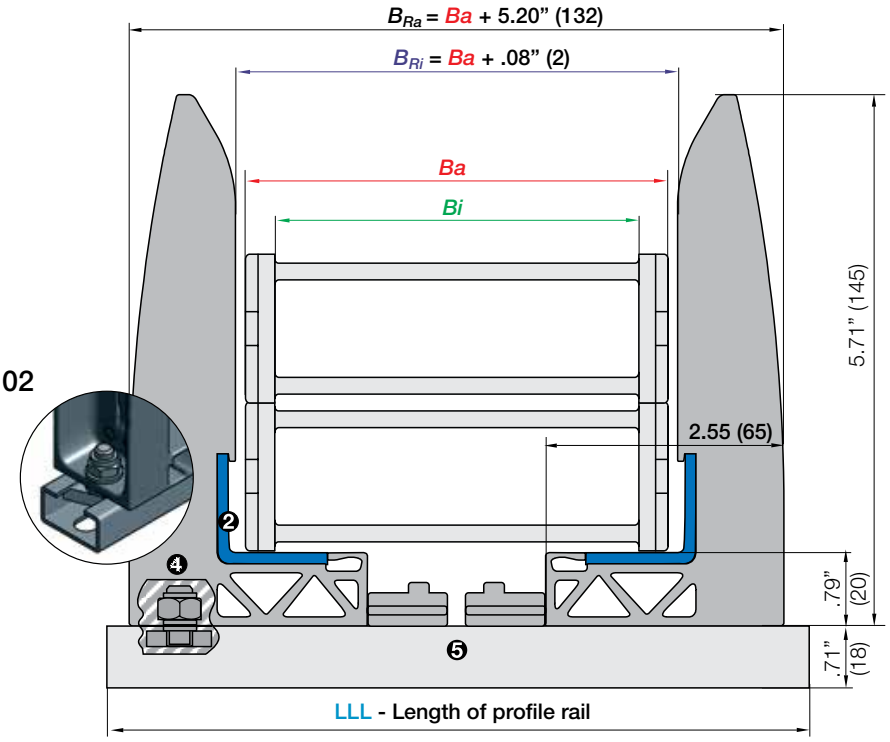
For the following Series

System E2/000 Series:
● 1500
● 2500
● 2700
● 3500
System E4-1 Series:
● E4-21
● E4-28
● E4-32

Components - Version 02

❶ Guide angles
❷ Plastic guide rail
❹ Screwset M8
❺ C-profile

Ba = Outer E-Chain® width
Bi = Inner E-Chain® width
B_{RA} = Outer guide angle distance
B_{Ri} = Inner guide angle distance
B_{Ri} = Ba + 2

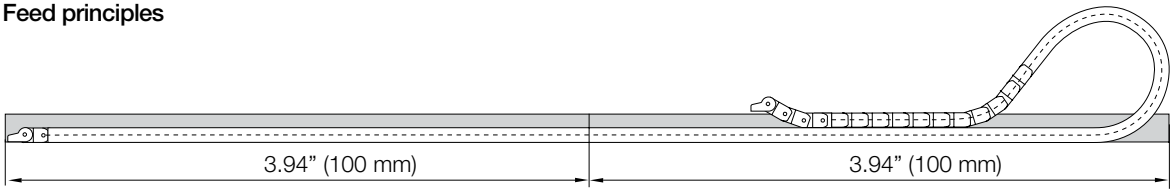


guidelite | Version 02

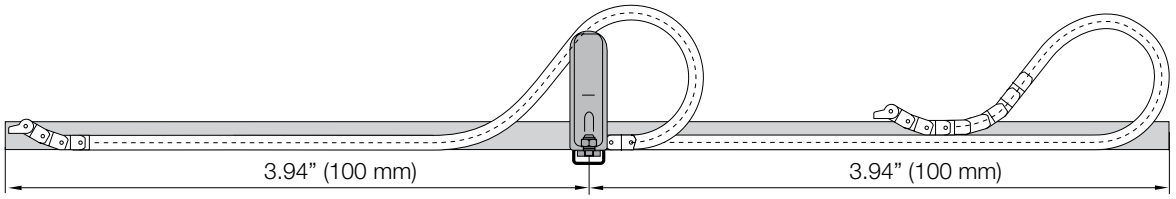
Description	Part No.
Installation set with profile rail consisting of	9GL-64-50-LLL
2 x plastic guide rails + 1 x profile rail + Screwsets M8	(LLL = Length of profile rail)
Set plastic guide rails (left and right)	9GL-64-30-2000
in specified lengths: standard 78.7" (2000 mm)	
Feed module that guides the upper run of the E-Chain® down, 78.7" (2000 mm)	9GL-64-80-Series-LLL
Only for Series 2700R and 3500R RoI E-Chain® with center feed	(LLL = Length of profile rail)

Please add the profile rail length LLL as shown on the tables on the right page. Example: 9GL-64-50-175

Feed principles



End feed is recommended for all E-Chains® in combination with guidelite



Center feed is only used with RoI E-Chains® of Series 2700R and Series 3500R.
Please use the **feed module** 9GL-64-80 of Series 450-XX, which guides the upper run of the E-Chain® down.

More information and assembly instructions ➤ www.igus.com/guidelite

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Guidelite Guide Trough Product Range - Version 02

Part No- Installation Set	For E-Chain® Series	For Rol E-Chain® Series
1500		
9GL-64-50-150	1500-068-*R*-0	–
9GL-64-50-175	1500-080-*R*-0	–
9GL-64-50-175	1500-100-*R*-0	–
9GL-64-50-200	1500-125-*R*-0	–
2500		
9GL-64-50-150	2500-05-*R*-0	–
9GL-64-50-175	2500-07-*R*-0	–
9GL-64-50-175	2500-09-*R*-0	–
9GL-64-50-200	2500-10-*R*-0	–
9GL-64-50-225	2500-12-*R*-0	–
2700		
9GL-64-50-150	2700-06-*R*-0	2700R-06-*R*-0
9GL-64-50-175	2700-07-*R*-0	2700R-07-*R*-0
9GL-64-50-175	2700-09-*R*-0	2700R-09-*R*-0
9GL-64-50-200	2700-10-*R*-0	2700R-10-*R*-0
9GL-64-50-225	2700-12-*R*-0	2700R-12-*R*-0
9GL-64-50-250	2700-15-*R*-0	2700R-15-*R*-0
9GL-64-50-275	2700-17-*R*-0	2700R-17-*R*-0
3500		
9GL-64-50-175	3500-075-*R*-0	3500R-075-*R*-0
9GL-64-50-200	3500-100-*R*-0	3500R-100-*R*-0
9GL-64-50-200	3500-115-*R*-0	3500R-115-*R*-0
9GL-64-50-225	3500-125-*R*-0	3500R-125-*R*-0
9GL-64-50-250	3500-150-*R*-0	3500R-150-*R*-0
9GL-64-50-275	3500-175-*R*-0	3500R-175-*R*-0
9GL-64-50-300	3500-200-*R*-0	3500R-200-*R*-0
9GL-64-50-325	3500-225-*R*-0	3500R-225-*R*-0
9GL-64-50-350	3500-250-*R*-0	3500R-250-*R*-0
E4-21		
9GL-64-50-150	E4-21-060-*R*-0	–
9GL-64-50-150	E4-21-070-*R*-0	–
9GL-64-50-175	E4-21-080-*R*-0	–
9GL-64-50-175	E4-21-090-*R*-0	–
9GL-64-50-175	E4-21-100-*R*-0	–
9GL-64-50-200	E4-21-110-*R*-0	–
9GL-64-50-200	E4-21-120-*R*-0	–

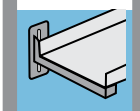
Part No- Installation Set	For E-Chain® Series	For Rol E-Chain® Series
E4-28		
9GL-64-50-150	E4-28-062-*R*-0	–
9GL-64-50-175	E4-28-070-*R*-0	–
9GL-64-50-175	E4-28-075-*R*-0	–
9GL-64-50-175	E4-28-087-*R*-0	–
9GL-64-50-200	E4-28-100-*R*-0	–
9GL-64-50-225	E4-28-125-*R*-0	–
9GL-64-50-250	E4-28-150-*R*-0	–
9GL-64-50-275	E4-28-175-*R*-0	–
9GL-64-50-300	E4-28-200-*R*-0	–
9GL-64-50-325	E4-28-225-*R*-0	–
9GL-64-50-350	E4-28-250-*R*-0	–
9GL-64-50-375	E4-28-275-*R*-0	–
9GL-64-50-400	E4-28-300-*R*-0	–
E4-32		
9GL-64-50-150	E4-32-05-*R*-0	–
9GL-64-50-175	E4-32-06-*R*-0	–
9GL-64-50-175	E4-32-07-*R*-0	–
9GL-64-50-175	E4-32-087-*R*-0	–
9GL-64-50-200	E4-32-09-*R*-0	–
9GL-64-50-200	E4-32-10-*R*-0	–
9GL-64-50-200	E4-32-11-*R*-0	–
9GL-64-50-200	E4-32-112-*R*-0	–
9GL-64-50-225	E4-32-12-*R*-0	–
9GL-64-50-225	E4-32-137-*R*-0	–
9GL-64-50-250	E4-32-15-*R*-0	–
9GL-64-50-275	E4-32-162-*R*-0	–
9GL-64-50-275	E4-32-17-*R*-0	–
9GL-64-50-275	E4-32-18-*R*-0	–
9GL-64-50-275	E4-32-187-*R*-0	–
9GL-64-50-300	E4-32-200-*R*-0	–
9GL-64-50-300	E4-32-212-*R*-0	–
9GL-64-50-325	E4-32-23-*R*-0	–
9GL-64-50-325	E4-32-237-*R*-0	–
9GL-64-50-350	E4-32-25-*R*-0	–
9GL-64-50-350	E4-32-262-*R*-0	–
9GL-64-50-375	E4-32-28-*R*-0	–
9GL-64-50-375	E4-32-29-*R*-0	–
9GL-64-50-400	E4-32-30-*R*-0	–

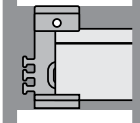
Please note: the smallest possible inner width of the guide trough is 2.83 (72 mm).

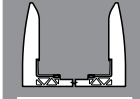
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

AL

ST







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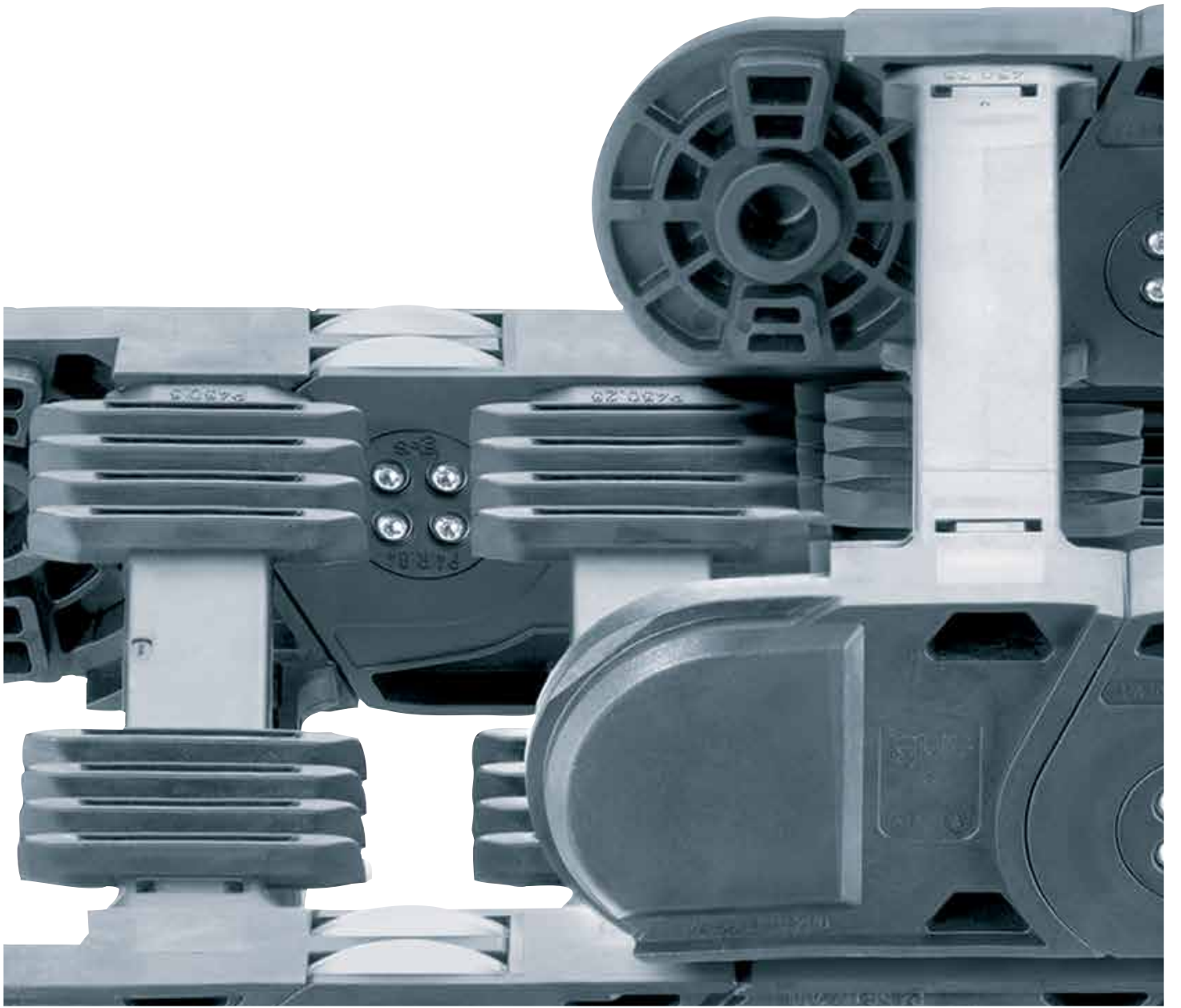

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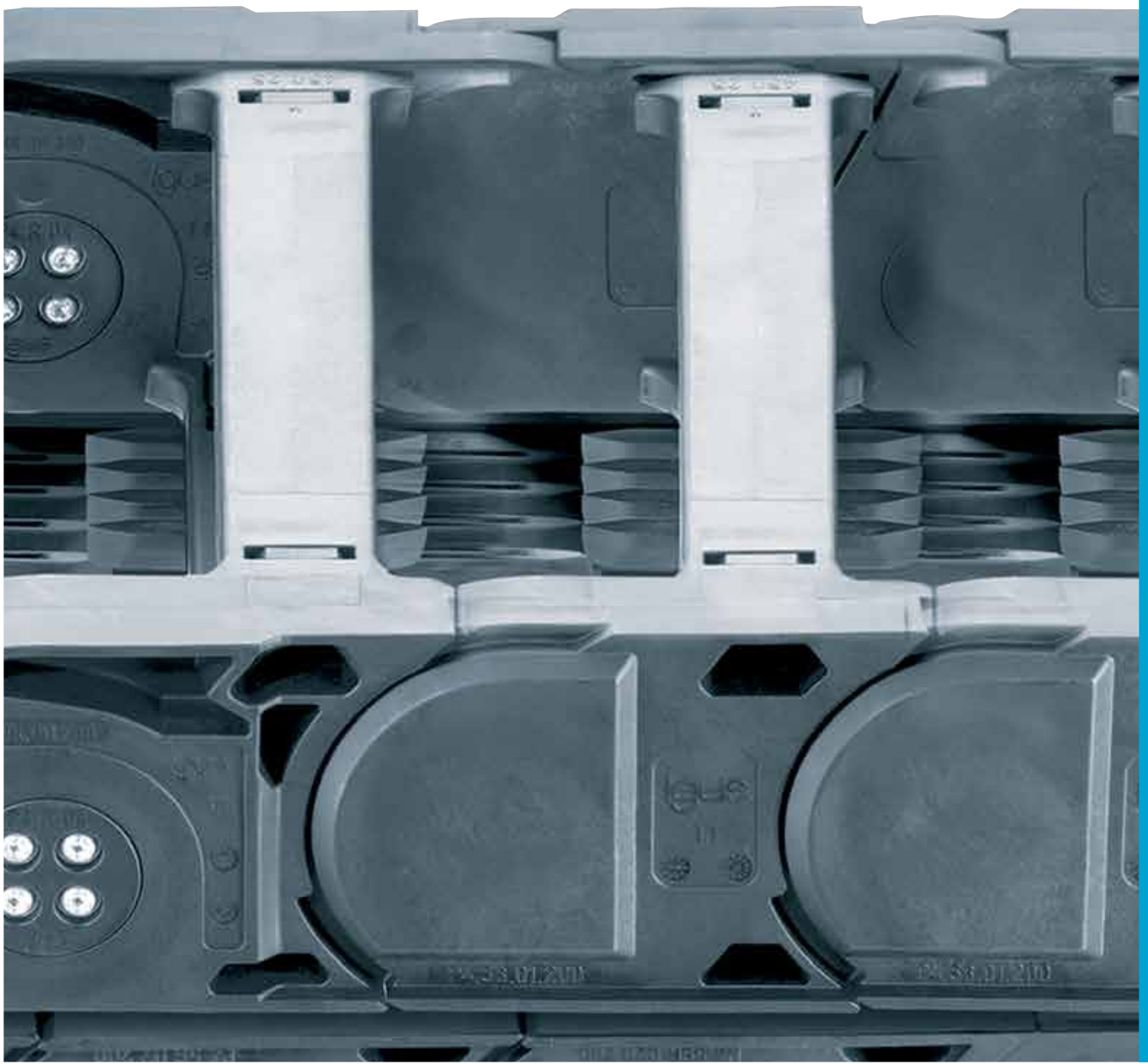
E-Chains®
for long travels

E4/4HD - P4
Rol E-Chains® - AUTO-GLIDE



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E4/4 HD - for extremely high additional fill weights on long travels

The E4/4HD system was designed for the most demanding tasks. It provides the required stability in long travels with high additional weights, heavy pollution or high humidity. The extremely sturdy side plates allow high loads, the stable tongue and groove ensures extremely high torsional stiffness. A longer service life is due to the particularly large glide surfaces.

- For extremely high additional fill weights and long travels
- Ideal for heavy duty applications

Typical industries and applications

- Cranes: RTG, Quay cranes, many more
- Compost plants
- Heavy machinery
- Steel plants
- Shipyards
- Farm machinery
- General machinery

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

System E4/4 approved with long travel

E-Tubes available as a special design with HT material for hot chips

The maintenance-free Series 4040HD protects the igus® Chainflex® motor and signal cables during the lifting and lowering movements of the tidal turbine and also protects them against aggressive ambient conditions. The travel distance amounts to approximately 65.6 ft. (20 m) in vertical direction above and under water.

Crossbars every link
for particularly demanding applications

Series	Inner height *hi* in.	(mm)	Inner width *Bi* in.	(mm)	Outer width *Ba* in.	(mm)	Outer height *ha* in.	(mm)	Bending radius *R* in.	(mm)
4040HD	2.20	(56)	1.97-23.62	(50-600)	4.09-25.75	(104-654)	3.31	(84)	5.31-15.75	(135-400)
5050HD	3.15	(80)	1.97-23.62	(50-600)	4.33-25.98	(110-660)	4.25	(108)	5.91-19.69	(150-500)

E-Tubes
fully enclosed, excellent cable protection against hot chips

Series	Inner height *hi* in.	(mm)	Inner width *Bi* in.	(mm)	Outer width *Ba* in.	(mm)	Outer height *ha* in.	(mm)	Bending radius *R* in.	(mm)
R8840HD	2.20	(56)	2.95-18.19	(75-462)	5.08-20.31	(129-516)	3.31	(84)	5.91-15.75	(150-400)
R9850HD	3.15	(80)	2.95-18.19	(75-462)	5.31-20.55	(135-522)	4.25	(108)	5.91-19.69	(150-500)

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4040HD
R8840HD

igus®

E-Chain System® E4/4
Series 4040HD/R8840HD

2.20" 2.20"

Price Index

Series 4040HD — Series R8840HD

Special Features / Options

- Side-mounted - unsupported
- ESD classification: Electrically conductive ESD/ ATEX version upon request
- High torsional rigidity

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 328 ft (100 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 9.84 ft (3 m)
Rotary requires further calculation

Usage Guidelines

- When high torsional forces are expected
- For side-mounted applications
- For long-term operation in very moist environments

- If a quieter version is required
  ➤ **Series E4-56**
- If a simple and low-cost solution is required
  ➤ **Series 14040/R18840**

Features & Benefits

1. Robust steel-mounting brackets
2. Wide, rounded plastic crossbars - cable friendly
3. High tensile stability (20% higher tensile force than Series 4040
4. Very wide glide surface, less wear
5. Closed and open styles can be combine
6. High torsional rigidity
7. Hinged snap-open removable lids along outer radius of Energy Tub
8. High side-mount stability due to undercut
9. Crossbars on E-Chains® are removable along both radii
10. Numerous interior separation possibilities

Rol-E-Chain® Series 4040RHD/8840RHD available upon request

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

16.4 ft (5 m) **4040HD-30-300-0**	**E-Chain®**
With 2 separators **56-1** assembled every 2nd link	**Interior Separation**
1 Set **40400HD-12-E**	**Mounting Bracket**

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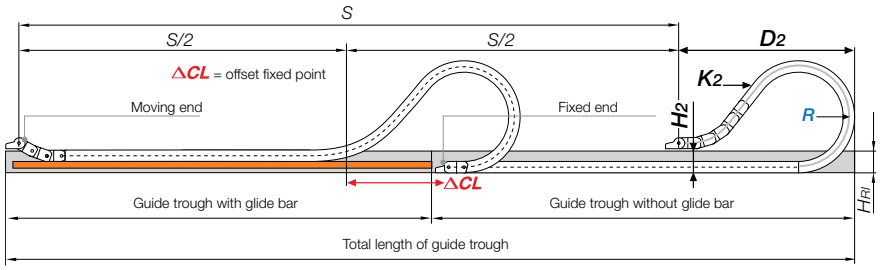
E-Chain System® E4/4
Series 4040HD/R8840HD
Installation Dimensions

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10m) to max. 1,148 ft. (350m)

Chain length: = $^{S}/_{2} + K_2$



In case of travels between 13 ft. (4m) and 32.8 ft. (10m) we recommend a longer unsupported length.

R	5.31 (135)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)
H_2	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)
D_2	15.35 (390)	17.72 (450)	27.95 (710)	36.22 (920)	46.46 (1180)	56.69 (1440)	60.24 (1530)
K_2	28.66 (728)	32.24 (819)	50.16 (1274)	64.49 (1638)	78.82 (2002)	93.15 (2366)	100.31(2548)
ΔCL	4.88 (124)	6.26 (159)	14.13 (359)	20.04 (509)	27.91 (709)	35.79 (909)	37.76 (959)

Legend

S = Length of travel
H_F = Required clearance height
HRI = Trough inner height
H_2 = *Mounting height
D_2 = Over length - long travels, gliding
K_2 = *Further add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Speed / acceleration FL_G	max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties ➤

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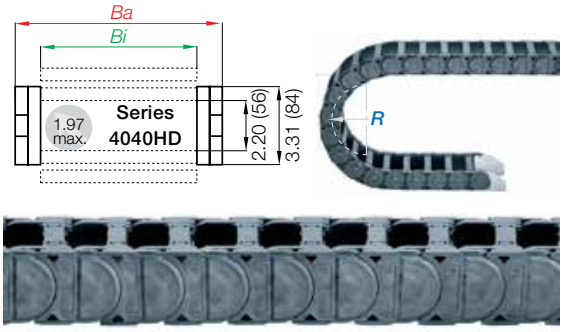
igus®

E-Chain System® E4/4
Series 4040HD/R8840HD
Product Range

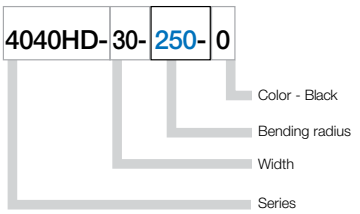
Telephone 1-800-521-2747
Fax 1-401-438-7270

Series 4040HD - E-Chain® with crossbars every link

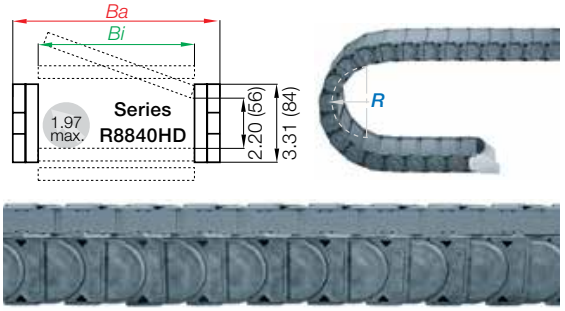


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

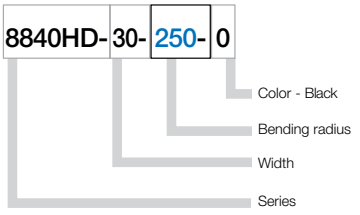


Series R8840HD - fully enclosed E-Tube

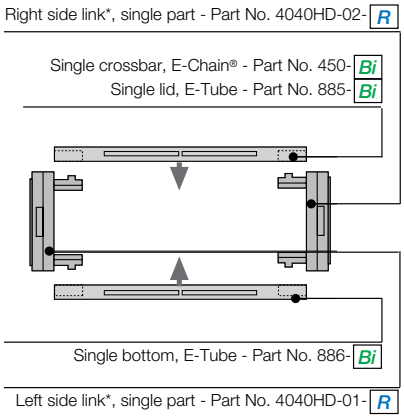


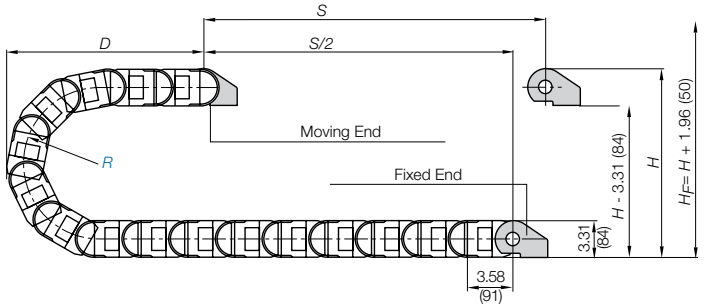
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips up to 1652°F (900°C)
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

Part Number Structure



E-Chain® as separate parts, links and side plates





*View from the fixed point of the E-Chain®/E-Tube

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E4/4
Series 4040HD/R8840HD
Product Range

Supplement part number with required radius. Example: 4040HD-30-300 -0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

Part Number				Bi	Ba	Weight	
Crossbars Every Link	Tube Version			in. (mm)	in. (mm)	4040R lbs/ft (kg/m)	8840HD lbs/ft (kg/m)
4040HD-05-		☐	-0	1.97 (50)	4.09 (104)	≈ 3.38 (5.03)	–
4040HD-06-		☐	-0	2.56 (65)	4.69 (119)	≈ 3.44 (5.12)	–
4040HD-07-	8840HD-07-	☐	-0*	2.95 (75)	5.08 (129)	≈ 3.49 (5.19)	≈ 3.79 (5.64)
4040HD-08-		☐	-0	3.43 (87)	5.55 (141)	≈ 3.54 (5.27)	–
4040HD-10-	8840HD-10-	☐	-0	3.94 (100)	6.06 (154)	≈ 3.60 (5.36)	≈ 3.98 (5.93)
4040HD-11-		☐	-0	4.41 (112)	6.54 (166)	≈ 3.68 (5.48)	–
4040HD-12-	8840HD-12-	☐	-0	4.92 (125)	7.05 (179)	≈ 3.74 (5.56)	≈ 4.23 (6.29)
4040HD-13-		☐	-0	5.39 (137)	7.52 (191)	≈ 3.82 (5.69)	–
4040HD-15-	8840HD-15-	☐	-0	5.91 (150)	8.03 (204)	≈ 3.85 (5.73)	≈ 4.48 (6.67)
4040HD-16-		☐	-0	6.38 (162)	8.50 (216)	≈ 3.92 (5.84)	–
4040HD-17-	8840HD-17-	☐	-0	6.89 (175)	9.02 (229)	≈ 4.01 (5.97)	≈ 4.69 (6.98)
4040HD-18-		☐	-0	7.36 (187)	9.49 (241)	≈ 4.09 (6.09)	–
4040HD-20-	8840HD-20-	☐	-0	7.87 (200)	10.00 (254)	≈ 4.13 (6.14)	≈ 4.90 (7.29)
4040HD-21-		☐	-0	8.35 (212)	10.47 (266)	≈ 4.17 (6.21)	–
4040HD-22-		☐	-0	8.86 (225)	10.98 (279)	≈ 4.22 (6.28)	–
4040HD-23-		☐	-0	9.33 (237)	11.46 (291)	≈ 4.29 (6.39)	–
4040HD-25-	8840HD-25-	☐	-0	9.84 (250)	11.97 (304)	≈ 4.37 (6.50)	≈ 5.39 (8.02)
4040HD-26-		☐	-0	10.31 (262)	12.44 (316)	≈ 4.43 (6.59)	–
4040HD-27-	8840HD-27	☐	-0	10.83 (275)	12.95 (329)	≈ 4.50 (6.70)	≈ 5.63 (8.38)
4040HD-28-		☐	-0	11.30 (287)	13.43 (341)	≈ 4.54 (6.75)	–
4040HD-30-	8840HD-30-	☐	-0	11.81 (300)	13.94 (354)	≈ 4.64 (6.91)	≈ 5.83 (8.68)
4040HD-31-		☐	-0	12.28 (312)	14.41 (366)	≈ 4.66 (6.94)	–
4040HD-32-		☐	-0	12.79 (325)	14.92 (379)	≈ 4.74 (7.05)	–
4040HD-33-		☐	-0	13.27 (337)	15.39 (391)	≈ 4.82 (7.17)	–
4040HD-35-	8840HD-35-	☐	-0	13.78 (350)	15.91 (404)	≈ 4.95 (7.37)	≈ 6.30 (9.38)
4040HD-36-		☐	-0	14.25 (362)	16.38 (416)	≈ 4.89 (7.28)	–
4040HD-37-		☐	-0	14.76 (375)	16.89 (429)	≈ 4.96 (7.38)	–
4040HD-38-		☐	-0	15.24 (387)	17.36 (441)	≈ 5.03 (7.49)	–
4040HD-40-	8840HD-40-	☐	-0	15.75 (400)	17.87 (454)	≈ 5.21 (7.76)	≈ 6.98 (10.38)
4040HD-41-		☐	-0	16.22 (412)	18.35 (466)	≈ 5.16 (7.68)	–
4040HD-42-		☐	-0	16.73 (425)	18.86 (479)	≈ 5.36 (7.98)	–
4040HD-43-		☐	-0	17.20 (437)	19.33 (491)	≈ 5.25 (7.82)	–
4040HD-45-		☐	-0	17.72 (450)	19.84 (504)	≈ 5.48 (8.15)	–
4040HD-46-	8840HD-46-	☐	-0	18.19 (462)	20.31 (516)	≈ 5.44 (8.10)	≈ 7.29 (10.85)
4040HD-47-		☐	-0	18.70 (475)	20.83 (529)	≈ 5.47 (8.14)	–
4040HD-48-		☐	-0	19.17 (487)	21.30 (541)	≈ 5.64 (8.39)	–
4040HD-50-		☐	-0	19.69 (500)	21.81 (554)	≈ 5.64 (8.40)	–
4040HD-51-		☐	-0	20.16 (512)	22.28 (566)	≈ 5.70 (8.48)	–
4040HD-52-		☐	-0	20.67 (525)	22.80 (579)	≈ 5.76 (8.57)	–
4040HD-53-		☐	-0	21.14 (537)	23.27 (591)	≈ 5.82 (8.66)	–
4040HD-55-		☐	-0	21.65 (550)	23.78 (604)	≈ 6.10 (9.08)	–
4040HD-60-		☐	-0	23.62 (600)	25.75 (654)	≈ 6.26 (9.31)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: 4040HD-30-300 -0

	135**	150	200	250	300	350	400
R	5.31 (135)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)
H**+25	13.94 (354)	15.12 (384)	19.06 (484)	22.99 (584)	26.93 (684)	30.87 (784)	34.80 (884)
D	12.36 (314)	12.95 (329)	14.92 (379)	16.88 (429)	18.86 (479)	20.83 (529)	22.79 (579)
K	24.02 (610)	25.79 (655)	32.09 (815)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.69 (1440)

** This radius is not available for the R8840HD Series *Removable lid only, no hinged option

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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4040HD
R8840HD

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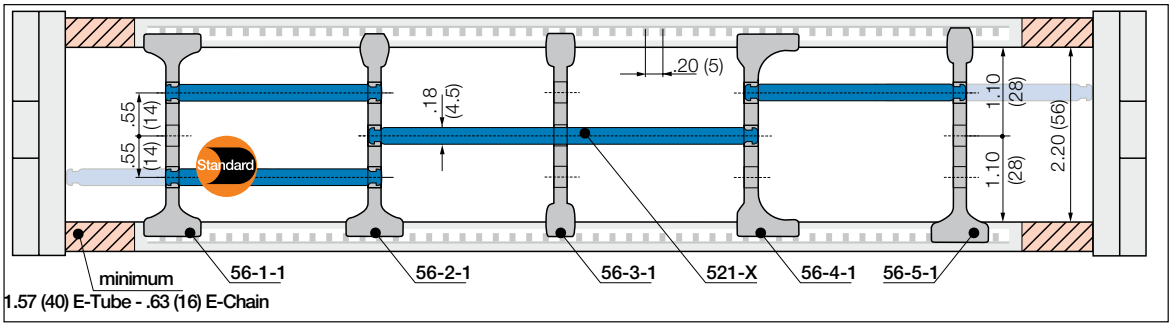
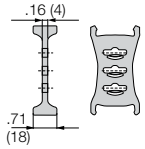
E-Chain System® E4/4
Series 4040HD/R8840HD
Interior Separation - New Generation



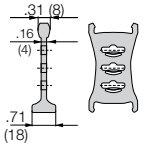
Note Please maintain a lateral spacing of 1.57" (40 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 56-1**
Assembled	**Part No. 56-1-1**

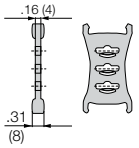
- **Standard separator 56-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator, narrow head

Unassembled	**Part No. 56-2**
Assembled	**Part No. 56-2-1**

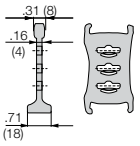
- **Separator 56-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 56-3**
Assembled	**Part No. 56-3-1**

- **Separator 56-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

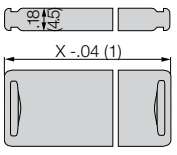


Separator, asymmetrical

Unassembled	**Part No. 56-5**
Assembled	**Part No. 56-5-1**

- **Separator 56-5**
  Locks safely in .30" (7.5 mm) increments
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 520-X**
Assembled	**Part No. 521-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**520-050**	**521-050**	5.91 (150)	**520-150**	**521-150**	11.81 (300)	**520-300**	**521-300**
2.56 (065)	**520-065**	**521-065**	6.89 (175)	**520-175**	**521-175**	13.78 (350)	**520-350**	**521-350**
2.95 (075)	**520-075**	**521-075**	7.87 (200)	**520-200**	**521-200**	14.76 (375)	**520-375**	**521-375**
3.94 (100)	**520-100**	**521-100**	8.86 (225)	**520-225**	**521-225**	15.24 (387)	**520-387**	**521-387**
4.92 (125)	**520-125**	**521-125**	9.84 (250)	**520-250**	**521-250**	17.723 (450)	**520-450**	**521-450**

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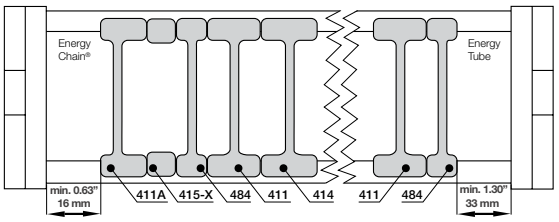
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E4/4
Series 4040HD/R8840HD
Interior Separation - Previous Generation

Vertical separators and spacers

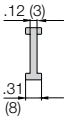
Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. In standard configuration, a separator is installed every second chain link.
NOTE: Observe a lateral spacing of at least 1.26 in. (32mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates



Vertical separator

Unassembled	**Part No. 401**
Assembled	**Part No. 411**

- **Standard separator 401 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design.



Vertical separator

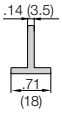
Unassembled	**Part No. 483**
Assembled	**Part No. 484**

- **Vertical separator 483 for E-Chains® and E-Tubes**
  This separator offers a narrow base for applications where a large number of small cables need to be individually separated.

Locking separator (chain only)

Unassembled	**Part No. 404**
Assembled	**Part No. 414**

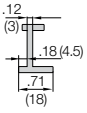
- **Locking separator 404 for E-Chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.



Locking separator (tube only)

Unassembled	**Part No. 406**
Assembled	**Part No. 416**

- **Locking separator 406 for E-Tubes**
  It features a single sided, secure fit, and can be placed on the lid or the bottom of the E-Tube. The single side locking design helps to eliminate difficulties in assembling the opposite cover or crossbar



Asymmetrical separator (chain only)

Unassembled	**Part No. 401A**
Assembled	**Part No. 411A**

- **Asymmetrical separator 401A for E-Chains®**
  This separator features an .71" (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

Spacer (chain only)

Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

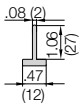
XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)	Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	**415 -10**	.39"	(10)	**405 -30**	**415 -30**	1.18"	(30)
405 -15	**415 -15**	.59"	(15)	**405 -40**	**415 -40**	1.57"	(40)
405 -20	**415 -20**	.79"	(20)				

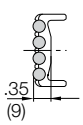
Center crossbar - for applications involving a very large number of thin cables This offers the option of subdividing the E-Chain® into upper and lower halves



Center crossbar

Unassembled	**Part No. 405**
Assembled	**Part No. 415**

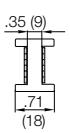
Rollclip - minimizes abrasion of particularly sensitive hoses or cables. The integrated rollers compensate for relative movement between the chain and the hose or cable.



Rollclip

Unassembled	**Part No. 489-27**
Assembled	**Part No. 490-27**

Roller separator - performs a similar function to the Rollclip, but doubles as a separator.



Center crossbar

Unassembled	**Part No. 429**
Assembled	**Part No. 430**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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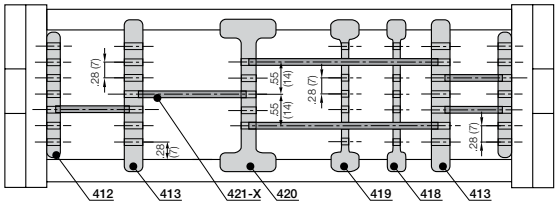
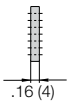
E-Chain System® E4/4
Series 4040HD/R8840HD
Interior Separation - Previous Generation

Shelves and separators

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.

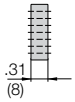




Side plate

Unassembled	**Part No. 402**
Assembled	**Part No. 412**

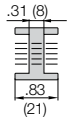
- **Side plates 402**
  This component is used to form the basic pattern of a shelf system.



Vertical separator

Unassembled	**Part No. 403**
Assembled	**Part No. 413**

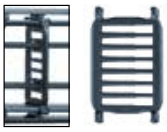
- **Vertical separator 403**
  This component is used to form the basic pattern of a shelf system.

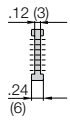


Locking vertical separator

Unassembled	**Part No. 410**
Assembled	**Part No. 420**

- **Locking vertical separator 410**
  This separator is slotted and able to be combined with shelves. For E-Chains® only

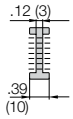




Slotted separators, closed

Unassembled	**Part No. 408**
Assembled	**Part No. 418**

- **Slotted separators 408**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.



Slotted separators, open

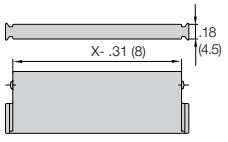
Unassembled	**Part No. 409**
Assembled	**Part No. 419**

- **Slotted separator 409**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 3 middle slots

Shelves 420-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled
.71 (18)	.39 (10)	**420-18**	**421-18**	2.95 (75)	2.64 (67)	**420-75**	**421-75**
.91 (23)	.59 (15)	**420-23**	**421-23**	3.46 (88)	3.15 (80)	**420-88**	**421-88**
.98 (25)	.67 (17)	**420-25**	**421-25**	3.94 (100)	3.62 (92)	**420-100**	**421-100**
1.10 (28)	.79 (20)	**420-28**	**421-28**	4.92 (125)	4.61(117)	**420-125**	**421-125**
1.30 (33)	.98 (25)	**420-33**	**421-33**	5.91 (150)	5.59(142)	**420-150**	**421-150**
1.69 (43)	1.38 (35)	**420-43**	**421-43**	6.89 (175)	6.57(167)	**420-175**	**421-175**
1.97 (50)	1.65 (42)	**420-50**	**421-50**	7.36 (187)	7.05(179)	**420-187**	**421-187**
2.44 (62)	2.13 (54)	**420-62**	**421-62**	7.87 (200)	7.56(192)	**420-200**	**421-200**



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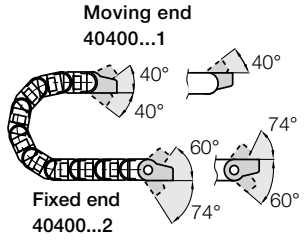
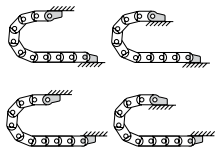
E-Chain System® E4/4
Series 4040HD/R8840HD
Mounting Brackets - Stainless Steel

Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive



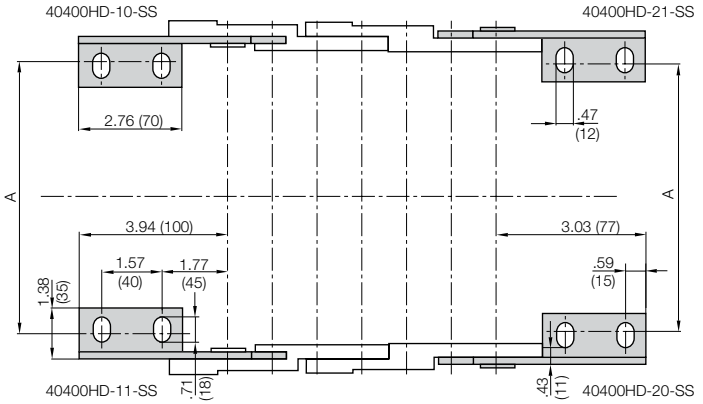


Possible installation configurations -

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 4040HD or R8840HD
40400HD-12-SS

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right with bore
Series 4040HD or R8840HD
40400HD-1-SS

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right with pin
Series 4040HD or R8840HD
40400HD-2-SS



Bracket Mounting dimensions

Width of Chain *Bi*	Part Number	Mounting Brackets Full Set	Moving End Only	Fixed End Only	A in. (mm)
1.97 (50)	40400HD	-12	-1	-2	1.18 (30)
2.56 (65)	40400HD	-12	-1	-2	1.77 (45)
2.95 (75)	40400HD	-12	-1	-2	2.16 (55)
3.43 (87)	40400HD	-12	-1	-2	2.64 (67)
3.94 (100)	40400HD	-12	-1	-2	3.15 (80)
4.41 (112)	40400HD	-12	-1	-2	3.62 (92)
4.92 (125)	40400HD	-12	-1	-2	4.13 (105)
5.39 (137)	40400HD	-12	-1	-2	4.61 (117)
5.91 (150)	40400HD	-12	-1	-2	5.12 (130)
6.38 (162)	40400HD	-12	-1	-2	5.59 (142)
6.89 (175)	40400HD	-12	-1	-2	6.10 (155)
7.36 (187)	40400HD	-12	-1	-2	6.57 (167)
7.87 (200)	40400HD	-12	-1	-2	7.09 (180)
8.35 (212)	40400HD	-12	-1	-2	7.56 (192)
8.86 (225)	40400HD	-12	-1	-2	8.07 (205)
9.33 (237)	40400HD	-12	-1	-2	8.54 (217)
9.84 (250)	40400HD	-12	-1	-2	9.05 (230)
10.31 (262)	40400HD	-12	-1	-2	9.53 (242)
10.83 (275)	40400HD	-12	-1	-2	10.04 (255)
11.30 (287)	40400HD	-12	-1	-2	10.51 (267)
11.81 (300)	40400HD	-12	-1	-2	11.02 (280)

Width of Chain *Bi*	Part Number	Mounting Brackets Full Set	Moving End Only	Fixed End Only	A in. (mm)
12.28 (312)	40400HD	-12	-1	-2	11.49 (292)
12.79 (325)	40400HD	-12	-1	-2	12.00 (305)
13.27 (337)	40400HD	-12	-1	-2	12.48 (317)
13.78 (350)	40400HD	-12	-1	-2	12.99 (330)
14.25 (362)	40400HD	-12	-1	-2	13.46 (342)
14.76 (375)	40400HD	-12	-1	-2	13.97 (355)
15.24 (387)	40400HD	-12	-1	-2	14.45 (367)
15.75 (400)	40400HD	-12	-1	-2	14.96 (380)
16.22 (412)	40400HD	-12	-1	-2	15.43 (392)
16.73 (425)	40400HD	-12	-1	-2	15.94 (405)
17.20 (437)	40400HD	-12	-1	-2	16.42 (417)
17.72 (450)	40400HD	-12	-1	-2	16.93 (430)
18.19 (462)	40400HD	-12	-1	-2	17.40 (442)
18.70 (475)	40400HD	-12	-1	-2	17.91 (455)
19.17 (487)	40400HD	-12	-1	-2	18.39 (467)
19.69 (500)	40400HD	-12	-1	-2	18.90 (480)
20.16 (512)	40400HD	-12	-1	-2	19.37 (492)
20.67 (525)	40400HD	-12	-1	-2	19.88 (505)
21.14 (537)	40400HD	-12	-1	-2	20.35 (517)
21.65 (550)	40400HD	-12	-1	-2	20.87 (530)
23.62 (600)	40400HD	-12	-1	-2	22.83 (580)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

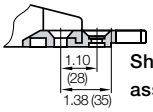
E-Chain System® E4/4
Series 4040HD/R8840HD
Strain Relief

Telephone 1-800-521-2747
Fax 1-401-438-7270

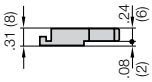
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

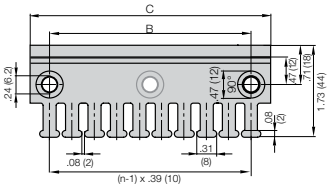


Shown assembled



Single tiewrap plate

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



For more information please refer to strain relief section of Chapter 10

E-Chain System® E4/4
Series 4040HD/R8840HD
Guide Trough

Width of Crossbar
4040HD-**05**-200-0

	B_{Ri}	Installation Part No.
-05	4.29 (109)	*
-06	4.88 (124)	**94-50-225**
-07	5.28 (134)	**94-50-225**
-08	5.75 (146)	**94-50-250**
-10	6.26 (159)	**94-50-250**
-11	6.73 (171)	**94-50-275**
-12	7.24 (184)	**94-50-275**
-13	7.72 (196)	**94-50-300**
-15	8.23 (209)	**94-50-300**
-16	8.70 (221)	**94-50-325**
-17	9.21 (234)	**94-50-325**
-18	9.69 (246)	**94-50-350**
-20	10.20 (259)	**94-50-350**
-21	10.67 (271)	**94-50-375**
-22	11.18 (284)	**94-50-375**
-23	11.65 (296)	**94-50-400**
-25	12.17 (309)	**94-50-400**
-26	12.64 (321)	**94-50-425**
-27	13.15 (334)	**94-50-425**
-28	13.62 (346)	**94-50-450**
-30	14.13 (359)	**94-50-450**
-31	14.61 (371)	**94-50-475**
-32	15.12 (384)	**94-50-475**
-33	15.59 (396)	**94-50-500**
-35	16.10 (409)	**94-50-500**
-36	16.57 (421)	**94-50-525**
-37	17.09 (434)	**94-50-525**
-38	17.56 (446)	**94-50-550**
-40	18.07 (459)	**94-50-550**
-41	18.54 (471)	**94-50-575**
-42	19.06 (484)	**94-50-575**
-43	19.53 (496)	**94-50-600**
-45	20.04 (509)	**94-50-600**
-46	20.51 (521)	**94-50-625**
-47	21.02 (534)	**94-50-625**
-48	21.50 (546)	**94-50-650**
-50	22.01 (559)	**94-50-650**
-51	22.48 (571)	**94-50-675**
-52	22.99 (584)	**94-50-675**
-53	23.46 (596)	**94-50-700**
-55	23.98 (609)	**94-50-700**
-60	25.94 (659)	**94-50-750**

Standard length profile rail

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required.

- Full travel length of guide trough
  Part No. 94-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 94-50-XX

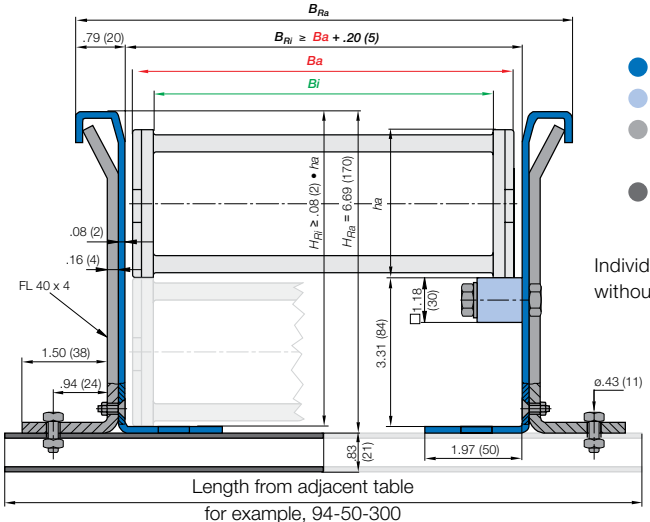
.XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center mounted

Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 94-30
= 13 sections of 6.56 ft (2 m) glide bars
Part No. 93-01
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
94-50-XXX
Example:
94-50-400 for 15.75 (400 mm) long profile rail

Left: Guide trough with glide bars Right: Guide troughs without glide bars

Installation sets as section connectors



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

For further technical information on guide troughs
➤ Chapter 9

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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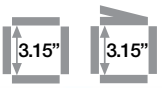
5050HD
R9850HD

igus®

E-Chain System® E4/4
Series 5050HD/R9850HD



Price Index

Series 5050HD ●●●

Series R9850HD ●●◐

Special Features / Options

Side-mounted - unsupported

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 394 ft (120 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 9.84 ft (3 m)
Rotary requires further calculation

Usage Guidelines

- When high torsional forces are expected
- For side-mounted applications
- For long-term operation in very moist environments

- When short travels or medium additional loads are involved
  ➤ Series E4-80
- If a simpler low-cost solution is required
  ➤ Series 15050/15150/R19850

Features & Benefits

1. Robust steel-mounting brackets
2. Wide, rounded plastic crossbars - cable friendly
3. Very wide glide surface, less wear
4. High tensile stability (20% higher tensile force than Series 5050
5. Hinged snap-open removable lids along outer radius of E-Tube
6. High torsional rigidity
7. Closed and open styles can be combine
8. Numerous interior separation possibilities
9. High side-mount stability due to undercut
10. Crossbars on E-Chains® are removable along both radii

RoI E-Chain® Series 5050R/9850R available upon request

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

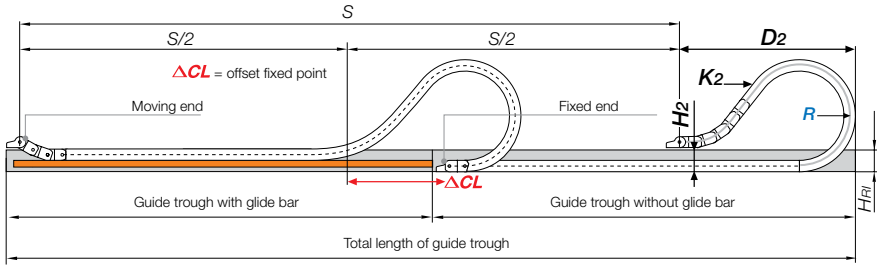
16.4 ft (5 m) **5050HD-30-300-0**	**E-Chain®**
With 2 separators **80-1** assembled every 2nd link	**Interior Separation**
1 Set **505000HD-12-E**	**Mounting Bracket**

E-Chain System® E4/4
Series 5050HD/R9850HD

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 1,640 ft. (500m)

Chain length: $= {}^{S}/_{2} + K_2$



In case of travels between 13 ft. (4m) and 32.8 ft. (10m) we recommend a longer unsupported length.

R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.69 (500)
H_2	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)
D_2	21.65 (550)	31.50 (800)	37.40 (950)	47.24 (1200)	61.02 (1550)	66.93 (1700)	85.63 (2175)
K_2	35.83 (910)	50.16 (1274)	64.49 (1638)	78.82 (2002)	97.44 (2475)	107.48 (2730)	136.14 (3458)
ΔCL	8.23 (209)	16.10 (409)	20.04 (509)	27.91 (709)	39.72 (1009)	43.66 (1109)	58.43 (1484)

Legend

S = Length of travel
H_F = Required clearance height
HRI = Trough inner height
H_2 = *Mounting height
D_2 = Over length - long travels, gliding
K_2 = *Further add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.

Design, Chapter 1

Speed / acceleration FL_G	max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties

➤ **Chapter 1**

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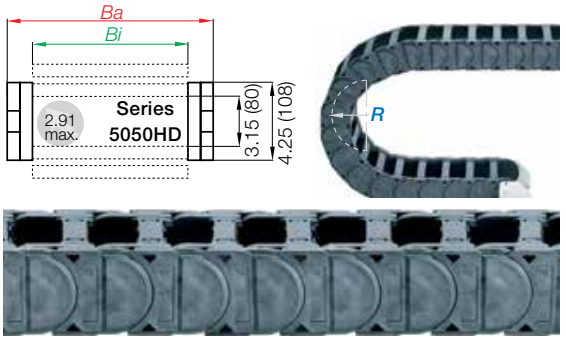
igus®

E-Chain System® E4/4
Series 5050HD/R9850HD

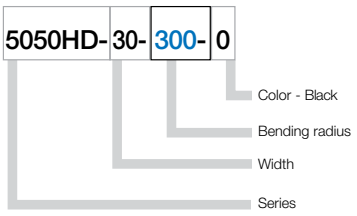
Telephone 1-800-521-2747
Fax 1-401-438-7270

Series 5050HD - E-Chain® with crossbars every link

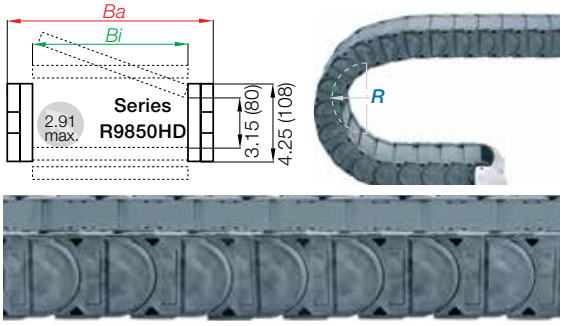


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

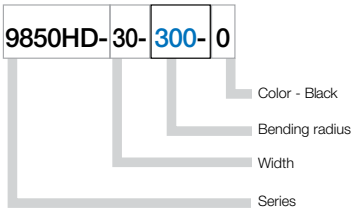


Series R9850HD - fully enclosed E-Tube

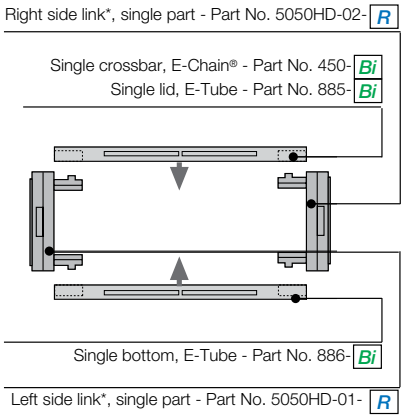


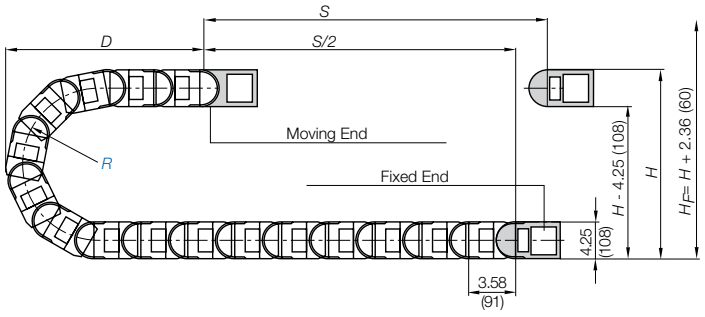
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips up to 1562°F (850°C)
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

Part Number Structure



E-Chain® as separate parts, links and side plates





*View from the fixed point of the E-Chain®/E-Tube

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E-Chain System® E4/4
Series 5050HD/R9850HD

Supplement part number with required radius. Example: 5050HD-30-300 -0
Pitch: 3.58 in. (91mm) per link links/ft(m) = 3.35 (11)

Part Number. Crossbars Every link	Tube Version		Bi in. (mm)	Ba in. (mm)	5050HD lbs/ft (kg/m)	R9850HD lbs/ft (kg/m)
5050HD-05-		-0	1.97 (50)	4.33 (110)	≈ 4.47 (6.65)	–
5050HD-06-		-0	2.56 (65)	4.92 (125)	≈ 4.53 (6.74)	–
5050HD-07-	9850HD-07-	-0*	2.95 (75)	5.31 (135)	≈ 4.58 (6.81)	≈ 4.87 (7.25)
5050HD-08-		-0	3.43 (87)	5.79 (147)	≈ 4.63 (6.89)	–
5050HD-10-	9850HD-10-	-0	3.94 (100)	6.30 (160)	≈ 4.70 (6.99)	≈ 5.07 (7.55)
5050HD-11-		-0	4.41 (112)	6.77 (172)	≈ 4.77 (7.10)	–
5050HD-12-	9850HD-12-	-0	4.92 (125)	7.28 (185)	≈ 4.82 (7.18)	≈ 5.32 (7.91)
5050HD-13-		-0	5.39 (137)	7.76 (197)	≈ 4.92 (7.32)	–
5050HD-15-	9850HD-15-	-0	5.91 (150)	8.27 (210)	≈ 4.94 (7.35)	≈ 5.57 (8.29)
5050HD-16-		-0	6.38 (162)	8.74 (222)	≈ 5.02 (7.47)	–
5050HD-17-	9850HD-17	-0	6.89 (175)	9.25 (235)	≈ 5.11 (7.60)	≈ 5.78 (8.60)
5050HD-18-		-0	7.36 (187)	9.72 (247)	≈ 5.18 (7.71)	–
5050HD-20-	9850HD-20-	-0	7.87 (200)	10.24 (260)	≈ 5.22 (7.77)	≈ 5.99 (8.91)
5050HD-21-		-0	8.35 (212)	10.71 (272)	≈ 5.27 (7.84)	–
5050HD-22-		-0	8.86 (225)	11.22 (285)	≈ 5.32 (7.91)	–
5050HD-23-		-0	9.33 (237)	11.69 (297)	≈ 5.39 (8.02)	–
5050HD-25-	9850HD-25-	-0	9.84 (250)	12.20 (310)	≈ 5.46 (8.13)	≈ 6.48 (9.64)
5050HD-26-		-0	10.31 (262)	12.68 (322)	≈ 5.52 (8.22)	–
5050HD-27-	9850HD-27	-0	10.83 (275)	13.19 (335)	≈ 5.59 (8.32)	≈ 6.72 (10.00)
5050HD-28-		-0	11.30 (287)	13.66 (347)	≈ 5.63 (8.38)	–
5050HD-30-	9850HD-30-	-0	11.81 (300)	14.17 (360)	≈ 5.73 (8.53)	≈ 6.92 (10.30)
5050HD-31-		-0	12.28 (312)	14.65 (372)	≈ 5.76 (8.57)	–
5050HD-32-		-0	12.79 (325)	15.16 (385)	≈ 5.83 (8.67)	–
5050HD-33-		-0	13.27 (337)	15.63 (397)	≈ 5.91 (8.79)	–
5050HD-35-	9850HD-35-	-0	13.78 (350)	16.14 (410)	≈ 6.04 (8.99)	≈ 7.39 (11.00)
5050HD-36-		-0	14.25 (362)	16.61 (422)	≈ 5.98 (8.90)	–
5050HD-37-		-0	14.76 (375)	17.12 (435)	≈ 6.04 (9.00)	–
5050HD-38-		-0	15.24 (387)	17.60 (447)	≈ 6.12 (9.11)	–
5050HD-40-	9850HD-40-	-0	15.75 (400)	18.11 (460)	≈ 6.30 (9.38)	≈ 8.06 (12.00)
5050HD-41-		-0	16.22 (412)	18.58 (472)	≈ 6.26 (9.31)	–
5050HD-42-		-0	16.73 (425)	19.09 (485)	≈ 6.45 (9.60)	–
5050HD-43-		-0	17.20 (437)	19.57 (497)	≈ 6.34 (9.44)	–
5050HD-45-		-0	17.72 (450)	20.08 (510)	≈ 6.42 (9.55)	–
5050HD-46-	9850HD-46-	-0	18.19 (462)	20.55 (522)	≈ 6.53 (9.72)	≈ 8.38 (12.47)
5050HD-47-		-0	18.70 (475)	21.06 (535)	≈ 6.56 (9.76)	–
5050HD-48-		-0	19.17 (487)	21.54 (547)	≈ 6.73 (10.01)	–
5050HD-50-		-0	19.69 (500)	22.05 (560)	≈ 6.79 (10.11)	–
5050HD-51-		-0	20.16 (512)	22.52 (572)	≈ 6.73 (10.02)	–
5050HD-52-		-0	20.67 (525)	23.03 (585)	≈ 6.85 (10.19)	–
5050HD-53-		-0	21.14 (537)	23.50 (597)	≈ 6.91 (10.29)	–
5050HD-55-		-0	21.65 (550)	24.02 (610)	≈ 7.20 (10.71)	–
5050HD-60-		-0	23.62 (600)	25.98 (660)	≈ 7.35 (10.94)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: 5050HD-30-300 -0

	150	200	250	300	350	400	500
R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.69 (500)
H**+25	16.06 (408)	20.00 (508)	23.94 (608)	27.87 (708)	31.81 (808)	35.75 (908)	43.62 (1108)
D	13.43 (341)	15.39 (391)	17.36 (441)	19.33 (491)	21.30 (541)	23.27 (591)	27.20 (691)
K	25.79 (655)	32.09 (815)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.69 (1440)	69.09 (1755)

** This radius is not available for the R9850HD Series *Removable lid only, no hinged option

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
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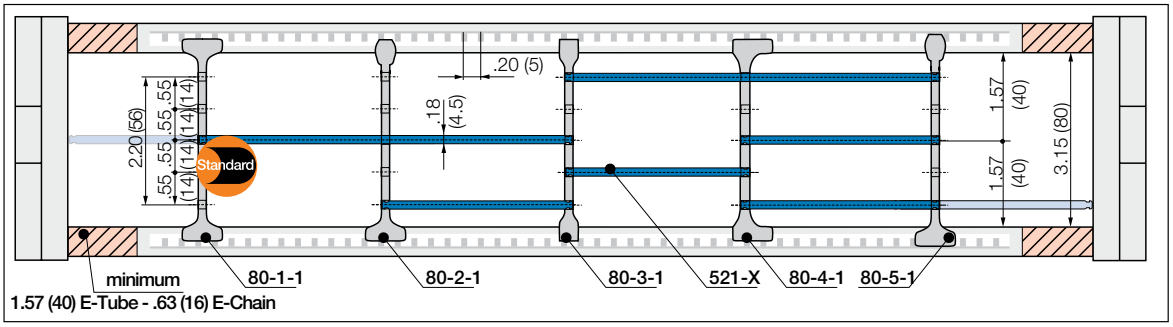
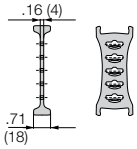
5050HD
R9850HD

igus®

E-Chain System® E4/4
Series 5050HD/R9850HD
Interior Separation - New Generation



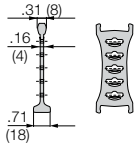
Note Please maintain a lateral spacing of 1.57" (40 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 80-1**
Assembled	**Part No. 80-1-1**

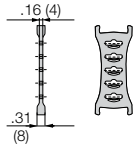
- **Standard separator 80-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator, narrow head

Unassembled	**Part No. 80-2**
Assembled	**Part No. 80-2-1**

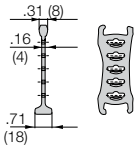
- **Separator 80-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 80-3**
Assembled	**Part No. 80-3-1**

- **Separator 80-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

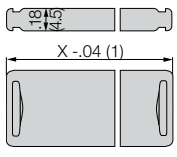


Separator, asymmetrical

Unassembled	**Part No. 80-5**
Assembled	**Part No. 80-5-1**

- **Separator 80-5**
  Locks safely in .30" (7.5 mm) increments
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 520-X**
Assembled	**Part No. 521-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 5 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**520-050**	**521-050**	5.91 (150)	**520-150**	**521-150**	11.81 (300)	**520-300**	**521-300**
2.56 (065)	**520-065**	**521-065**	6.89 (175)	**520-175**	**521-175**	17.723 (450)	**520-450**	**521-125**
2.95 (075)	**520-075**	**521-075**	7.87 (200)	**520-200**	**521-200**			
3.94 (100)	**520-100**	**521-100**	8.86 (225)	**520-225**	**521-225**			
4.92 (125)	**520-125**	**521-125**	9.84 (250)	**520-250**	**521-250**			

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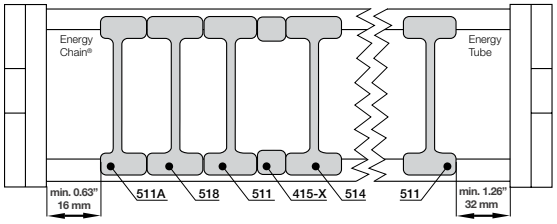
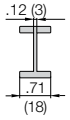
E-Chain System® E4/4
Series 5050HD/R9850HD
Interior Separation - Previous Generation

Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

NOTE: Observe a lateral spacing of at least 1.30 in. (33mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates





Vertical separator

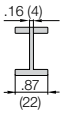
Unassembled	**Part No. 501**
Assembled	**Part No. 511**

- **Standard separator 501 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

Locking separator (for E-Chains®)

Unassembled	**Part No. 504**
Assembled	**Part No. 514**

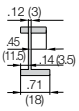
- **Locking separator 504 for E-Chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. If locking separators are used, the E-Chain® is more difficult to open.



Locking separator (for E-Chains®)

Unassembled	**Part No. 508**
Assembled	**Part No. 518**

- **Locking separator 508 for E-Tubes**
  This separator is used for applications that are exposed to extremely high humidity. The clamp at the side serves to uniformly align the separators. In order to avoid destroying the separators when opening the E-Chain®, make sure all separators are identically aligned.



Asymmetrical separator (for E-Chains®)

Unassembled	**Part No. 501A**
Assembled	**Part No. 511A**

- **Asymmetrical separator 501A for E-Chains®**
  This separator is NOT for E-Tubes. It features an (18mm) base and can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

Spacer (for E-Chains®)

Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)	Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	**415 -10**	.39"	(10)	**405 -30**	**415 -30**	1.18"	(30)
405 -15	**415 -15**	.59"	(15)	**405 -40**	**415 -40**	1.57"	(40)
405 -20	**415 -20**	79"	(20)				

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RoHS info: www.igus.com/RoHS

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Interior Separation - Previous Generation

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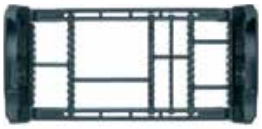
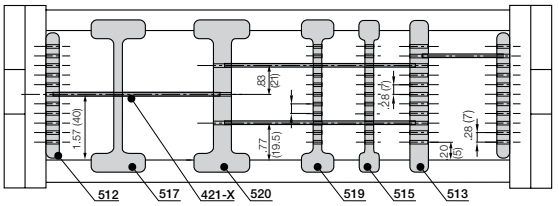
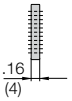


Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.
➤ **Design, Chapter 1** for layout recommendations.

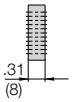




Side plate

Unassembled	**Part No. 502**
Assembled	**Part No. 512**

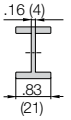
- **Side plates 502**
  This component is used to form the basic pattern of a shelf system.



Vertical separator

Unassembled	**Part No. 503**
Assembled	**Part No. 513**

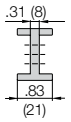
- **Vertical separator 503**
  This component is used to form the basic pattern of a shelf system.



Locking vertical separator

Unassembled	**Part No. 507**
Assembled	**Part No. 517**

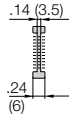
- **Locking vertical separator 507**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.



Locking vertical separator

Unassembled	**Part No. 510**
Assembled	**Part No. 520**

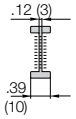
- **Locking vertical separator 510**
  This separator is slotted and able to be combined with shelves. For E-Chains® only.



Slotted separators, closed

Unassembled	**Part No. 505**
Assembled	**Part No. 515**

- **Slotted separators 505**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.



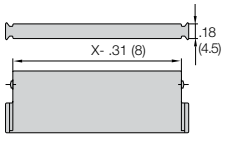
Slotted separators, open

Unassembled	**Part No. 509**
Assembled	**Part No. 519**

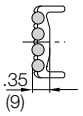
- **Slotted separator 509**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 7 middle slots

Shelves 420-XX
These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

Usable Width X in.	(mm)	Part No. Width in.	(mm)	Part No. Shelf only	Assembled	Usable Width X in.	(mm)	Part No. Width in.	(mm)	Part No. Shelf only	Assembled
.71	(18)	.39	(10)	**420-18**	**421-18**	2.95	(75)	2.64	(67)	**420-75**	**421-75**
.91	(23)	.59	(15)	**420-23**	**421-23**	3.46	(88)	3.15	(80)	**420-88**	**421-88**
.98	(25)	.67	(17)	**420-25**	**421-25**	3.94	(100)	3.62	(92)	**420-100**	**421-100**
1.10	(28)	.79	(20)	**420-28**	**421-28**	4.92	(125)	4.61	(117)	**420-125**	**421-125**
1.30	(33)	.98	(25)	**420-33**	**421-33**	5.91	(150)	5.59	(142)	**420-150**	**421-150**
1.69	(43)	1.38	(35)	**420-43**	**421-43**	6.89	(175)	6.57	(167)	**420-175**	**421-175**
1.97	(50)	1.65	(42)	**420-50**	**421-50**	7.36	(187)	7.05	(179)	**420-187**	**421-187**
2.44	(62)	2.13	(54)	**420-62**	**421-62**	7.87	(200)	7.56	(192)	**420-200**	**421-200**



Rollclip - minimizes abrasion of particularly sensitive hoses or cables in an E-Chain®. The integrated rollers compensate for relative movement between the chain and the hose or cable. This reduces the abrasion of the hoses or cables



Rollclip

Unassembled	**Part No. 489-27**
Assembled	**Part No. 490-27**

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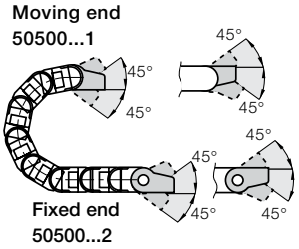
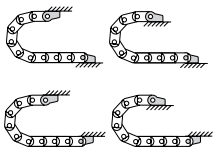
E-Chain System® E4/4
Series 5050HD/R9850HD
Mounting Bracket - Stainless Steel

pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive



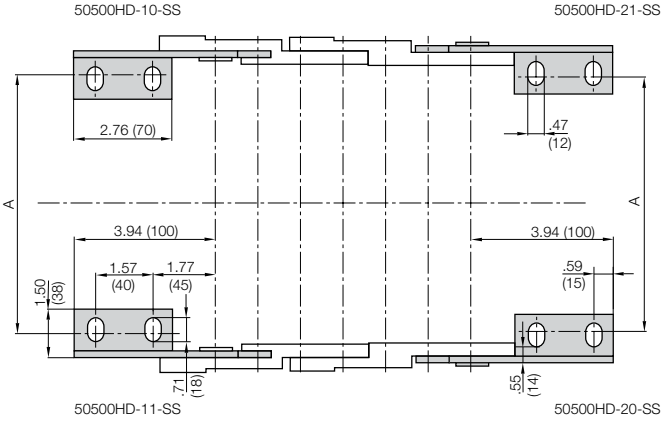


Possible installation configurations -

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 5050HD or R9850HD:
50500HD-12-SS

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right with bore
Series 5050HD or R9850HD:
50500HD-1-SS

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right with pin
Series 5050HD or R9850HD:
50500HD-2-SS



Bracket mounting dimensions

Width of Chain *Bi*	Part Number	Mounting Brackets Full Set	Moving End Only	Fixed End Only	A in. (mm)
1.97 (50)	50500HD	-12	-1	-2	1.18 (30)
2.56 (65)	50500HD	-12	-1	-2	1.77 (45)
2.95 (75)	50500HD	-12	-1	-2	2.16 (55)
3.43 (87)	50500HD	-12	-1	-2	2.64 (67)
3.94 (100)	50500HD	-12	-1	-2	3.15 (80)
4.41 (112)	50500HD	-12	-1	-2	3.62 (92)
4.92 (125)	50500HD	-12	-1	-2	4.13 (105)
5.39 (137)	50500HD	-12	-1	-2	4.61 (117)
5.91 (150)	50500HD	-12	-1	-2	5.12 (130)
6.38 (162)	50500HD	-12	-1	-2	5.59 (142)
6.89 (175)	50500HD	-12	-1	-2	6.10 (155)
7.36 (187)	50500HD	-12	-1	-2	6.57 (167)
7.87 (200)	50500HD	-12	-1	-2	7.09 (180)
8.35 (212)	50500HD	-12	-1	-2	7.56 (192)
8.86 (225)	50500HD	-12	-1	-2	8.07 (205)
9.33 (237)	50500HD	-12	-1	-2	8.54 (217)
9.84 (250)	50500HD	-12	-1	-2	9.05 (230)
10.31 (262)	50500HD	-12	-1	-2	9.53 (242)
10.83 (275)	50500HD	-12	-1	-2	10.04 (255)
11.30 (287)	50500HD	-12	-1	-2	10.51 (267)
11.81 (300)	50500HD	-12	-1	-2	11.02 (280)

Width of Chain *Bi*	Part Number	Mounting Brackets Full Set	Moving End Only	Fixed End Only	A in. (mm)
12.28 (312)	50500HD	-12	-1	-2	11.49 (292)
12.79 (325)	50500HD	-12	-1	-2	12.00 (305)
13.27 (337)	50500HD	-12	-1	-2	12.48 (317)
13.78 (350)	50500HD	-12	-1	-2	12.99 (330)
14.25 (362)	50500HD	-12	-1	-2	13.46 (342)
14.76 (375)	50500HD	-12	-1	-2	13.97 (355)
15.24 (387)	50500HD	-12	-1	-2	14.45 (367)
15.75 (400)	50500HD	-12	-1	-2	14.96 (380)
16.22 (412)	50500HD	-12	-1	-2	15.43 (392)
16.73 (425)	50500HD	-12	-1	-2	15.94 (405)
17.20 (437)	50500HD	-12	-1	-2	16.42 (417)
17.72 (450)	50500HD	-12	-1	-2	16.93 (430)
18.19 (462)	50500HD	-12	-1	-2	17.40 (442)
18.70 (475)	50500HD	-12	-1	-2	17.91 (455)
19.17 (487)	50500HD	-12	-1	-2	18.39 (467)
19.69 (500)	50500HD	-12	-1	-2	18.90 (480)
20.16 (512)	50500HD	-12	-1	-2	19.37 (492)
20.67 (525)	50500HD	-12	-1	-2	19.88 (505)
21.14 (537)	50500HD	-12	-1	-2	20.35 (517)
21.65 (550)	50500HD	-12	-1	-2	20.87 (530)
23.62 (600)	50500HD	-12	-1	-2	22.83 (580)

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Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

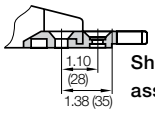
E-Chain System® E4/4
Series 5050HD/R9850HD
Strain Relief

Telephone 1-800-521-2747
Fax 1-401-438-7270

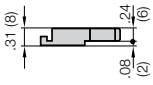
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

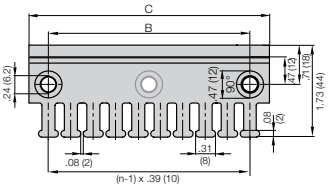


Shown assembled



Single tiewrap plate

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



For more information please refer to strain relief section of Chapter 10

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E-Chain System® E4/4
Series 5050HD/R9850HD
Guide Trough

Width of Crossbar 5050HD-**05**-200-0	B_{Ri}	Installation Part No.
-05	4.13 (105)	**96-50-225**
-06	4.72 (120)	**96-50-250**
-07	5.12 (130)	**96-50-250**
-08	5.59 (142)	**96-50-275**
-10	6.10 (155)	**96-50-275**
-11	6.61 (168)	**96-50-300**
-12	7.09 (180)	**96-50-300**
-13	7.60 (193)	**96-50-325**
-15	8.07 (205)	**96-50-325**
-16	8.58 (218)	**96-50-350**
-17	9.06 (230)	**96-50-350**
-18	9.57 (243)	**96-50-375**
-20	10.04 (255)	**96-50-375**
-21	10.55 (268)	**96-50-400**
-22	11.02 (280)	**96-50-400**
-23	11.54 (293)	**96-50-425**
-25	12.01 (305)	**96-50-425**
-26	12.52 (318)	**96-50-450**
-27	12.99 (330)	**96-50-450**
-28	13.50 (343)	**96-50-475**
-30	13.98 (355)	**96-50-475**
-31	14.49 (368)	**96-50-500**
-32	14.96 (380)	**96-50-500**
-33	15.47 (393)	**96-50-525**
-35	15.94 (405)	**96-50-525**
-36	16.46 (418)	**96-50-550**
-37	16.93 (430)	**96-50-550**
-38	17.44 (443)	**96-50-575**
-40	17.91 (455)	**96-50-575**
-41	18.43 (468)	**96-50-600**
-42	18.90 (480)	**96-50-600**
-43	19.41 (493)	**96-50-625**
-45	19.88 (505)	**96-50-625**
-46	20.39 (518)	**96-50-650**
-47	20.87 (530)	**96-50-650**
-48	21.38 (543)	**96-50-675**
-50	21.85 (555)	**96-50-675**
-51	22.36 (568)	**96-50-700**
-52	22.83 (580)	**96-50-700**
-53	23.35 (593)	**96-50-725**
-55	23.82 (605)	**96-50-725**
-60	25.79 (655)	**96-50-775**

Standard length profile rail

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 99-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 96-50-XX

-XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the right. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center-mounted

Required guide troughs:
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar

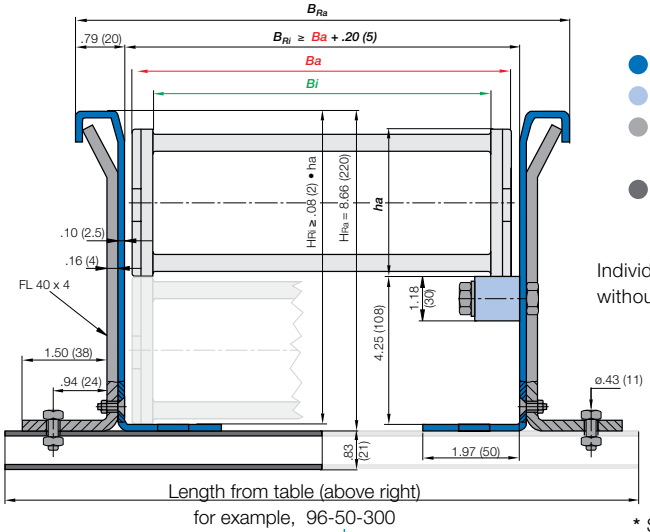
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 99-30

= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01

Required number of installation set:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **96-50-XXX**
Example: 96-50-400 for 15.75 (400 mm) long profile rail

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

Installation sets as section connectors



Length from table (above right)
for example, 96-50-300

- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

For further technical information on guide troughs
➤ Chapter 9

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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P4

igus®

Special solutions for long travel
System P4 - Profile RoI E-Chain®
For very long travels, speed up to 32.8 f/s (10 m/s)

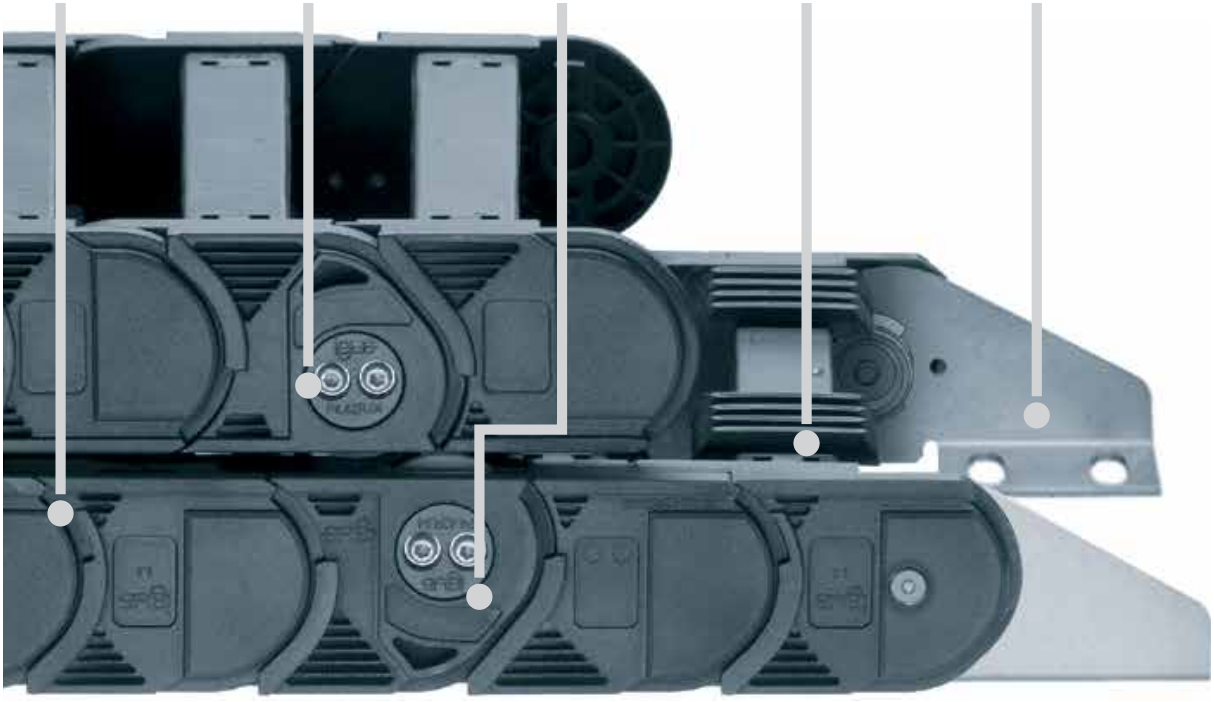
Low vibration:
Offset operation of upper and lower run

Low maintenance:
Tribo-optimized plastic rollers

Low noise:
Special roller- / E-Chain® links -design

Secure guidance:
comb style AUTO-GLIDE crossbars

Robust:
Steel mounting brackets



57% less energy consumption - System P4, profile RoI E-Chain®

Safe, low-noise, abrasion-resistant energy supply system on long travels up to 2,625 ft. (800 m) and more
Standard RoI E-Chain® has been used in over 1000 installations worldwide. Some industries -cranes, for example - have ever-increasing demands for length of travel, fill weight and speed. **Systems of this type should be designed by our system design engineers. We will be more than willing to submit an offer to you. Please contact us about this.**

- Identical pitch of the chain link with or without roller
- Smooth, low noise operation through identical pitch length for links with and without rollers
- Integrated “captive” roller in the side part
- Long travels(up to 2,625 ft. (800 m), high additional loads up to 20.2 lbs/ ft (30 kg/m)
- For very long travels and high speeds >32.8 ft/s (10 m/s) travel speed
- AUTO-GLIDE crossbars provide for a safe guiding in very long travels
- 4 different inner heights: 1.26” (32mm), 1.65” (42mm), 2.20” (56mm), 3.15” (80 mm) available
- Large modular tool box system with interior separations of the System E4

Typical industries and applications

- Cranes
- Warehousing
- Equipment manufacturing
- Gantry robots
- Material handling

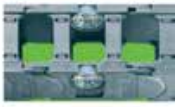
iF product design award
2007 igus® System P4

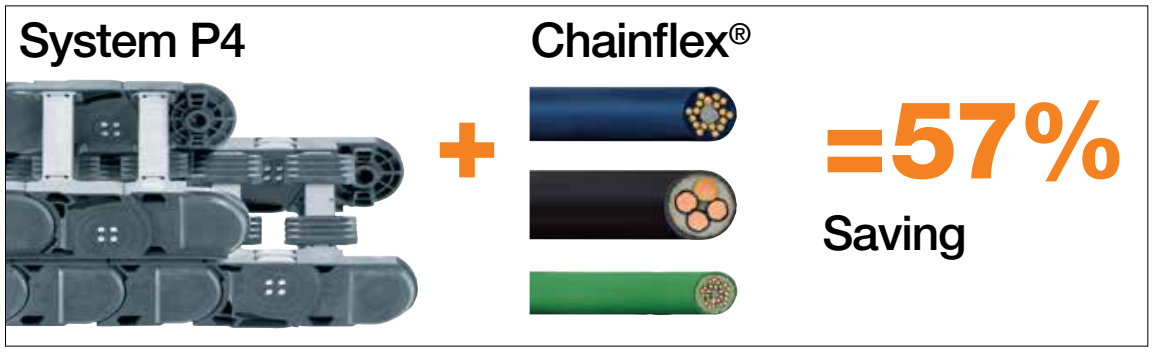
Special solutions for long travel
System P4 - Profile RoI E-Chain®
Efficiency

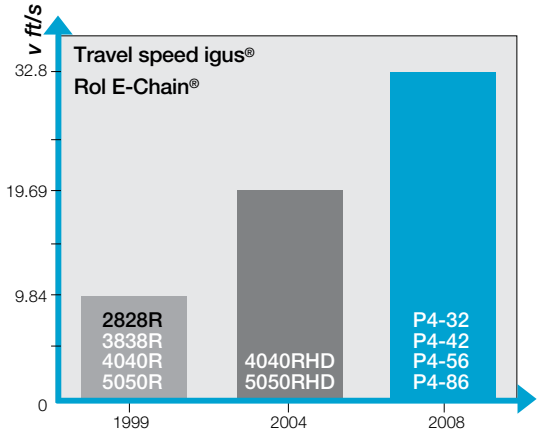
igus® P4

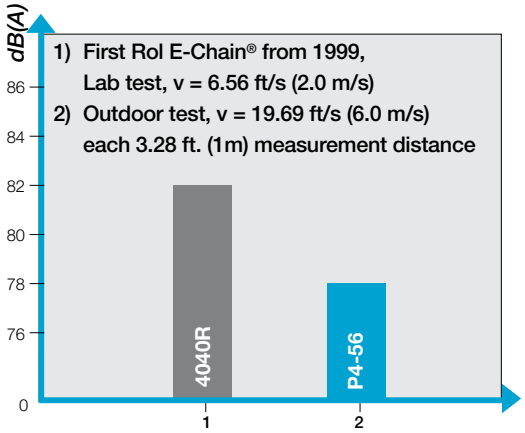
Energy efficient polymer E-Chains® and cables reduce consumption by up to 57%

With the right materials and clever design, the energy consumption can be drastically reduced, as now proven by current tests and sample calculations in the E-Chain® and cable laboratory at igus®. igus® E-Chains® and Chainflex® cables reduce the required drive power and extend the application's service life.

Better cables, stronger and rolling E-Chains®	System P4 -57%	
Rolling instead of gliding	RoI E-Chain® -37%	
Stronger E-Chains®	E4-1 -17%	
Optimized cables	Chainflex® -17%	
Gliding application	Standard 100%	







P4

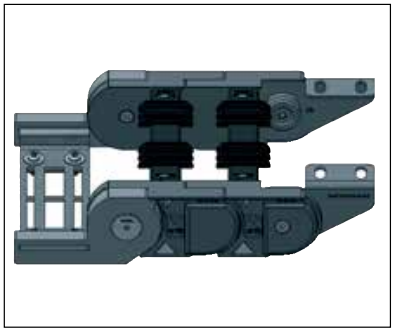
igus®

Special solutions for long travel
System P4 - Profile Rol E-Chain®
Selection Table - Technical Data

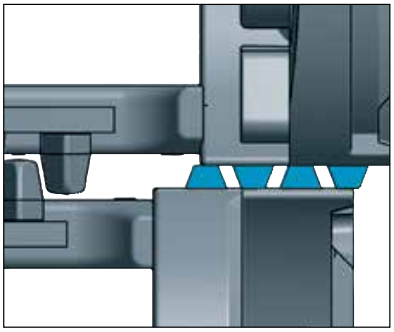
System P4 - Profile Rol E-Chain®
Safe, low noise, abrasion-resistant on long travels

Series	Inner height *hi* in. (mm)	Inner width *Bi* in. (mm)	Outer width *Ba* in. (mm)	Outer height *ha* in. (mm)	Bending radius *R* *in.* (mm)	Maximum Travel ft. (m)
P4-32	1.26 (32)	3.94-7.87 (100-200)	5.20-9.13 (132-232)	2.13 (54)	5.91-9.84 (150-250)	1,641 (500)
P4-42	1.65 (42)	3.94-7.87 (100-200)	6.06-10.00 (154-254)	2.52 (64)	3.94-13.78 (100-350)	1,969 (600)
P4-56	2.20 (56)	7.36-15.75 (187-400)	10.12-18.50 (257-470)	3.31 (84)	9.84-13.78 (250-350)	2,625 (800)
P4-80	3.15 (80)	7.36-15.75 (187-400)	10.35-18.74 (263-476)	4.25 (108)	9.84-13.78 (250-350)	2,625 (800)

Optimized interior separation program, cables last up to 4 times longer



Robust pivoting mounting brackets available



Offset operation of upper and lower run, resulting in continuous roll-through surface

- Extension link for heavy fill weights
- 2 inner heights available (56, 80 mm)
- 50% higher fill weight possible
- Maximum rigidity
- Divides cross section into compartments (electric/hydraulic)

- Tribo-optimized plastic rollers for all P4 systems
- Wear optimized
- Long cycle life
- Improved rolling
- Lower noise and vibration
- Same pitch for roller links / E-Chain® links

- Aluminum guide trough system
- Special geometry in combination with AUTO-GLIDE cross bars allows for offset upper and lower run
- Strong installation kits for long cycle life
- Aluminum trough segments resist corrosion

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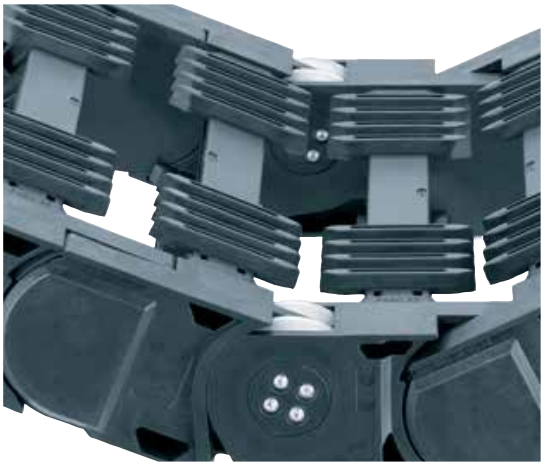
Special solutions for long travel
System P4 - Profile Rol E-Chain®

igus® P4 Rol E-Chain® in suitable aluminum SuperTrough. High speeds, longest travels, smooth running - thereby longest lifetime



System P4 - Very quiet operation through identical pitch of all chain links. AUTO-GLIDE crossbars offer a safe guidance in very long travels

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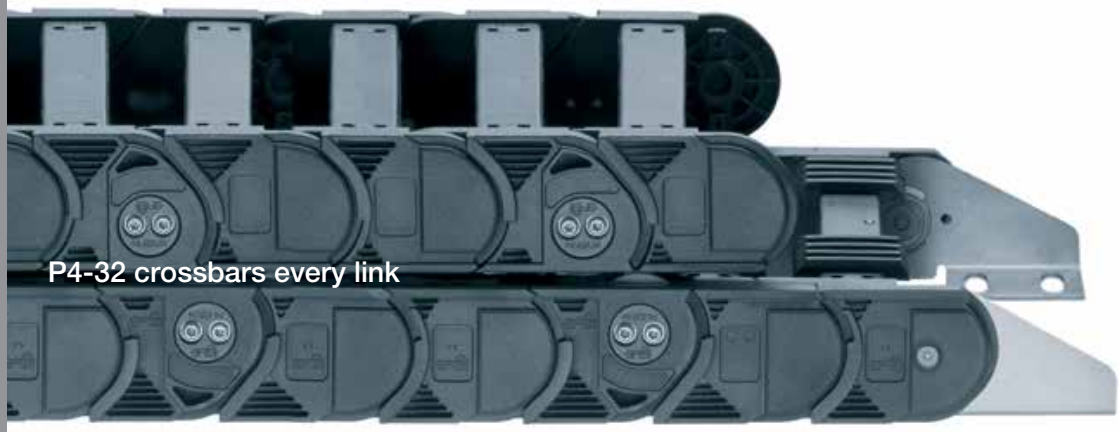
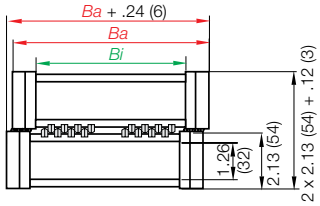
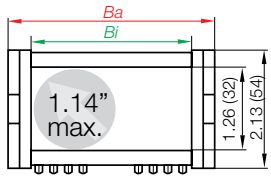
Special solutions for long travel
System P4 - Rol E-Chain® - Series P4-32
Installation Dimensions

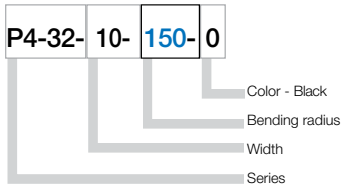
P4-32 - openable along both radii, crossbars every link - comb style AUTO-GLIDE crossbars







Part Number Structure



Part Number			*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
P4-32-10-	☐	-0	3.94 (100)	5.20 (132)	≈ 1.82 (2.71)
P4-32-15-	☐	-0	5.91 (150)	7.17 (182)	≈ 2.04 (3.04)
P4-32-20-	☐	-0	7.87 (200)	9.13 (232)	≈ 2.24 (3.34)

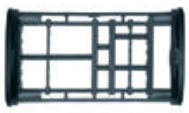
Choose from the radii below for all of the above sizes
Radius (mm) Example: P4-32-20-[150]-0

	150	200	250
R	5.91 (150)	7.87 (200)	9.84 (250)
H_2	4.92 (125)	4.92 (125)	4.92 (125)
D_2	29.92 (760)	39.96 (1015)	55.12 (1400)
K_2	48.50 (1232)	63.94 (1624)	81.57 (2072)

The bending radii [075] [100] [125] [300] are available upon request.
Please contact technical sales for approximate delivery times.

Note: We recommend contacting our technical experts when planning your P4 application.
For distances below 32.8 ft. (10 m) we recommend a self-supporting E-Chain®.

Additional Features



Interior separation available
➤ **Series E4-32**

Robust steel mounting brackets available ➤ **Upon request**

Special P4 guide trough system available ➤ **Upon request**

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QuickSpec: http://www.igus.com/quickspec

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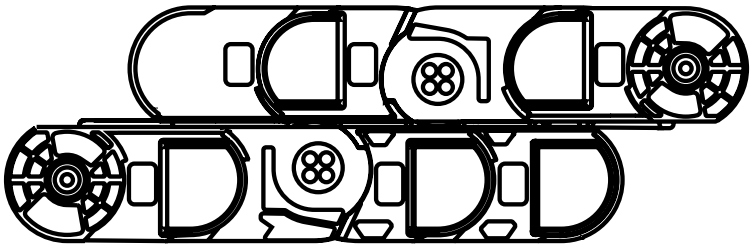
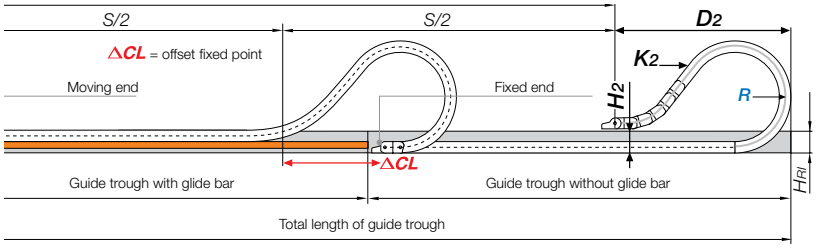
Special solutions for long travel
System P4 - Rol E-Chain® - Series P4-32
Installation Dimensions



The required clearance height: $H_F = H + 1.57$ in. (40 mm) with 4.03 lbs/ft (6 kg/m) fill weight. Please consult igus® if space is particularly restricted.

Sliding applications

Long travel lengths up to 1,641 ft. (500 m)
In case of travels below 32.8 ft. (10m) we recommend an self-supporting E-Chain®.



Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.49 (18)
Chain length: = $S/2 + K_2$

R	5.91 (150)	7.87 (200)	9.84 (250)
H_2	4.92 (125)	4.92 (125)	4.92 (125)
D_2	29.92 (760)	39.96 (1015)	55.12 (1400)
K_2	48.50 (1232)	63.94 (1624)	81.57 (2072)
ΔCL	14.80 (376)	23.46 (596)	32.87 (835)

Legend

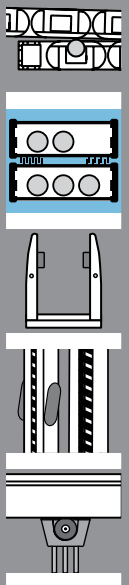
S = Length of travel
R = Bending radius
H_2 = Mounting height
D_2 = Overlength - long travels, gliding
K_2 = Add-on
H_{RI} = Trough inner height

Long travels	from 32.8 ft. (10 m) up to max. 1,641 ft. (500 m)
Speed max. rolling / acceleration max. rolling	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Fill weight	max. 4.03 lbs/ft. (6 kg/m)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



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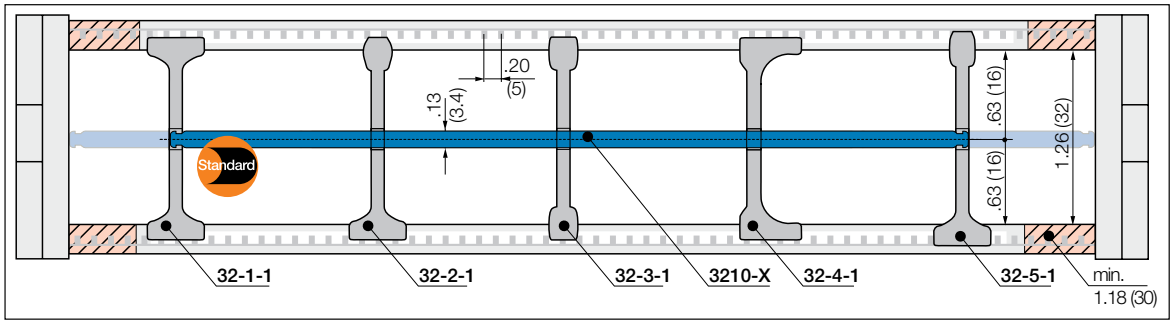
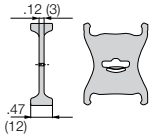
Special solutions for long travel
System P4 - Rol E-Chain® - Series P4-32
Installation Dimensions



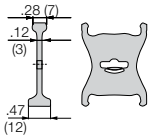
Note E-Tube: Please maintain a lateral spacing of 1.18" (30 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 32-1**
Assembled	**Part No. 32-1-1**

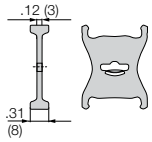
- **Standard separator 32-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator, narrow head

Unassembled	**Part No. 32-2**
Assembled	**Part No. 32-2-1**

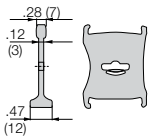
- **Separator 32-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 32-3**
Assembled	**Part No. 32-3-1**

- **Separator 32-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

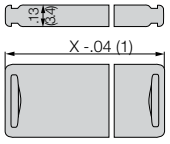


Separator, asymmetrical

Unassembled	**Part No. 32-5**
Assembled	**Part No. 32-5-1**

- **Separator 32-5**
  Locks safely in .20" (5 mm) increments
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be used at one height.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-050**	**3210-050**	4.92 (125)	**3200-125**	**3210-125**	8.86 (225)	**3200-225**	**3210-225**
2.95 (075)	**3200-075**	**3210-075**	5.91 (150)	**3200-150**	**3210-150**	9.84 (250)	**3200-250**	**3210-250**
3.94 (100)	**3200-100**	**3210-100**	6.89 (175)	**3200-175**	**3210-175**			
4.53 (115)	**3200-115**	**3210-115**	7.87 (200)	**3200-200**	**3210-200**			

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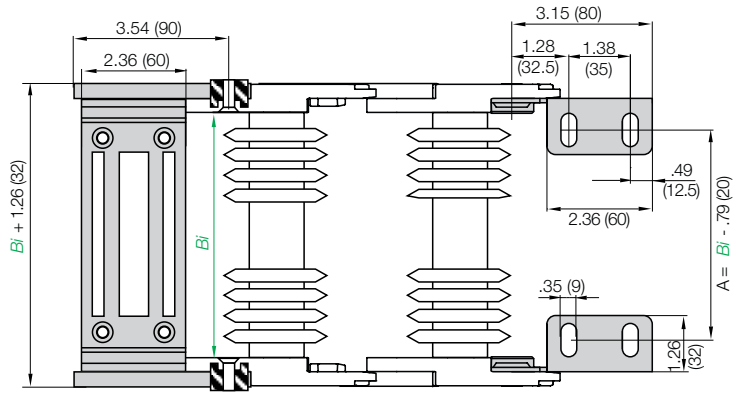
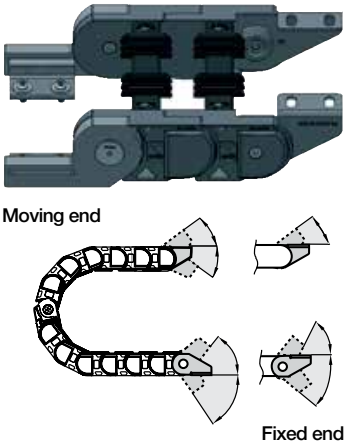
Special solutions for long travel
System P4 - Rol E-Chain® - Series P4-32
Installation Dimensions

Fixed end
Polymer
P4.32100.5.VS.E45

Moving end
Steel
P4.32100.4.VS.E45





Mounting brackets pivoting - Recommended for rolling applications on long travels

Width Index	Part No. full set for Fixed end and moving end	*Bi* in. (mm)	Dim. A in. (mm)
10- ➤	P4-32100-54-10-VS-E45	3.94 (100)	3.15 (80)
15- ➤	P4-32100-54-15-VS-E45	5.91 (150)	5.12 (130)
20- ➤	P4-32100-54-20-VS-E45	7.87 (200)	7.09 (180)

The mounting brackets for P4 E-Chains® consist of a steel mounting bracket at the moving end and a polymer mounting bracket at the fixed end. This ensure that the rollers move over a plain surface at the fixed end.

Strain relief, clamps, tiewrap plates, and clip-on solutions are available from stock.
For the complete Chainfix range refer to ➤ Chapter 10

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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Special solutions for long travel
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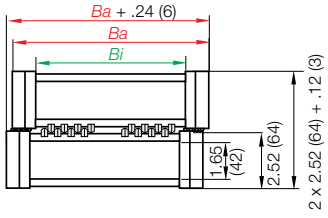
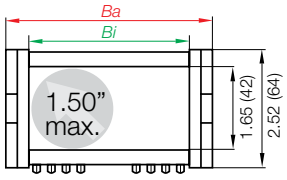
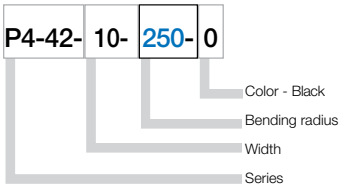
Installation Dimensions

P4-42 - openable along both radii, crossbars every link - comb style AUTO-GLIDE crossbars





Part Number Structure



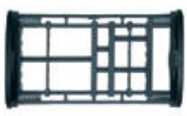
Part Number	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
P4-42-10- ☐ -0	3.94 (100)	6.06 (154)	≈ 1.82 (2.71)
P4-42-15- ☐ -0	5.91 (150)	8.03 (204)	≈ 2.04 (3.04)
P4-42-20- ☐ -0	7.87 (200)	10.00 (254)	≈ 2.24 (3.34)

Choose from the radii below for all of the above sizes
Radius (mm) Example: P4-42-20-250-0

	100	125	150	200	250	300	350
R	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H_2	5.51 (140)	5.51 (140)	5.51 (140)	5.51 (140)	5.51 (140)	5.51 (140)	5.51 (140)
D_2	20.47 (520)	30.91 (785)	37.01 (940)	50.39 (1280)	63.78 (1620)	77.17 (1960)	89.17 (2265)
K_2	36.61 (930)	47.48 (1206)	55.39 (1407)	73.86 (1876)	92.32 (2345)	110.79 (2814)	126.61 (3216)

Note: We recommend contacting our technical experts when planning your P4 application.
For distances below 32.8 ft. (10 m) we recommend a self-supporting E-Chain®.

Additional Features



Interior separation available
➤ **Series E4-42**

Robust steel mounting brackets available ➤ **Upon request**

Special P4 guide trough system available ➤ **Upon request**

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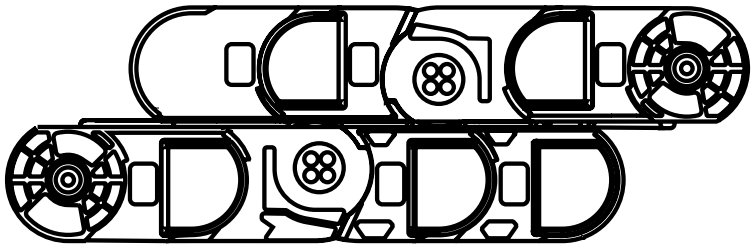
Special solutions for long travel
System P4 - Rol E-Chain® - Series P4-42
Installation Dimensions



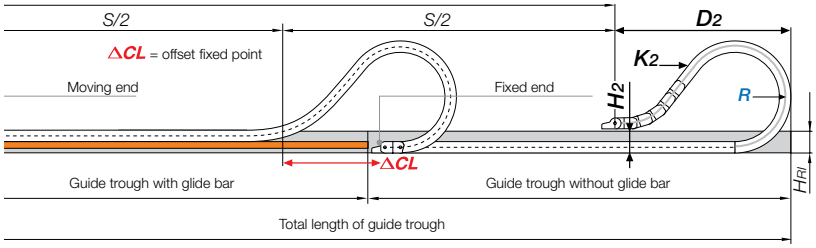
The required clearance height: $H_F = H + 1.57$ in. (40 mm) with 4.70 lbs/ft (7 kg/m) fill weight. Please consult igus® if space is particularly restricted.

Legend

S = Length of travel
R = Bending radius
H_2 = Mounting height
D_2 = Overlength - long travels, gliding
K_2 = Add-on
H_{RI} = Trough inner height

Sliding applications

Long travel lengths up to 1,969 ft. (600 m)
In case of travels less than 32.8 ft. (10m) we recommend an self-supporting E-Chain®.



Pitch per link: = 2.64" (67 mm)
Links per ft (m): = 4.57 (15)
Chain length: = $_{S}/_{2} + K_2$

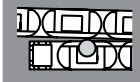
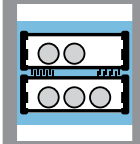
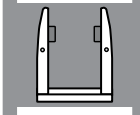
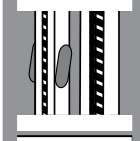
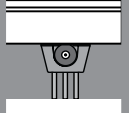
R	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H_2	5.51 (140)	5.51 (140)	5.51 (140)	5.51 (140)	5.51 (140)	5.51 (140)	5.51 (140)
D_2	20.47 (520)	30.91 (785)	37.01 (940)	50.39 (1280)	63.78 (1620)	77.17 (1960)	89.17 (2265)
K_2	36.61 (930)	47.48 (1206)	55.39 (1407)	73.86 (1876)	92.32 (2345)	110.79 (2814)	126.61 (3216)
ΔCL	7.68 (195)	130.19 (335)	18.50 (470)	30.12 (765)	41.14 (1045)	52.36 (1330)	63.58 (1615)

Technical Data

Long travels	from 32.8 ft. (10 m) up to max. 1,969 ft. (600 m)
Speed max. rolling / acceleration max. rolling	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Fill weight	max. 4.70 lbs/ft. (7 kg/m)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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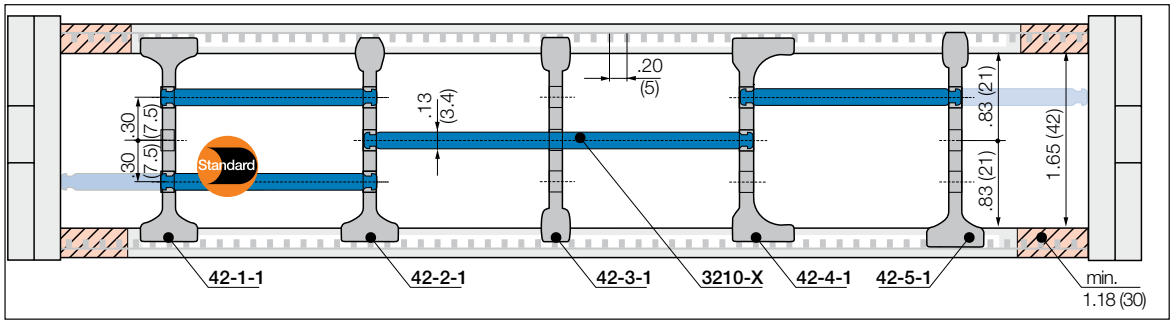
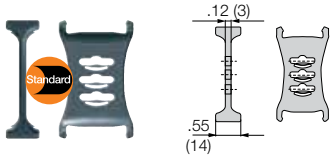
igus®

Special solutions for long travel
System P4 - Rol E-Chain® - Series P4-42
Installation Dimensions



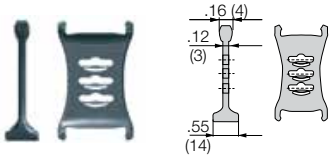
Note E-Tube: Please maintain a lateral spacing of 1.18" (30 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 42-1**
Assembled	**Part No. 42-1-1**

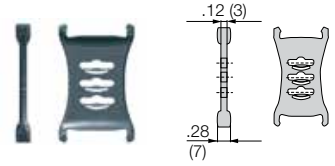
- **Standard separator 42-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator, narrow head

Unassembled	**Part No. 42-2**
Assembled	**Part No. 42-2-1**

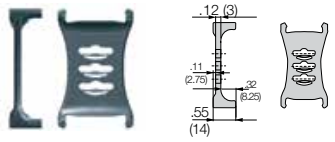
- **Separator 42-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 42-3**
Assembled	**Part No. 42-3-1**

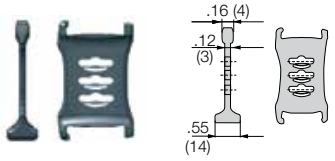
- **Separator 42-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, asymmetrical

Unassembled	**Part No. 42-4**
Assembled	**Part No. 42-4-1**

- **Separator 42-4**
  For side mounted applications
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

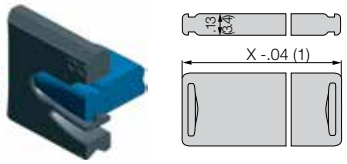


Separator, asymmetrical

Unassembled	**Part No. 42-5**
Assembled	**Part No. 42-5-1**

- **Separator 42-5**
  Locks safely in .30" (7.5 mm) increments
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be used at one height.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-050**	**3210-050**	4.92 (125)	**3200-125**	**3210-125**	8.86 (225)	**3200-225**	**3210-225**
2.95 (075)	**3200-075**	**3210-075**	5.91 (150)	**3200-150**	**3210-150**	9.84 (250)	**3200-250**	**3210-250**
3.94 (100)	**3200-100**	**3210-100**	6.89 (175)	**3200-175**	**3210-175**			
4.53 (115)	**3200-115**	**3210-115**	7.87 (200)	**3200-200**	**3210-200**			

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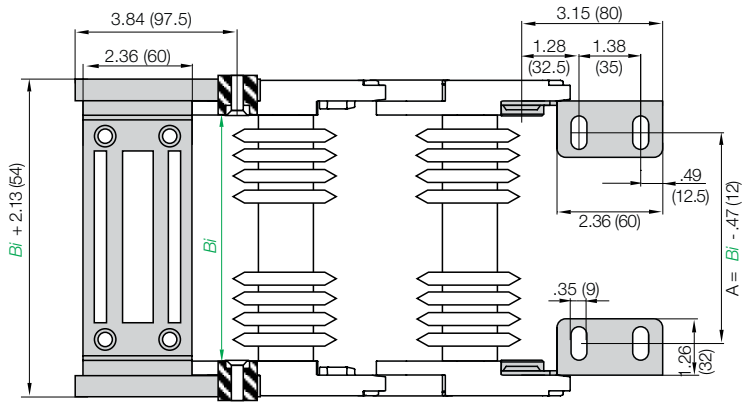
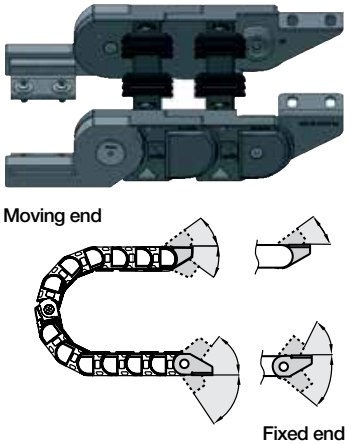
Installation Dimensions

Fixed end
Polymer
P4.42100.5.VS.E45

Moving end
Steel
P4.42100.4.VS.E45





Mounting brackets pivoting - Recommended for rolling applications on long travels

Width Index	Part No. full set for Fixed end and moving end	*Bi* in. (mm)	Dim. A in. (mm)
10- ➤	P4-42100-54-10-VS-E45	3.94 (100)	3.15 (80)
15- ➤	P4-42100-54-15-VS-E45	5.91 (150)	5.12 (130)
20- ➤	P4-42100-54-20-VS-E45	7.87 (200)	7.09 (180)

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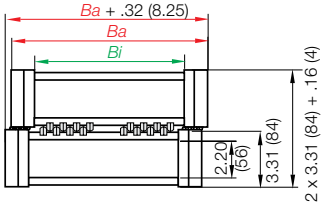
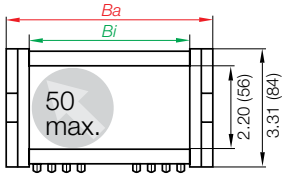
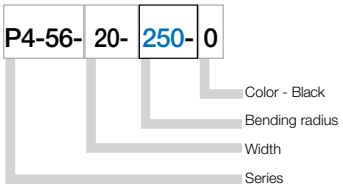
Installation Dimensions

P4-56 - openable along both radii, crossbars every link - comb style AUTO-GLIDE crossbars





Part Number Structure



Part Number			*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
P4-56-18-	☐	-0	7.36 (187)	9.84 (250)	≈ 4.52 (6.72)
P4-56-20-	☐	-0	7.87 (200)	10.63 (270)	≈ 4.72 (7.03)
P4-56-25-	☐	-0	9.84 (250)	12.60 (320)	≈ 4.97 (7.39)
P4-56-30-	☐	-0	11.81 (300)	14.57 (370)	≈ 5.23 (7.79)
P4-56-35-	☐	-0	13.78 (350)	16.54 (420)	≈ 5.45 (8.11)
P4-56-40-	☐	-0	15.75 (400)	18.50 (470)	≈ 5.71 (8.50)

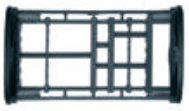
Choose from the radii below for all of the above sizes
Radius (mm) Example: P4-56-20-[250]-0

	200	250	300	350
R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H_2	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)
D_2	44.88 (1140)	57.87 (1470)	66.93 (1700)	76.77 (1950)
K_2	71.65 (1820)	89.57 (2275)	103.90 (2639)	118.23 (3003)

The bending radii [150] [400] [450] [500] are available upon request.
Please contact technical sales for approximate delivery times.

Note: We recommend contacting our technical experts when planning your P4 application.
For distances below 32.8 ft. (10 m) we recommend a self-supporting E-Chain®.

Additional Features



Interior separation available ➤ **Series E4-56**

Robust steel mounting brackets available ➤ **Upon request**

Special P4 guide trough system available ➤ **Upon request**

Extension link for heavy fill weights available ➤ **upon request**

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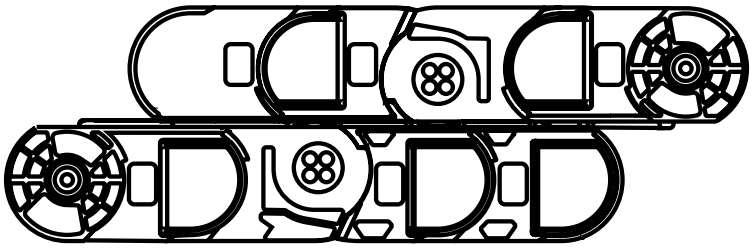
Special solutions for long travel
System P4 - RoI E-Chain® - Series P4-56
Installation Dimensions



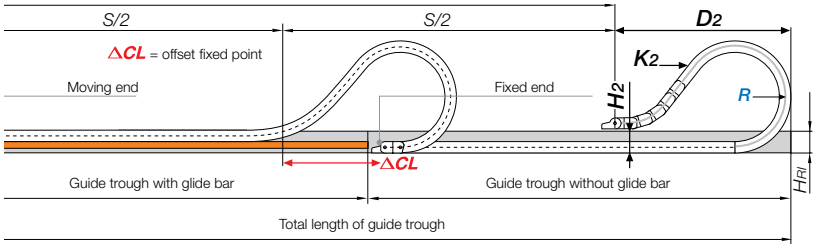
The required clearance height: $H_F = H + 1.97$ in. (50 mm) with 8.74 lbs/ft (13 kg/m) fill weight. Please consult igus® if space is particularly restricted.

Legend

S = Length of travel
R = Bending radius
H_2 = Mounting height
D_2 = Overlength - long travels, gliding
K_2 = Add-on
H_{RI} = Trough inner height

Sliding applications

Long travel lengths up to 2,625 ft. (800 m)
In case of travels less than 32.8 ft. (10m) we recommend an self-supporting E-Chain®.



Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
Chain length: = $_{S}/_{2} + K_2$

R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H_2	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)
D_2	44.88 (1140)	57.87 (1470)	66.93 (1700)	76.77 (1950)
K_2	71.65 (1820)	89.57 (2275)	103.90 (2639)	118.23 (3003)
ΔCL	21.65 (550)	31.50 (800)	39.37 (1000)	47.24 (1200)

Technical Data

Long travels	from 32.8 ft. (10 m) up to max. 2,625 ft. (800 m)
Speed max. rolling / acceleration max. rolling	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Fill weight	max. 8.74 lbs/ft. (13 kg/m)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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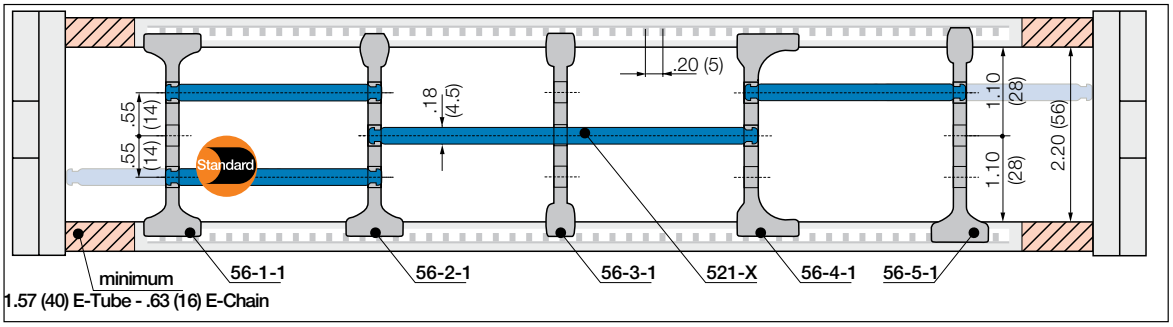
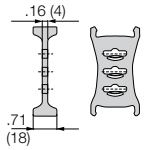
Special solutions for long travel
System P4 - Rol E-Chain® - Series P4-56
Installation Dimensions



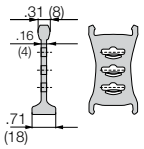
Note Please maintain a lateral spacing of 1.57" (40 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 56-1**
Assembled	**Part No. 56-1-1**

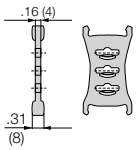
- **Standard separator 56-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator, narrow head

Unassembled	**Part No. 56-2**
Assembled	**Part No. 56-2-1**

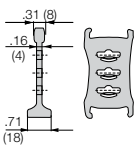
- **Separator 56-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 56-3**
Assembled	**Part No. 56-3-1**

- **Separator 56-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

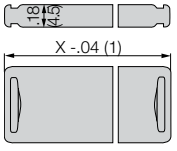


Separator, asymmetrical

Unassembled	**Part No. 56-5**
Assembled	**Part No. 56-5-1**

- **Separator 56-5**
  Locks safely in .30" (7.5 mm) increments
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 520-X**
Assembled	**Part No. 521-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**520-050**	**521-050**	5.91 (150)	**520-150**	**521-150**	11.81 (300)	**520-300**	**521-300**
2.56 (065)	**520-065**	**521-065**	6.89 (175)	**520-175**	**521-175**	17.723 (450)	**520-450**	**521-450**
2.95 (075)	**520-075**	**521-075**	7.87 (200)	**520-200**	**521-200**			
3.94 (100)	**520-100**	**521-100**	8.86 (225)	**520-225**	**521-225**			
4.92 (125)	**520-125**	**521-125**	9.84 (250)	**520-250**	**521-250**			

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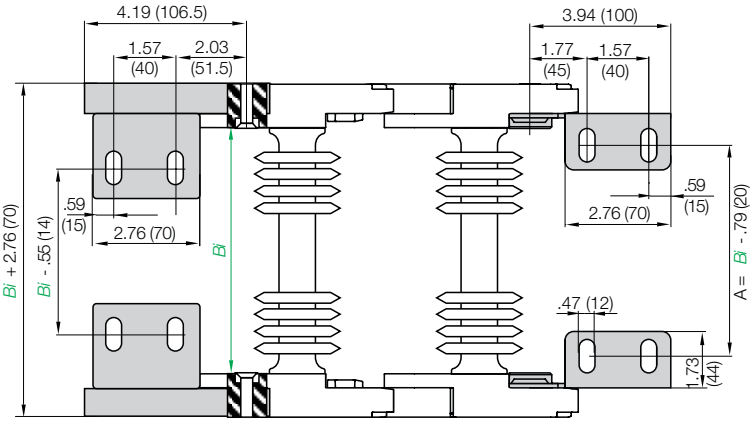
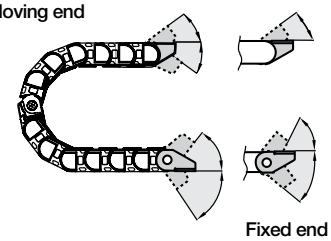
Special solutions for long travel
System P4 - Rol E-Chain® - Series P4-56
Installation Dimensions

Fixed end
Polymer
P4.56100.5.VS.E45

Moving end
Steel
P4.56100.4.VS.E45



Moving end



Fixed end

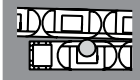
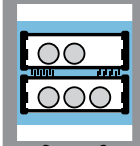
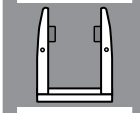
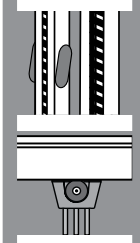
Mounting brackets pivoting - Recommended for rolling applications on long travels

Width Index	Part No. full set for Fixed end and moving end	*Bi* in. (mm)	Dim. A in. (mm)
18- ➤	P4-56100-54-VS-E45	7.09 (180)	6.30 (160)
20- ➤	P4-56100-54-VS-E45	7.87 (200)	7.09 (180)
25- ➤	P4-56100-54-VS-E45	9.84 (250)	9.06 (230)
30- ➤	P4-56100-54-VS-E45	11.81 (300)	11.02 (280)
35- ➤	P4-56100-54-VS-E45	13.78 (350)	12.99 (330)
40- ➤	P4-56100-54-VS-E45	15.75 (400)	14.96 (380)

The mounting brackets for P4 E-Chains® consist of a steel mounting bracket at the moving end and a polymer mounting bracket at the fixed end. This ensure that the rollers move over a plain surface at the fixed end.

Strain relief, clamps, tiewrap plates, and clip-on solutions are available from stock.
For the complete Chainfix range refer to ➤ Chapter 10

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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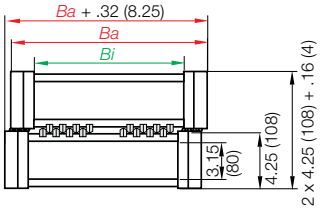
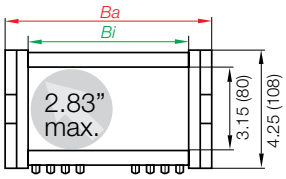
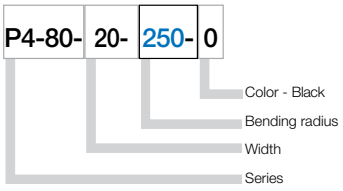
Special solutions for long travel
System P4 - Rol E-Chain® - Series P4-80
Installation Dimensions

P4-80 - openable along both radii, crossbars every link - comb style AUTO-GLIDE crossbars





Part Number Structure



Part Number		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
P4-80-18-	☐ -0	7.36 (187)	10.35 (263)	≈ 5.95 (8.85)
P4-80-20-	☐ -0	7.87 (200)	10.87 (276)	≈ 6.14 (9.13)
P4-80-25-	☐ -0	9.84 (250)	12.83 (326)	≈ 6.36 (9.46)
P4-80-30-	☐ -0	11.81 (300)	14.80 (376)	≈ 6.61 (9.83)
P4-80-35-	☐ -0	13.78 (350)	16.77 (426)	≈ 6.85 (10.19)
P4-80-40-	☐ -0	15.75 (400)	18.74 (476)	≈ 7.03 (10.46)

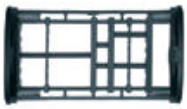
Choose from the radii below for all of the above sizes
Radius (mm) Example: P4-80-20-[250]-0

	250	300	350	500
R	9.84 (250)	11.81 (300)	13.78 (350)	19.68 (500)
H_2	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)
D_2	63.39 (1610)	77.72 (1974)	81.10 (2060)	128.94 (3275)
K_2	70.87 (1800)	90.55 (2300)	106.30 (2700)	161.42 (4100)

The bending radii [150] [200] [400] [450] are available upon request.
Please contact technical sales for approximate delivery times.

Note: We recommend contacting our technical experts when planning your P4 application.
For distances below 32.8 ft. (10 m) we recommend a self-supporting E-Chain®.

Additional Features


Interior separation available ➤ **Series E4-80**

Robust steel mounting brackets available ➤ **Upon request**

Special P4 guide trough system available ➤ **Upon request**

Extension link for heavy fill weights available ➤ **upon request**

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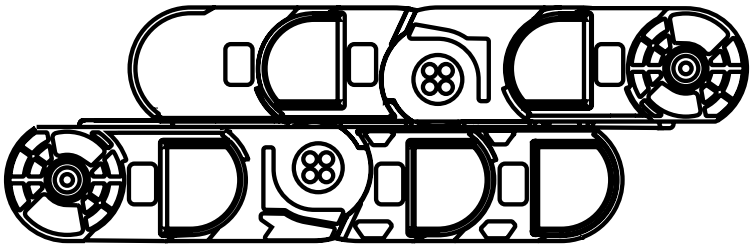
Special solutions for long travel
System P4 - Rol E-Chain® - Series P4-80
Installation Dimensions



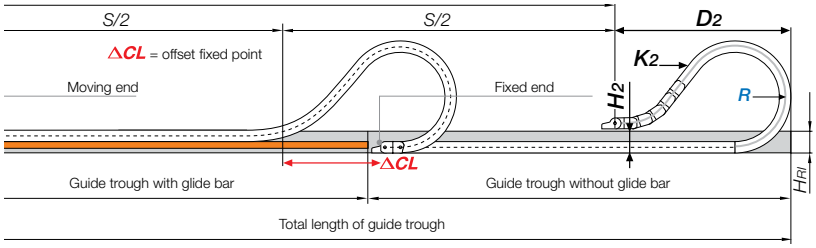
The required clearance height: $H_F = H + 1.97$ in. (50 mm) with 20.16 lbs/ft (30 kg/m) fill weight. Please consult igus® if space is particularly restricted.

Legend

S = Length of travel
R = Bending radius
H_2 = Mounting height
D_2 = Overlength - long travels, gliding
K_2 = Add-on
H_{RI} = Trough inner height

Sliding applications

Long travel lengths up to 2,625 ft. (800 m)
In case of travels less than 32.8 ft. (10m) we recommend an self-supporting E-Chain®.



Pitch per link: = 3.94" (100 mm)
Links per ft (m): = 3.05 (10)
Chain length: = $_S/_2 + K_2$

R	9.84 (250)	11.81 (300)	13.78 (350)	19.68 (500)
H_2	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)
D_2	63.39 (1610)	77.72 (1974)	81.10 (2060)	128.94 (3275)
K_2	70.87 (1800)	90.55 (2300)	106.30 (2700)	161.42 (4100)
ΔCL	23.62 (600)	31.50 (800)	38.19 (970)	60.24 (1530)

Technical Data

Long travels	from 32.8 ft. (10 m) up to max. 2,625 ft. (600 m)
Speed max. rolling / acceleration max. rolling	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Fill weight	max. 20.16 lbs/ft. (30 kg/m)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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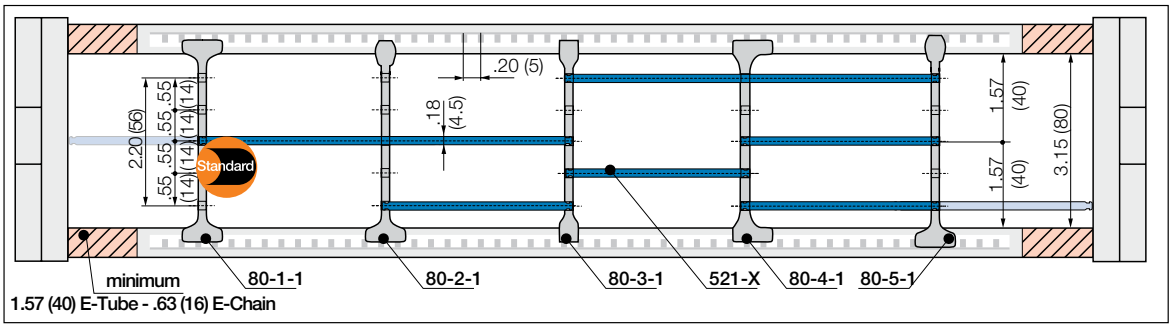
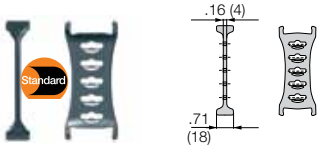
Special solutions for long travel
System P4 - Rol E-Chain® - Series P4-80
Installation Dimensions



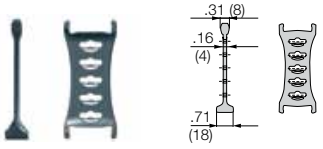
Note Please maintain a lateral spacing of 1.57" (40 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link



Separator, wide base

Unassembled	**Part No. 80-1**
Assembled	**Part No. 80-1-1**

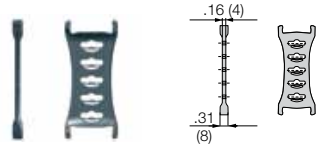
- **Standard separator 80-1**
  for all applications
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator, narrow head

Unassembled	**Part No. 80-2**
Assembled	**Part No. 80-2-1**

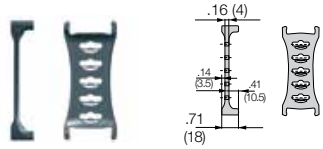
- **Separator 80-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 80-3**
Assembled	**Part No. 80-3-1**

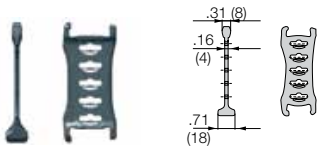
- **Separator 80-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, asymmetrical

Unassembled	**Part No. 80-4**
Assembled	**Part No. 80-4-1**

- **Separator 80-4**
  For side mounted applications
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

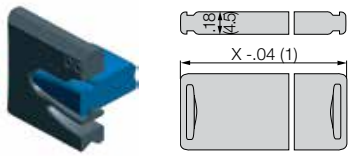


Separator, asymmetrical

Unassembled	**Part No. 80-5**
Assembled	**Part No. 80-5-1**

- **Separator 80-5**
  Locks safely in .30" (7.5 mm) increments
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 520-X**
Assembled	**Part No. 521-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 5 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**520-50**	**521-50**	5.91 (150)	**520-125**	**521-125**	11.81 (300)	**520-125**	**521-125**
2.56 (065)	**520-65**	**521-65**	6.89 (175)	**520-125**	**521-125**	13.78 (350)	**520-125**	**521-125**
2.95 (075)	**520-75**	**521-75**	7.87 (200)	**520-125**	**521-125**	14.76 (375)	**520-125**	**521-125**
3.94 (100)	**520-100**	**521-100**	8.86 (225)	**520-125**	**521-125**	15.24 (387)	**520-125**	**521-125**
4.92 (125)	**520-125**	**521-125**	9.84 (250)	**520-125**	**521-125**	17.723 (450)	**520-125**	**521-125**

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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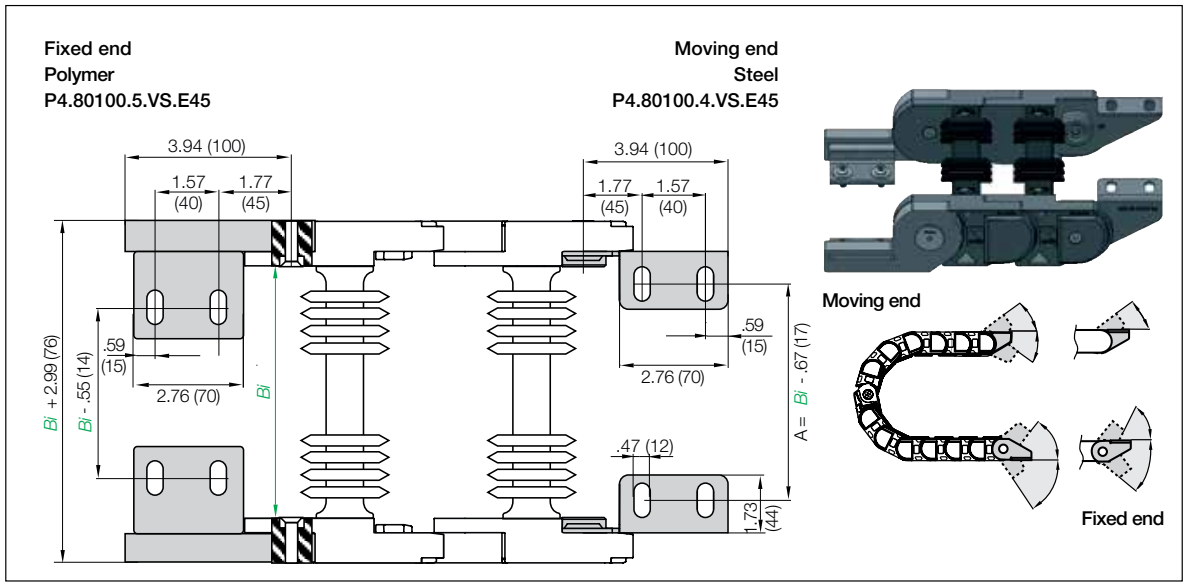
Special solutions for long travel
System P4 - Rol E-Chain® - Series P4-80
Installation Dimensions



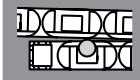
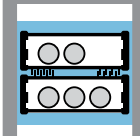
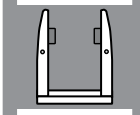
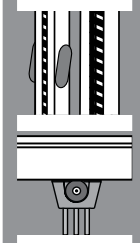
Mounting brackets pivoting - Recommended for rolling applications on long travels

Width Index	Part No. full set for Fixed end and moving end	*Bi* in. (mm)	Dim. A in. (mm)
18- ➤	P4-80100-54-VS-E45	7.09 (180)	6.30 (160)
20- ➤	P4-80100-54-VS-E45	7.87 (200)	7.09 (180)
25- ➤	P4-80100-54-VS-E45	9.84 (250)	9.06 (230)
30- ➤	P4-80100-54-VS-E45	11.81 (300)	11.02 (280)
35- ➤	P4-80100-54-VS-E45	13.78 (350)	12.99 (330)
40- ➤	P4-80100-54-VS-E45	15.75 (400)	14.96 (380)

The mounting brackets for P4 E-Chains® consist of a steel mounting bracket at the moving end and a polymer mounting bracket at the fixed end. This ensure that the rollers move over a plain surface at the fixed end.

Strain relief, clamps, tiewrap plates, and clip-on solutions are available from stock.
For the complete Chainfix range refer to ➤ Chapter 10

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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Rol E-Chain®

igus®

Special solutions for long travel
E4/4 Rol E-Chain®
Rolling instead of gliding

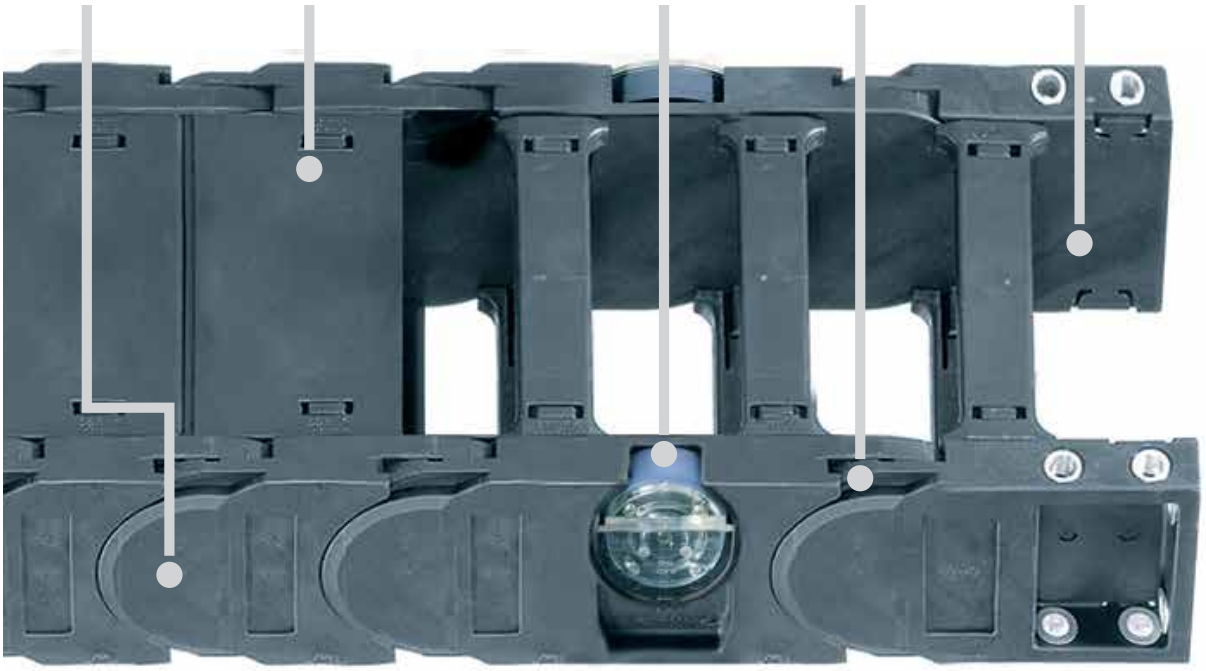
High push/pull forces:
Large bolt connection

Quick to fill:
Lids open on both sides, flip open in the outer radius

Long life:
High-strength rollers, quiet design, stainless steel ball bearings

High stability:
Torsional stiffness through undercut design

Universal:
KMA with attachment points on all sides



Long travels up to 2,625 ft. (800 m), rolling instead of gliding - Rol E-Chain®

Conventionally designed E-Chains® are operated in the glide mode on long travels. The reason for developing the igus® Rol E-Chain® was the necessity to extend the technical limits of this operating mode. The demands on E-Chains® for long travels have increased steadily in recent years. Travels of 2,625 ft. (800 m) also pose new challenges in crane building such as high travel speeds and low noise with extreme cable loads.
Please contact us if you have decided for this product. We'll assist you in the project planning!

- Major reduction in drive power for moving the E-Chain®
- Travels up to 2,625 ft. (800 m) possible
- Speeds up to 19.69 ft/s (6 m/s) possible
- Various roller types for optimum application adaption
- Can be used even in dirty environments
- Available as ready-to-fit, made-to-specifications system with system guarantee

Typical industries and applications

- Cranes
- Warehousing
- Equipment manufacturing
- Gantry robots
- Material handling
- Mining
- Construction machinery

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Special solutions for long travel
E4/4 Rol E-Chain®
Selection Table - Technical Data

Series	Inner height *hi* in. (mm)	Inner width *Bi* in. (mm)	Outer width *Ba* in. (mm)	Outer height *ha* in. (mm)	Bending radius *R* in. (mm)	Maximum Travel ft. (m)
					Rol E-Chain® - with crossbars every link for the most demanding applications	
2828R	1.26 (32)	1.97-15.75 (50-400)	2.91-16.69 (74-424)	2.13 (54)	4.92-11.81 (125-300)**	820 (250)
3838R	1.65 (42)	1.97-15.75 (50-400)	3.03-16.81 (77-427)	2.52 (64)	5.91-13.78 (150-350)**	1,082 (330)
4040R	2.20 (56)	1.97-23.62 (50-600)	3.39-25.04 (86-636)	3.31 (84)	7.87-19.69 (200-500)**	1,641 (500)
5050R	3.15 (80)	1.97-23.62 (50-600)	3.94-25.59 (100-650)	4.25 (108)	9.84-19.69 (250-500)**	1,969 (600)
					Rol E-Chain® - E-Tubes fully enclosed, excellent cable protection	
7728R	1.26 (32)	1.97-11.81 (50-300)	2.91-16.69 (74-424)	2.13 (54)	9.84-11.81 (250-300)	820 (250)
7838R	1.65 (42)	1.97-11.81 (50-300)	3.03-16.81 (77-327)	2.52 (64)	4.92-13.78 (200-350)	1,082 (330)
8840R	2.20 (56)	2.95-18.19 (75-462)	4.37-19.65 (111-499)	3.31 (84)	11.81-19.69 (300-500)	1,641 (500)
9850R	3.15 (80)	2.95-18.19 (75-462)	4.92-20.20 (125-513)	4.25 (108)	11.81-39.37 (300-1000)	1,969 (600)
					Rol E-Chain® - with crossbars every link, Heavy Duty For very long travels with high additional fill weights	
4040RHD*	2.20 (56)	1.97-23.62 (50-600)	4.09-25.75 (104-654)	3.31 (84)	7.87-15.75 (200-400)	1,969 (600)
5050RHD*	3.15 (80)	1.97-23.62 (50-600)	4.33-25.98 (110-660)	4.25 (108)	9.84-19.69 (250-500)	2,625 (800)
					Rol E-Chain® - E-Tubes Heavy Duty fully enclosed, for very long travels with high additional fill weights	
8840RHD*	2.20 (56)	2.24-4.92 (57-125)	5.08-20.31 (129-516)	3.31 (84)	11.81-15.75 (300-400)	1,969 (600)
9850RHD*	3.15 (80)	2.87-5.55 (73-141)	5.31-20.55 (135-522)	4.25 (108)	11.81-19.69 (300-500)	2,625 (800)

**Smaller bending radii (only For E-Chains®) available upon request, please consult igus® for delivery time.

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igus®

Special solutions for long travel E4/4 Rol E-Chain®

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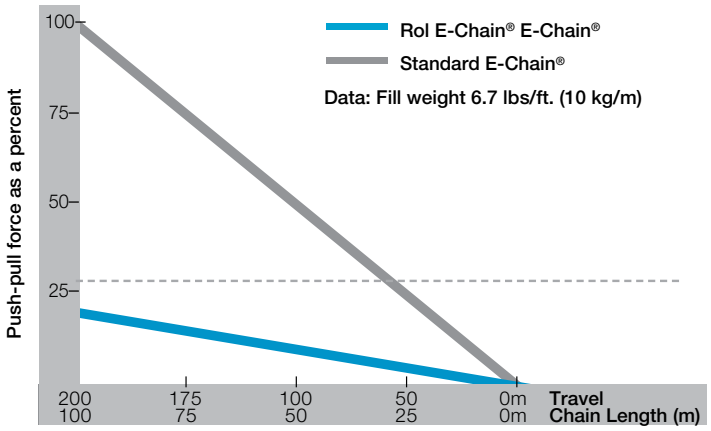
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Product Range Rol E-Chain®

Interior heights of 1.26", 1.65", 2.20", and 3.15" (32, 42, 56, and 80 mm) can be supplied from stock. All interior separation and mounting bracket options of the igus® System E4 are available. The standard guide troughs of the various chains from stock can be used. Rol E-Chains® can be opened on both sides. The Rol E-Chain® is available as a made-to-spec E-Chain Systems®. Chainflex® cables can be harnessed in Rol E-Chain to your specifications by igus® specialists and are packaged in an installation-friendly manner. Depending on the Rol E-Chain length it can be delivered on a drum. If cables from the Chainflex® product line are to be used, we will also be happy to provide a guarantee for the entire system. **Systems of this type should be designed by our system design engineers. We will be more than willing to submit an offer to you. Please contact igus®.**

Reduce push/pull forces by over 75% with igus® Rol E-Chain



The Rol E-Chain® roller E-Chain® compared with a conventional E-Chain System®

Shipyard-Crane: 590.5 ft. (180 m) travel, 20.16 lbs/ft (30 kg/m) fill weight: No problems since installation in 2001 with igus® Rol E-Chain®

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Special solutions for long travel E4/4 Rol E-Chain®

igus® Rol E-Chain® Series 5050R in a steel plant in india with highly corrosive atmosphere -
Travel = 72 ft. (22 m), v = 3.28 ft/s (1 m/s), a = 3.28 ft/s² (1 m/s²)

Power plant application with igus® Rol E-Chain® 4040R -
Travel 151 ft. (46 m), Speed 4.92 ft/s (1.5 m/s), Fill weight 3.56 lbs/ft (5.3 kg/m)

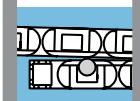
Assembled system in a ship unloading crane with igus® 5050RHD - Travel 248 ft. (106 m), Speed 13.12 ft/s (4 m/s), Fill weight 16.8 lbs/ft (25 kg/m)

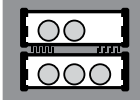
Series 4040R on a coal unloading system -
Travel 623 ft. (190 m), Speed 1.6 ft/s (0.5 m/s), Fill weight 5.41 lbs/ft (8.05 kg/m)

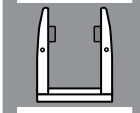
Series 4040R in steel works environment -
Travel 34.5 ft. (10.5 m), Speed 197 ft/min (60 m/min), Fill weight 4.09 lbs/ft (6.084 kg/m)

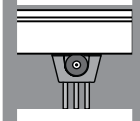
igus® E-Chains® 5050RHD Rol E-Chain® in an igus® Aluminum SuperTrough = 75% less driving power

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS









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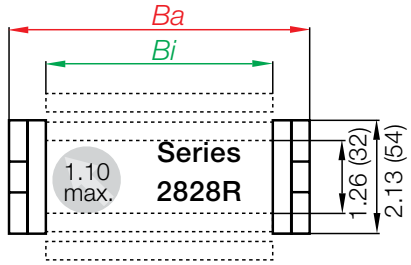
igus®

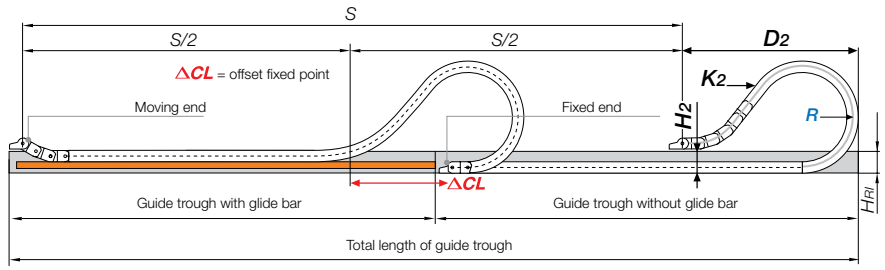
Special solutions for long travel
E4/4 Rol E-Chain® - Series 2828R/R7728R

Series 2828R - crossbars every link, openable along both radii
Series 7728R - fully enclosed, hinged, snap-open removable lids



Sliding applications

Long travel lengths up to 820 ft. (250 m) fill weight up to 4.03 lbs/ft (6 kg/m)
In case of travels less than 32.8 ft. (10m) we recommend a self-supporting E-Chain®.
NOTE: Systems of this type should be designed by our system design engineers. Please contact igus® for assistance with your application.



Legend

S = Length of travel
R = Bending radius
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

R	4.92 (125**)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
H_2 +10	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
D_2 +50	22.64 (575)	27.56 (700)	33.27 (845)	37.80 (960)	40.94 (1040)	50.00 (1270)	60.63 (1540)
K_2	35.28 (896)	41.89 (1064)	50.71 (1288)	57.32 (1456)	63.94 (1624)	74.96 (1904)	90.39 (2296)
ΔCL	10.63 (270)	14.96 (380)	19.29 (490)	23.62 (600)	27.56 (700)	33.07 (840)	41.54 (1055)

Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.48 (18)
For center mount applications:
Chain length: = $\frac{S}{2} + K_2$

** This radius not available for E-Tubes

Available Accessories

Optimized, cable-friendly interior separation program

Pivoting KMA mounting bracket with all-sides attachment

Steel mounting brackets, pivoting, robust and electrically conductive

Extension links - for extremely wide E-Chains® up to 9.84 ft. (3.0 m)

Aluminum SuperTrough, Basic Version

Long travels	from 32.8 ft. (10 m) up to max. 820 ft. (250 m)
Speed max. rolling / acceleration max. rolling	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

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Special solutions for long travel
E4/4 RoI E-Chain® - Series 2828R/7728R
Installation Dimensions

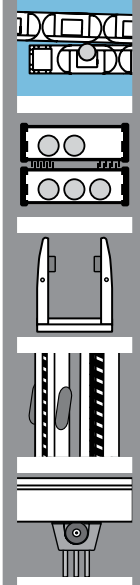
Supplement part number with required radius. Example: 2828R-30-300-0
Pitch: 2.20 in. (56mm) per link links/ft (m) = 5.49 (18)

Part Number						Weight	
Crossbars Every Link	Tube Version			*Bi* in. (mm)	*Ba* in. (mm)	2828R lbs/ft (kg/m)	7728R lbs/ft (kg/m)
2828R-05-	[1]7728R-05-		-0	1.97 (50)	2.91 (74)	≈ 1.16 (1.73)	≈ 1.76 (2.63)
2828R-06-			-0	2.68 (68)	3.62 (92)	≈ 1.20 (1.79)	–
2828R-07-	7728R-07-		-0	2.95 (75)	3.90 (99)	≈ 1.24 (1.84)	≈ 1.84 (2.75)
2828R-087-			-0	3.43 (87)	4.37 (111)	≈ 1.30 (1.93)	–
2828R-097			-0	3.82 (97)	4.72 (120)	≈ 1.34 (1.99)	–
2828R-10-	7728R-10-		-0	3.94 (100)	4.88 (124)	≈ 1.36 (2.02)	≈ 1.90 (2.83)
2828R-11-	7728R-11-		-0	4.25 (108)	5.20 (132)	≈ 1.40 (2.08)	≈ 1.98 (2.94)
2828R-112-			-0	4.41(112)	5.39 (137)	≈ 1.44 (2.15)	–
2828R-12-	7728R-12-		-0	4.92 (125)	5.87 (149)	≈ 1.48 (2.20)	≈ 2.04 (3.03)
2828R-137-			-0	5.39 (137)	6.38 (162)	≈ 1.54 (2.29)	–
2828R-15-	7728R-15-		-0	5.91 (150)	6.85 (174)	≈ 1.60 (2.38)	≈ 2.14 (3.19)
2828R-162-			-0	6.38 (162)	7.36 (187)	≈ 1.64 (2.44)	–
2828R-17-	7728R-17-		-0	6.61 (168)	7.56 (192)	≈ 1.69 (2.51)	≈ 2.28 (3.39)
2828R-18-			-0	6.89 (175)	7.83 (199)	≈ 1.72 (2.56)	–
2828R-187-			-0	7.36 (187)	8.35 (212)	≈ 1.78 (2.65)	–
2828R-20-	7728R-20-		-0	7.87 (200)	8.82 (224)	≈ 1.84 (2.74)	≈ 2.41 (3.59)
2828R-212-			-0	8.35 (212)	9.33 (237)	≈ 1.93 (2.87)	–
2828R-23-			-0	8.86 (225)	9.80 (249)	≈ 1.96 (2.92)	–
2828R-237-			-0	9.33 (237)	10.31 (262)	≈ 2.05 (3.05)	–
2828R-25-	7728R-25-		-0	9.84 (250)	10.79 (274)	≈ 2.08 (3.10)	≈ 2.72 (4.04)
2828R-262-			-0	10.31 (262)	11.26 (286)	≈ 2.14 (3.19)	–
2828R-28			-0	10.83 (275)	11.77 (299)	≈ 2.20 (3.28)	–
2828R-29-			-0	11.30 (287)	12.28 (312)	≈ 2.26 (3.37)	–
2828R-30-	7728R-30-		-0	11.81 (300)	12.76 (324)	≈ 2.33 (3.46)	≈ 2.98 (4.43)
2828R-312-			-0	12.28 (312)	13.27 (337)	≈ 2.41 (3.59)	–
2828R-325-			-0	12.79 (325)	13.74 (349)	≈ 2.47 (3.68)	–
2828R-337-			-0	13.27 (337)	14.25 (362)	≈ 2.53 (3.77)	–
2828R-350-			-0	13.78 (350)	14.72 (374)	≈ 2.59 (3.86)	–
2828R-362-			-0	14.25 (362)	15.24 (387)	≈ 2.65 (3.95)	–
2828R-375-			-0	14.76 (375)	15.71 (399)	≈ 2.72 (4.04)	–
2828R-387-			-0	15.24 (387)	16.22 (412)	≈ 2.76 (4.11)	–
2828R-400			-0	15.75 (400)	16.69 (424)	≈ 2.81 (4.18)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: 2828R-30-300-0

	125**	150	175	200	220	250	300
R	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
H_2 +10	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
D_2 +50	22.64 (575)	27.56 (700)	33.27 (845)	37.80 (960)	40.94 (1040)	50.00 (1270)	60.63 (1540)
K_2	35.28 (896)	41.89 (1064)	50.71 (1288)	57.32 (1456)	63.94 (1624)	74.96 (1904)	90.39 (2296)

** This radius not available for E-Tubes
[1] Removable lid only, no hinged option



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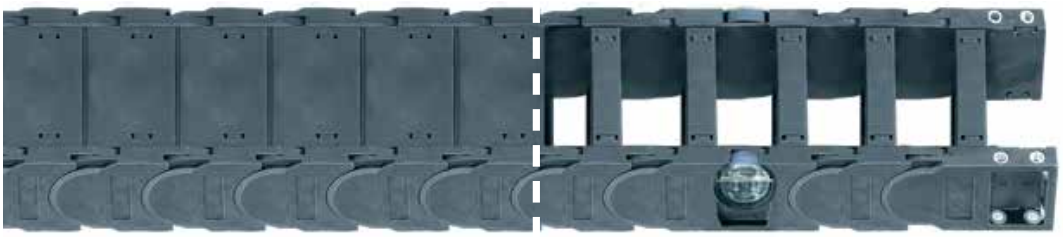
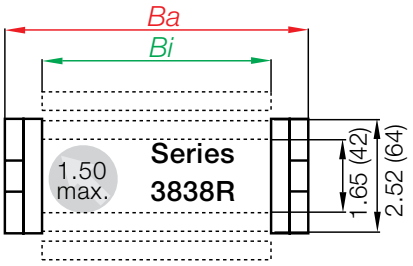
Special solutions for long travel
E4/4 Rol E-Chain® - Series 3838R/R7838R

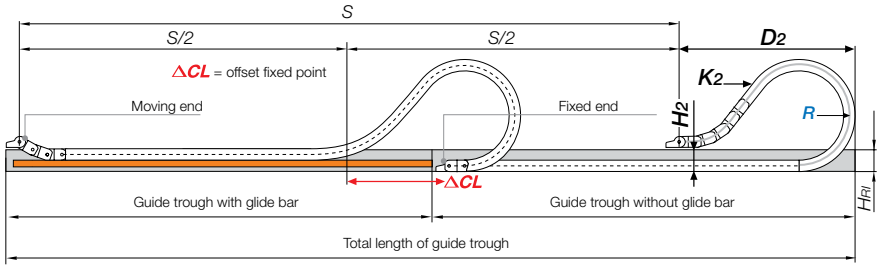


Series 3838R - crossbars every link, openable along both radii
Series 7838R - fully enclosed, hinged, snap-open removable lids



Sliding applications

Long travel lengths up to 1,083 ft. (330 m), Fill weights up to 4.70 lbs/ft (7 kg/m)
In case of travels less than 32.8 ft. (10m) we recommend an self-supporting E-Chain®.
NOTE: Systems of this type should be designed by our system design engineers. Please contact igus® for assistance with your application.



Legend

S = Length of travel
R = Bending radius
H_{Ri} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

R	5.91 (150**)	6.69 (170**)	7.87 (200)	8.46 (215)	9.84 (250)	11.81 (300)	13.78 (350)
$H_{2\ +10}$	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)
$D_{2\ +50}$	26.77 (680)	32.28 (820)	39.76 (1010)	40.55 (1030)	49.02 (1245)	64.17 (1630)	72.05 (1830)
K_2	42.13 (107)	50.12 (1273)	60.67 (1541)	63.31 (1608)	73.86 (1876)	97.60 (2479)	108.15 (2747)
ΔCL	13.58 (345)	17.91 (455)	24.02 (610)	23.38 (670)	32.48 (825)	42.32 (1075)	50.59 (1285)

Pitch per link: = 2.64" (67 mm)
Links per ft (m): = 4.57 (15)
For center mount applications:
Chain length = $\Delta S/2 + K$

** This radius not available for E-Tubes

Available Accessories

Optimized, cable-friendly interior separation program

Pivoting KMA mounting bracket with all-sides attachment

Steel mounting brackets, pivoting, robust and electrically conductive

Extension links - for extremely wide E-Chains® up to 9.84 ft. (3.0 m)

Aluminum SuperTrough, Basic Version

Long travels	from 32.8 ft. (10 m) up to max. 1,083 ft. (330 m)
Speed max. rolling / acceleration max. rolling	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

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Special solutions for long travel
E4/4 Rol E-Chain® - Series 3838R/R7838R
Installation Dimensions

Supplement part number with required radius. Example: 3838R-30-300-0
Pitch: 2.64 in. (67mm) per link, links/ft (m) = 4.57 (15)

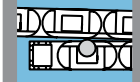
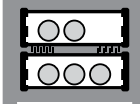
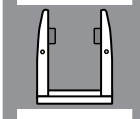
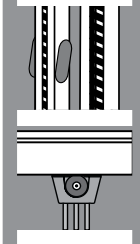
Part Number				Weight	
Crossbars Every Link	Tube Version		*Bi* in. (mm)	*Ba* in. (mm)	3838R lbs/ft (kg/m)	7838R lbs/ft (kg/m)
3838R-05-	[1]7838R-05-	-0	1.97 (50)	3.03 (77)	≈ 1.38 (2.06)	≈ 1.51 (2.25)
3838R-06-		-0	2.68 (68)	3.74 (95)	≈ 1.40 (2.09)	–
3838R-07-	7838R-07-	-0	2.95 (75)	4.02 (102)	≈ 1.42 (2.12)	≈ 1.60 (2.38)
3838R-087-		-0	3.43 (87)	4.53 (115)	≈ 1.47 (2.18)	–
3838R-097-		-0	3.82 (97)	4.84 (123)	≈ 1.50 (2.23)	–
3838R-10-	7838R-10-	-0	3.94 (100)	5.00 (127)	≈ 1.51 (2.25)	≈ 1.75 (2.60)
3838R-11-	7838R-11-	-0	4.25 (108)	5.31 (135)	≈ 1.55 (2.30)	≈ 1.78 (2.65)
3838R-112-		-0	4.41(112)	5.51 (140)	≈ 1.55 (2.30)	–
3838R-12-	7838R-12-	-0	4.92 (125)	5.98 (152)	≈ 1.61 (2.40)	≈ 1.89 (2.81)
3838R-137-		-0	5.39 (137)	6.50 (165)	≈ 1.64 (2.44)	–
3838R-15-	7838R-15-	-0	5.91 (150)	6.97 (177)	≈ 1.70 (2.53)	≈ 2.06 (3.07)
3838R-162-		-0	6.38 (162)	7.48 (190)	≈ 1.71 (2.55)	–
3838R-17-	7838R-17-	-0	6.61 (168)	7.68 (195)	≈ 1.76 (2.62)	≈ 2.18 (3.24)
3838R-18-		-0	6.89 (175)	7.95 (202)	≈ 1.76 (2.62)	–
3838R-187-		-0	7.36 (187)	8.46 (215)	≈ 1.81 (2.69)	–
3838R-20-	7838R-20-	-0	7.87 (200)	8.94 (227)	≈ 1.86 (2.77)	≈ 2.37 (3.53)
3838R-212-		-0	8.35 (212)	9.45 (240)	≈ 1.91 (2.84)	–
3838R-23-		-0	8.86 (225)	9.92 (252)	≈ 1.96 (2.92)	–
3838R-237-		-0	9.33 (237)	10.43 (265)	≈ 1.99 (2.96)	–
3838R-25-	7838R-25-	-0	9.84 (250)	10.91 (277)	≈ 2.05 (3.05)	≈ 2.91 (4.33)
3838R-262-		-0	10.31 (262)	11.42 (290)	≈ 2.06 (3.06)	–
3838R-28		-0	10.83 (275)	11.89 (302)	≈ 2.13 (3.17)	–
3838R-29-		-0	11.30 (287)	12.40 (315)	≈ 2.14 (3.19)	–
3838R-30-	7838R-30-	-0	11.81 (300)	12.87 (327)	≈ 2.23 (3.32)	≈ 3.29 (4.89)
3838R-312-		-0	12.28 (312)	13.39 (340)	≈ 2.24 (3.34)	–
3838R-325-		-0	12.79 (325)	13.86 (352)	≈ 2.29 (3.41)	–
3838R-337-		-0	13.27 (337)	14.37 (365)	≈ 2.33 (3.46)	–
3838R-350-		-0	13.78 (350)	15.41 (377)	≈ 2.47 (3.68)	–
3838R-362-		-0	14.25 (362)	15.36 (390)	≈ 2.51 (3.74)	–
3838R-375-		-0	14.76 (375)	15.83 (402)	≈ 2.55 (3.79)	–
3838R-387-		-0	15.24 (387)	16.34 (415)	≈ 2.59 (3.85)	–
3838R-400		-0	15.75 (400)	16.81 (427)	≈ 2.62 (3.90)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: 3838R-30-300-0

	150**	170**	200	215	250	300	350
R	5.91 (150)	6.69 (170)	7.87 (200)	8.46 (215)	9.84 (250)	11.81 (300)	13.78 (350)
H_2 +10	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)
D_2 +50	26.77 (680)	32.28 (820)	39.76 (1010)	40.55 (1030)	49.02 (1245)	64.17 (1630)	72.05 (1830)
K_2	42.13 (107)	50.12 (1273)	60.67 (1541)	63.31 (1608)	73.86 (1876)	97.60 (2479)	108.15 (2747)

** This radius not available for E-Tubes
[1] Removable lid only, no hinged option

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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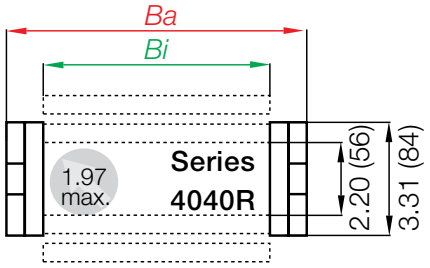
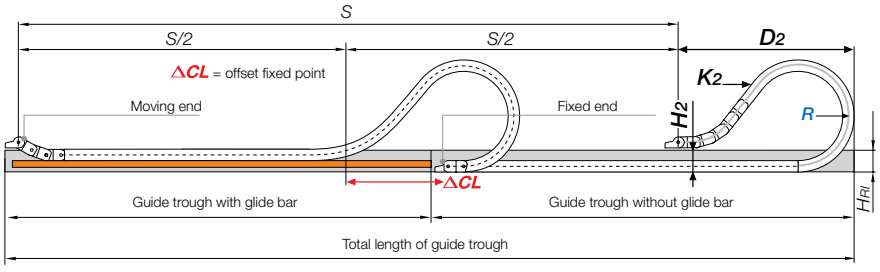
Special solutions for long travel
E4/4 Rol E-Chain® - Series 4040R/R8840R

Series 4040R - crossbars every link, openable along both radii
Series 8840R - fully enclosed, hinged, snap-open removable lids



Sliding applications

Long travel lengths up to 1,641 ft. (500 m), Fill weights up to 8.74 lbs/ft (13 kg/m)
In case of travels less than 32.8 ft. (10m) we recommend an self-supporting E-Chain®.
NOTE: Systems of this type should be designed by our system design engineers. Please contact igus® for assistance with your application.



Legend

S = Length of travel
R = Bending radius
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)
H_2 +10	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)
D_2 +50	48.43 (1230)	53.94 (1370)	62.99 (1600)	72.83 (1850)	81.50 (2070)
K_2	71.65 (1820)	85.98 (2184)	100.31 (2548)	114.65 (2912)	128.98 (3276)
ΔCL	20.67 (525)	27.95 (710)	35.43 (900)	42.91 (1090)	50.20 (1275)

Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $S/2 + K$

Available Accessories

Optimized, cable-friendly interior separation program

Pivoting KMA mounting bracket with all-sides attachment

Steel mounting brackets, pivoting, robust and electrically conductive

Extension links - for extremely wide E-Chains® up to 9.84 ft. (3.0 m)

Aluminum SuperTrough, Basic Version

Long travels	from 32.8 ft. (10 m) up to max. 1,641 ft. (500 m)
Speed max. rolling / acceleration max. rolling	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

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E4/4 Rol E-Chain® - Series 4040R/R8840R
Installation Dimensions

igus®

4040R
8840R

2.20”

Supplement part number with required radius. Example: 4040R-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

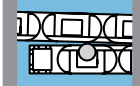
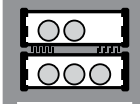
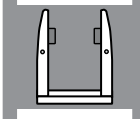
Part Number			Bi	Ba	Weight	
Crossbars Every Link	Tube Version		in. (mm)	in. (mm)	4040R lbs/ft (kg/m)	8840R lbs/ft (kg/m)
4040R-05-		-0	1.97 (50)	3.39 (86)	≈ 2.45 (3.65)	–
4040R-06-		-0	2.56 (65)	3.98 (101)	≈ 2.47 (3.67)	–
4040R-07-	[1]8840R-07-	-0	2.95 (75)	4.37 (111)	≈ 2.54 (3.78)	≈ 2.85 (4.24)
4040R-08-		-0	3.43 (87)	4.84 (123)	≈ 2.57 (3.83)	–
4040R-10-	8840R-10-	-0	3.94 (100)	5.35 (136)	≈ 2.66 (3.96)	≈ 3.04 (4.52)
4040R-11-		-0	4.41 (112)	5.87 (149)	≈ 2.75 (4.09)	–
4040R-12-	8840R-12-	-0	4.92 (125)	6.34 (161)	≈ 2.80 (4.16)	≈ 3.28 (4.88)
4040R-13-		-0	5.39 (137)	6.85 (174)	≈ 2.88 (4.29)	–
4040R-15-	8840R-15-	-0	5.91 (150)	7.32 (186)	≈ 2.93 (4.36)	≈ 3.57 (5.31)
4040R-16-		-0	6.38 (162)	7.83 (199)	≈ 3.00 (4.47)	–
4040R-17-	8840R-17	-0	6.89 (175)	8.31 (211)	≈ 3.08 (4.58)	≈ 3.74 (5.56)
4040R-18-		-0	7.36 (187)	8.81 (224)	≈ 3.15 (4.69)	–
4040R-20-	8840R-20-	-0	7.87 (200)	9.29 (236)	≈ 3.17 (4.71)	≈ 3.96 (5.89)
4040R-21-		-0	8.35 (212)	9.80 (249)	≈ 3.24 (4.82)	–
4040R-22-		-0	8.86 (225)	10.28 (261)	≈ 3.28 (4.88)	–
4040R-23-		-0	9.33 (237)	10.79 (274)	≈ 3.37 (5.02)	–
4040R-25-	8840R-25-	-0	9.84 (250)	11.26 (286)	≈ 3.43 (5.10)	≈ 4.44 (6.61)
4040R-26-		-0	10.31 (262)	11.77 (299)	≈ 3.49 (5.19)	–
4040R-27-	8840R-27	-0	10.83 (275)	12.24 (311)	≈ 3.56 (5.30)	≈ 4.63 (6.89)
4040R-28-		-0	11.30 (287)	12.76 (324)	≈ 3.58 (5.32)	–
4040R-30-	8840R-30-	-0	11.81 (300)	13.23 (336)	≈ 3.72 (5.54)	≈ 4.89 (7.27)
4040R-31-		-0	12.28 (312)	13.74 (349)	≈ 3.75 (5.58)	–
4040R-32-		-0	12.79 (325)	14.21 (361)	≈ 3.78 (5.63)	–
4040R-33-		-0	13.27 (337)	14.72 (374)	≈ 3.90 (5.81)	–
4040R-35-	8840R-35-	-0	13.78 (350)	15.20 (386)	≈ 4.01 (5.96)	≈ 5.39 (8.02)
4040R-36-		-0	14.25 (362)	15.71 (399)	≈ 4.01 (5.96)	–
4040R-37-		-0	14.76 (375)	16.18 (411)	≈ 4.02 (5.98)	–
4040R-38-		-0	15.24 (387)	16.69 (424)	≈ 4.08 (6.07)	
4040R-40-	8840R-40-	-0	15.75 (400)	17.17 (436)	≈ 4.21 (6.27)	≈ 6.04 (8.98)
4040R-41-		-0	16.22 (412)	17.68 (449)	≈ 4.31 (6.42)	–
4040R-42-		-0	16.73 (425)	18.15 (461)	≈ 4.42 (6.58)	–
4040R-43-		-0	17.20 (437)	18.66 (474)	≈ 4.46 (6.64)	–
4040R-45-		-0	17.72 (450)	19.13 (486)	≈ 4.51 (6.71)	–
4040R-46-	8840R-46-	-0	18.19 (462)	19.65 (499)	≈ 4.52 (6.73)	≈ 6.34 (9.44)
4040R-47-		-0	18.70 (475)	20.12 (511)	≈ 4.61 (6.86)	–
4040R-48-		-0	19.17 (487)	20.63 (524)	≈ 4.63 (6.88)	–
4040R-50-		-0	19.69 (500)	21.10 (536)	≈ 4.70 (7.00)	–
4040R-51-		-0	20.16 (512)	21.61 (549)	≈ 4.72 (7.02)	–
4040R-52-		-0	20.67 (525)	22.09 (561)	≈ 4.74 (7.06)	–
4040R-53-		-0	21.14 (537)	22.60 (574)	≈ 4.85 (7.22)	–
4040R-55-		-0	21.65 (550)	23.07 (586)	≈ 5.17 (7.70)	–
4040R-60-		-0	23.62 (600)	25.04 (636)	≈ 5.31 (7.90)	–

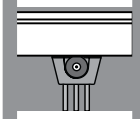
Choose from the radii below for all of the above sizes
Radius (mm) Example: 4040R-30-300-0

	200**	250**	300	350	400
R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)
H_2 +10	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)
D_2 +50	48.43 (1230)	53.94 (1370)	62.99 (1600)	72.83 (1850)	81.50 (2070)
K_2	71.65 (1820)	85.98 (2184)	100.31 (2548)	114.65 (2912)	128.98 (3276)

** This radius not available for E-Tubes
[1] Removable lid only, no hinged option

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



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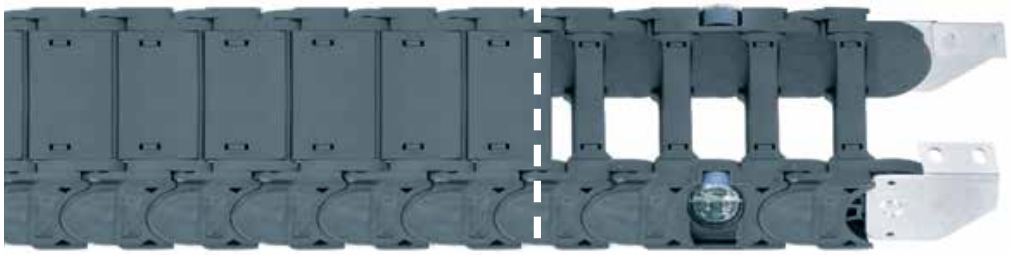
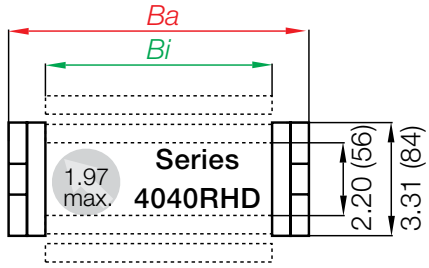
Special solutions for long travel
E4/4 Rol E-Chain® - Series 4040RHD/R8840RHD

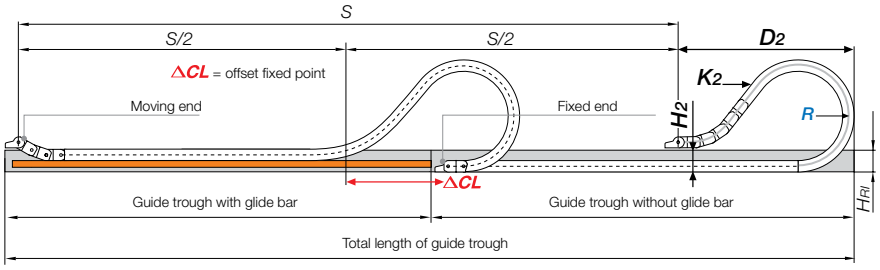


Series 4040RHD - crossbars every link, openable along both radii
Series 8840RHD - fully enclosed, hinged, snap-open removable lids



Sliding applications

Long travel lengths up to 1,969 ft. (600 m), Fill weights up to 10.75 lbs/ft (16 kg/m)
In case of travels less than 32.8 ft. (10m) we recommend an self-supporting E-Chain®.
NOTE: Systems of this type should be designed by our system design engineers. Please contact igus® for assistance with your application.



R	7.87 (200**)	9.84 (250**)	11.81 (300)	13.78 (350)	15.75 (400)
H_2 +10	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)
D_2 +50	45.08 (1145)	54.72 (1390)	63.78 (1620)	73.62 (1870)	82.48 (2095)
K_2	71.65 (1820)	85.98 (2184)	100.31 (2548)	114.65 (2912)	128.98 (3276)
ΔCL	20.67 (525)	27.95 (710)	35.43 (900)	42.91 (1090)	50.20 (1275)

Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $_{S}/_{2} + K$

Legend

S = Length of travel
R = Bending radius
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

Available Accessories

Optimized, cable-friendly interior separation program

Steel mounting brackets, pivoting, robust and electrically conductive

Aluminum SuperTrough, Basic Version

Long travels	from 32.8 ft. (10 m) up to max. 1,969 ft. (600 m)
Speed max. rolling / acceleration max. rolling	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E4/4 Rol E-Chain® - Series 4040RHD/R8840RHD Installation Dimensions

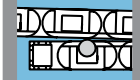
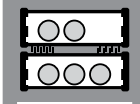
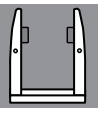
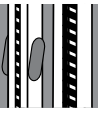
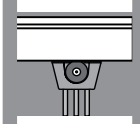
Supplement part number with required radius. Example: 4040HD-30-[300]-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

Part Number			*Bi*	*Ba*	Weight	
Crossbars Every Link	Tube Version		in. (mm)	in. (mm)	4040RHD lbs/ft (kg/m)	8840RHD lbs/ft (kg/m)
4040RHD-05-		[ ]-0	1.97 (50)	4.09 (104)	≈ 3.38 (5.03)	–
4040RHD-06-		[ ]-0	2.56 (65)	4.69 (119)	≈ 3.44 (5.12)	–
4040RHD-07-	[1]8840RHD-07-	[ ]-0	2.95 (75)	5.08 (129)	≈ 3.49 (5.19)	≈ 3.79 (5.64)
4040RHD-08-		[ ]-0	3.43 (87)	5.55 (141)	≈ 3.54 (5.27)	–
4040RHD-10-	8840RHD-10-	[ ]-0	3.94 (100)	6.06 (154)	≈ 3.60 (5.36)	≈ 3.98 (5.93)
4040RHD-11-		[ ]-0	4.41 (112)	6.54 (166)	≈ 3.68 (5.48)	–
4040RHD-12-	8840RHD-12-	[ ]-0	4.92 (125)	7.05 (179)	≈ 3.74 (5.56)	≈ 4.23 (6.29)
4040RHD-13-		[ ]-0	5.39 (137)	7.52 (191)	≈ 3.82 (5.69)	–
4040RHD-15-	8840RHD-15-	[ ]-0	5.91 (150)	8.03 (204)	≈ 3.85 (5.73)	≈ 4.48 (6.67)
4040RHD-16-		[ ]-0	6.38 (162)	8.50 (216)	≈ 3.92 (5.84)	–
4040RHD-17-	8840RHD-17-	[ ]-0	6.89 (175)	9.02 (229)	≈ 4.01 (5.97)	≈ 4.69 (6.98)
4040RHD-18-		[ ]-0	7.36 (187)	9.49 (241)	≈ 4.09 (6.09)	–
4040RHD-20-	8840RHD-20-	[ ]-0	7.87 (200)	10.00 (254)	≈ 4.13 (6.14)	≈ 4.90 (7.29)
4040RHD-21-		[ ]-0	8.35 (212)	10.47 (266)	≈ 4.17 (6.21)	–
4040RHD-22-		[ ]-0	8.86 (225)	10.98 (279)	≈ 4.22 (6.28)	–
4040RHD-23-		[ ]-0	9.33 (237)	11.46 (291)	≈ 4.29 (6.39)	–
4040RHD-25-	8840RHD-25-	[ ]-0	9.84 (250)	11.97 (304)	≈ 4.37 (6.50)	≈ 5.39 (8.02)
4040RHD-26-		[ ]-0	10.31 (262)	12.44 (316)	≈ 4.43 (6.59)	–
4040RHD-27-	8840RHD-27	[ ]-0	10.83 (275)	12.95 (329)	≈ 4.50 (6.70)	≈ 5.63 (8.38)
4040RHD-28-		[ ]-0	11.30 (287)	13.43 (341)	≈ 4.54 (6.75)	–
4040RHD-30-	8840RHD-30-	[ ]-0	11.81 (300)	13.94 (354)	≈ 4.64 (6.91)	≈ 5.83 (8.68)
4040RHD-31-		[ ]-0	12.28 (312)	14.41 (366)	≈ 4.66 (6.94)	–
4040RHD-32-		[ ]-0	12.79 (325)	14.92 (379)	≈ 4.74 (7.05)	–
4040RHD-33-		[ ]-0	13.27 (337)	15.39 (391)	≈ 4.82 (7.17)	–
4040RHD-35-	8840RHD-35-	[ ]-0	13.78 (350)	15.91 (404)	≈ 4.95 (7.37)	≈ 6.30 (9.38)
4040RHD-36-		[ ]-0	14.25 (362)	16.38 (416)	≈ 4.96 (7.38)	–
4040RHD-37-		[ ]-0	14.76 (375)	16.89 (429)	≈ 4.96 (7.38)	–
4040RHD-38-		[ ]-0	15.24 (387)	17.36 (441)	≈ 5.03 (7.49)	–
4040RHD-40-	8840RHD-40-	[ ]-0	15.75 (400)	17.87 (454)	≈ 5.21 (7.76)	≈ 6.98 (10.38)
4040RHD-41-		[ ]-0	16.22 (412)	18.35 (466)	≈ 5.16 (7.68)	–
4040RHD-42-		[ ]-0	16.73 (425)	18.86 (479)	≈ 5.36 (7.98)	–
4040RHD-43-		[ ]-0	17.20 (437)	19.33 (491)	≈ 5.25 (7.82)	–
4040RHD-45-		[ ]-0	17.72 (450)	19.84 (504)	≈ 5.48 (8.15)	–
4040RHD-46-	8840RHD-46-	[ ]-0	18.19 (462)	20.31 (516)	≈ 5.44 (8.10)	≈ 7.29 (10.85)
4040RHD-47-		[ ]-0	18.70 (475)	20.83 (529)	≈ 5.47 (8.14)	–
4040RHD-48-		[ ]-0	19.17 (487)	21.30 (541)	≈ 5.64 (8.39)	–
4040RHD-50-		[ ]-0	19.69 (500)	21.81 (554)	≈ 5.70 (8.48)	–
4040RHD-51-		[ ]-0	20.16 (512)	22.28 (566)	≈ 5.64 (8.40)	–
4040RHD-52-		[ ]-0	20.67 (525)	22.80 (579)	≈ 5.76 (8.57)	–
4040RHD-53-		[ ]-0	21.14 (537)	23.27 (591)	≈ 5.82 (8.66)	–
4040RHD-55-		[ ]-0	21.65 (550)	23.78 (604)	≈ 6.10 (9.08)	–
4040RHD-60-		[ ]-0	23.62 (600)	25.75 (654)	≈ 6.26 (9.31)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: 4040RHD-30-[300]-0

	[200**]	[250**]	[300]	[350]	[400]
R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)
H_2	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)
D_2	45.08 (1145)	54.72 (1390)	63.78 (1620)	73.62 (1870)	82.48 (2095)
K_2	71.65 (1820)	85.98 (2184)	100.31 (2548)	114.65 (2912)	128.98 (3276)

** This radius is not available for the R8840HD Series *Removable lid only, no hinged option

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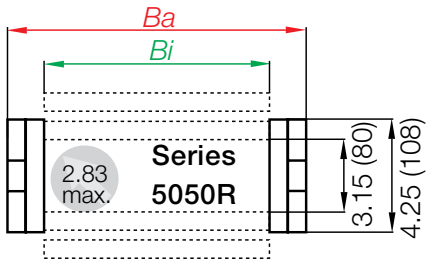
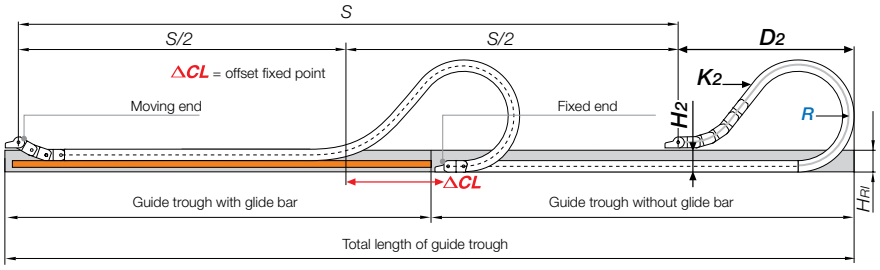
Special solutions for long travel
E4/4 Rol E-Chain® - Series 5050R/9850R

Series 5050R - crossbars every link, openable along both radii
Series 9850R - fully enclosed, hinged, snap-open removable lids



Sliding applications

Long travel lengths up to 1,969 ft. (600 m), Fill weights up to 16.80 lbs/ft (25 kg/m)
In case of travels less than 32.8 ft. (10m) we recommend an self-supporting E-Chain®.
NOTE: Systems of this type should be designed by our system design engineers. Please contact igus® for assistance with your application.



Legend

S = Length of travel
R = Bending radius
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

R	9.84 (250**)	11.81 (300)	13.78 (350)	15.75 (400)	19.69 (500)
H_2 +10	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)
D_2 +50	49.21 (1250)	61.02 (1550)	67.72 (1720)	78.35 (1990)	96.85 (2460)
K_2	78.82 (2002)	96.73 (2457)	107.48 (2730)	125.39 (3185)	154.06 (3913)
ΔCL	23.62 (600)	31.50 (800)	38.19 (970)	45.67 (1160)	60.24 (1530)

Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $^{S}/_{2} + K$

Available Accessories

Optimized, cable-friendly interior separation program

Pivoting KMA mounting bracket with all-sides attachment

Steel mounting brackets, pivoting, robust and electrically conductive

Extension links - for extremely wide E-Chains® up to 9.84 ft. (3.0 m)

Aluminum SuperTrough, Basic Version

Long travels	from 32.8 ft. (10 m) up to max. 1,969 ft. (600 m)
Speed max. rolling / acceleration max. rolling	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

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E4/4 Rol E-Chain® - Series 5050R/9850R Installation Dimensions

Supplement part number with required radius. Example: 5050R-30-[300]-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

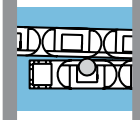
Part Number			Bi	Ba	Weight	
Crossbars Every Link	Tube Version		in. (mm)	in. (mm)	5050R lbs/ft (kg/m)	9850R lbs/ft (kg/m)
5050R-05-		[ ]-0	1.97 (50)	3.94 (100)	≈ 3.78 (5.62)	–
5050R-06-		[ ]-0	2.56 (65)	4.53 (115)	≈ 3.82 (5.68)	–
5050R-07-	[1]9850R-07-	[ ]-0	2.95 (75)	4.92 (125)	≈ 3.83 (5.70)	≈ 4.19 (6.24)
5050R-08-		[ ]-0	3.43 (87)	5.39 (137)	≈ 3.87 (5.76)	–
5050R-10-	9850R-10-	[ ]-0	3.94 (100)	5.91 (150)	≈ 3.89 (5.79)	≈ 4.38 (6.52)
5050R-11-		[ ]-0	4.41 (112)	6.42 (163)	≈ 3.93 (5.85)	–
5050R-12-	9850R-12-	[ ]-0	4.92 (125)	6.89 (175)	≈ 3.96 (5.89)	≈ 4.63 (6.89)
5050R-13-		[ ]-0	5.39 (137)	7.40 (188)	≈ 4.00 (5.95)	–
5050R-15-	9850R-15-	[ ]-0	5.91 (150)	7.87 (200)	≈ 4.02 (5.98)	≈ 4.92 (7.32)
5050R-16-		[ ]-0	6.38 (162)	8.39 (213)	≈ 4.06 (6.04)	–
5050R-17-	9850R-17	[ ]-0	6.89 (175)	8.86 (225)	≈ 4.09 (6.09)	≈ 5.09 (7.58)
5050R-18-		[ ]-0	7.36 (187)	9.37 (238)	≈ 4.13 (6.15)	–
5050R-20-	9850R-20-	[ ]-0	7.87 (200)	9.84 (250)	≈ 4.14 (6.16)	≈ 5.30 (7.89)
5050R-21-		[ ]-0	8.35 (212)	10.35 (263)	≈ 4.18 (6.22)	–
5050R-22-		[ ]-0	8.86 (225)	10.83 (275)	≈ 4.20 (6.25)	–
5050R-23-		[ ]-0	9.33 (237)	11.34 (288)	≈ 4.24 (6.31)	–
5050R-25-	9850R-25-	[ ]-0	9.84 (250)	11.81 (300)	≈ 4.27 (6.36)	≈ 5.79 (8.61)
5050R-26-		[ ]-0	10.31 (262)	12.32 (313)	≈ 4.30 (6.40)	–
5050R-27-	9850R-27	[ ]-0	10.83 (275)	12.80 (325)	≈ 4.34 (6.46)	≈ 5.93 (8.82)
5050R-28-		[ ]-0	11.30 (287)	13.31 (338)	≈ 4.35 (6.47)	–
5050R-30-	9850R-30-	[ ]-0	11.81 (300)	13.78 (350)	≈ 4.42 (6.58)	≈ 6.23 (9.27)
5050R-31-		[ ]-0	12.28 (312)	14.29 (363)	≈ 443 (6.60)	–
5050R-32-		[ ]-0	12.79 (325)	14.76 (375)	≈ 4.45 (6.62)	–
5050R-33-		[ ]-0	13.27 (337)	15.28 (388)	≈ 4.51 (6.71)	–
5050R-35-	9850R-35-	[ ]-0	13.78 (350)	15.75 (400)	≈ 4.56 (6.79)	≈ 6.73 (10.02)
5050R-36-		[ ]-0	14.25 (362)	16.26 (413)	≈ 4.57 (6.80)	–
5050R-37-		[ ]-0	14.76 (375)	16.73 (425)	≈ 4.57 (6.80)	–
5050R-38-		[ ]-0	15.24 (387)	17.24 (438)	≈ 4.60 (6.84)	–
5050R-40-	9850R-40-	[ ]-0	15.75 (400)	17.72 (450)	≈ 4.66 (6.94)	≈ 7.38 (10.98)
5050R-41-		[ ]-0	16.22 (412)	18.23 (463)	≈ 4.72 (7.02)	–
5050R-42-		[ ]-0	16.73 (425)	18.70 (475)	≈ 4.77 (7.10)	–
5050R-43-		[ ]-0	17.20 (437)	19.21 (488)	≈ 4.79 (7.13)	–
5050R-45-		[ ]-0	17.72 (450)	19.69 (500)	≈ 4.81 (7.16)	–
5050R-46-	9850R-46-	[ ]-0	18.19 (462)	20.20 (513)	≈ 4.82 (7.17)	≈ 7.69 (11.44)
5050R-47-		[ ]-0	18.70 (475)	20.67 (525)	≈ 4.87 (7.24)	–
5050R-48-		[ ]-0	19.17 (487)	21.99 (538)	≈ 4.88 (7.26)	–
5050R-50-		[ ]-0	19.69 (500)	21.65 (550)	≈ 4.91 (7.30)	–
5050R-51-		[ ]-0	20.16 (512)	22.16 (563)	≈ 4.92 (7.32)	–
5050R-52-		[ ]-0	20.67 (525)	22.64 (575)	≈ 4.93 (7.34)	–
5050R-53-		[ ]-0	21.14 (537)	23.15 (588)	≈ 4.98 (7.41)	–
5050R-55-		[ ]-0	21.65 (550)	23.62 (600)	≈ 5.15 (7.66)	–
5050R-60-		[ ]-0	23.62 (600)	25.59 (650)	≈ 5.21 (7.76)	–

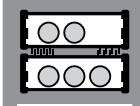
Choose from the radii below for all of the above sizes
Radius (mm) Example: 5050R-30-[300]-0

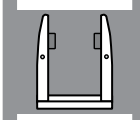
	[250**]	[300]	[350]	[400]	[500]
R	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.69 (500)
H_2 +10	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)
D_2 +50	49.21 (1250)	61.02 (1550)	67.72 (1720)	78.35 (1990)	96.85 (2460)
K_2	78.82 (2002)	96.73 (2457)	107.48 (2730)	125.39 (3185)	154.06 (3913)

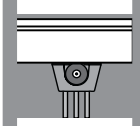
** This radius not available for E-Tubes
[1] Removable lid only, no hinged option

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS









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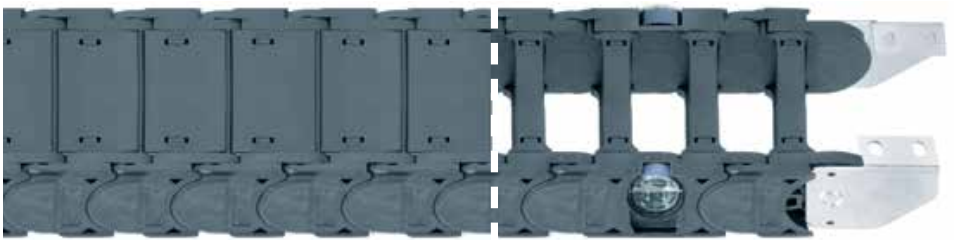
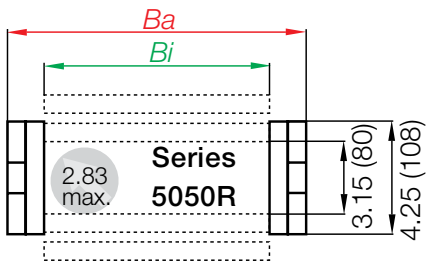
igus®

Special solutions for long travel
E4/4 Rol E-Chain® - Series 5050RHD/9850RHD

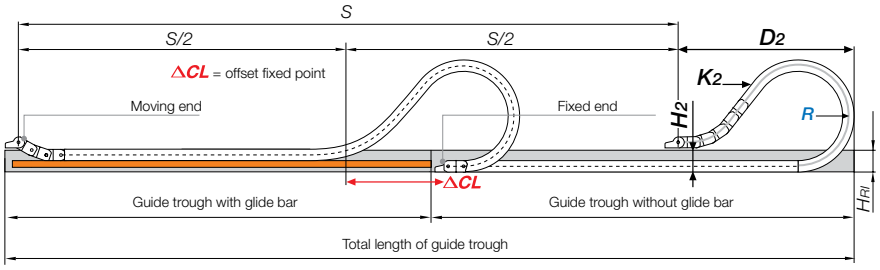


Series 5050RHD - crossbars every link, openable along both radii
Series 9850RHD - fully enclosed, hinged, snap-open removable lids



Sliding applications

Long travel lengths up to 2,625 ft. (800 m), Fill weights up to 20.16 lbs/ft (30 kg/m)
In case of travels less than 32.8 ft. (10m) we recommend an self-supporting E-Chain®.
NOTE: Systems of this type should be designed by our system design engineers. Please contact igus® for assistance with your application.



Legend

S = Length of travel
R = Bending radius
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

R	9.84 (250**)	11.81 (300)	13.78 (350)	15.75 (400)	19.69 (500)
H_2 +10	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)
D_2 +50	50.39 (1280)	61.81 (1570)	68.90 (1750)	79.13 (2010)	97.64 (2480)
K_2	78.82 (2002)	96.73 (2457)	107.48 (2730)	125.39 (3185)	154.06 (3913)
ΔCL	23.62 (600)	31.50 (800)	38.19 (970)	45.67 (1160)	60.24 (1530)

Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $^{S}/_{2}$ + K

Available Accessories

Optimized, cable-friendly interior separation program

Steel mounting brackets, pivoting, robust and electrically conductive

Extension links - for extremely wide E-Chains® up to 9.84 ft. (3.0 m)

Aluminum SuperTrough, Basic Version

Long travels	from 32.8 ft. (10 m) up to max. 2,625 ft. (800 m)
Speed max. rolling / acceleration max. rolling	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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E4/4 Rol E-Chain® - Series 5050RHD/9850RHD Installation Dimensions

igus®

5050RHD
9850RHD

Supplement part number with required radius. Example: 4040R-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

Part Number				Bi	Ba	Weight	
Crossbars Every Link	Tube Version			in. (mm)	in. (mm)	5050RHD lbs/ft (kg/m)	9850RHD lbs/ft (kg/m)
5050RHD-05-			-0	1.97 (50)	4.33 (110)	≈ 4.47 (6.65)	–
5050RHD-06-			-0	2.56 (65)	4.92 (125)	≈ 4.53 (6.74)	–
5050RHD-07-	9850RHD-07-		-0	2.95 (75)	5.31 (135)	≈ 4.58 (6.81)	≈ 4.87 (7.25)
5050RHD-08-			-0	3.43 (87)	5.79 (147)	≈ 4.63 (6.89)	–
5050RHD-10-	9850RHD-10-		-0	3.94 (100)	6.30 (160)	≈ 4.70 (6.99)	≈ 5.07 (7.55)
5050RHD-11-			-0	4.41 (112)	6.77 (172)	≈ 4.77 (7.10)	–
5050RHD-12-	9850RHD-12-		-0	4.92 (125)	7.28 (185)	≈ 4.82 (7.18)	≈ 5.32 (7.91)
5050RHD-13-			-0	5.39 (137)	7.76 (197)	≈ 4.92 (7.32)	–
5050RHD-15-	9850RHD-15-		-0	5.91 (150)	8.27 (210)	≈ 4.94 (7.35)	≈ 5.57 (8.29)
5050RHD-16-			-0	6.38 (162)	8.74 (222)	≈ 5.02 (7.47)	–
5050RHD-17-	9850RHD-17		-0	6.89 (175)	9.25 (235)	≈ 5.11 (7.60)	≈ 5.78 (8.60)
5050RHD-18-			-0	7.36 (187)	9.72 (247)	≈ 5.18 (7.71)	–
5050RHD-20-	9850RHD-20-		-0	7.87 (200)	10.24 (260)	≈ 5.22 (7.77)	≈ 5.99 (8.91)
5050RHD-21-			-0	8.35 (212)	10.71 (272)	≈ 5.27 (7.84)	–
5050RHD-22-			-0	8.86 (225)	11.22 (285)	≈ 5.32 (7.91)	–
5050RHD-23-			-0	9.33 (237)	11.69 (297)	≈ 5.39 (8.02)	–
5050RHD-25-	9850RHD-25-		-0	9.84 (250)	12.20 (310)	≈ 5.46 (8.13)	≈ 6.48 (9.64)
5050RHD-26-			-0	10.31 (262)	12.68 (322)	≈ 5.52 (8.22)	–
5050RHD-27-	9850RHD-27		-0	10.83 (275)	13.19 (335)	≈ 5.59 (8.32)	≈ 6.72 (10.00)
5050RHD-28-			-0	11.30 (287)	13.66 (347)	≈ 5.63 (8.38)	–
5050RHD-30-	9850RHD-30-		-0	11.81 (300)	14.17 (360)	≈ 5.73 (8.53)	≈ 6.92 (10.30)
5050RHD-31-			-0	12.28 (312)	14.65 (372)	≈ 5.76 (8.57)	–
5050RHD-32-			-0	12.79 (325)	15.16 (385)	≈ 5.83 (8.67)	–
5050RHD-33-			-0	13.27 (337)	15.63 (397)	≈ 5.91 (8.79)	–
5050RHD-35-	9850RHD-35-		-0	13.78 (350)	16.14 (410)	≈ 6.04 (8.99)	≈ 7.39 (11.00)
5050RHD-36-			-0	14.25 (362)	16.61 (422)	≈ 5.98 (8.90)	–
5050RHD-37-			-0	14.76 (375)	17.12 (435)	≈ 6.04 (9.00)	–
5050RHD-38-			-0	15.24 (387)	17.60 (447)	≈ 6.12 (9.11)	–
5050RHD-40-	9850RHD-40-		-0	15.75 (400)	18.11 (460)	≈ 6.30 (9.38)	≈ 8.06 (12.00)
5050RHD-41-			-0	16.22 (412)	18.58 (472)	≈ 6.26 (9.31)	–
5050RHD-42-			-0	16.73 (425)	19.09 (485)	≈ 6.45 (9.60)	–
5050RHD-43-			-0	17.20 (437)	19.57 (497)	≈ 6.34 (9.44)	–
5050RHD-45-			-0	17.72 (450)	20.08 (510)	≈ 6.42 (9.55)	–
5050RHD-46-	9850RHD-46-		-0	18.19 (462)	20.55 (522)	≈ 6.53 (9.72)	≈ 8.38 (12.47)
5050RHD-47-			-0	18.70 (475)	21.06 (535)	≈ 6.56 (9.76)	–
5050RHD-48-			-0	19.17 (487)	21.54 (547)	≈ 6.73 (10.01)	–
5050RHD-50-			-0	19.69 (500)	22.05 (560)	≈ 6.79 (10.11)	–
5050RHD-51-			-0	20.16 (512)	22.52 (572)	≈ 6.73 (10.02)	–
5050RHD-52-			-0	20.67 (525)	23.03 (585)	≈ 6.85 (10.19)	–
5050RHD-53-			-0	21.14 (537)	23.50 (597)	≈ 6.91 (10.29)	–
5050RHD-55-			-0	21.65 (550)	24.02 (610)	≈ 7.20 (10.71)	–
5050RHD-60-			-0	23.62 (600)	25.98 (660)	≈ 7.35 (10.94)	–

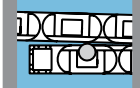
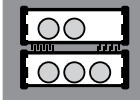
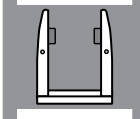
Choose from the radii below for all of the above sizes
Radius (mm) Example: 5050R-30-300-0

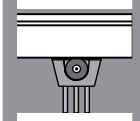
	250**	300	350	400	500
R	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.69 (500)
H_2 +10	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)
D_2 +50	49.21 (1250)	61.02 (1550)	67.72 (1720)	78.35 (1990)	96.85 (2460)
K_2	78.82 (2002)	96.73 (2457)	107.48 (2730)	125.39 (3185)	154.06 (3913)

** This radius not available for E-Tubes
1) Removable lid only, no hinged option

2.20”

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

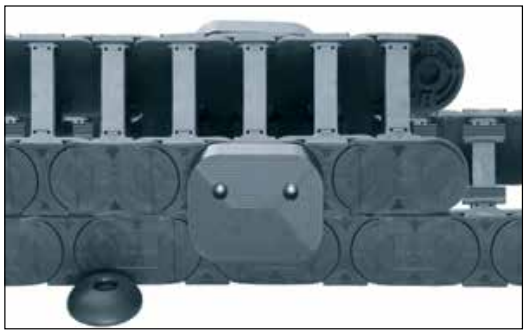


AUTO-GLIDE

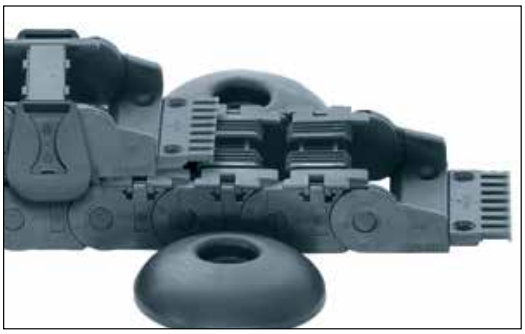
igus®

Special solutions for long travel
AUTO-GLIDE - Self-guiding E-Chain Systems®

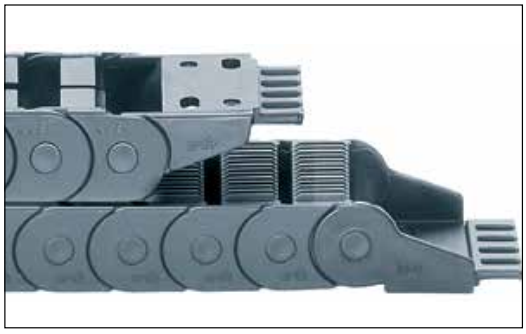
There are 4 options for the igus® autoglide system:



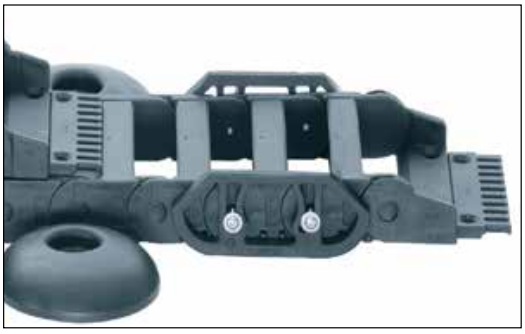
Version 01 - For igus® E4-1 E-Chains®
Special crossbars in the inner radius of the E-Chain® fitted with molded-on AUTO-GLIDE grooves



Version 02 - For igus® E2/000 E-Chains®
Special crossbars with molded-on AUTO-GLIDE grooves. To be opened along the inner radius.



Version 03 - For igus® E-Z Chains
Combination of the easily fillable E-Z Chainand injection-molded AUTO-GLIDE grooves in the inner radius



Version 04 - For Series E2/000 E-Chains®
Special plastic AUTO-GLIDE grooves side-mounted on the E-Chain® hold the E-Chain® "in the track"

Save on long travels, self-guiding E-Chains® - AUTO-GLIDE

Long travels are always demanding for an E-Chain System®. For much of the travel, the E-Chain® must run on the lower run or on the glide bars. In addition the E-Chain System® needs guides, in order to prevent a sidewards movement. In most cases this is ensured through a guide trough. However, there are also applications where a guide trough is not desired for space reasons, whether this is due to optical considerations or spatial conditions. In order to cater for this possibility, igus® developed the AUTO-GLIDE system in 1995. AUTO-GLIDE is a self-aligning E-Chain®, which can eliminate guide troughs for up to 262 ft. (80 m) travel.

- Travels up to 262 ft. (80 m) and travel speeds up to 8.20 ft/s (2.5 m/s)
- Cost-effective solution, guide troughs not required
- Very quick installation times for long travels
- Small installation width, quiet operation

Typical industries and applications

- Industrial vehicles
- Long travels with easier filling
- Simple outdoor applications

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Special solutions for long travel
AUTO-GLIDE - Self-guiding E-Chain Systems®
Selection Table - Technical Data

Series	Inner height *hi* in. (mm)	Inner width *Bi* in. (mm)	Outer width *Ba* in. (mm)	Outer height *ha* in. (mm)	Bending radius *R* in. (mm)	Maximum Travel ft. (m)
			Version 01 AUTO-GLIDE - Self-guiding E-Chains® for system E4-1 Crossbars in the inner radius of the E-Chain® fitted with molded-on AUTO-GLIDE grooves			
E4-32AG	1.26 (32)	4.41-10.31 (112-262)	5.35-11.26 (136-286)	2.13 (54)	3.94-11.81 (100-300)	196.9 (60)
E4-42AG	1.65 (42)	4.41-10.31 (112-262)	5.47-11.38 (139-289)	2.52 (64)	4.92-13.78 (125-350)	229.7 (70)
E4-56AG	2.20 (56)	5.91-9.84 (150-250)	7.24-11.18 (184-284)	3.31 (84)	5.91-19.69 (150-500)	262.5 (80)
			Version 02 AUTO-GLIDE - Self-guiding E-Chains® for system E2/000 Crossbars in the inner radius of the E-Chain® fitted with molded-on AUTO-GLIDE grooves			
2400AG	.98 (25)	2.24-3.03 (57-77)	2.87-3.66 (73-93)	1.38 (35)	2.95-9.84 (075-250)	131.2 (40)
2600AG	1.38 (35)	1.97-2.95 (50-75)	2.60-3.58 (66-91)	1.97 (50)	2.95-9.84 (075-250)	196.9 (60)
3400AG	1.77 (45)	2.95-3.94 (75-100)	3.74-4.72 (95-120)	2.52 (64)	3.94-11.81 (100-300)	229.7 (70)
			Version 03 AUTO-GLIDE - Easy filling - simply press cables in E-Z Chain Design in the outer radius, fitted with molded-on AUTO-GLIDE grooves in the inner radius			
EA16	1.26 (32)	1.89 (48)	2.36 (60)	1.54 (39)	2.56-3.94 (065-100)	65.6 (20)
EA25	.98 (25)	1.97 (50)	2.36 (60)	.99 (25.2)	2.95-3.94 (075-100)	65.6 (20)
			Version 04 AUTO-GLIDE - Special glide elements provide a secure guidance on E2/000: E-Chain®, half and full E-Tubes			
2400/2500-AG	.98 (25)	2.24-4.92 (57-125)	2.87-5.55 (73-141)	1.38 (35)	2.17-9.84 (055-250)	65.6 (20)
2600/2700-AG	1.38 (35)	1.97-9.84 (50-250)	2.60-7.64 (66-194)	1.97(50)	2.95-9.84 (075-250)	98.4 (30)

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AUTO-GLIDE

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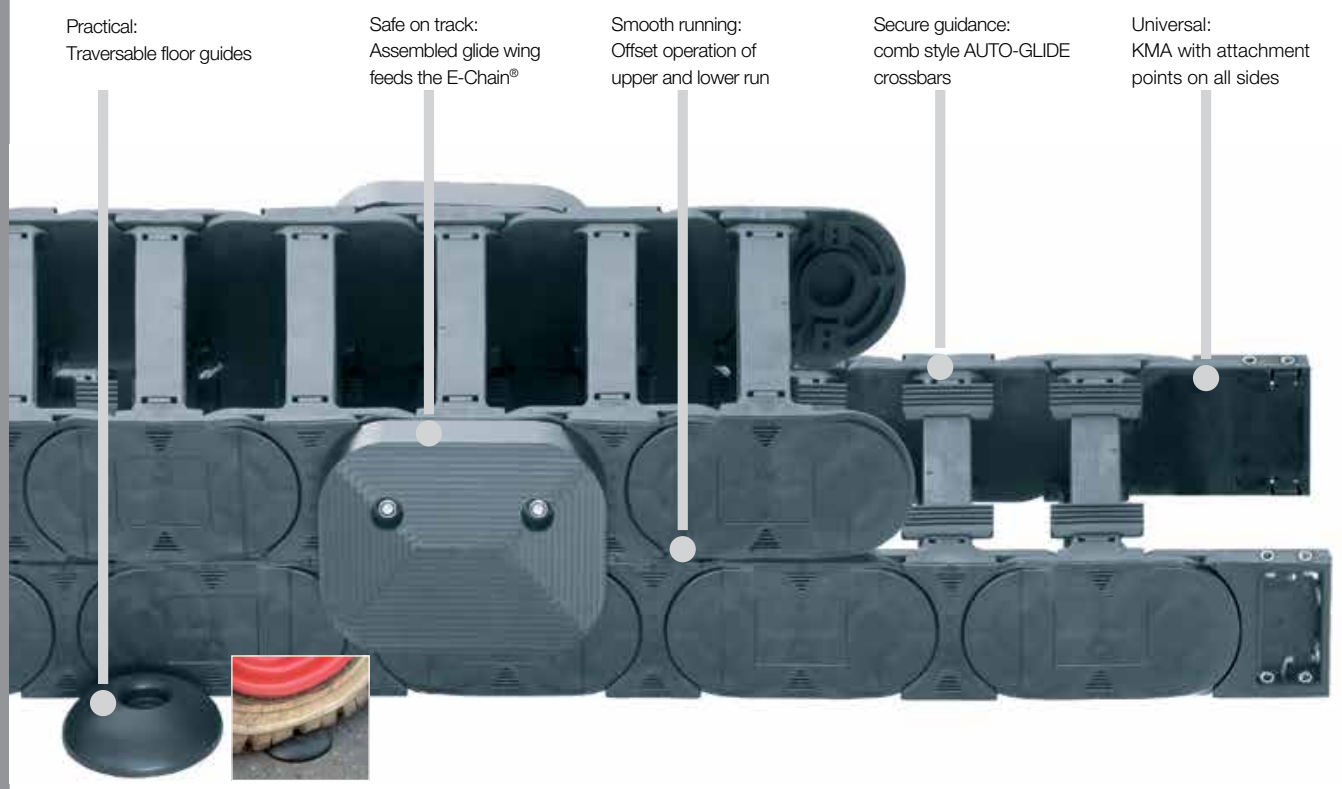
Special solutions for long travel
AUTO-GLIDE - Self-guiding E-Chain Systems®
Version 01 - Overview



Self-guiding E-Chains® for System E4-1 AUTO-GLIDE Version 01

For the larger E-Chains® of the E4-1 system - crossbars in the inner radius of the E-Chains® are provided with injection-molded glide shoes. **Glide wings and floor guides -** Simple guide elements for quick installation on the subsurface are available for the AUTO-GLIDE system version 01. The traversable eccentric floor guides are fastened every 6.56 ft.(2 m) on the subsurface. The glide wing fastened on the moving end feeds the E-Chains® and holds this securely in the track. The AUTO-GLIDE crossbars safely guide the E-Chains® and replace the guide trough.

- Save purchase and installation costs with this system
- Traversable over floor guide for travel distances over 32.8 ft.(10 m).

Note: Only two glide wings **AG-XXX-OF** are required for the safe feeding of the E-Chains®. The mounting of the glide wing is done on the outer link of the upper run, which is laid down first on the lower run.

Typical industries and applications

- Industrial vehicles
- Long travels with easier filling
- Simple outdoor applications

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Special solutions for long travel
AUTO-GLIDE - Self-guiding E-Chain Systems®
Version 01 - Technical Data - Order Examples

AUTO-GLIDE with assembled glide wing. Module, containing 3 E-Chain® links and 2 glide wings
Part No. E4-32-15-150-0-AG-OF-NC

AUTO-GLIDE self-guiding E-Chains®
Part No. E4-32-15-150-0-AG-NC

Glide wing Part No. AG-280-OF and floor guide
Part No. AG-380-BF as single parts

Part number structure
E4-32-15-150-0-AG-**OF**-NC

- Assembly as NC Version
- With assembled glide wing
- AUTO-GLIDE
- Standard color black
- Bending radius ***R***
- Width index
- Series / Type

Order example | Part number structure

Order example for complete E-Chain® Series E4-32AG 49.2 ft. (15 m), color black, with mounting brackets and interior separation:

E-Chain® 49.2 ft. (15 m)	Please indicate E-Chain® length or number of links: 49.2 ft. (15 m) or 287 links	E4-32-15-150-0-AG-NC
E-Chain® + glide wing	Module, containing 3 E-Chain® links and 2 glide wings	E4-32-15-150-0-AG-OF-NC
+ Floor guides	8 pieces (2 pieces every 6.56 ft. (2 m) from the half of travel)	AG-380-BF

Order text: 49.2 ft. (15 m) E4-32-15-150-0-AG-NC + E4-32-15-150-0-AG-OF-NC + AG-380-BF + Mounting bracket + Interior separation (optional)
Note: We require one glide wing per E-Chain® to the left and right at the position where the upper run first meets the lower run.

Long travels	from 32.8 ft. (10 m) up to max. 262 ft. (80 m)
Speed max. gliding / acceleration max. gliding	max. 8.20 ft/s (2.5 m/s) / max. 8.20 ft/s² (2.5 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ **Chapter 1**

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igus®

Special solutions for long travel
AUTO-GLIDE - Version 01 - Self-guiding E-Chain Systems®
E4-32AG

Series E4-32AG - openable along both radii, crossbars every link - AUTO-GLIDE crossbars along the inner radius

Supplement part number with required radius. Example: E4-32-15-[150]-0-AG-NC
Pitch: 2.20 in. (56 mm) per link links/ft (m) = 5.49 (18)

Part Number Crossbars Every Link		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)	Glide Wing Single part	Floor Guide Single part
E4-32-112-	-0-AG-NC	4.41 (112)	5.35 (136)	≈ 1.42 (2.106)	AG-380-OF	AG-380-BF
E4-32-12-	-0-AG-NC	4.92 (125)	5.83 (148)	≈ 1.46 (2.176)	AG-380-OF	AG-380-BF
E4-32-15-	-0-AG-NC	5.91 (150)	6.81 (173)	≈ 1.57 (2.343)	AG-380-OF	AG-380-BF
E4-32-17-	-0-AG-NC	6.61 (168)	7.52 (191)	≈ 1.64 (2.444)	AG-380-OF	AG-380-BF
E4-32-20-	-0-AG-NC	7.87 (200)	8.78 (223)	≈ 1.79 (2.657)	AG-380-OF	AG-380-BF
E4-32-262-	-0-AG-NC	10.31 (262)	11.26 (286)	≈ 2.05 (3.050)	AG-380-OF	AG-380-BF

Choose from the radii below for all of the above sizes
Radius (mm)Example: E4-32-15-[150]-0-AG-NC

	100	125	150	175	200	220	250	300
R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
H_2	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
D_2	14.57 (370)	18.50 (470)	19.69 (500)	25.79 (655)	30.31 (770)	35.43 (900)	36.61 (930)	43.31 (1100)
K_3	33.07 (840)	40.71 (1064)	48.50 (1232)	61.73 (1568)	72.76 (1848)	81.57 (2072)	88.19 (2240)	105.83 (2688)

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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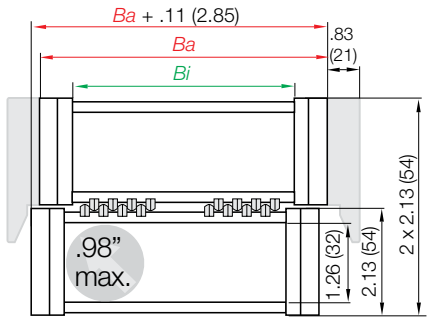
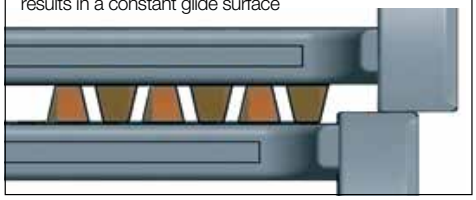
Special solutions for long travel
AUTO-GLIDE - Version 01 - Self-guiding E-Chain Systems®
E4-32AG - Installation Dimensions

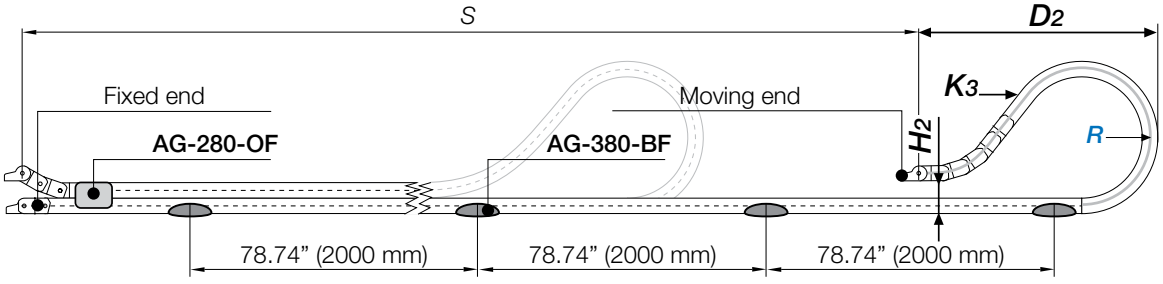


AUTO-GLIDE principle
Offset operation of upper and lower run, results in a constant glide surface



Gliding applications

Long travel lengths up to 197 ft. (60 m), Fill weights up to 3.36 to 4.70 lbs/ft (5.0 to 7.0 kg/m)
In case of travels less than 32.8 ft. (10m) we recommend an self-supporting E-Chain®.
NOTE: Systems of this type should be designed by our system design engineers.
Please contact igus® for assistance with your application.



R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
H_2	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
D_2	14.57 (370)	18.50 (470)	19.69 (500)	25.79 (655)	30.31 (770)	35.43 (900)	36.61 (930)	43.31 (1100)
K_3	33.07 (840)	40.71 (1064)	48.50 (1232)	61.73 (1568)	72.76 (1848)	81.57 (2072)	88.19 (2240)	105.83 (2688)

Legend
S = Length of travel
R = Bending radius
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding

Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.49 (18)
For center mount applications:
Chain length = $S + K_3$

Available Accessories

Optimized, cable-friendly interior separation program

Pivoting KMA mounting brackets with attachment points on all sides

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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Special solutions for long travel
AUTO-GLIDE - Version 01 - Self-guiding E-Chain Systems®
E4-42AG

Series E4-42AG - openable along both radii, crossbars every link - AUTO-GLIDE crossbars along the inner radius

Supplement part number with required radius. Example: E4-42-15-[150]-0-AG-NC
Pitch: 2.64 in. (67 mm) per link links/ft (m) = 4.57 (15)

Part Number Crossbars Every Link		*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)	Glide Wing Single part	Floor Guide Single part
E4-42-112-	-0-AG-NC	4.41 (112)	5.47 (139)	≈ 1.59 (2.372)	AG-380-OF	AG-380-BF
E4-42-12-	-0-AG-NC	4.92 (125)	5.94 (151)	≈ 1.63 (2.430)	AG-380-OF	AG-380-BF
E4-42-15-	-0-AG-NC	5.91 (150)	6.93 (176)	≈ 1.73 (2.569)	AG-380-OF	AG-380-BF
E4-42-17-	-0-AG-NC	6.61 (168)	7.64 (194)	≈ 1.78 (2.654)	AG-380-OF	AG-380-BF
E4-42-20-	-0-AG-NC	7.87 (200)	8.90 (226)	≈ 1.90 (2.831)	AG-380-OF	AG-380-BF
E4-42-262-	-0-AG-NC	10.31 (262)	11.38 (289)	≈ 2.12 (3.159)	AG-380-OF	AG-380-BF

Choose from the radii below for all of the above sizes
Radius (mm)Example: E4-42-15-[150]-0-AG-NC

	125	150	160	175	200	250	250	300
R	4.92 (125)	5.91 (150)	6.30 (160)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H_2	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)
D_2	18.70 (475)	22.44 (570)	24.53 (623)	26.38 (670)	30.71 (780)	40.55 (1030)	45.28 (1150)	59.06 (1500)
K_3	44.84 (1139)	52.76 (1340)	58.03 (1474)	63.31 (1608)	73.86 (1876)	94.96 (2412)	111.89 (2747)	139.80 (3551)

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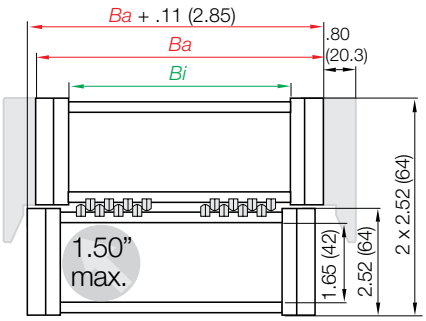
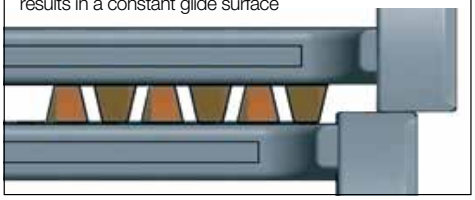
Special solutions for long travel
AUTO-GLIDE - Version 01- Self-guiding E-Chain Systems®
E4-42AG - Installation Dimensions

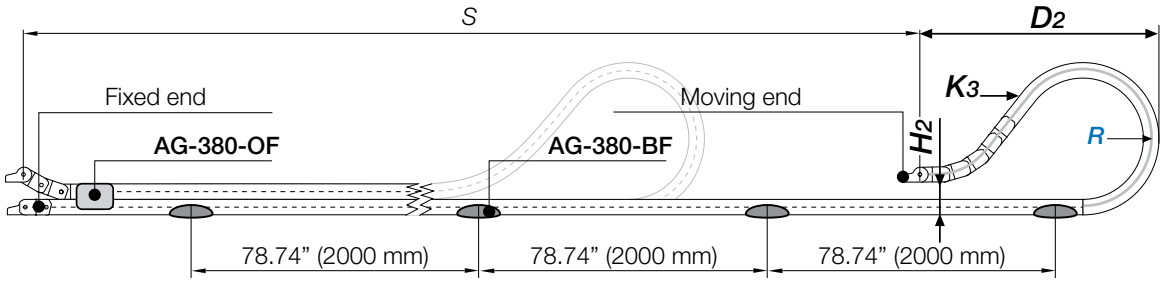


AUTO-GLIDE principle
Offset operation of upper and lower run, results in a constant glide surface



Gliding applications

Long travel lengths up to 230 ft. (70 m), Fill weights up to 2.69 to 6.45 lbs/ft (4.0 to 9.6 kg/m)
In case of travels less than 32.8 ft. (10m) we recommend an self-supporting E-Chain®.
NOTE: Systems of this type should be designed by our system design engineers.
Please contact igus® for assistance with your application.



R	4.92 (125)	5.91 (150)	6.30 (160)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H_2	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)
D_2	18.70 (475)	22.44 (570)	24.53 (623)	26.38 (670)	30.71 (780)	40.55 (1030)	45.28 (1150)	59.06 (1500)
K_3	44.84 (1139)	52.76 (1340)	58.03 (1474)	63.31 (1608)	73.86 (1876)	94.96 (2412)	111.89 (2747)	139.80 (3551)

Legend
S = Length of travel
R = Bending radius
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding

Pitch per link: = 2.64" (67 mm)
Links per ft (m): = 4.57 (15)
For center mount applications:
Chain length = $S + K_3$

Available Accessories

Optimized, cable-friendly interior separation program

Pivoting KMA mounting brackets with attachment points on all sides

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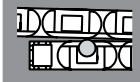
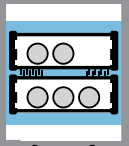
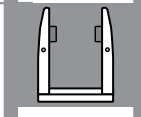
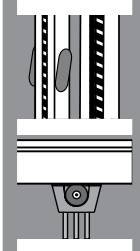

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igus®

Special solutions for long travel
AUTO-GLIDE - Version 01 - Self-guiding E-Chain Systems®
E4-56AG

Series E4-56AG - openable along both radii, crossbars every link - AUTO-GLIDE crossbars along the inner radius

Supplement part number with required radius. Example: E4-56-15-[150]-0-AG-NC
Pitch: 3.58 in. (91 mm) per link links/ft (m) = 3.35 (11)

Part Number Crossbars Every Link		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)	Glide Wing Single part	Floor Guide Single part
E4-56-15- [ ]	-0-AG-NC	5.91 (150)	7.24 (184)	≈2.76 (4.109)	AG-400-OF	AG-400-BF
E4-56-21- [ ]	-0-AG-NC	8.35 (212)	9.72 (247)	≈3.07 (4.567)	AG-400-OF	AG-400-BF
E4-56-25- [ ]	-0-AG-NC	9.84 (250)	11.18 (284)	≈3.29 (4.896)	AG-400-OF	AG-400-BF

Choose from the radii below for all of the above sizes
Radius (mm)Example: E4-56-15-[150]-0-AG-NC

	150	175	200	240	250	300	350	400	450	500
R	5.91 (150)	6.89 (175)	7.87 (200)	9.45 (240)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)
H_2	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)
D_2	17.72 (450)	22.83 (580)	27.95 (710)	35.43 (900)	38.58 (980)	46.46 (1180)	56.69 (1440)	60.24 (1530)	66.93 (1700)	72.83 (1850)
K_3	42.99 (1092)	57.32 (1456)	68.07 (1729)	85.98 (2184)	93.15 (2366)	111.06 (2821)	128.98 (3276)	143.31 (3640)	161.22 (4095)	179.13 (4550)

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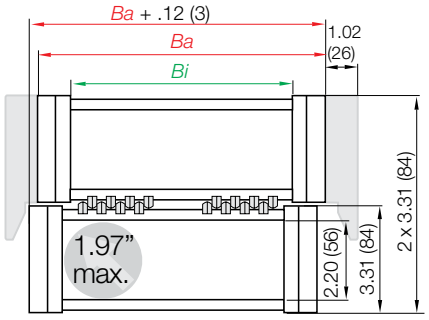
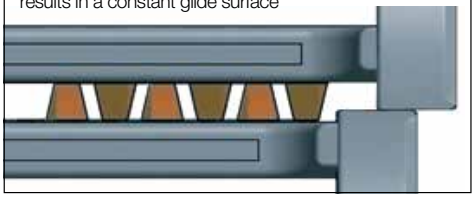
Special solutions for long travel
AUTO-GLIDE - Version 01 - Self-guiding E-Chain Systems®
E4-56AG - Installation Dimensions



AUTO-GLIDE principle
Offset operation of upper and lower run, results in a constant glide surface

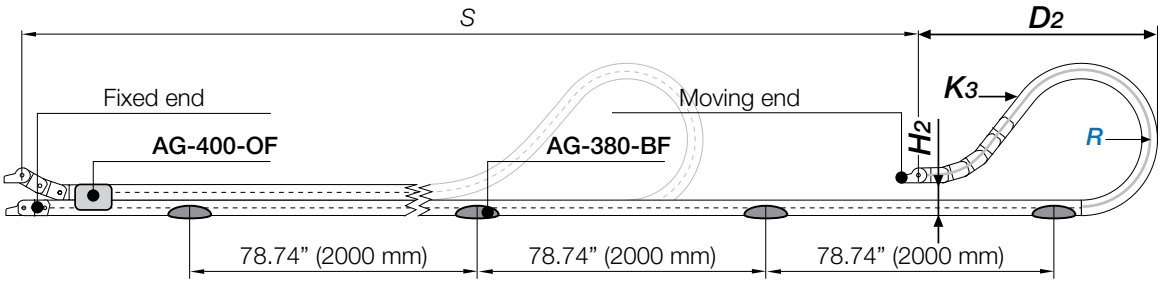


Gliding applications

Long travel lengths up to 262 ft. (80 m), Fill weights up to 4.30 to 8.06 lbs/ft (6.4 to 12.0 kg/m)
In case of travels less than 32.8 ft. (10m) we recommend an self-supporting E-Chain®.
NOTE: Systems of this type should be designed by our system design engineers.
Please contact igus® for assistance with your application.

Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $S + K_3$

Legend
S = Length of travel
R = Bending radius
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding



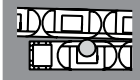
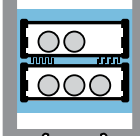
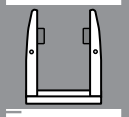
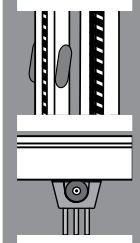
R	5.91 (150)	6.89 (175)	7.87 (200)	9.45 (240)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)
H_2	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)
D_2	17.72 (450)	22.83 (580)	27.95 (710)	35.43 (900)	38.58 (980)	46.46 (1180)	56.69 (1440)	60.24 (1530)	66.93 (1700)	72.83 (1850)
K_3	42.99 (1092)	57.32 (1456)	68.07 (1729)	85.98 (2184)	93.15 (2366)	111.06 (2821)	128.98 (3276)	143.31 (3640)	161.22 (4095)	179.13 (4550)

Available Accessories

Optimized, cable-friendly interior separation program

Pivoting KMA mounting brackets with attachment points on all sides

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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AUTO-GLIDE

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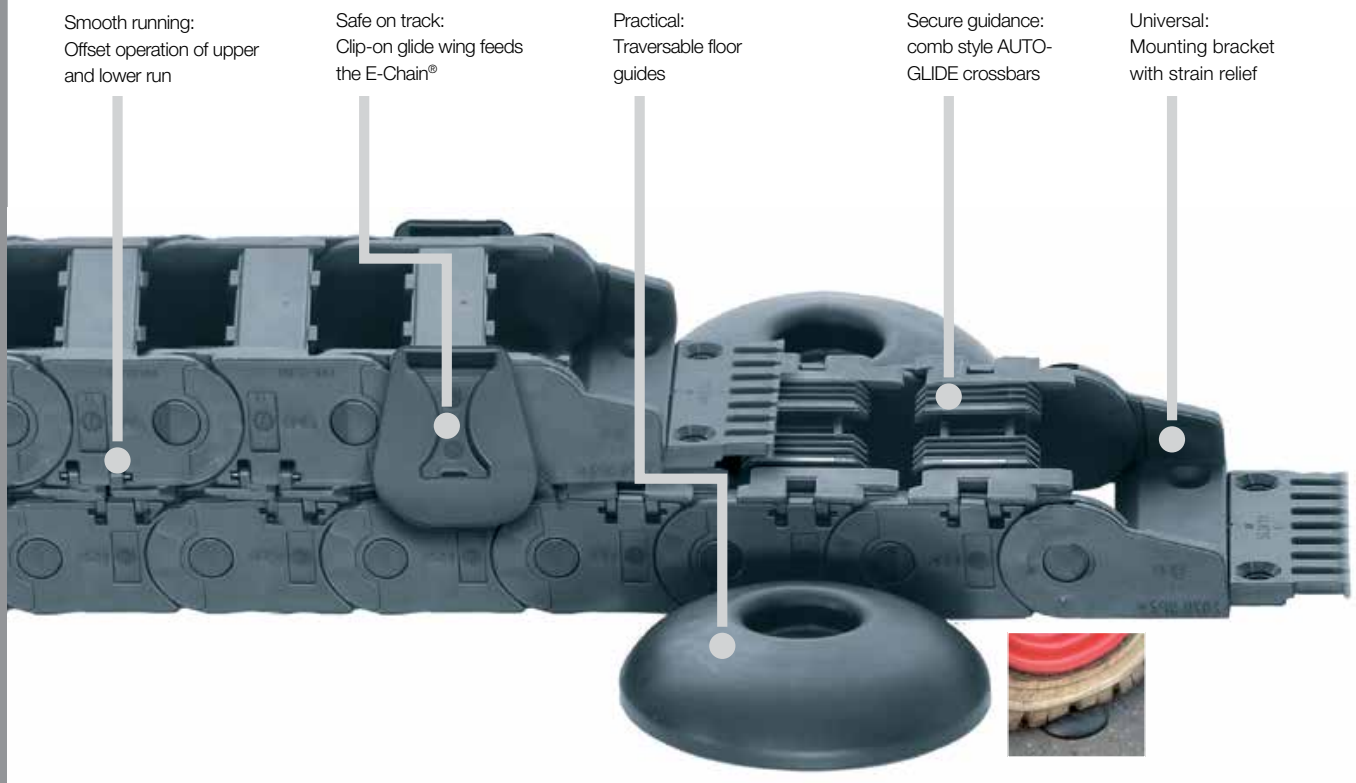
Special solutions for long travel
AUTO-GLIDE - Version 02 - Self-guiding E-Chain Systems®
Overview



Self-guiding E-Chains® for System E2/000 AUTO-GLIDE Version 02

Interfering guide troughs for long travels can be dispensed with when using the AUTO-GLIDE system. Self-guiding E-Chains® glide safely on top of each other for up to 230 ft. (70 m). The system has now been extended to the igus® E2/000 and further improved. The AUTO-GLIDE crossbars ensure even longer life. A plug-in glide wing ensures safe E-Chain® threading over the first few feet (meters) of travel. The traversable eccentric floor guides are fastened to the subsurface every 6.56 ft. (2 m).

- Travels up to 230 ft. (70 m) without guide trough at speeds up to 6.56 ft/s (2.0 m/s)
- Very compact, no interfering trough in the travel or work area
- Fast installation times for long travels
- Snap-open in the inner radius
- Also for "half tube" fully enclosed in the outer radius
- Clip-on glide wings, safe threading in of the E-Chain®
- Drive-over floor guide

Typical industries and applications

- Greenhouses
- Storage and retrieval systems
- Conveyor systems
- Indoor cranes
- Handling
- And many other long travels

Estudio de Fluidos
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Special solutions for long travel
AUTO-GLIDE - Version 02 - Self-guiding E-Chain Systems®
Technical Data - Order Examples

Part number structure
2400-05AG-100-0

- Standard color black
- Bending radius *R*
- AUTO-GLIDE
- Width index
- Series / Type

Order example | Part number structure

Order example for complete E-Chain® Series E4-32AG 49.2 ft. (15 m), color black, with mounting brackets and interior separation:

E-Chain® 49.2 ft. (15 m)	Please indicate E-Chain® length or number of links: 49.2 ft. (15 m) or 347 links	**2400-15AG-100-0**
+ glide wing	2 glide wings are required per E-Chain®	**AG-2400-OF**
+ Floor guides	8 pieces (2 pieces every 6.56 ft. (2 m) from the half of travel)	**AG-380-BF**

Order text: 49.2 ft. (15 m) 2400-05AG-100-0 + AG-2400-OF + AG-380-BF + Mounting bracket + Interior separation (optional)
Note: We require one glide wing per E-Chain® to the left and right at the position where the upper run first meets the lower run.

Speed max. rolling	max. 6.56 ft/s (2 m/s)
Acceleration max. gliding	max. 3.28 ft/s² (1 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ **Chapter 1**

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Special solutions for long travel
AUTO-GLIDE - Version 02 - Self-guiding E-Chain Systems® 2400AG

Series 2400AG - snap-open along the inner radius - crossbars with molded-on AUTO-GLIDE grooves

Supplement part number with required radius. Example: 2400-05AG-150-0
Pitch: 1.814 in. (46 mm) per link links/ft (m) = 6.63 (22)

Part Number Crossbars Every Link	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)	Glide Wing Single part	Floor Guide Single part
2400-05AG-□-0	2.24 (57)	2.87 (73)	≈0.67 (1.00)	AG-2400-OF	AG-380-BF
2400-07AG-□-0	3.03 (77)	3.66 (93)	≈0.74 (1.10)	AG-2400-OF	AG-380-BF

Choose from the radii below for all of the above sizes
Radius (mm) Example: 2400-05AG-150-0

	075	100	125	150	175	200	225	250
R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)
H_2	5.91 (150)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)
D_2	6.38 (162)	14.96 (380)	17.32 (440)	23.23 (590)	29.72 (755)	37.40 (950)	40.94 (1040)	44.49 (1130)
K_3	23.54 (598)	36.22 (920)	41.65 (1058)	56.14 (1426)	70.63 (1794)	86.93 (2208)	95.98 (2438)	105.04 (2668)

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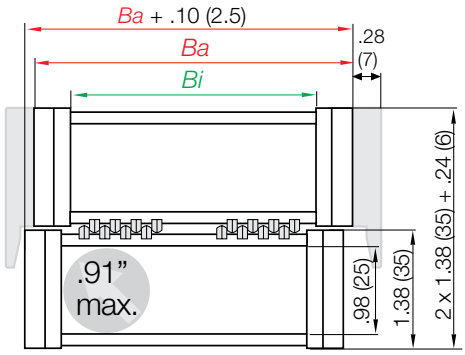
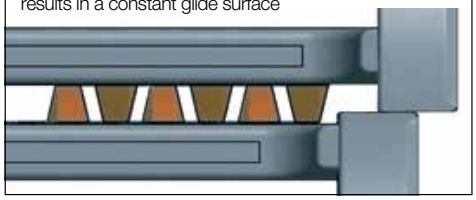
Special solutions for long travel
AUTO-GLIDE - Version 02 - Self-guiding E-Chain Systems®
2400AG - Installation Dimensions

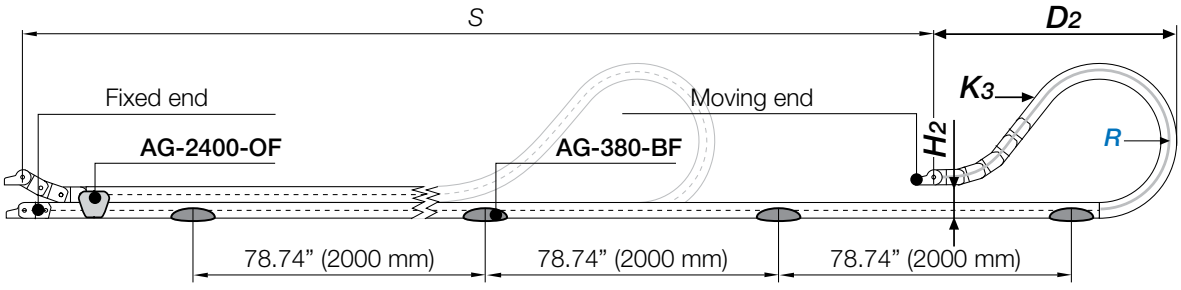


AUTO-GLIDE principle
Offset operation of upper and lower run, results in a constant glide surface



Gliding applications

Long travel lengths up to 131 ft. (40 m), Fill weights up to 1.34 lbs/ft (2.0 kg/m)
In case of travels between 13 ft. (4 m) and 32.8 ft. (10m) we recommend an self-supporting E-Chain®.
NOTE: Systems of this type should be designed by our system design engineers.
Please contact igus® for assistance with your application.



R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)
H_2	5.91 (150)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)
D_2	6.38 (162)	14.96 (380)	17.32 (440)	23.23 (590)	29.72 (755)	37.40 (950)	40.94 (1040)	44.49 (1130)
K_3	23.54 (598)	36.22 (920)	41.65 (1058)	56.14 (1426)	70.63 (1794)	86.93 (2208)	95.98 (2438)	105.04 (2668)

Legend
S = Length of travel
R = Bending radius
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding

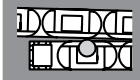
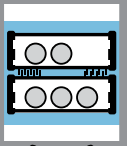
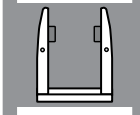
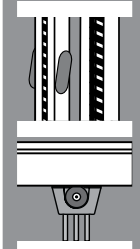
Pitch per link: = 1.81" (46 mm)
Links per ft (m): = 6.63 (22)
For center mount applications:
Chain length = $S + K_3$

Available Accessories

Optimized, cable-friendly interior separation program

Pivoting mounting brackets for gliding applications

Pivoting KMA mounting brackets with attachment points on all sides

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Special solutions for long travel
AUTO-GLIDE - Version 02 - Self-guiding E-Chain Systems®
2600AG

Series 2600AG - snap-open along the inner radius - crossbars with molded-on AUTO-GLIDE grooves

Supplement part number with required radius. Example: 2600-05AG-150-0
Pitch: 2.20 in. (56 mm) per link links/ft (m) = 5.45 (18)

Part Number Crossbars Every Link	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)	Glide Wing Single part	Floor Guide Single part
2600-05AG-□-0	1.97 (50)	2.60 (66)	≈ 0.85 (1.27)	AG-2600-OF	AG-380-BF
2600-07AG-□-0	2.95 (75)	3.58 (91)	≈ 0.94 (1.40)	AG-2600-OF	AG-380-BF

Choose from the radii below for all of the above sizes
Radius (mm) Example: 2600-05AG-150-0

	075	100	125	150	175	200	250
R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H_2	5.91 (150)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
D_2	5.91 (150)	13.78 (350)	18.70 (475)	19.69 (500)	25.79 (655)	30.31 (770)	37.40 (950)
K_3	24.25 (616)	33.07 (840)	44.09 (1120)	48.50 (1232)	61.73 (1568)	72.76 (1848)	90.39 (2296)

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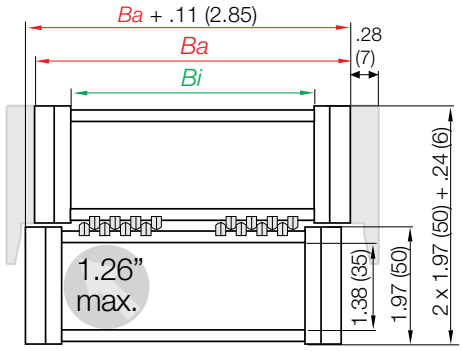
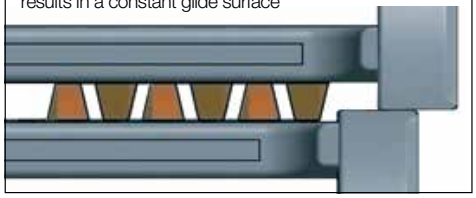
Special solutions for long travel
AUTO-GLIDE - Version 02 - Self-guiding E-Chain Systems®
2600AG - Installation Dimensions

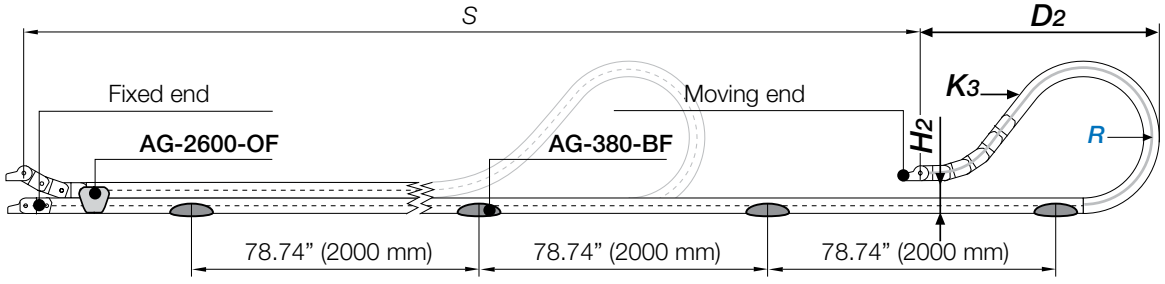


AUTO-GLIDE principle
Offset operation of upper and lower run, results in a constant glide surface



Gliding applications

Long travel lengths up to 197 ft. (60 m), Fill weights up to 1.68 lbs/ft (2.5 kg/m)
In case of travels between 16.4 ft. (5 m) and 32.8 ft. (10m) we recommend an self-supporting E-Chain®.
NOTE: Systems of this type should be designed by our system design engineers.
Please contact igus® for assistance with your application.



R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H_2	5.91 (150)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
D_2	5.91 (150)	13.78 (350)	18.70 (475)	19.69 (500)	25.79 (655)	30.31 (770)	37.40 (950)
K_3	24.25 (616)	33.07 (840)	44.09 (1120)	48.50 (1232)	61.73 (1568)	72.76 (1848)	90.39 (2296)

Legend
S = Length of travel
R = Bending radius
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding

Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.49 (18)
For center mount applications:
Chain length = $S + K_3$

Available Accessories

Optimized, cable-friendly interior separation program

Pivoting mounting brackets for gliding applications

Pivoting KMA mounting brackets with attachment points on all sides

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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Special solutions for long travel
AUTO-GLIDE - Version 02 - Self-guiding E-Chain Systems® 3400AG

Series 3400AG - snap-open along the inner radius - crossbars with molded-on AUTO-GLIDE grooves

Supplement part number with required radius. Example: 3400-100AG-150-0
Pitch: 2.64 in. (67 mm) per link links/ft (m) = 4.55 (15)

Part Number Crossbars Every Link		*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)	Glide Wing Single part	Floor Guide Single part
3400-05AG-☐	-0	2.95 (75)	3.74 (95)	≈1.27 (1.89)	AG-3400-OF	AG-380-BF
3400-07AG-☐	-0	3.94 (100)	4.72 (120)	≈1.37 (2.04)	AG-3400-OF	AG-380-BF

Choose from the radii below for all of the above sizes
Radius (mm) Example: 3400-05AG-150-0

	100	125	150	200	250	300
R	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)
H_2	7.87 (200)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)
D_2	9.17 (233)	18.70 (475)	22.44 (570)	30.71 (780)	39.76 (1010)	45.28 (1150)
K_3	34.29 (871)	44.84 (1139)	55.39 (1407)	73.86 (1876)	94.96 (2412)	108.15 (2747)

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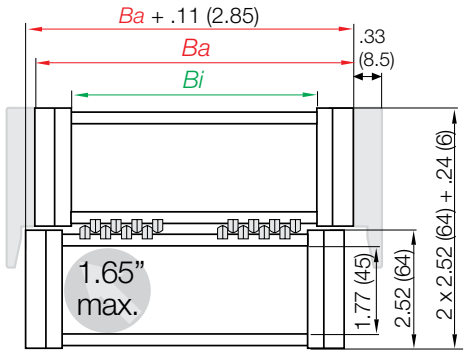
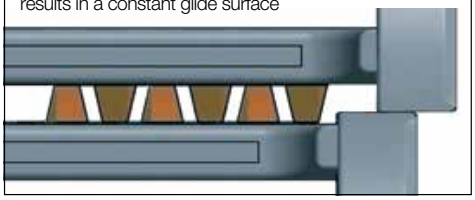
Special solutions for long travel
AUTO-GLIDE - Version 02 - Self-guiding E-Chain Systems®
3400AG - Installation Dimensions

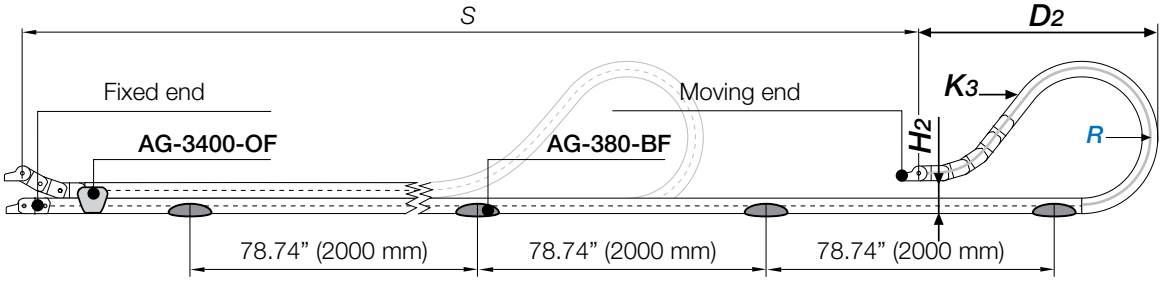


AUTO-GLIDE principle
Offset operation of upper and lower run, results in a constant glide surface



Gliding applications

Long travel lengths up to 230 ft. (70 m), Fill weights up to 3.36 to 5.38 lbs/ft (5.0 to 8.0 kg/m)
In case of travels between 19.7 ft. (6 m) and 32.8 ft. (10m) we recommend an self-supporting E-Chain®.
NOTE: Systems of this type should be designed by our system design engineers.
Please contact igus® for assistance with your application.



R	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)
H_2	7.87 (200)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)
D_2	9.17 (233)	18.70 (475)	22.44 (570)	30.71 (780)	39.76 (1010)	45.28 (1150)
K_3	34.29 (871)	44.84 (1139)	55.39 (1407)	73.86 (1876)	94.96 (2412)	108.15 (2747)

Legend
S = Length of travel
R = Bending radius
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding

Pitch per link: = 2.64" (67 mm)
Links per ft (m): = 4.55 (15)
For center mount applications:
Chain length = $S + K_3$

Available Accessories

Optimized, cable-friendly interior separation program

Pivoting mounting brackets for gliding applications

Pivoting KMA mounting brackets with attachment points on all sides

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AUTO-GLIDE

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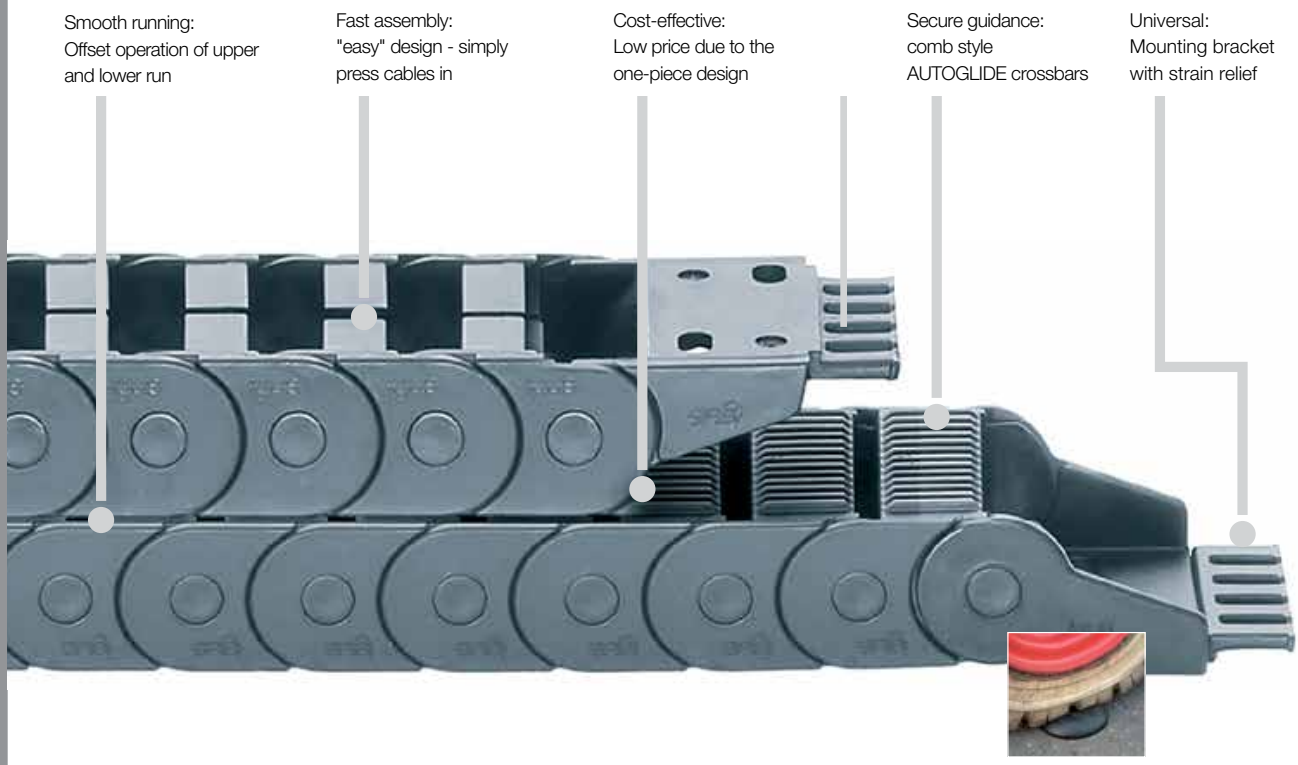
Special solutions for long travel
AUTO-GLIDE - Version 03 - Self-guiding E-Chain Systems®
Overview



E-Z Chain along the outer radius, injection molded AUTO-GLIDE crossbars along the inner radius - Version 03

Version 03 is the quickly filled and cost-effective E-Z-Chain® with injection-molded AUTO-GLIDE crossbars in the inner radius. The crossbars are molded directly on the E-Chain® link and are available in two sizes. The reduced installation time is one of the main features of the E-Chains®. The elastic and rugged material igumid NB offers yet more reasons for application: Optimum elasticity, UL94-V2 classification and excellent suitability for cleanrooms. Their one-piece design makes E-Z Chain® attractive especially with regard to price.

- Doubly cost-effective. Elimination of guide troughs and economical, one-piece E-Chain®
- Very quick assembly time - "easy"-design even on long travels
- "Easy"-design: Easy to fill - cables and hoses can be inserted without opening
- Single part design
- Small installation width, quiet operation
- UL94-V2 classifications

Typical industries and applications

- Industrial vehicles
- Long travels with easier filling
- Simple outdoor applications

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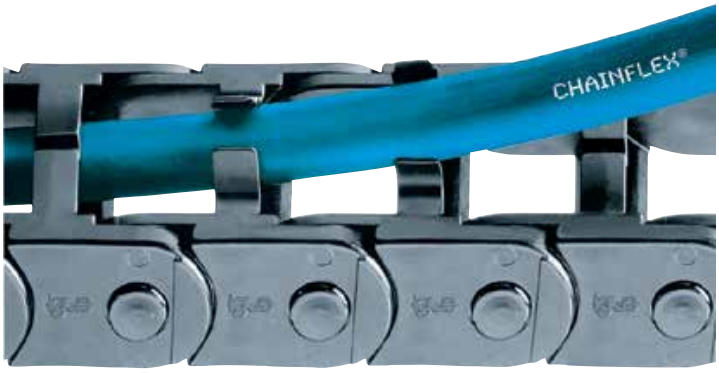
Special solutions for long travel
AUTO-GLIDE - Version 03 - Self-guiding E-Chain Systems®
Technical Data - Order Examples

Part number structure
EA25-050-100-0-

- Standard color black
- Bending radius *R*
- Width index
- Series / Type



Simply push in the cables in the E-Chain with your thumb - and it's ready!
To remove simply pull out the cables from the E-Chain®

Speed max. rolling	max. 3.28 ft/s (1 m/s)
Acceleration max. gliding	max. 3.28 ft/s² (1 m/s²)
Material - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Flammability Class, igumid NB	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

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AUTO-GLIDE

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Special solutions for long travel
AUTO-GLIDE - Version 03 - Self-guiding E-Chain Systems®
EA16

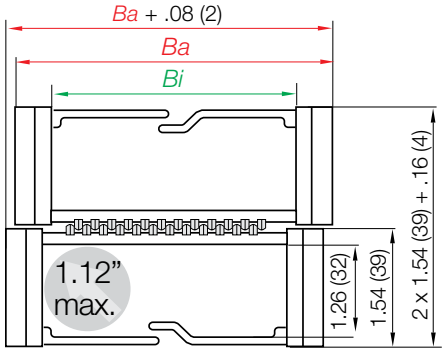
Series EA16 - Simply press cables in (outer radius) - AUTO-GLIDE crossbars (inner radius)

Supplement part number with required radius. Example: EA16-4-065-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

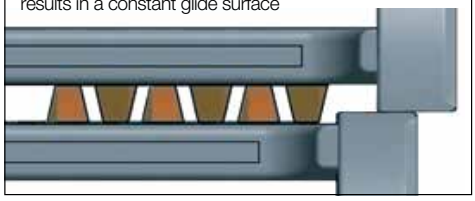
Part Number		*Bi* in. (mm)	*Ba* in. (mm)
EA16-4-	□ -0	1.89 (48)	2.36 (60)

Choose from the radii below for the above size
Radius (mm) Example: EA16-4-065-0

	065	075	100
R	2.56 (065)	1.89 (075)	3.94 (100)
H_2	3.94 (100)	3.94 (100)	3.94 (100)
D_2	12.80 (325)	13.98 (355)	22.44 (570)
K_3	27.64 (702)	30.04 (763)	49.25 (1251)



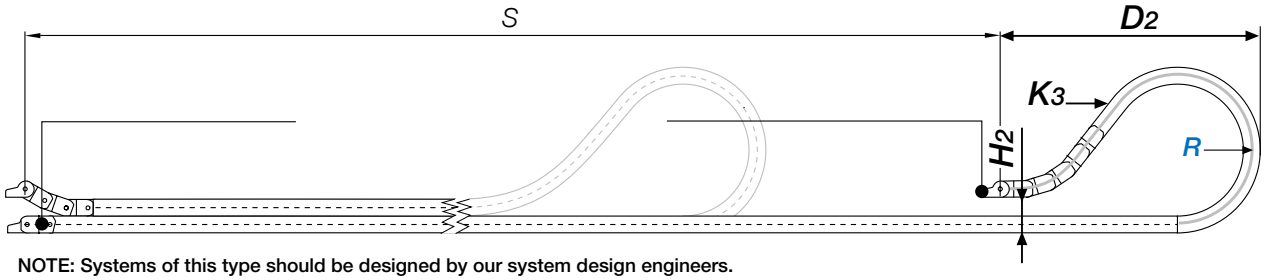
AUTO-GLIDE principle
Offset operation of upper and lower run, results in a constant glide surface



Pitch	=	1.20 (30.5 mm)
Links per ft (m)	=	10.06 (33)
Chain length	=	S + K_3

Gliding applications

Long travel lengths up to 65.6 ft. (20 m), Fill weights up to 0.27 lbs/ft (0.4 kg/m)



NOTE: Systems of this type should be designed by our system design engineers.
Please contact igus® for assistance with your application.

R	2.56 (065)	1.89 (075)	3.94 (100)
H_2	3.94 (100)	3.94 (100)	3.94 (100)
D_2	12.80 (325)	13.98 (355)	22.44 (570)
K_3	27.64 (702)	30.04 (763)	49.25 (1251)

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Special solutions for long travel
AUTO-GLIDE - Version 03 - Self-guiding E-Chain Systems®
EA25

igus® AUTO-GLIDE

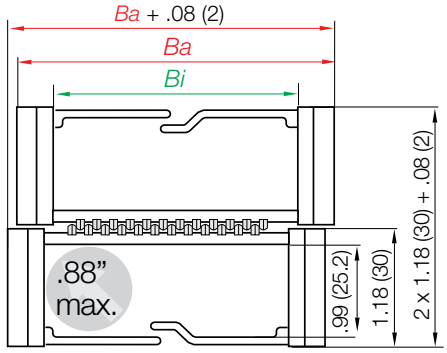
Series EA25 - Simply press cables in (outer radius) - AUTO-GLIDE crossbars (inner radius)

Supplement part number with required radius. Example: EA25-050-100-0
Pitch: .98 in. (25 mm) per link links/ft (m) = 12.24 (40)

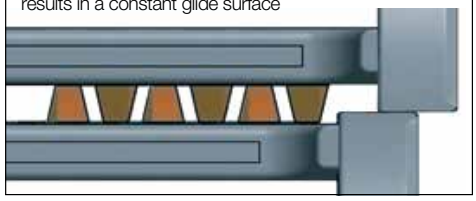
Part Number		Bi in. (mm)	Ba in. (mm)
EA25-050-	-0	1.97 (50)	2.36 (60)

Choose from the radii below for the above size
Example: EA25-050-100-0

Radius (mm)	075	100
R	1.89 (075)	3.94 (100)
H2	3.94 (100)	3.94 (100)
D2	13.00 (330)	13.00 (330)
K3	29.53 (750)	44.29 (1125)



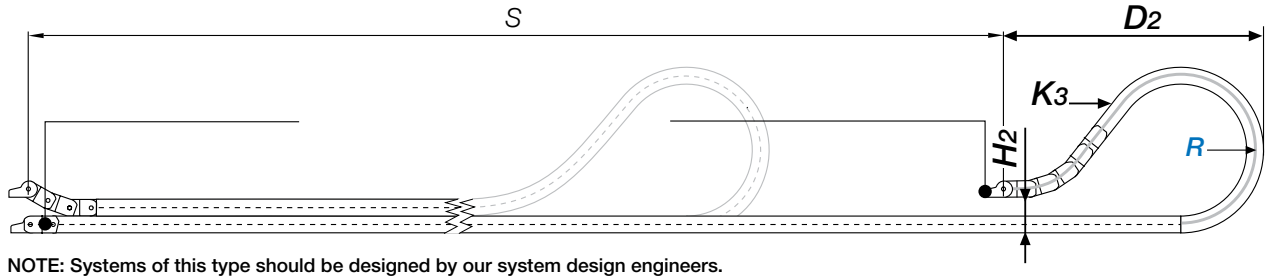
AUTO-GLIDE principle
Offset operation of upper and lower run, results in a constant glide surface



Pitch = .98 (25 mm)
Links per ft (m) = 12.24 (40)
Chain length = S + K_3

Gliding applications

Long travel lengths up to 65.6 ft. (20 m), Fill weights up to 0.27 lbs/ft (0.4 kg/m)



NOTE: Systems of this type should be designed by our system design engineers.
Please contact igus® for assistance with your application.

R	1.89 (075)	3.94 (100)
H2	3.94 (100)	3.94 (100)
D2	13.00 (330)	13.00 (330)
K3	29.53 (750)	44.29 (1125)

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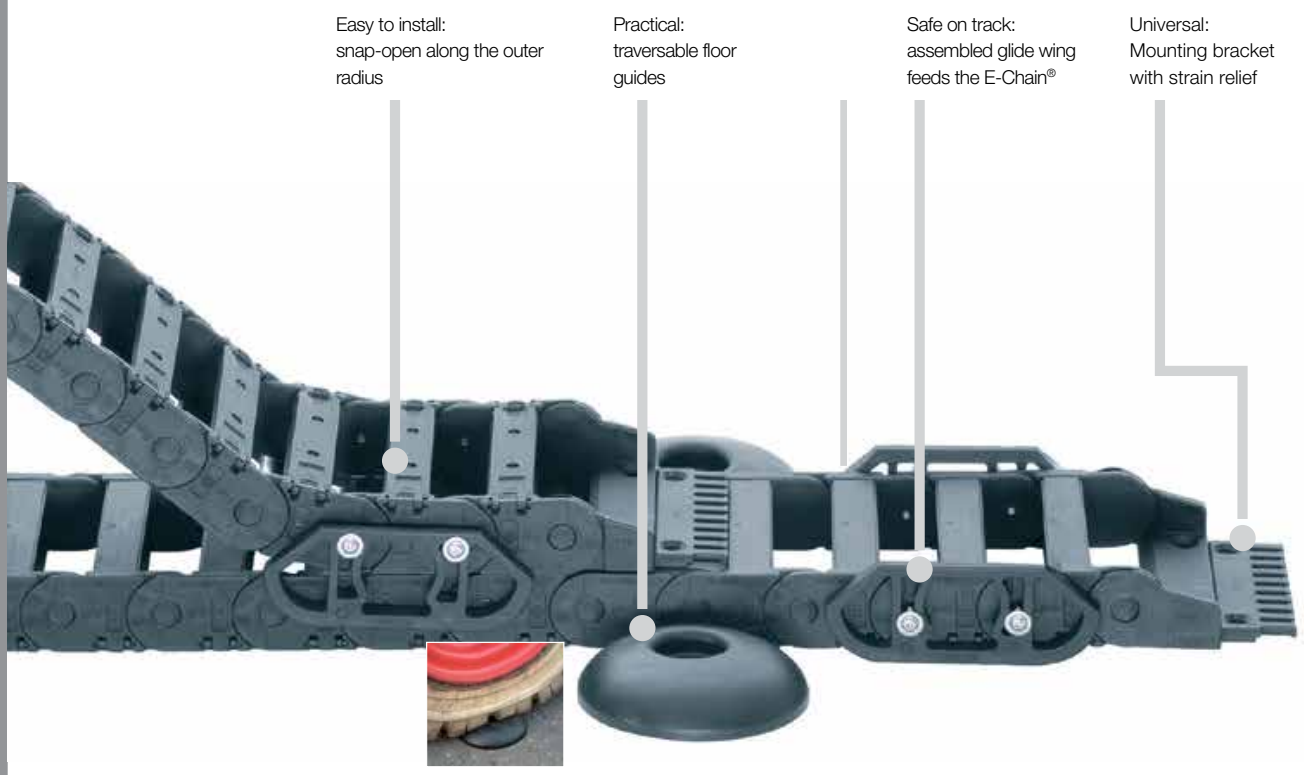
AUTO-GLIDE

igus®

Special solutions for long travel
AUTO-GLIDE - Version 04 - Self-guiding E-Chain Systems®
Overview



Special glide shoes provide safe guiding of the E2/000 - AUTO-GLIDE - Version 04

In this version, special plastic glide shoes are side-mounted on the E-Chain® link every 39.4 to 78.7 inches (1,000 to 2,000 mm). The function of these gliding shoes resembles the leeboard used on sailboats. Some of these glide shoes are conceived in such a way that in contact they pivot upwards and enable the continuation of the travel. Similarly the glide shoes in AUTO-GLIDE go up and down, each according to its position as lower run or upper run of the E-Chain®. They provide the precise lateral guidance and a smooth glide of the E-Chain®. The glide shoes are assembled every 24th E-Chain® link from the moving end. Up to 32.8 ft. (10 m) length without floor guides possible in the series 2400/2450/2480/2500.

Typical industries and applications

- Industrial vehicles
- Long travels with easier filling
- Simple outdoor applications

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Special solutions for long travel
AUTO-GLIDE - Version 04 - Self-guiding E-Chain Systems®
Technical Data - Order Examples

igus® AUTO-GLIDE

Part number structure
2500-05-150-0-AG

- 2500 – Series / Type
- 05 – Width index
- 150 – Bending radius *R*
- 0 – Standard color black
- AG – AUTO-GLIDE

Order example | Part number structure

Order example for complete E-Chain® Series 2500, color black, with mounting brackets and interior separation:

E-Chain® 32.8 ft. (10 m)	Please indicate E-Chain® length or number of links: 32.8 ft. (10 m) or 249 links (Number of links in the assembly must be deducted	2500-05-150-0
E-Chain® + glide wing	Assembly consists of 4 E-Chain® links and 2 glide wings	2500-05-1500-AG
+ Floor guides	8 pieces (2 pieces every 6.56 ft. (2 m) from the half of travel)	AG-380-BF

Order text: 249 links 2500-05-150-0 + 10 units 2500-05-150-AG + Mounting bracket + Interior separation (optional)
Note: Lateral glide wings are assembled on every 24th E-Chain® link.

Speed max. rolling	max. 1.64 ft/s (0.5 m/s)
Acceleration max. gliding	max. 3.28 ft/s² (1 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

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AUTO-GLIDE

igus®

Special solutions for long travel
AUTO-GLIDE - Version 04 - Self-guiding E-Chain Systems®
2400/2450/2480/2500

Series 2400 shown

Series 2400 - snap-open along the inner radius
Series 2450 - snap-open along the outer radius - standard
Series 2480 - snap-open along the inner radius, enclosed along the outer radius
Series 2500 - snap-open along the inner radius, fully enclosed

Supplement part number with required radius. Example: 2500-05-[150]-0-AG
Pitch: 1.81 in. (46 mm) per link links/ft (m) = 6.63 (22)

Part Number E-Chain® / E-Tube	*Bi* in. (mm)	*Ba* in. (mm)	Floor Guide Single part
2400/2450/2480/2500-05-[ ]-0-AG	2.24 (57)	2.87 (73)	AG-380-BF
2400/2450/2480/2500-07-[ ]-0-AG	3.03 (77)	3.66 (93)	AG-380-BF
2400/2450/2480/2500-09-[ ]-0-AG	3.50 (89)	4.13 (105)	AG-380-BF
2400/2450/2480/2500-10-[ ]-0-AG	4.06 (103)	4.69 (119)	AG-380-BF
2400/2450/2480/2500-12-[ ]-0-AG	4.92 (125)	5.55 (141)	AG-380-BF

Choose from the radii below for all of the above sizes
Radius (mm) Example: 2500-05-[150]-0-AG

	055*	075	100	125	150	175	200	225	250
R	2.17 (55)	2.95 (75)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
H_2	4.33 (110)	5.91 (150)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)
D_{2}^{+25}	5.59 (142)	6.38 (162)	14.96 (380)	17.32 (440)	23.23 (590)	29.72 (755)	37.40 (950)	40.94 (1040)	44.49 (1130)
K_3	19.92 (506)	23.54 (598)	36.22 (920)	41.65 (1058)	56.14 (1426)	70.63 (1794)	86.93 (2208)	95.98 (2438)	105.04 (2668)

*This radius for Series 2450/2480 available upon request. Please consult igus® for delivery times.

igus® E-Chain System®
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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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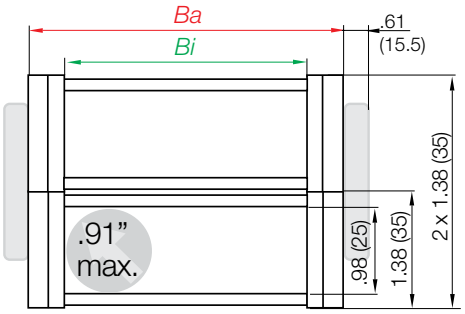
Special solutions for long travel
AUTO-GLIDE - Version 04 - Self-guiding E-Chain Systems®
2400/2450/2480/2500 - Installation Dimensions



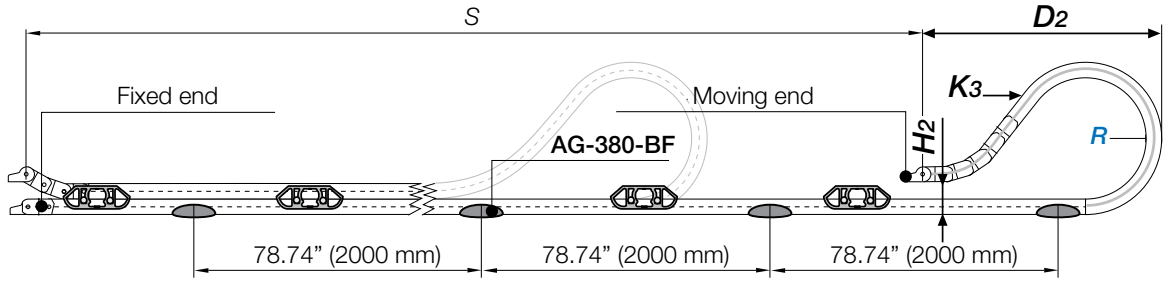
Legend

S = Length of travel
R = Bending radius
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding

Gliding applications

Long travel lengths up to 65.6 ft. (20 m), Fill weights up to 1.08 lbs/ft (1.6 kg/m)
In case of travels less than 9.84 ft. (3 m) we recommend an self-supporting E-Chain®.
Note: Lateral glide wings are assembled on every 24th E-Chain® link.

Pitch per link: = 1.81" (46 mm)
Links per ft (m): = 6.63 (22)
For center mount applications:
Chain length = $S + K_3$



R	2.17 (55)	2.95 (75)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
H_2	4.33 (110)	5.91 (150)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)
D_2^{+25}	5.59 (142)	6.38 (162)	14.96 (380)	17.32 (440)	23.23 (590)	29.72 (755)	37.40 (950)	40.94 (1040)	44.49 (1130)
K_3	19.92 (506)	23.54 (598)	36.22 (920)	41.65 (1058)	56.14 (1426)	70.63 (1794)	86.93 (2208)	95.98 (2438)	105.04 (2668)

*This radius for Series 2450/2480 available upon request. Please consult igus® for delivery times.

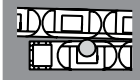
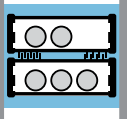
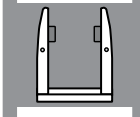
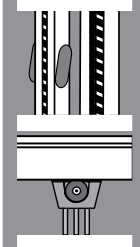
Available Accessories

Optimized, cable-friendly interior separation program

Pivoting mounting brackets for gliding applications

Pivoting KMA mounting brackets with attachment points on all sides

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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Special solutions for long travel
AUTO-GLIDE - Version 04 - Self-guiding E-Chain Systems®
2600/2650/2680/2700

Series 2600 shown

Series 2600 - snap-open along the inner radius
Series 2650 - snap-open along the outer radius - standard
Series 2680 - snap-open along the inner radius, enclosed along the outer radius
Series 2700 - snap-open along the inner radius, fully enclosed

Supplement part number with required radius. Example: 2600-05-[150]-0-AG
Pitch: 2.20 in. (56 mm) per link links/ft (m) = 5.45 (18)

Part Number E-Chain® / E-Tube	*Bi* in. (mm)	*Ba* in. (mm)	Floor Guide Single part
2600/2650/2680/2700-05-[ ]-0-AG	1.97 (50)	2.60 (66)	AG-380-BF
2600/2650/2680/2700-06-[ ]-0-AG	2.56 (65)	3.19 (81)	AG-380-BF
2600/2650/2680/2700-07-[ ]-0-AG	2.95 (75)	3.58 (91)	AG-380-BF
2600/2650/2680/2700-09-[ ]-0-AG	3.54 (90)	4.17 (106)	AG-380-BF
2600/2650/2680/2700-10-[ ]-0-AG	3.94 (100)	4.57 (116)	AG-380-BF
2600/2650/2680/2700-12-[ ]-0-AG	4.92 (125)	5.55 (141)	AG-380-BF
2600/2650/2680/2700-15-[ ]-0-AG	5.91 (150)	6.54 (166)	AG-380-BF
2600/2650/2680/2700-17-[ ]-0-AG	6.89 (175)	7.64 (194)	AG-380-BF

Choose from the radii below for all of the above sizes
Radius (mm) Example: 2600-05-[150]-0-AG

	075*	100	125	150	175	200	250		
R	2.95 (75)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)		
H_2	5.91 (150)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)		
D_{2}^{*25}	5.91 (150)	13.78 (350)	18.70 (475)	19.69 (500)	25.79 (655)	30.31 (770)	37.40 (950)		
K_3	24.33 (616)	33.07 (840)	44.09 (1120)	48.50 (1232)	61.73 (1568)	72.76 (1848)	90.39 (2296)		

*This radius for Series 2650/2680 available upon request. Please consult igus® for delivery times.

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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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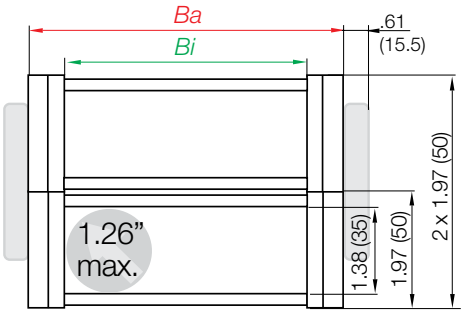
Special solutions for long travel
AUTO-GLIDE - Version 04 - Self-guiding E-Chain Systems®
2600/2650/2680/2700 - Installation Dimensions



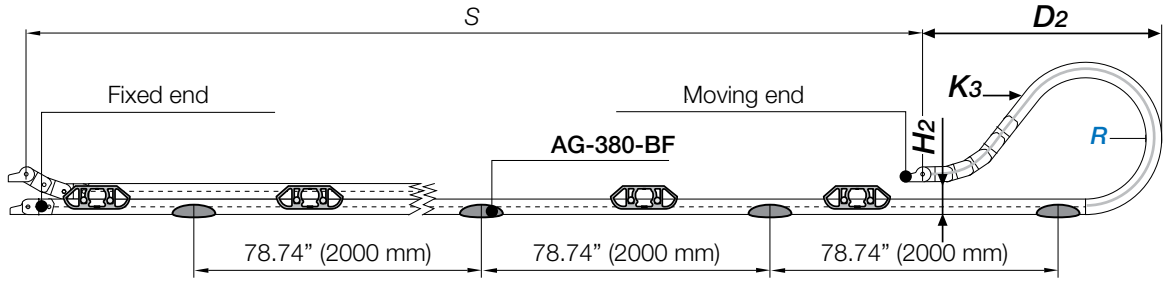
Legend

S = Length of travel
R = Bending radius
H_{Ri} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding

Gliding applications

Long travel lengths up to 98.4 ft. (30 m), Fill weights up to 1.34 lbs/ft (2.0 kg/m)
In case of travels less than 9.84 ft. (3 m) we recommend an self-supporting E-Chain®.
Note: Lateral glide wings are assembled on every 24th E-Chain® link.

Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.45 (18)
For center mount applications:
Chain length = $\frac{S}{2} + K_3$



R	2.95 (75)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H_2	5.91 (150)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
D_2 *25	5.91 (150)	13.78 (350)	18.70 (475)	19.69 (500)	25.79 (655)	30.31 (770)	37.40 (950)
K_3	24.33 (616)	33.07 (840)	44.09 (1120)	48.50 (1232)	61.73 (1568)	72.76 (1848)	90.39 (2296)

***This radius for Series 2650/2680 available upon request. Please consult igus® for delivery times.**

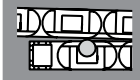
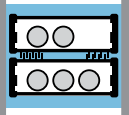
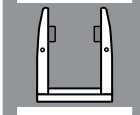
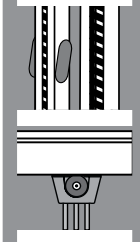
Available Accessories

Optimized, cable-friendly interior separation program

Pivoting mounting brackets for gliding applications

Pivoting KMA mounting brackets with attachment points on all sides

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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More solutions for long travels

Guidelok horizontal - Basic flizz®
Micro Flizz® - PPDS - Modular Projects

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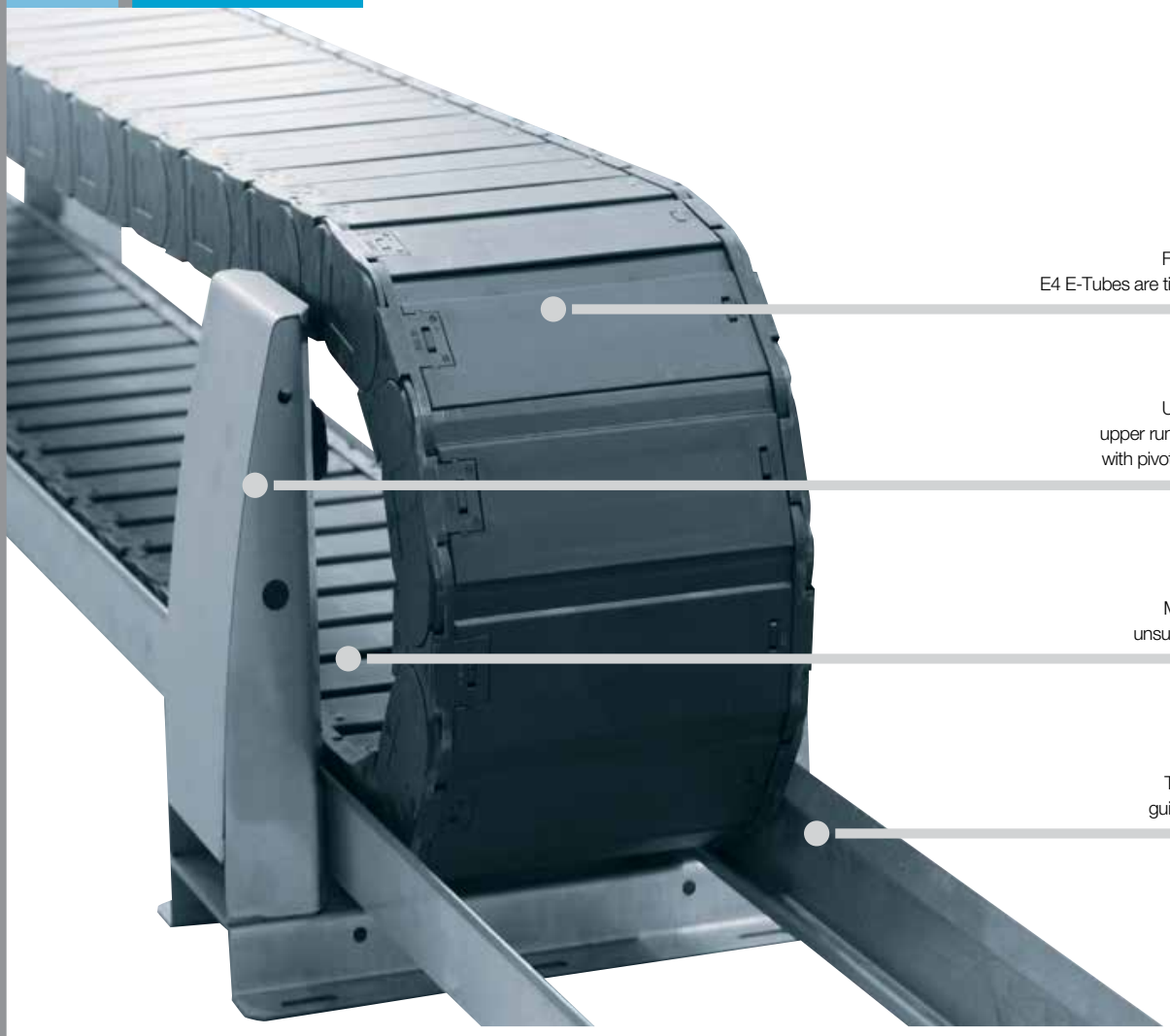
Guidelok igus®

More solutions for long travel
Guidelok Horizontal - Upper run guide for long travels
Overview



Self-supporting in chip areas - Guidelok horizontal

Especially for long travels on machine tools, when the E-Chain® has to be gliding, metallic chips are a problem. Guidelok horizontal is a cost-effective solution.

- Travels, unsupported up to (50 m) possible
- Chips cannot get stuck between upper and lower run
- Modular system with few parts (also possible without sideways trough)
- Enormous increase of "self-supporting" length of E-Chains®
- Lower push-/pull forces (smaller E-Chains®, self-supporting and rollers = energy efficient)
- Lower cost than most steel chains or ambitions gliding systems
- Open guide trough design, chips can fall through

Typical industries and applications

- Machine tools
- Applications in chip areas
- Wherever a gliding application is not recommended

More solutions for long travel
Guidelok Horizontal - Upper run guide for long travels
Dimensions

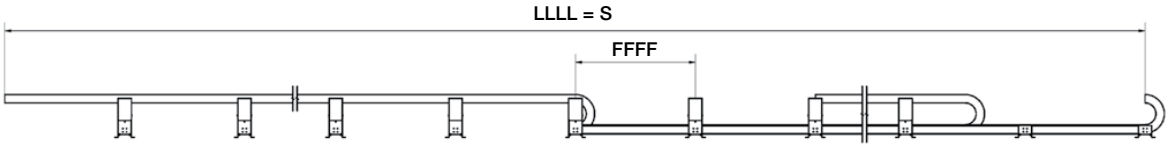
igus® Guidelok

Design-principle - horizontal Guidelok guides the E-Chain® on special spring loaded roller supports that are pushed back by the E-Chain® radius, clearing its path

The E-Chain® is guided in the trough channel, pushing back the spring loaded roller support with its radius...

...which snaps back out after the E-Chain® radius has passed...

...the upper run then lays on the roller support.



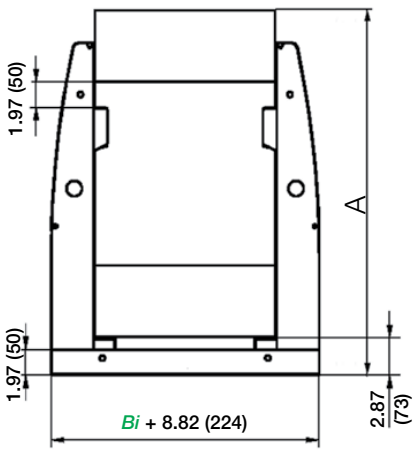
Design sketch - Guidelok horizontal

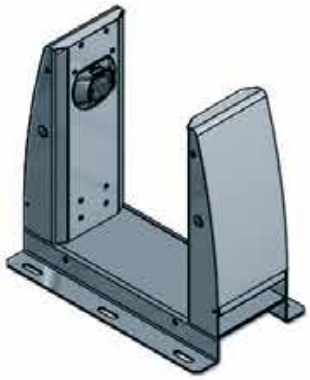
Selection table

For Series	Part Number	*Bi* (mm)	*R* (mm)
E4-56/R4-56	907-645-*Bi*- *R* - LLLL/FFFF	(150 - 600)	150, 175, 200, 250, 300
E4-80/R4-80	907-645-*Bi*- *R* - LLLL/FFFF	(50 - 600)	150, 175, 200, 250, 300
E4-112	907-645-*Bi*- *R* - LLLL/FFFF	(200 - 600)	150, 175, 200, 250, 300
E4-56/R4-56	907-837-*Bi*- *R* - LLLL/FFFF	(50 - 600)	350, 400, 450, 500
E4-80/R4-80	907-837-*Bi*- *R* - LLLL/FFFF	(50 - 600)	350, 400, 450, 500
E4-112	907-837-*Bi*- *R* - LLLL/FFFF	(200 - 600)	350, 400, 450, 500

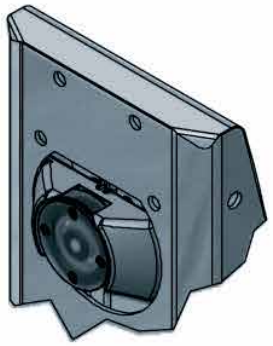
LLLL = Total Length

FFFF = Field Length





Lateral supports with pivoting rollers for the upper run support of the E-Chain®



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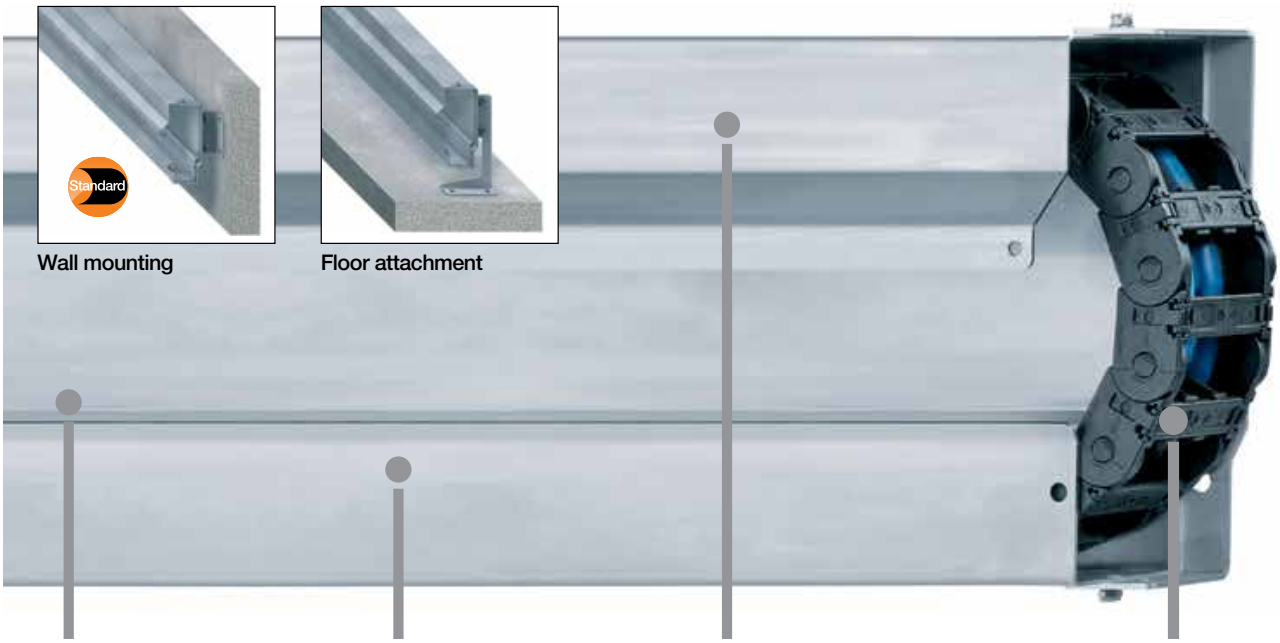
Basic Flizz®

igus®

More solutions for long travel
Basic Flizz® - Enclosed solution for long travels
Overview



Cost-effective, enclosed solution for long travels - Basic Flizz®

- Low-maintenance system for travels up to 100 m
- Other sizes and versions available, up to 200 travel with E2 rol E-Chains® and more
- Protection against weather and dirt exposure - Cost-effective and fully enclosed complete solution
- Standardized and modular design
- Easy wall mounting or optionally as floor attachment
- Cable lengths up to 50 % shorter than festooning, low-profile installation and no cable salad
- Cables are always guided with a defined bending radius
  an tension forces will be supported by the E-Chain®
- Cables cannot entangle, hang, or tear
- No slip-ring contact (as is the case on motor drums)
- Cables or hoses can be easily retrofitted on demand
- Reduce power costs - directly driven by scraper.
  No additional drives needed (as is the case on motor drums)
- Optionally available moving end arm (e.g. as mechanical connection for scraper trolley -
  we will document the local situation and will provide a tailored solution

Typical industries and applications

- Sludge scrapers
- Longitudinal scrapers
- Sand catchers
- Grease trap
- Waste-water treatment
- Plating facilities
- Cranes
- Plant construction
- Locks

More solutions for long travel
Basic Flizz® - Enclosed solution for long travels
Dimensions

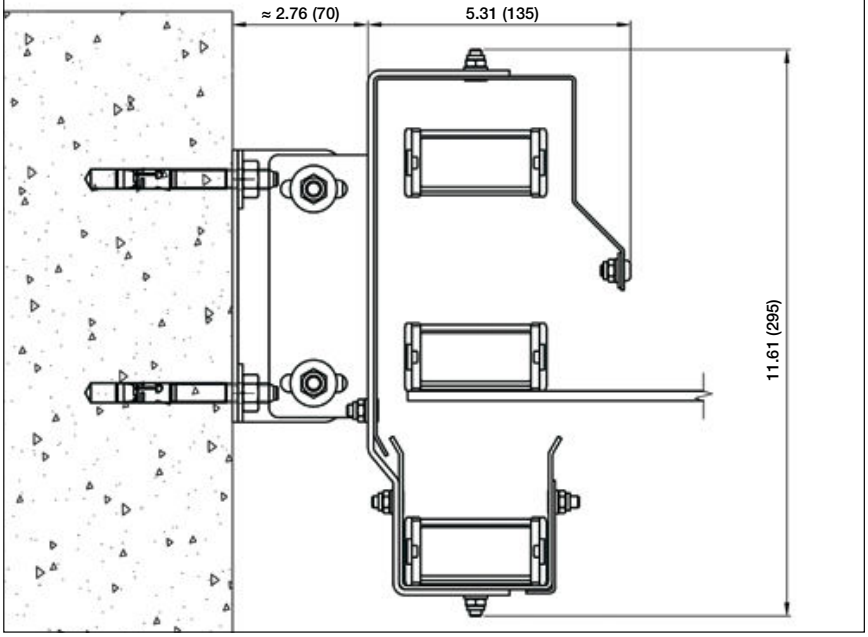
Part Number Basic Flizz®	Specification	Support gap (mm)
IE92-31-75-260-3000-01-E	basic flizz® - With glide bar	3000
IE92-31-75-260-3000-F-01-E	basic flizz® - Fixed-end module	3000
IE92-30-75-260-3000-01-E	basic flizz® - Without glide bar	3000

Standard material stainless steel V2A: material 1.4301 (AISI 304).

Optional: galvanized steel or stainless steel V4A: material 1.4404 (AISI 316L)

More lengths available upon request, please consult igus® for delivery time.

Dimensions



basic flizz® - enclosed total solution

igus® basic flizz® - ideal for waste-water treatment plants

Cost-effective, maintenance-free system

Simple assembly (wall-mounted or floor-mounted assembly), standardized, modular construction

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Micro Flizz®

igus®

More solutions for long travel
Micro Flizz® - Small E-Chains® in Aluminum profile
Overview

Universal attachment:
Universal attachment options due to three T-grooves

Unsupported:
Winglets hold the E-Chain® secure in the guidance channel

Secure:
Integrated strain relief in the guide carriage

Maintenance-free:
Aluminum channel and lubricant-free plastic E-Chain®

Master long travels with the smallest E-Chain® - Micro Flizz®

Compact system for a secure guidance of power, data and air as a maintenance-free alternative for busbar

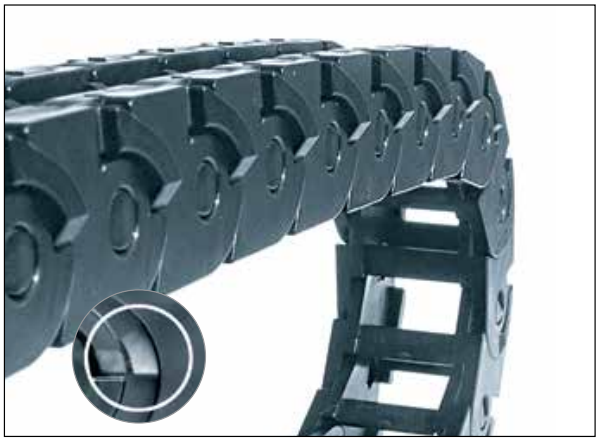
- E-Chain® is guided in special slot, no sliding against each other
- Control via stationary switch cabinet possible
- Accelerations up to 164 ft/s² (50 m/s²) and speeds up to 19.69 ft. (6 m/s)
- Fast assembly due to pre-configured, modular system
- Less space required
- Available also as preassembled
- Smooth running due to ball bearings in the guide carriages
- Also with EX tested E-Chain® available (on request)
- 3 sizes available: cable diameters **MF06:** max. Ø 8.0 mm, **MF08:** max. Ø 9.5 mm, **MF10:** max. Ø 16 mm

Typical industries and applications

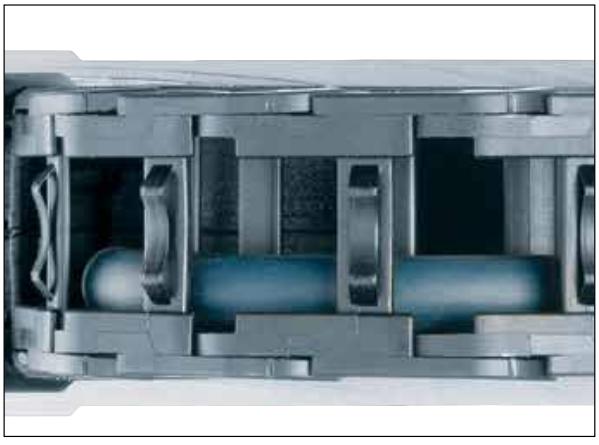
- Rack feeder
- Indoor cranes
- Industrial gates
- Working stations
- Sewage treatment plants
- Camera systems
- Sliding doors
- Operator panels
- Measure systems
- Studio equipment
- Conveyor technique

More solutions for long travel
Micro Flizz® - Small E-Chains® in Aluminum profile
Overview

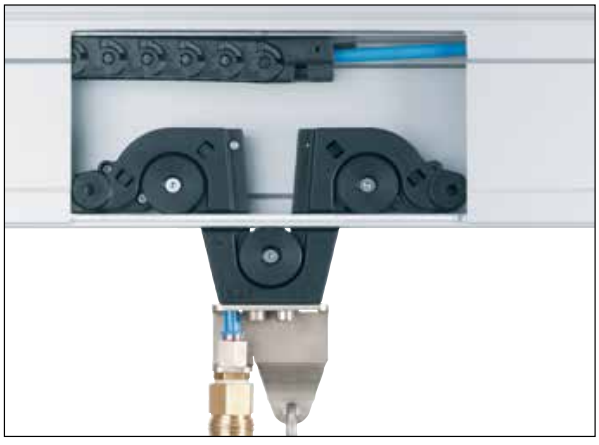
Separated upper and lower run: Running trough the radius, integrated winglets fold in



In the extended position, the winglets fold out and safely hold the upper run in the elevated position

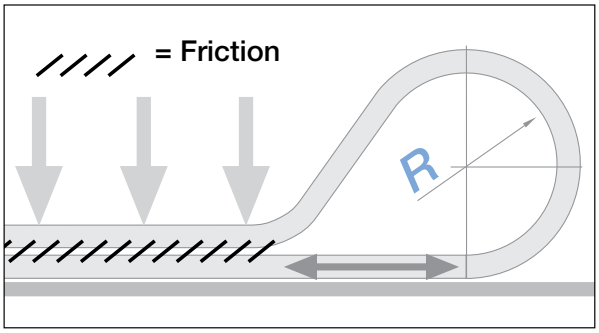


A polymer spring element cushions the motion inside the trough and lower noise

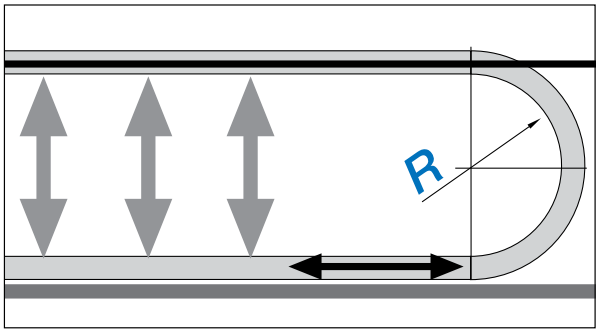


Micro Flizz® accessory: Connection for compressed air coupling

Special feature: micro flizz® construction



Yesterday: Moving lower run, sliding function.
Long travels need stable E-Chains®



Today: Micro Flizz® - Small E-Chains®, self-guiding in guiding channel - Friction is reduced by factor 3 over the conventional system.

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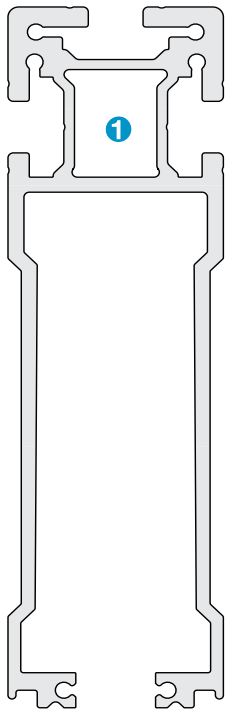
igus®

E-Chain Systems®
Micro Flizz® - Small E-Chains® in aluminum profile

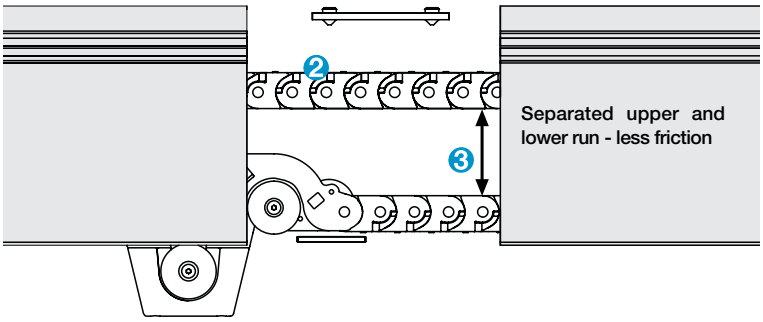
Telephone 1-800-521-2747
Fax 1-401-438-7270

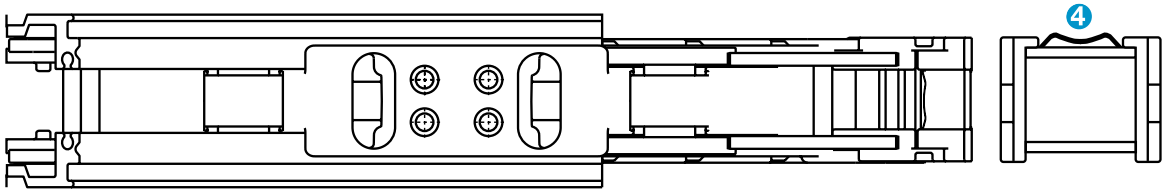
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



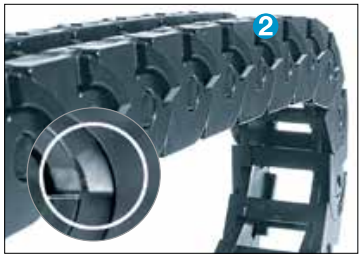
Technical data Micro Flizz®

1. Universal attachment options due to three T-grooves
2. Winglets hold the E-Chain® secure in the guidance channel
3. Separated upper and lower run of the Flizz® E-Chain®, thus less friction and reduced push/pull forces
4. Polymer springs for a soft unrolling of the E-Chain® in the Flizz® channel effect a substantial noise reduction
5. Opposed E-Chains® can be used, that means a double filling or two independent travels are possible
6. Attachment of the E-Chain® by roller cart on the moving end, gliding or locking possible
7. Integrated strain relief in the guide carriage for the safe fixing of cables

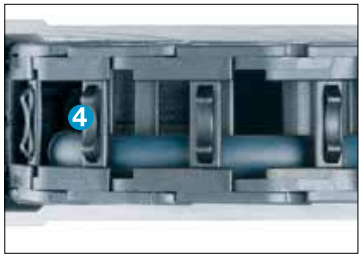




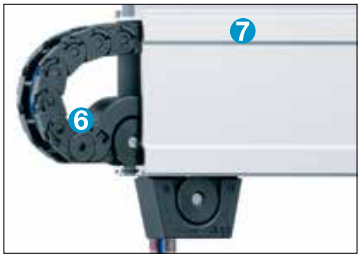
Details Micro Flizz®



In the extended position, the winglets fold out and safely hold the upper run in the elevated position



A polymer spring element cushions the motion inside the trough and lower noise



Power, data, pneumatics in confined areas. Chainflex® cables are specifically designed for this challenge

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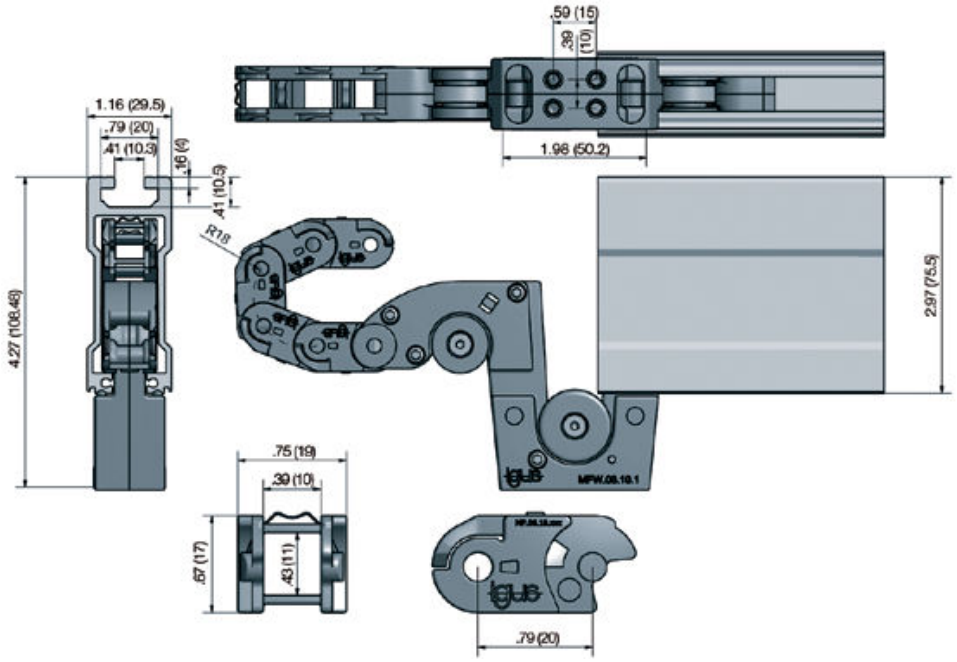
E-Chain Systems®
Micro Flizz® - Small E-Chains® in Aluminum profile
Series MF06

Micro Flizz® Series MF06 - Part No. MF-06-10-018



Micro Flizz® Series MF06 - Dimensions

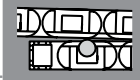
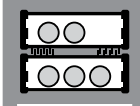
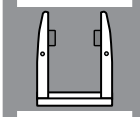
Part No.	Bi		Ba		hi		ha		R Bending radius
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	(mm)
MF-06-10-018	.39	(10)	.75	(19)	.43	(11)	.67	(17)	018

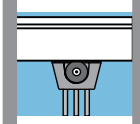
More dimensions	
Installation height complete system:	108.48 mm
Installation width complete system:	29.5 mm
Recommended length channel pieces:	2.0 m, 3.0 m and 6.0 m - Die-cast aluminum material
Cable diameter max.:	8 mm

MF06

E-Chain® viewable for illustration

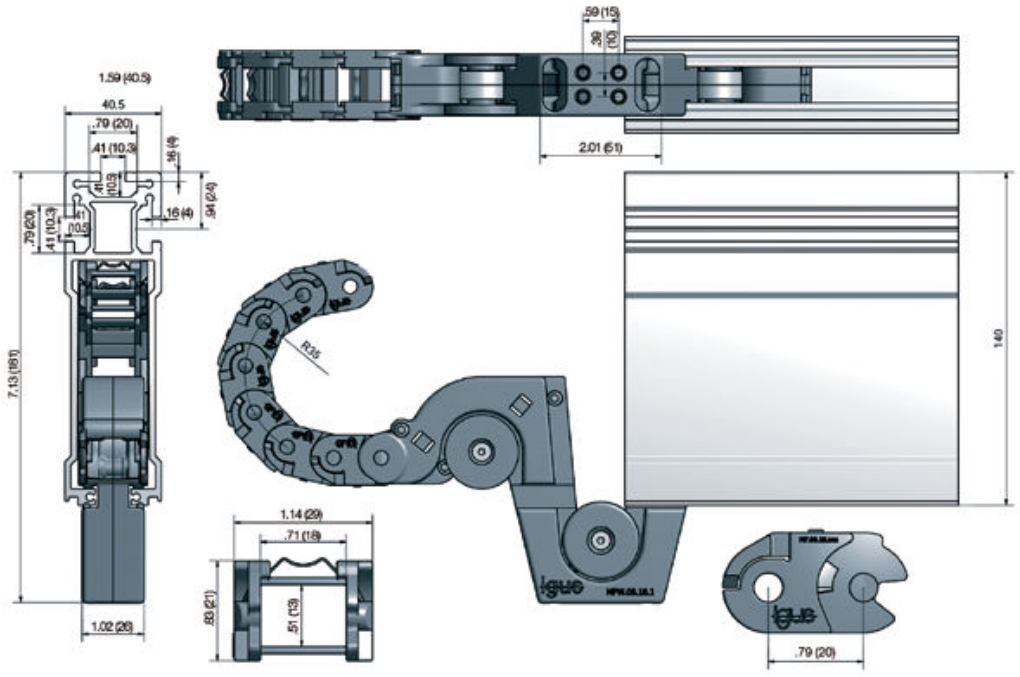
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



E-Chain Systems®
Micro Flizz® - Small E-Chains® in Aluminum profile
Series MF08

Micro Flizz® Series MF08 - Part No. MF-08-18-035



Micro Flizz® Series MF08 - Dimensions

Part No.	*Bi*		*Ba*		*hi*		*ha*		*R* Bending radius
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	(mm)
MF-08-18-035	.71	(18)	1.14	(29)	.51	(13)	.83	(21)	035

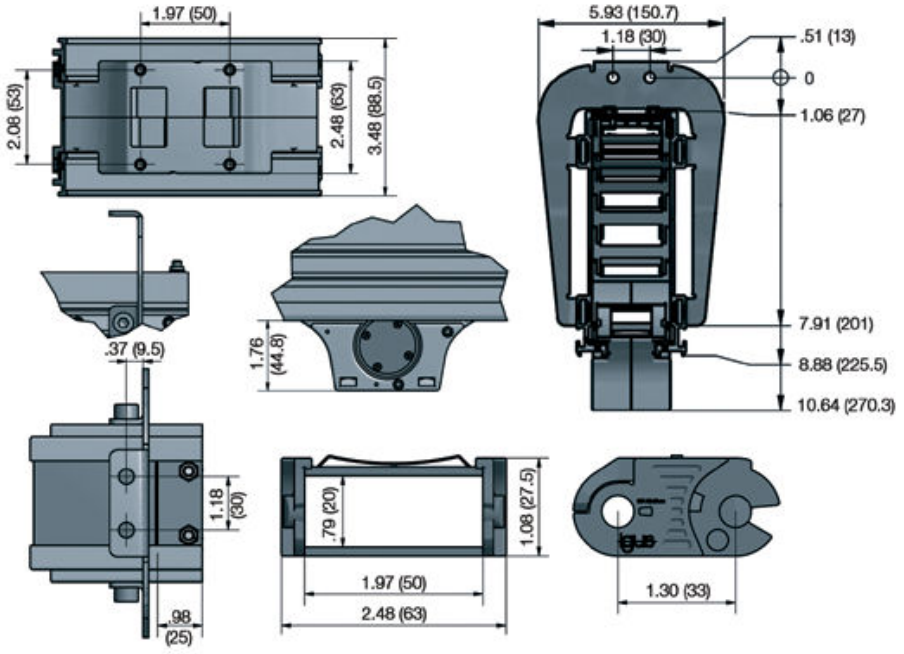
Order example ➤ Page 9.179

More dimensions	
Installation height complete system:	161 mm
Installation width complete system:	40.5 mm
Recommended length channel pieces:	2.0 m, 3.0 m and 6.0 m - Die-cast aluminum material
Cable diameter max.:	9.5 mm

E-Chain® viewable for illustration

E-Chain Systems®
Micro Flizz® - Small E-Chains® in Aluminum profile
Series MF10

Micro Flizz® Series MF10 - Part No. MF-10-50-075



Micro Flizz® Series MF08 - Dimensions

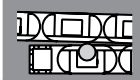
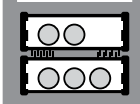
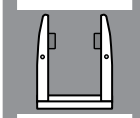
Part No.	*Bi*		*Ba*		*hi*		*ha*		*R* Bending radius
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	(mm)
MF-10-50-075	1.97	(50)	2.48	(63)	.79	(20)	1.08	(27.5)	075

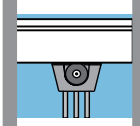
Order example ➤ Page 9.179

More dimensions	
Installation height complete system:	275 mm
Installation width complete system:	107.6 mm
Recommended length channel pieces:	2.0 m, 3.0 m and 6.0 m - Die-cast aluminum material
Cable diameter max.:	16 mm

E-Chain® viewable for illustration

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



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E-Chain Systems®
Micro Flizz® - Small E-Chains® in Aluminum profile
Order Examples

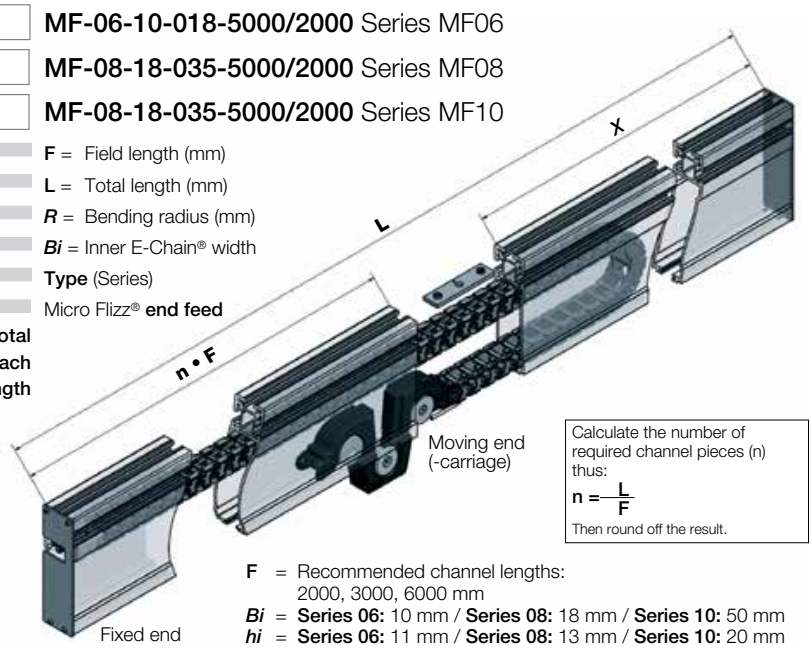
Order example - End feed

MF	06-	10-	018-	L / F	**MF-06-10-018-5000/2000** Series MF06
MF	08-	18-	035-	L / F	**MF-08-18-035-5000/2000** Series MF08
MF	10-	50-	075-	L / F	**MF-08-18-035-5000/2000** Series MF10

F = Field length (mm)
L = Total length (mm)
R = Bending radius (mm)
Bi = Inner E-Chain® width
Type (Series)
Micro Flizz® **end feed**

Micro Flizz® as end feed option with a total length of 5000 mm, split into 2 channels each 2000 mm and 1 channel with a residual length of 1000 mm

Bi = Inner E-Chain® width (mm)
R = Bending radius (mm)
n = Number of channel pieces
S = travel = L - 300 (mm)
F = Field length (mm)
L = Total length (mm)
X = residual length (mm)



Calculate the number of required channel pieces (n) thus:
$n = \frac{L}{F}$
Then round off the result.

F = Recommended channel lengths:
2000, 3000, 6000 mm
Bi = **Series 06:** 10 mm / **Series 08:** 18 mm / **Series 10:** 50 mm
hi = **Series 06:** 11 mm / **Series 08:** 13 mm / **Series 10:** 20 mm

Order example - 2 carriages in opposite directions

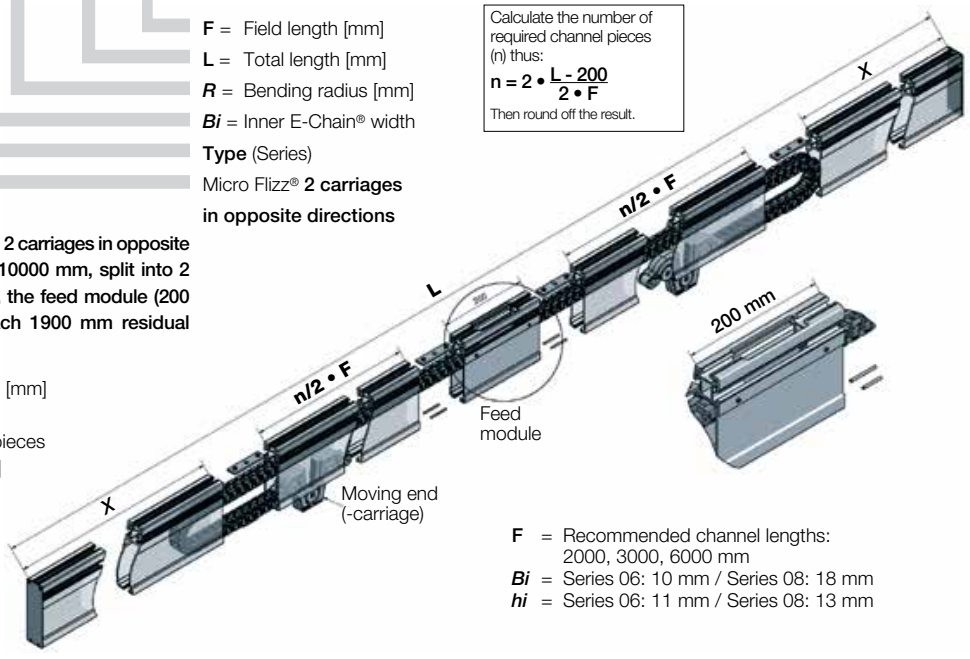
MFG2	06-	10-	018-	L / F	**MFG2-06-10-018-10000/3000** Series MF06
MFG2	08-	18-	035-	L / F	**MFG2-08-18-035-10000/3000** Series MF08
MFG2	10-	50-	075-	L / F	**MFG2-08-18-035-10000/3000** Series MF10

F = Field length [mm]
L = Total length [mm]
R = Bending radius [mm]
Bi = Inner E-Chain® width
Type (Series)
Micro Flizz® **2 carriages in opposite directions**

Micro Flizz® mounted with 2 carriages in opposite directions - Total length 10000 mm, split into 2 channels each 3000 mm, the feed module (200 mm) and 2 channels each 1900 mm residual length.

Bi = Inner E-Chain® width [mm]
R = Bending radius [mm]
n = Number of channel pieces
S = travel = L - 300 [mm]
F = Field length [mm]
L = Total length [mm]
X = residual length [mm]

Calculate the number of required channel pieces (n) thus:
$n = 2 \bullet \frac{L - 200}{2 \bullet F}$
Then round off the result.



F = Recommended channel lengths:
2000, 3000, 6000 mm
Bi = Series 06: 10 mm / Series 08: 18 mm
hi = Series 06: 11 mm / Series 08: 13 mm

E-Chain Systems®
Micro Flizz® - Small E-Chains® in Aluminum profile

Highly flexible Chainflex® special cables for dynamic applications

Chainflex®		Temp.	v max. unsupported ft/s	(m/s)	v max. gliding ft/s	(m/s)	a max. ft/s²	(m/s²)	Number of cores	AWG Range
	CF9	-31°F - +212°F	32.8	(10)	19.7	(6)	328	(100)	2 - 36	24-2
	CF10	-31°F - +212°F	32.8	(10)	16.4	(5)	328	(100)	2 - 25	26-12
	CF98	-31°F - +194°F	32.8	(10)	19.7	(6)	328	(100)	2 - 8	26-22
	CF99	-31°F - +194°F	32.8	(10)	19.7	(6)	328	(100)	2 - 8	26-22

Chainflex® cables suitable for Micro Flizz® are available from stock at igus®!
MF06 - max. cable outer diameter ø 8.0 mm, MF08 - max. cable outer diameter ø 9.5 mm

Micro Flizz® in an outdoor application with 30 m travel

Safe energy supply under strong dust
and dirt accumulation with igus® Micro Flizz®

Micro Flizz® as “energy supplying rail guide”
for a scale to weigh chemicals, etc.

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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PPDS

igus®

E-Chain Systems®
PPDS - Condition Monitoring
Overview - Advantages

Floating moving end now also available for PPDS basic

PPDS basic:
Reliability from stock

PPDS analysis unit:
Emergency shut-off or alarm in response to a potential system overload

PPF sensor:
Force is measured directly at the mounting bracket of the E-Chain®

Complete package:
Including interface cables

Condition monitoring: Push Pull Force Detection System - PPDS

The PPDS System is an electronic diagnostics tool that performs online monitoring of the displacement forces on the E-Chains® in order to avoid system damage and stoppages. Excessive dirt, ice, and snow and foreign objects that fall into the E-Chain® can block the system, causing the E-Chain® to ascend and break. The PPDS system measures the displacement forces on the E-Chain® several times per second, and compares the information with be calculated specification. If a variance occurs the plant can be automatically stopped with the help of the PPDS system.

- 3 PPDS systems are available
- Easy installation by means of non-interchangeable connectors
- Easy programming using the membrane keypad directly at the device
- Compact housing, stable, corrosion resistant, sealed in accordance with IP 65
- The force limit is programmed in tensile and compression direction
- The plant stops when the force is exceeded
- Custom programmable and event logging in the data memory

Typical industries and applications

- Malfunction-sensitive plants, such as conveyor systems in power plants
- Waste incineration systems
- Chemical plants
- Crane building
- Generally with long travel distances that have high fail-safe requirements
- For long travel applications, if tensile and compressive force monitoring is needed

E-Chain Systems®
PPDS - Condition Monitoring Options
Product Range - Basic / Advanced / Pro

igus® PPDS

PPDS basic - as safety standard

So far the realization of Condition Monitoring Systems was limited to large-scale projects, e.g. ship-to-shore cranes. PPDS basic now makes this technology available for all standard industrial appliances. The simple force measuring function conducted at the mounting bracket of the E-Chain® new also provides an emergency stop function for E-Chains® in gliding applications under 328 ft. (100 m) stroke at a reasonable price

- Low-cost system protection
- Emergency Shutdown or alarming in case of system overload
- Space - saving design
- New floating moving end available for PPDS basic.

PPDS advanced - for long gliding applications

The system for very long gliding applications with an igus® floating moving arm (used to compensate lateral movements). The force sensor is integrated in the floating moving arm and works in connection with the PPDS evaluation unit. We recommend to realize the engineering of such a plant by our technicians, please consult igus®.

PPDS pro - for extreme operational reliability requirements

The system for long travels when extreme operational reliability is essential. The PPDS pro analysis unit can analyze force thresholds by position. Here as well, a load cell is installed in the floating moving end. We recommend to realize the engineering of such a plant by our technicians, please consult igus®.

Electronic pull-push force monitor with the igus® PPDS system

PPDS system test facility in the igus® lab

Floating moving end as separate component

- Compensates parallel errors - compensates lateral offset tolerances between moving end and E-Chain System® horizontal ± 82 ft. (25 m)
- Easy assembly, small, light, and affordable
- Compatible with PPDS basic
- Max. acceleration: 2 m/s² (speed depends on E-Chain® type)

Delivery program

Part No. floating moving end as separate component	For E-Chain® Series
FTA-B-01-2500-XX	2500, System E2/000
FTA-B-01-2700-XX	2700, System E2/000
FTA-B-01-3400-XX	2500, System E2/000
FTA-B-01-E4-28-XX	E4.28, System E4-1
FTA-B-01-E4-32-XX	E4.32, System E4-1
FTA-B-01-E4-42-XX	E4.42, System E4-1

More series available upon request, please consult igus® for delivery time. Supplement Part No. with the required E-Chain® width-index.
Example: FTA-B-01-2500-05

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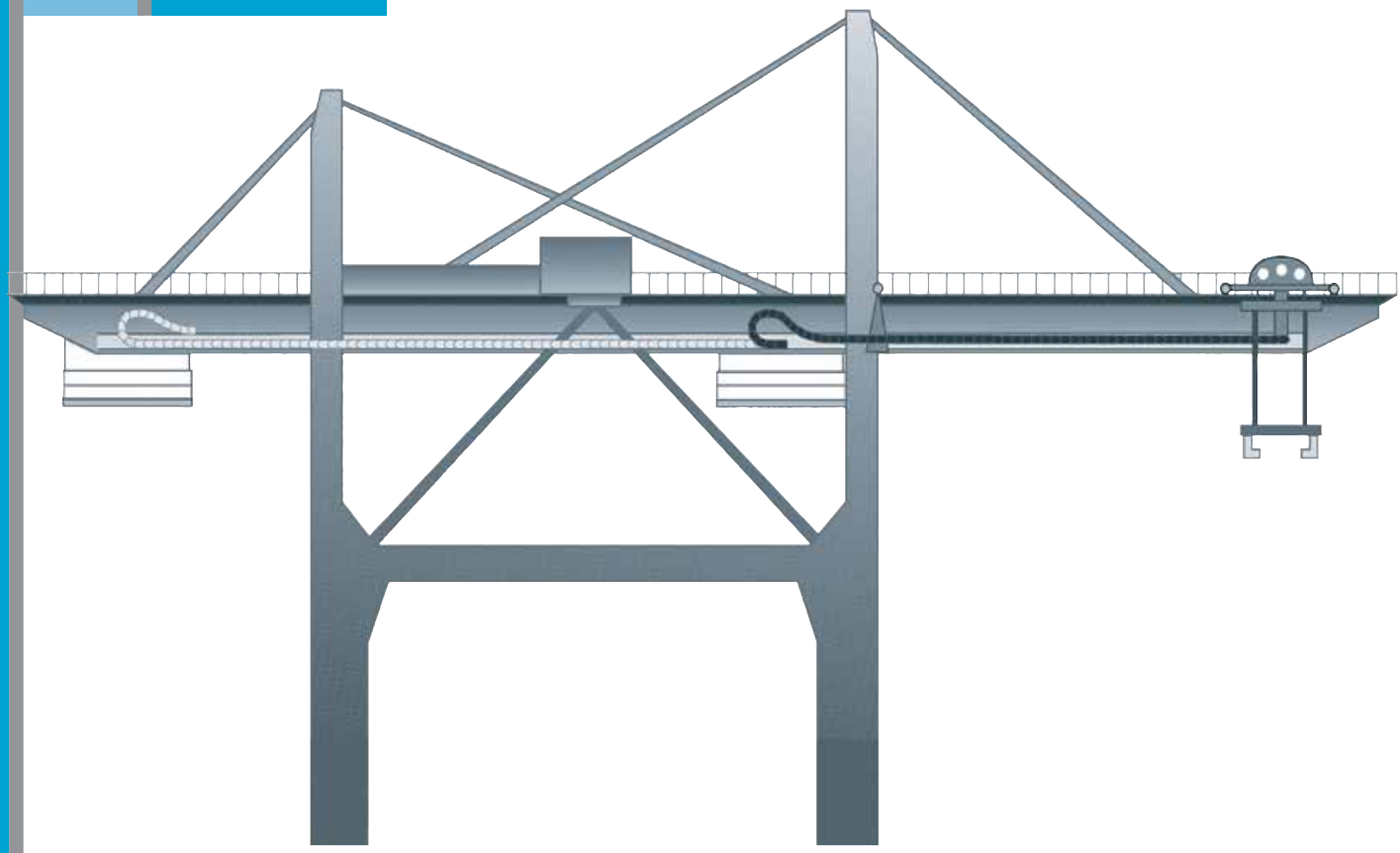
Modular System

igus®

E-Chain Systems®
Modular System for Projects
Advantages



For extremely heavy-duty applications and special solutions from stock

The igus® modular system for projects ...tested and time-proven in numerous projects, have now become available as a modular standard system.

- Faster quotations, faster project planning
- Detailed service manuals and documentation
- Time and cost savings
- Safe function
- System warranty available upon request, for individual applications
- PPDS tow arm with electronic push/pull force monitoring
- Fixed end-modules for easy attachment of the E-Chain® inside the guide trough, with no drilling required
- Extreme gliders gliding elements for even longer cycle life of E-Chains® on long travels
- HD trough systems with different assembly kit designs, matching the respective application and stress levels

Typical industries and applications

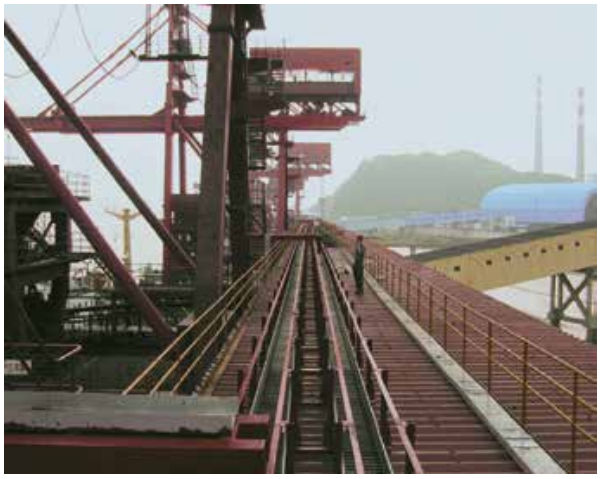
- Cranes
- Offshore
- Cranes, offshore

E-Chain Systems®
Modular System for Projects Applications

igus® Modular System

Long travels with electronics Push/Pull-force monitoring with the igus® PPDS System

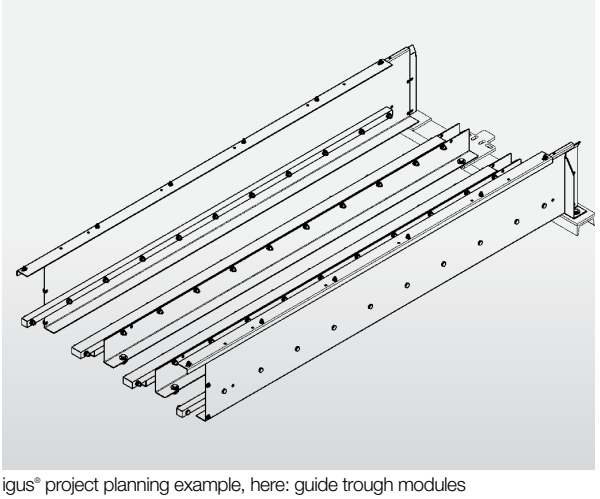
igus® supervisors plan projects worldwide



Series 4040R on a coal unloading system - travel 623.4 ft. (190 m), speed 1.64 ft/ s (0.5 m/s), fill weight 5.41 lbs/ft (8.05 kg/m)

Series 4040HD on (180 m) travel lengths with housing.
-40°F/+104°F (-40°C to +40°C) temperature range and high dirt pollution

Crane system designed by igus®



igus® project planning example, here: guide trough modules

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Special solutions for movements in all directions

Guidelok slimline F - LiftBand - E-Spool

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Special solutions - Movements in all directions
Guidelok Slimline F
Overview - Advantages

Safe guidance:
Also at high travel speeds

No swinging out of the E-Chain®:
Guidelok safety catches to guide the
E-Chain® even at high lateral accelerations

High vertical travels:
Travels up to 164 ft. (50 m) in 4.92 ft. (1.5 m)
or 6.56 ft. (2 m) field length possible

Safe vertical guidance - Guidelok slimline F

In highly dynamic rack feeder a speed for the horizontal movement exceeding in 23 ft. (7 m/s) is not uncommon. The advanced igus® Guidelok slimline F guides E-Chains® even at the fastest speeds or accelerations.

- Up to 23 ft. (7 m/s) and 32.8 ft. (10 m/s²)
- Up to 80% less trough required, saving costs and weight
- For hanging systems up to 164 ft. (50 m)
- No swinging of the E-Chain®, high reliability due to the lever mechanism and guiding rails
- Faster and easier installation
- Reduced noise
- Easy access for servicing
- Energy and data and all kinds of media are safely

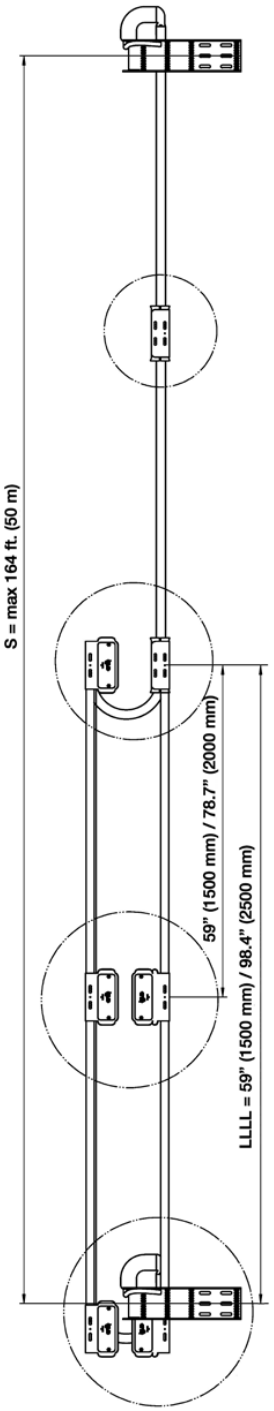
Typical industries and applications

- Storage and retrieval units
- Lifts
- Elevators
- Construction and crane lifts
- Hoists

igus® Guidelok-Slimline F

Special solutions - Movements in all directions
Guidelok Slimline F
Dimensions

Note: Systems of this type should be designed by our system design engineers. We will be more than willing to submit an offer to you. Please contact us about this.



For Series	*Bi*	*R* Bending radii	Part. No. Guidelok F
255	(103)	(150)	GLSL-F-255-10-150-LLLL/FFFF
2700	(100)	(150)	GLSL-F-2700-10-150-LLLL/FFFF

LLLL = Total length
FFFF = Field length
Special versions with different widths, radii and field lengths possible. Please consult igus® for delivery time.
Supplement Part No. with required value for total length and field length.
Example: **GLSL-F-2700-10-150-9000/1500**

Technical Data

Speed max. vertical	max. 13 ft/s (4 m/s)
Speed max. horizontal	max. 23 ft/s (7 m/s)
Acceleration max. a	max. 32.8 ft/s² (10 m/s²)

Details of material properties
➤ Chapter 1

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LiftBand igus®

Special solutions - Movements in all directions
LiftBand
Overview - Advantages

Extracted system -
Secure cable supply up to 42.7 ft. (13 m)

Guide up to a height of 42.65 ft. (13 m) with limited installation space - LiftBand

Modular, silent, space saving -
guide media, energy and data up and down.
High vertical applications that have plenty of space horizontally but allow only for little system height can be implemented with the LiftBand

- Available in 2 sizes -
  Inner width .98" (25 mm) and 1.26" (32 mm)
- 2 radii available - 6.89" (175 mm) and 9.84" (250 mm)
- Alternative to zig-zag solution
- Lighter and smaller installation space
- Vertical applications implemented with ease
- Max. expansion length: 42.7 ft. (13 m)
- Simply press cables up to a diameter
  of .35"/.47" (9/12 mm*) into the E-Chain®
- Pull cables up to .43"/.59" (11/15* mm)
  into the E-Chain® (*depends on Series)

Typical industries and applications
● Stage technology ● Indoor cranes
● Mobile telescoping antennas

Retracted system -
Safe discard in a solid steel basket

Special solutions - Movements in all directions
LiftBand
Product Range - Dimensions

igus® LiftBand

LiftBand Series LB-E332-25 - E-Chain® with "easy" design - inner width .98" (25 mm)

Part No. LiftBand	Extension Height ft (m)	Inner Width *Bi* in. (mm)	Inner Height *hi* in. (mm)	Bending Radius Max. *R* in. (mm)	Cable Max. Ø in. (mm)
LB-E332-25-2-175-1-01-0	3.28 (1)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-2-01-0	6.56 (2)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-3-01-0	9.84 (3)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-4-01-0	13.12 (4)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-5-01-0	16.41 (5)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-6-01-0	19.69 (6)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-7-01-0	22.97 (7)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-8-01-0	26.25 (8)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-9-01-0	29.53 (9)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-10-01-0	32.81 (10)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-11-01-0	36.10 (11)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-12-01-0	39.37 (12)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-13-01-0	42.65 (13)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)

*Simply press cables up to a diameter of .35" (9 mm) into the E-Chain® / pull cables up to .43" (11 mm) into the E-Chain®

LiftBand Series LB-E332-25 - E-Chain® with "easy" design - inner width .98" (25 mm)

Part No. LiftBand	Extension Height ft (m)	Inner Width *Bi* in. (mm)	Inner Height *hi* in. (mm)	Bending Radius Max. *R* in. (mm)	Cable Max. Ø in. (mm)
LB-E332-32-2-250-1-01-0	3.28 (1)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-2-01-0	6.56 (2)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-3-01-0	9.84 (3)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-4-01-0	13.12 (4)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-5-01-0	16.41 (5)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-6-01-0	19.69 (6)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-7-01-0	22.97 (7)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-8-01-0	26.25 (8)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-9-01-0	29.53 (9)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-10-01-0	32.81 (10)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-11-01-0	36.10 (11)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-12-01-0	39.37 (12)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-13-01-0	42.65 (13)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)

*Simply press cables up to a diameter of .47" (12 mm) into the E-Chain® / pull cables up to .59" (15 mm) into the E-Chain®

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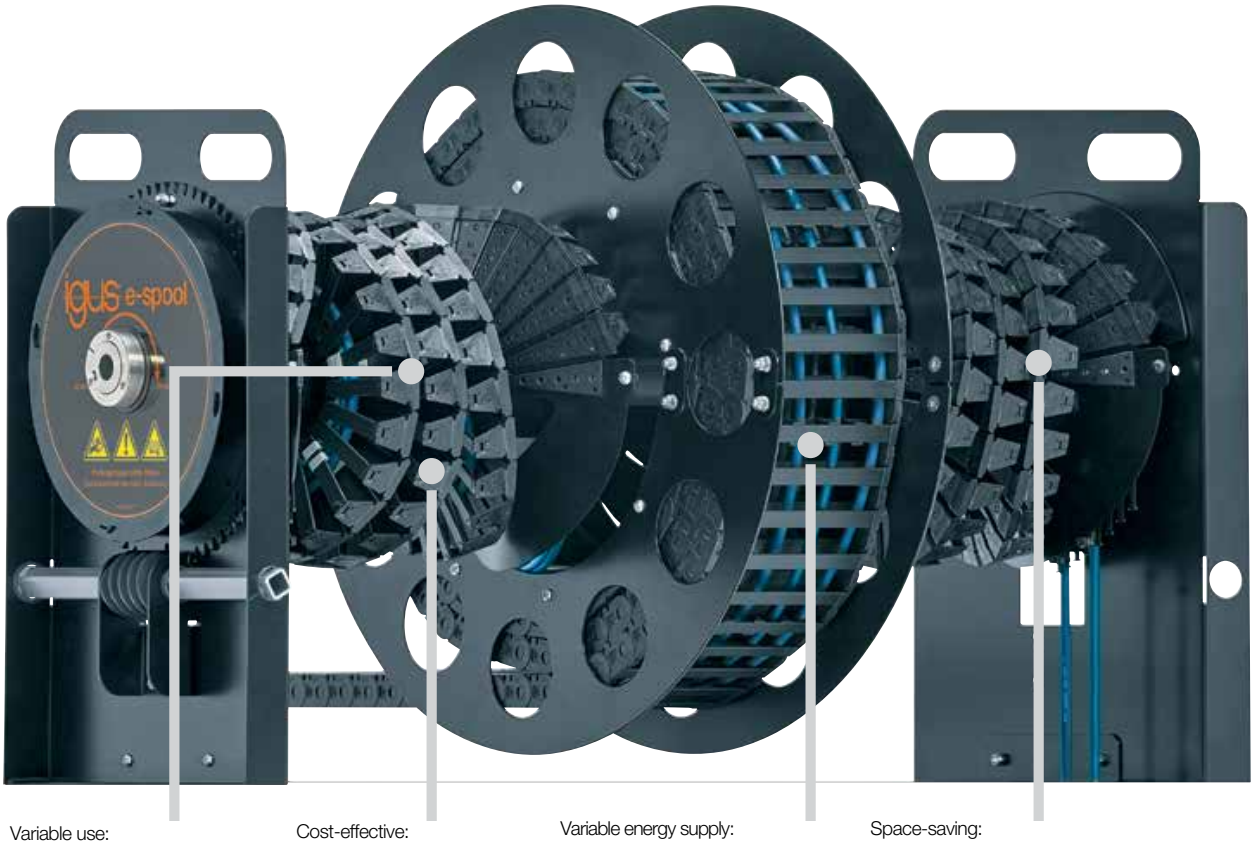
E-Spool igus®

Special solutions - Movements in all directions
E-Spool
Overview - Advantages



Variable use:
Energy supply possible in all directions

Cost-effective:
TwisterBand enables rotary movement

Variable energy supply:
guidance of all media in one system

Space-saving:
E-Chain® rolled into the home position, the paths remain free

The cable drum without a slip ring - igus® E-Spool

Route many different cables in very narrow spaces. e-spool uniquely combines two different energy supply systems: one standard E-Chain® is guided by one roller and always provides the precisely correct length and tension of the energy supply system through an integrated retaining spring. In the starting position, the E-Chain® is entirely rolled up to save space. The TwisterBand connects the roller with the shaft block, which serves as an interface with the permanently laid cables.

- Different media and diameters in one drum possible
- No tensile load of the cables
- Energy supply in all possible directions (horizontal, vertical, diagonal)
- Space-saving, no "E-Chain® junction" - E-Chain® rolled into the home position, the paths remain free
- Cable diameters up to .67" (17 mm)
- Cables can be retroactively added or changed
- Alternative to zig-zag solutions
- Max. deployment and retract speed: 3.28 ft. (1 m/s)

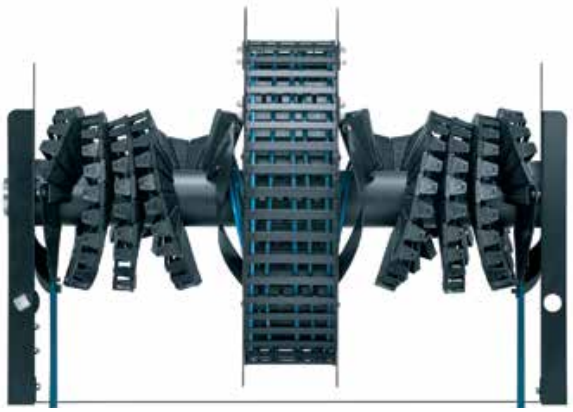
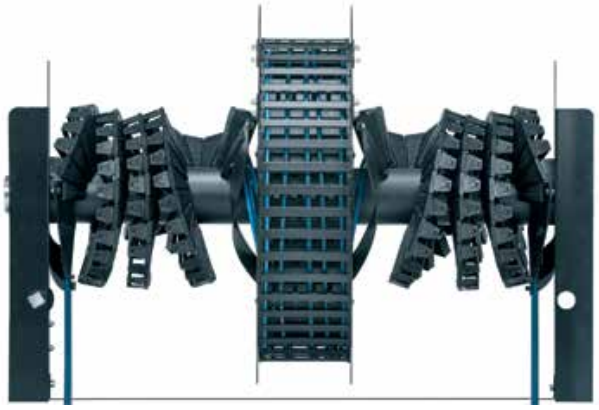
Typical industries and applications
- Telescopic applications
- Light / Stage equipment
- Space-saving alternative to zig-zag applications

iF product design award
2013 igus® E-Spool

product design award
2013

Special solutions - Movements in all directions
E-Spool
Product Range - Dimensions

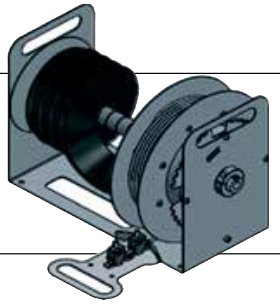
igus® E-Spool

Part No. E-Spool with 1 TwisterBand	Part No. E-Spool with 2 TwisterBands	Travel Lengths Max. in. (mm)	Drum Diameter Ø in. (mm)	Cable Length ft. (m)
		**E-Spool - Standard** **The alternative to a cable drum. Reduce cable wear and reliably guide various media** (Illustration shows E-Spool with 2 TwisterBands)		
SP1-600-	SP2-600-	0 - 157.5 (0 - 4,000)	23.62 (600)	25.59 (7.8)
SP1-700-	SP2-700-	0 - 275.6 (0 - 7,000)	27.56 (700)	35.43 (10.8)
SP1-850-	SP2-850-	0 - 551.2 (0 - 14,000)	33.46 (850)	63.00 (19.2)
		**E-Spool - Standard** **The alternative to a cable drum. Reduce cable wear and reliably guide various media** (Illustration shows E-Spool with 2 TwisterBands)		
SPHD1-600-	SPHD2-600-	0 - 157.5 (0 - 4,000)	23.62 (600)	25.59 (7.8)
SPHD1-700-	SPHD2-700-	0 - 275.6 (0 - 7,000)	27.56 (700)	35.43 (10.8)
SPHD1-850-	SPHD2-850-	0 - 551.2 (0 - 14,000)	33.46 (850)	63.00 (19.2)

Small E-Spool and E-Spool for manual operation

For tight installation spaces and low fill rates, the e-spool **SP1-400-4000-01-R-0** is available for up to 13.12 ft. (4 m) extraction. For applications where a cable is pulled out manually there is the **SPC1-300-5000-01-R-0** with locking function for up to 16.41 ft. (5 m) extraction.

More information ➤ www.igus.com



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Special solutions - Movements in all directions
E-Spool
Technical Data - Order Example

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Spool - Versions

Modular construction kit in 2 versions: standard and HD.
Two versions of each with different filling capacities and 1 or 2 TwisterBands

Part number structure

SP1-600-4000-02-R-0

- 1 TwisterBand
- Drum diameter ø
- Max. extension length
- Extension R / L
- Standard color black

Standard-System with a single TwisterBand with 23.62" (600 mm) drum diameter, and 157.5" (4000 mm) maximum extension length, extension right

Part number structure

SP2-600-4000-02-R-0

- 2 TwisterBands
- Drum diameter ø
- Max. extension length
- Extension R / L
- Standard color black

Standard-System with two TwisterBands with 23.62" (600 mm) drum diameter, and 157.5" (4000 mm) maximum extension length, extension right

Part number structure

SPHD1-700-7000-02-L-0

- 1 TwisterBand -HD
- Drum diameter ø
- Max. extension length
- Extension R / L
- Standard color black

HD-Version with a single TwisterBand with 27.56" (700 mm) drum diameter, and 275.6" (7000 mm) maximum extension length, extension left

Part number structure

SPHD2-700-7000-02-L-0

- 2 TwisterBands -HD
- Drum diameter ø
- Max. extension length
- Extension R / L
- Standard color black

HD-Version with two TwisterBands with 27.56" (700 mm) drum diameter, and 275.6" (7000 mm) maximum extension length, extension left

Technical Data

Speed, v	max. 3.28 ft/s (1 m/s)
Speed, v	max. 6.56 ft/s² (2 m/s²)
Lateral speed	max. 3.28 ft/s (1 m/s)
Lateral acceleration (radial)	max. 3.28 ft/s² (1 m/s²)
Lateral acceleration (axial)	max.0.82 ft/s² (0.25 m/s²)

Details of material properties
➤ Chapter 1

Special solutions - Movements in all directions
E-Spool
Filling Guidelines

igus® E-Spool

Filling guidelines for the E-Spool

In view of the special mechanical stress in an E-Spool, we recommend using igus® Chainflex® cables. We also recommend that you observe the following filling rules:

1. Where possible, cables with a TPE outer jacket should be used for unshielded cables
2. Shielded cables should be from the CFROBOT range.
3. All cables should have an outer diameter of ≤ (17 mm).
4. The max. bending radii of (44 mm) in the inner radius and (77 mm) in the outer radius should be observed
5. Where possible, use separators to protect cables against cross-over and abrasion against other cables. To save space, install the separators alternately in segments positioned one behind the other. Repeat the separators in every 4th segment.
6. Insert cables sorted according to diameter and/or bending radius. Insert thin, small ones in the inside then increasingly larger ones outward
7. Apply strain relief on both ends of the cable. The cable tie wrap node must not be installed in the E-Chain® direction
8. Always install cables in the TwisterBand close to the axis of rotation with space on the outside.
9. Always install cables in the TwisterBand with a slight gap from the axis of rotation

Installation instructions

For applications that move horizontally, a smooth surface is needed for the E-Chain® to travel over.

The igus® E-Spool in an extendable winding system.

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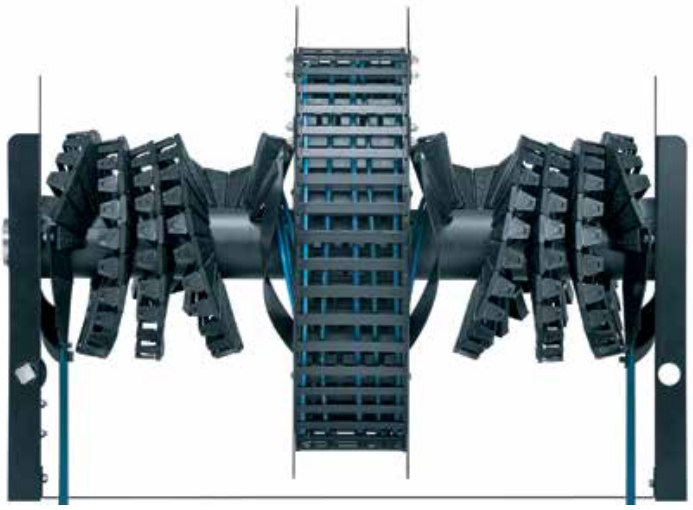
Special solutions - Movements in all directions
E-Spool - Series SP1, SP2
Product Range

E-Spool with 1 TwisterBand

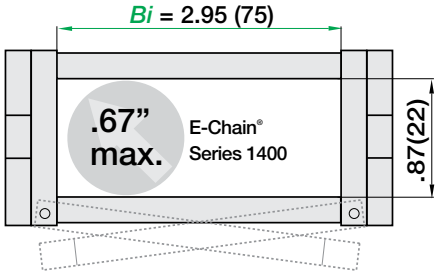


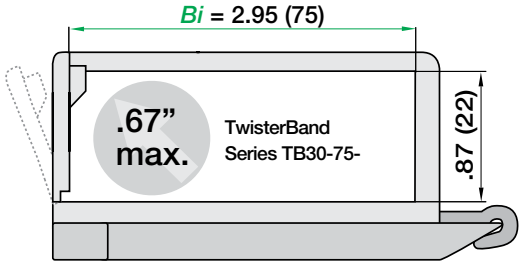
E-Spool with 1 TwisterBand

E-Spool | with E-Chain® and 1 or 2 TwisterBands - Standard

Part No. with 1 TwisterBand, extension right	Part No. with 1 TwisterBand, extension left	*Bi* in. (mm)	*hi* in. (mm0	Travel Length in. (mm)
SP1-600-4000-02-**R**-0	SP1-600-4000-02-**L**-0	2.95 (75)	.86 (21)	0 - 157.5 (0 - 4000)
SP1-700-7000-02-**R**-0	SP1-700-7000-02-**L**-0	2.95 (75)	.86 (21)	0 - 275.6 (0 - 7000)
SP1-850-14000-002-**R**-0	SP1-850-14000-02-**L**-0	2.95 (75)	.86 (21)	0 - 551.2 (0 - 14000)

Part No. with 2 TwisterBand, extension right	Part No. with 2 TwisterBand, extension left	*Bi* in. (mm)	*hi* in. (mm0	Travel Length in. (mm)
SP2-600-4000-02-**R**-0	SP2-600-4000-02-**L**-0	4.92 (125)	.86 (21)	0 - 157.5 (0 - 4000)
SP2-700-7000-02-**R**-0	SP2-700-7000-02-**L**-0	4.92 (125)	.86 (21)	0 - 275.6 (0 - 7000)
SP2-850-14000-002-**R**-0	SP2-850-14000-02-**L**-0	4.92 (125)	.86 (21)	0 - 551.2 (0 - 14000)



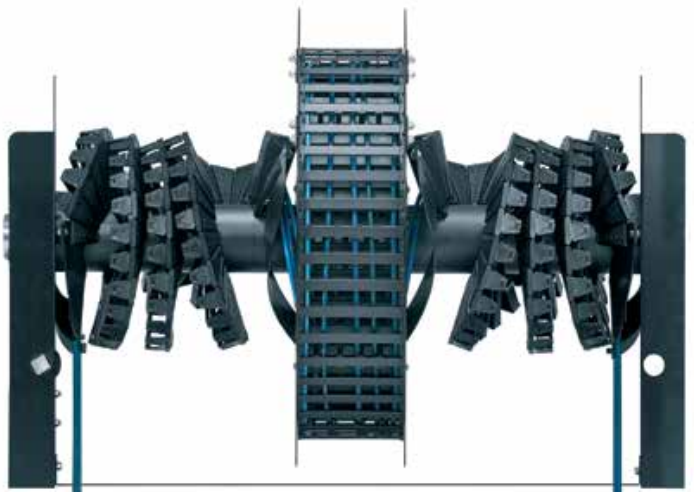


If the E-Chain® is extracted upwards, igus® recommends the standard E-Spool. If the E-Chain® is extracted downward or horizontally, please consult an igus® engineer about your application. The HD version with a greater retraction force is may be necessary.

Special solutions - Movements in all directions
E-Spool - Series SPHD1, SPHD2
Product Range

igus® Guide Trough

E-Spool HD version with 1 TwisterBand

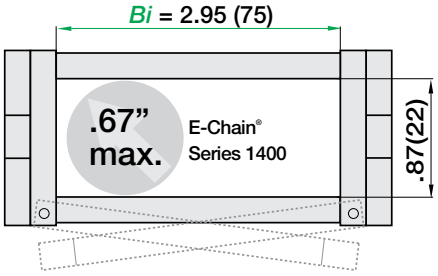


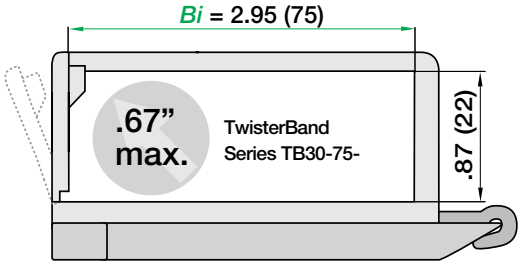
E-Spool HD version with 1 TwisterBand

E-Spool | with E-Chain® and 1 or 2 TwisterBands - Standard

Part No. with 1 TwisterBand, extension right	Part No. with 1 TwisterBand, extension left	*Bi* in. (mm)	*hi* in. (mm0	Travel Length in. (mm)
SPHD1-600-4000-02-**R**-0	SPHD1-600-4000-02-**L**-0	2.95 (75)	.86 (21)	0 - 157.5 (0 - 4000)
SPHD1-700-7000-02-**R**-0	SPHD1-700-7000-02-**L**-0	2.95 (75)	.86 (21)	0 - 275.6 (0 - 7000)
SPHD1-850-14000-002-**R**-0	SPHD1-850-14000-02-**L**-0	2.95 (75)	.86 (21)	0 - 551.2 (0 - 14000)

Part No. with 2 TwisterBand, extension right	Part No. with 2 TwisterBand, extension left	*Bi* in. (mm)	*hi* in. (mm0	Travel Length in. (mm)
SPHD2-600-4000-02-**R**-0	SPHD2-600-4000-02-**L**-0	4.92 (125)	.86 (21)	0 - 157.5 (0 - 4000)
SPHD2-700-7000-02-**R**-0	SPHD2-700-7000-02-**L**-0	4.92 (125)	.86 (21)	0 - 275.6 (0 - 7000)
SPHD2-850-14000-002-**R**-0	SPHD2-850-14000-02-**L**-0	4.92 (125)	.86 (21)	0 - 551.2 (0 - 14000)





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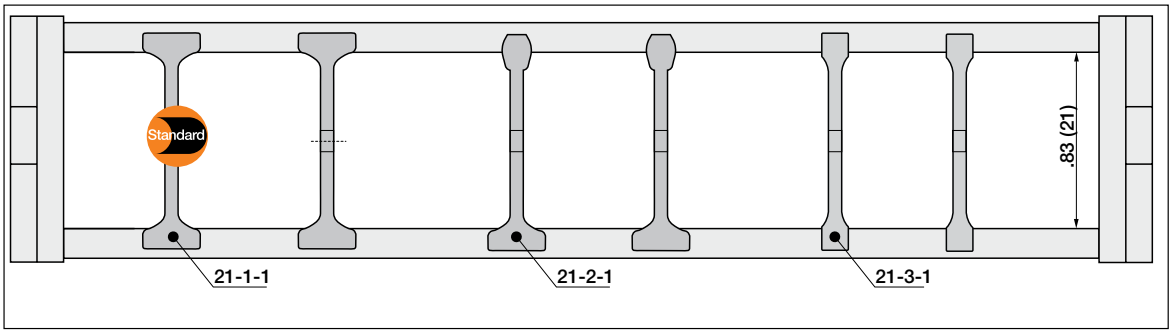
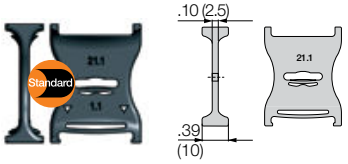
Special solutions - Movements in all directions
E-Spool - Series SP1, SP2
Interior Separation



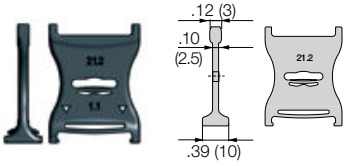
In the standard configuration separators are assembled every 2nd E-Chain® link
Note: No lateral spacing to side link is necessary



Separator, wide base

Unassembled	**Part No. 21-1**
Assembled	**Part No. 21-1-1**

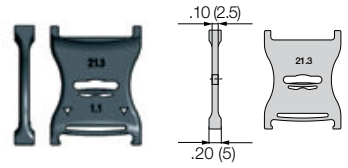
- **Standard separator 21-1**
  for all applications
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.



Separator, narrow head

Unassembled	**Part No. 21-2**
Assembled	**Part No. 21-2-1**

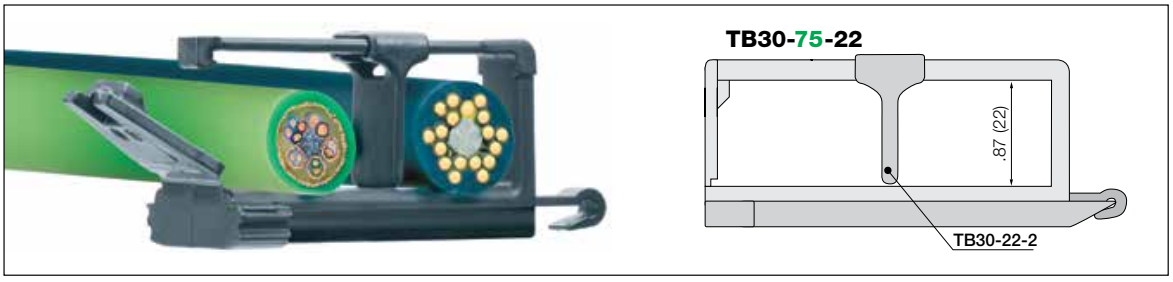
- **Separator 21-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



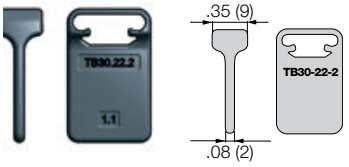
Separator, narrow base

Unassembled	**Part No. 21-3**
Assembled	**Part No. 21-3-1**

- **Separator 21-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separators are delivered unassembled. Simply push them onto the crossbar!



Separator for TB30-75-22

Unassembled	**Part No. TB30-22-2**

- **Separator TB30-75-22**
  For TwisterBand
  Separators - For installation simply open the E-Chain®, insert a cable and push the separator onto the crossbar. Then add more cables. The separators provide a clear, cable-friendly interior separation.

Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Special solutions - Movements in all directions
E-Spool - Series SPHD1, SPHD2
Applications

Space-saving solution for a secure vertical movement. E-Spool with 137.8" (3500 mm) extension length in this handling unit. Assembled with igus® Chainflex® CF9 control and CF30 motor cables as well as CFRobot torsion cable and CAPU pneumatic hose

The igus® E-Spool in an extendable winding system of the company Becker Electric Forklift Service in Erftstadt. Vertically extendable up to 32.8 ft. (10 m). The E-Spool supplies the motor of the facility with media and energy cables.

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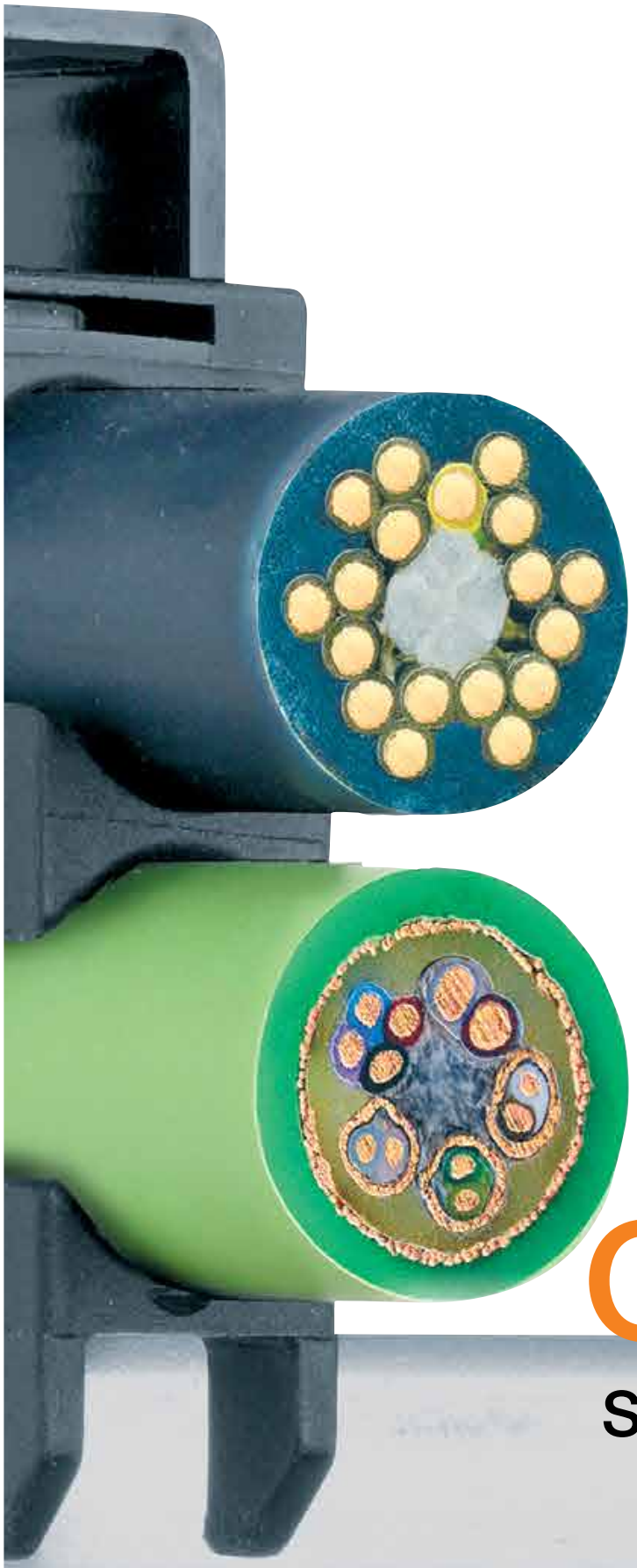

igus®
Chainfix
Strain relief systems

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942 25 27 50
edf@edfluidos.com
www.edfluidos.com

igus® Chainfix strain relief. Flexible and fast assembled.

Strain relief from igus® is specifically developed for use in E-Chains® and dynamic applications. The combination of Chainflex® cable materials and the plastic strain relief components of igus® Chainfix are designed to achieve long life of the cables and maximum holding power. For a wide variety of applications igus® Chainfix is the best solution in terms of costs and benefits. igus® Chainfix strain relief components are installed in applications around the world.

Available from stock. Delivery in 24-48 hours

3D-CAD files, configurators, PDF ➤ www.igus.com/chainfix

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Chainfix Strain Relief Overview

Chainfix clamps and stainless-steel clamps - for maximum pull forces

CFX[1)] Single, double, triple clamp standard clamps,
CFXL[1)] Single, double, triple clamp housing
Saddle elements - bottom and stacker saddles
Chainfix Multi-Clamps[1)]

[1)] Standard material zinc-coated steel. Stainless-steel (1.4301) version also available.

Chainfix tiewrap plates - for universal tiewrap, bolted or clip-on

Option 1A: Chainfix tiewrap plates as single parts Series 2000 + cable tiewraps
Option 1B: Chainfix tiewrap plates as single parts Series 3000 + cable tiewraps

Chainfix tiewrap plates - for strain relief with cable tiewraps

Option 2: Tiewrap plates with clip-on connection for the profile rail
Option 3: Integrated strain relief for E2 Tubes - Series R
Option 4: Tiewrap plates for fixed crossbars
Option 5: Tiewrap plates for opening crossbars

Chainfix Clips - high pull forces, plug-in

Option1: For all igus® E-Chains® with profile rails, also suitable for assembly in the KMA mounting brackets
Option 2: Clip-on strain relief for crossbars

Chainfix strain relief separators - with integrated teeth

Separator with integrated strain relief - easy strain relief with tiewrap

Chainfix strain relief element - outside of the E-Chain® cross section

Easy strain relief for cables, even in enclosed tubes.
With stepped, integrated teeth

Strain relief Nuggets - for profile rail

Simple and universal cable attachment, for cable diameters of .79" (20 mm) and 1.18" (30 mm)
Clips onto standard profile rail

Strain relief connector system - modular and customizable

CFB plastic strain relief connector system, many cables in a very confined space

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Chainfix Strain Relief Selection Guide

E-Chain® Series	Clamps		Clip Profile rail	Clip crossbars	Nugget	Strain relief separator	Strain relief element, stepped
	CFX	CFXL					
E-Z chain®							
E/Z200	X [1]	–	–	–	–	–	–
E/Z26	X [1]	–	–	–	–	–	–
E/Z300	X [1]	–	–	–	–	–	–
E2/000							
1400/1500	X [1]	X [1]	–	–	–	21-1-Z	–
1450/1480	X [1]	X [1]	–	–	–	–	–
2400/2500	X [1]	X [1]	–	–	–	2020-Z	–
2450/2480	X [1]	X [1]	–	–	–	2020-ZR	–
2600/2700	X	X [1]	X	–	X	262-Z	CFV-42-C*
2650/2680	X	X [1]	X	–	X	–	CFV-42-C*
3400/3500	X	X [1]	X	–	X	301-Z	CFV-42-C*
3450/3480	X	X [1]	X	–	X	34501-Z	CFV-42-C*
255	–	–	–	–	–	–	–
E2							
R117/118	X [1]	X [1]	–	–	–	–	–
R157/158	X [1]	X [1]	–	–	–	1585-01-Z	–
R167/168	X [1]	X [1]	–	–	–	1685-01-Z	–
R48	X [1]	X [1]	–	–	–	481-ZR	–
R58	X [1]	X [1]	–	–	–	–	–
R68	X [1]	X [1]	–	–	–	–	–
E4-1							
E4-21	X [1]	X [1]	–	–	–	T2103-Z	–
E4-28/R4-28	X [1]	X [1]	–	–	–	28-Z* / 28-ZT*	–
E4-32/H4-32/R4-32	X	X [1]	X	–	X	–	CFV-42-C*
E4-42/H4-42/R4-42	X	X [1]	X	–	X	–	CFV-42-C*
E4-56/H4-56/R4-56	X	X [1]	X	X	X	–	CFV-80-C*
E4-80/H4-80/R4-80	X	X [1]	X	X	X	–	CFV-80-C*
E4-112	X [1]	X [1]	–	X	–	–	–
800	X [1]	X [1]	–	–	–	–	–
840	X [1]	–	–	–	–	–	–
E4-1 light							
E4-38L/R4-38L	X	X [1]	X	–	X	–	CFV-42-C*
E4-48L/R4-48L	X	X [1]	X	–	X	–	CFV-42-C*
E4/light							
14040/14140/18840	X	X [1]	X	X	X	–	–
14240/14340	X	X [1]	X	–	X	–	–
14550/14650/19050	X	X [1]	X	X	X	–	–
15050/15150/19850	X	X [1]	X	X	–	–	–
15250/15350	X	X [1]	X	–	–	–	–
1640/R1608	X	X [1]	–	X	–	–	–
E6							
E6-29	X [1]	X [1]	–	–	–	E6-29-02-Z	–
R6-29	X [1]	X [1]	–	–	–	–	–
E6-35	X [1]	X [1]	–	–	–	E6-35-02-Z	–
E6-40	X	X [1]	X	–	X	E6-40-02-Z	–
E6-52	X	X [1]	X	–	X	–	–
R6-52	X	X [1]	X	–	X	–	–
E6-62	X	X [1]	X	–	X	–	–
E6-80L	X	X [1]	X	X	X	–	–
E6-80	X	X [1]	X	X	X	–	–
E6-1							
E61-29	X [1]	X [1]	–	–	–	E6-29-02-Z	20XX-ZB
Triflex®							
E-Z Triflex®	X [1]	–	–	–	–	–	–
Triflex®	X [1]	–	–	–	–	–	–

	Single part 2000	Single part 3000	Clip-on for Profile rail	Fixed crossbar	Crossbar	For Triflex® [2]	For E2 E-Tube
	20XX-ZB	–	–	2050-Z	–	–	–
	–	30XX-ZB	–	–	–	–	–
	–	30XX-ZB	–	–	–	–	–
	20XX-ZB	–	–	–	–	–	–
	20XX-ZB	–	–	–	–	–	–
	20XX-ZB	–	–	2050-Z	–	–	–
	20XX-ZB	–	–	–	–	–	–
	–	30XX-ZB	30XX-ZC	2050-Z	2050-Z	–	–
	–	30XX-ZB	30XX-ZC	–	2050-Z [3]	–	–
	–	30XX-ZB	30XX-ZC	30XX-Z	30XX-ZS	–	–
	–	30XX-ZB	30XX-ZC	–	30XX-ZS [3]	–	–
	20XX-ZB	–	–	–	–	–	–
	20XX-ZB	–	–	–	–	–	–
	–	–	–	–	–	–	–
	–	–	–	–	–	–	–
	20XX-ZB	–	–	–	–	–	–
	–	–	–	–	–	–	5850-Z
	–	–	–	–	–	–	30XX-Z
	20XX-ZB	–	–	–	–	–	–
	20XX-ZB	–	–	–	2050-Z	–	–
	–	30XX-ZB	30XX-ZC	–	3850-ZS	–	–
	–	30XX-ZB	30XX-ZC	–	3850-ZS	–	–
	–	30XX-ZB	30XX-ZC	–	45XX-ZS	–	–
	–	30XX-ZB	30XX-ZC	–	45XX-ZS	–	–
	–	30XX-ZB	–	–	45XX-ZS	–	–
	–	30XX-ZB	–	–	–	–	–
	–	–	–	–	–	–	–
	–	30XX-ZB	30XX-ZC	–	3850-ZS	–	–
	–	30XX-ZB	30XX-ZC	–	3850-ZS	–	–
	–	30XX-ZB	30XX-ZC	–	45XX-ZS	–	–
	–	30XX-ZB	30XX-ZC	–	3850-ZS	–	–
	–	30XX-ZB	30XX-ZC	–	45XX-ZS	–	–
	–	30XX-ZB	30XX-ZC	–	45XX-ZS	–	–
	–	30XX-ZB	30XX-ZC	–	3850-ZS	–	–
	–	30XX-ZB	–	–	45XX-ZS	–	–
	20XX-ZB	–	–	–	–	–	–
	20XX-ZB	–	–	–	–	–	–
	20XX-ZB	–	–	–	–	–	–
	20XX-ZB	–	–	–	–	–	–
	–	30XX-ZB	30XX-ZC	–	2050-Z	–	–
	–	30XX-ZB	30XX-ZC	–	–	–	–
	–	30XX-ZB	30XX-ZC	–	3850-ZS	–	–
	–	30XX-ZB	30XX-ZC	–	45XX-ZS	–	–
	–	30XX-ZB	30XX-ZC	–	45XX-ZS	–	–
	–	–	–	–	–	–	–
	–	–	–	–	–	E33X-XX-2	–
	–	–	–	–	–	33X-XX	–

Recommended strain relief for selected E-Chain®

[1] CFXL clamps must be assembled in front of the E-Chain - They cannot be integrated into the KMA bracket

[2] Located in the Triiflex® Section of the catalog

[3] Half E-Tube only

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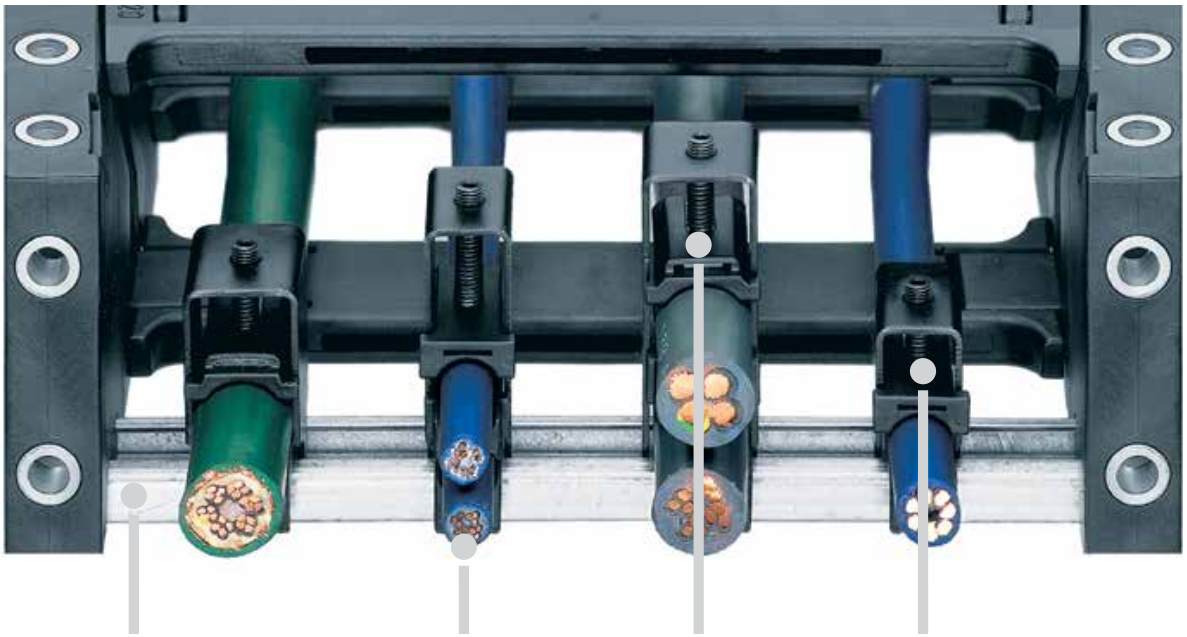
Chainfix Strain Relief



To be integrated into KMA mounting bracket

For up to three cables over one another

Reduced installation height, space saving

Excellent durability for dynamic applications

Chainfix clamps - more secure, faster assembled

- Integration with KMA mounting brackets and profile rail host-option
- Easy to read the part number and lateral marking of the correct installation direction
- Reduced installation height due to optimal housing height (compared to conventional clamps up to 15 mm)
- Space- and time-saving assembly
- Delivery options for complete systems with cables and preassembled strain relief
- Improved base for easy fit on the profile rail
- Setscrews, tightened with Allen wrench, for easy installation
- Durability for dynamic applications through improved stacker elements: optimized stacker saddles, held by retaining lugs
- The long contact surface of the stacker elements improves the clamp's stability
- The high rigidity of the stacker elements significantly increases the reliability
- Built-in ribs to the stacker elements - no disconnection of cables from the strain relief
- Optional: CFXL clamps with increased holding power for Heavy-Duty applications
  NOTE: (CFXL are always assembled **in front** of the E-Chain® -
  CAN NOT be integrated into KMA mounting brackets with profile rail host option!)

Chainfix Strain Relief

Strain Relief Elements for E-Chains® and E-Tubes with igus® Chainfix Clamps and Saddle Clamp Elements

The Chainfix clamp system design has proven itself as effective, life-prolonging strain relief for igus® E-Chain Systems®.

Product range and materials

- Steel clamp: clamp and screw black painted steel
- Stainless steel clamp: clamp and screw: blank (material 1.4301)
- Stacker elements: bottom saddle and stacker saddle (material igumid G)
- Profile rail: steel (material galvanized steel) or stainless steel (material 1.4301) available

Features of the igus® Chainfix Clamps

- Improved housing foot clamp for easy fit into profile rail
- Newly developed housing with reduced overall height
- Black housing and setscrews for attractive appearance
- Setscrews, tightened with Allen wrench, for easy installation

Features of the igus® Saddle Clamps

- Long support surface for improved stability
- Inherently high material rigidity for increased reliability
- Integrated ribbing to keep cables/hoses firmly strain relieved

Installation Height

If the E-Chain® glides on itself over long travel distances, the screw heads of the strain relief on the fixed end must be at least .39 (10 mm) below the E-Chain® link height. Our clamp housing with setscrews reduces the overall height by up to .59 (15 mm) compared to conventional clamp housings. In the case of unsupported E-Chains®, the strain relief elements may be used with no problems.

For Series:

System E2/000
- 2400/2500/2450/2480
- 2600/2700/2650/2680
- 3400/3500/3450/3480

System E4-1
- E4-32/H4-32/R4-32
- E4-42/H4-42/R4-42
- E4-56/H4-56/R4-56
- E4-80/H4-80/R4-80
- E4-112/H4-112/R4-112

System E4-1/light
- E4-38L/R4-38L
- E4-48L/R4-48L

System E4/light
- 14040/14140/R18840
- 14240/14340
- 14550/14650/19050
- 15050/15150/R19850
- 15250/15350

System E6
- E6-40
- E6-52 / R6-52
- E6-62
- E6-80L
- E6-80

*Add and "M" to the end of the part number for this series

Please note:

- Ideally, the cables/hoses should be strain relieved at both ends of the E-Chain®. At the very least, they must be strain relieved at the moving end of the E-Chain®.

- When using Chainfix clamps on profile rail in the mounting bracket for the Series:
  E4-32/H4-32/R4-32,
  280/290/ R770,
  2828/2928/R7728,
  28/29/R77,
  a shortened bottom saddle must be used. For shortened bottom saddles supplement Part No. with index "**K**" = Example: **Part No. CFX12-1K**

CFX - Chainfix housing with reduced height

KMA mounting bracket with integrated profile rail and Chainfix clamps

Improved housing foot clamp for easy fit into profile rail

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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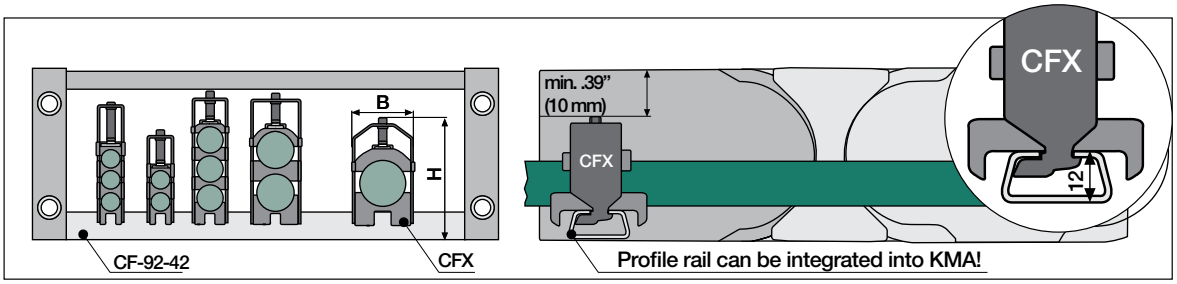
Chainfix Strain Relief CFX Clamps For use inside the KMA Bracket



The dimensions given for H in the tables are based on the maximum cable diameter. Cables with smaller diameters may result in lower overall clamp housing heights.

Single clamp housing, including top/bottom saddle clamps

Part No. Steel	Part No. Stainless Steel	For cable diameters in.	(ø mm)	B+2	H
CFX12-1	CFX12-1E	.24-.47	(6 – 12)	.63 (16)	1.57 (40)
CFX14-1	CFX14-1E	.47-.55	(12 – 14)	.71 (18)	1.97 (50)
CFX16-1	CFX16-1E	.55-.63	(14 – 16)	.79 (20)	2.05 (52)
CFX18-1	CFX18-1E	.63-.71	(16 – 18)	.87 (22)	2.13 (54)
CFX20-1	CFX20-1E	.71-.79	(18 – 20)	.94 (24)	2.20 (56)
CFX22-1	CFX22-1E	.79-.87	(20 – 22)	1.02 (26)	2.28 (58)
CFX26-1	CFX26-1E	.87-1.02	(22 – 26)	1.18 (30)	2.64 (67)
CFX30-1	CFX30-1E	1.02-1.18	(26 – 30)	1.34 (34)	2.80 (71)
CFX34-1	CFX34-1E	1.18-1.34	(30 – 34)	1.50 (38)	2.95 (75)
CFX38-1	CFX38-1E	1.34-1.50	(34 – 38)	1.65 (42)	3.11 (79)
CFX42-1	CFX42-1E	1.50-1.65	(38 – 42)	1.81 (46)	3.27 (83)

Ribbed strain relief saddle clamps withstands increased pull forces for long-term durability

Double clamp housing, including top/bottom saddle clamps and one stacker saddle clamp

Part No. Steel	Part No. Stainless Steel	For cable diameters in.	(mm)	B+2	H
CFX12-2	CFX12-2E	.24-.47	(6 – 12)	.63 (16)	2.83 (72)
CFX14-2	CFX14-2E	.47-.55	(12 – 14)	.71 (18)	2.91 (74)
CFX16-2	CFX16-2E	.55-.63	(14 – 16)	.79 (20)	3.07 (78)
CFX18-2	CFX18-2E	.63-.71	(16 – 18)	.87 (22)	3.23 (82)
CFX20-2	CFX20-2E	.71-.79	(18 – 20)	.94 (24)	3.38 (86)
CFX22-2	CFX22-2E	.79-.87	(20 – 22)	1.02 (26)	3.54 (90)
CFX26-2	CFX26-2E	.87-1.02	(22 – 26)	1.18 (30)	4.29 (109)
CFX30-2	CFX30-2E	1.02-1.18	(26 – 30)	1.34 (34)	4.61 (117)
CFX34-2	CFX34-2E	1.18-1.34	(30 – 34)	1.50 (38)	4.92 (125)

Triple clamp housing, including top/bottom saddle clamps and two stacker saddle clamps

Part No. Steel	For cable diameters in.	(ø mm)	B+2	H
CFX12-3	.24-.47	(6 – 12)	.63 (16)	3.94 (100)
CFX14-3	.47-.55	(12 – 14)	.71 (18)	3.78 (96)
CFX16-3	.55-.63	(14 – 16)	.79 (20)	4.02 (102)
CFX18-3	.63-.71	(16 – 18)	.87 (22)	4.25 (108)
CFX20-3	.71-.79	(18 – 20)	.94 (24)	4.49 (114)
CFX22-3	.79-.87	(20 – 22)	1.02 (26)	4.72 (120)

Suitable profile rails for CFX clamps **Part No. CF-92-42KMA ➤ page 10.13**

igus® E-Chain System®
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Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

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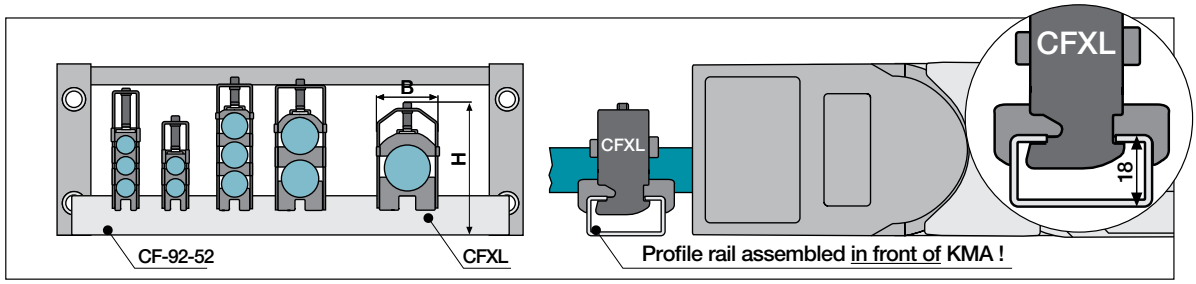
Chainfix Strain Relief
CFXL Clamps
For use outside the KMA Bracket



The dimensions given for H in the tables are based on the maximum cable diameter. Cables with smaller diameters may result in lower overall clamp housing heights. Tightening torque 1.5 Nm for CFXL clamps

Single clamp housing, including top/bottom saddle clamps

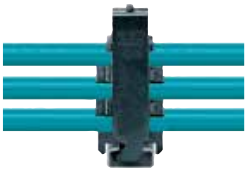
CFXL - clamps with wide base for increased holding power
Suitable for profile rails CF-92-52-XX - profile rail assembled in front of KMA !
CAN NOT be integrated into the KMA mounting bracket!

Part No. Steel	Part No. Stainless Steel	For cable diameters in.	(ø mm)	B+2	H
CFXL12-1	CFXL12-1E	.24-.47	(6 – 12)	.63 (16)	2.36 (60)
CFXL14-1	CFXL14-1E	.47-.55	(12 – 14)	.71 (18)	2.20 (56)
CFXL16-1	CFXL16-1E	.55-.63	(14 – 16)	.79 (20)	2.28 (58)
CFXL18-1	CFXL18-1E	.63-.71	(16 – 18)	.87 (22)	2.36 (60)
CFXL20-1	CFXL20-1E	.71-.79	(18 – 20)	.94 (24)	2.44 (62)
CFXL22-1	CFXL22-1E	.79-.87	(20 – 22)	1.02 (26)	2.52 (64)
CFXL26-1	CFXL26-1E	.87-1.02	(22 – 26)	1.18 (30)	2.87 (73)
CFXL30-1	CFXL30-1E	1.02-1.18	(26 – 30)	1.34 (34)	3.03 (77)
CFXL34-1	CFXL34-1E	1.18-1.34	(30 – 34)	1.50 (38)	3.19 (81)
CFXL38-1	CFXL38-1E	1.34-1.50	(34 – 38)	1.65 (42)	3.35 (85)
CFXL42-1	CFXL42-1E	1.50-1.65	(38 – 42)	1.81 (46)	3.50 (89)

Ribbed strain relief saddle clamps withstands increased pull forces for long-term durability

Double clamp housing, including top/bottom saddle clamps and one stacker saddle clamp

Part No. Steel	Part No. Stainless Steel	For cable diameters in.	(ø mm)	B+2	H
CFXL12-2	CFXL12-2E	.24-.47	(6 – 12)	.63 (16)	3.07 (78)
CFXL14-2	CFXL14-2E	.47-.55	(12 – 14)	.71 (18)	3.15 (80)
CFXL16-2	CFXL16-2E	.55-.63	(14 – 16)	.79 (20)	3.31 (84)
CFXL18-2	CFXL18-2E	.63-.71	(16 – 18)	.87 (22)	3.39 (86)
CFXL20-2	CFXL20-2E	.71-.79	(18 – 20)	.94 (24)	3.62 (92)
CFXL22-2	CFXL22-2E	.79-.87	(20 – 22)	1.02 (26)	3.39 (86)
CFXL26-2	CFXL26-2E	.87-1.02	(22 – 26)	1.18 (30)	4.53 (115)
CFXL30-2	CFXL30-2E	1.02-1.18	(26 – 30)	1.34 (34)	4.84 (123)
CFXL34-2	CFXL34-2E	1.18-1.34	(30 – 34)	1.50 (38)	5.16 (131)



Triple clamp housing, including top/bottom saddle clamps and two stacker saddle clamps

Part No. Steel	For cable diameters in.	(ø mm)	B+2	H
CFXL12-3	.24-.47	(6 – 12)	.63 (16)	4.17 (106)
CFXL14-3	.47-.55	(12 – 14)	.71 (18)	4.02 (102)
CFXL16-3	.55-.63	(14 – 16)	.79 (20)	4.25 (108)
CFXL18-3	.63-.71	(16 – 18)	.87 (22)	4.49 (114)
CFXL20-3	.71-.79	(18 – 20)	.94 (24)	4.72 (120)
CFXL22-3	.79-.87	(20 – 22)	1.02 (26)	4.96 (126)

Suitable profile rails for CFXL clamps **Part No. CF-92-52G ➤ page 10.13**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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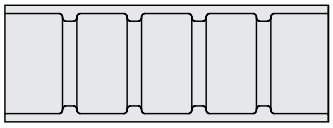
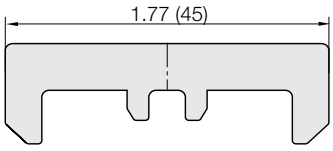
Chainfix Strain Relief Clamps - Single Parts

Characteristics of igus® Chainfix clamps - stacker elements

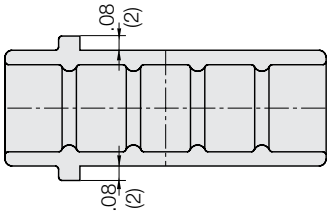
- Built-in ribs for security of cables in the strain relief
- Optimized stacker saddles, retained by ① locking spring and with ② spring grooves for a simplified and precise installation
- Conventional stacker saddles
- Long contact surface improves the clamp's stability
- More secure due to high stiffness
- Suitable for CFX and CFXL clamps

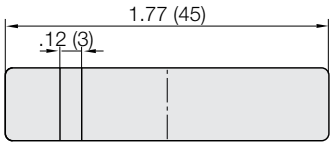
CGXX | Bottom saddles to slide into the clamp housing as single part



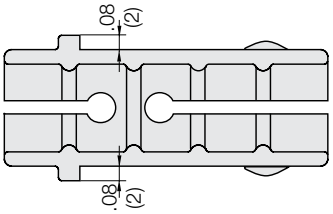


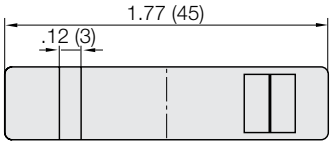
CDXX | Conventional stacker saddles for all for all double and triple clamps as single part

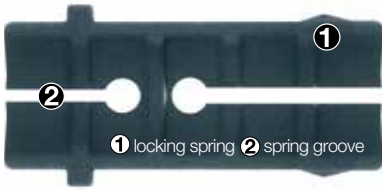




CD-XX-C | Optimized stacker saddles for all double and triple clamps as single part







Part No. Clamp	CGXX bottom saddle for singles	CDXX stacker saddle for doubles & triples	CD-XX-C optimized stacker saddle for doubles & triples	Diameter	
				in.	(mm)
CFX / CFXL12-1	CG12	CD12	–	.24-.47	(6 – 12)
CFX / CFXL14-1	CG14	CD14	CD-14-C	.47-.55	(12 – 14)
CFX / CFXL16-1	CG16	CD16	CD-16-C	.55-.63	(14 – 16)
CFX / CFXL18-1	CG18	CD18	CD-18-C	.63-.71	(16 – 18)
CFX / CFXL20-1	CG20	CD20	CD-20-C	.71-.79	(18 – 20)
CFX / CFXL22-1	CG22	CD22	CD-22-C	.79-.87	(20 – 22)
CFX / CFXL26-1	CG26	CD26	CD-26-C	.87-1.02	(22 – 26)
CFX / CFXL30-1	CG30	CD30	CD-30-C	1.02 -1.18	(26 – 30)
CFX / CFXL34-1	CG34	CD34	CD-34-C	1.18 -1.34	(30 – 34)
CFX / CFXL38-1	CG38	–	–	1.34-1.50	(34 – 38)
CFX / CFXL42-1	CG42	–	–	1.50-1.65	(38 – 42)

Please note: When using chainfix clamps on profile rail in the mounting bracket for Series E4-32/H4-32/R4-32, 280/290/ R770, 2828/2928/R7728, 28/29/R77 a shortened bottom saddle has to be used.
The Part No. for this is "**K**", Example: **Part No. CFX12-1K**

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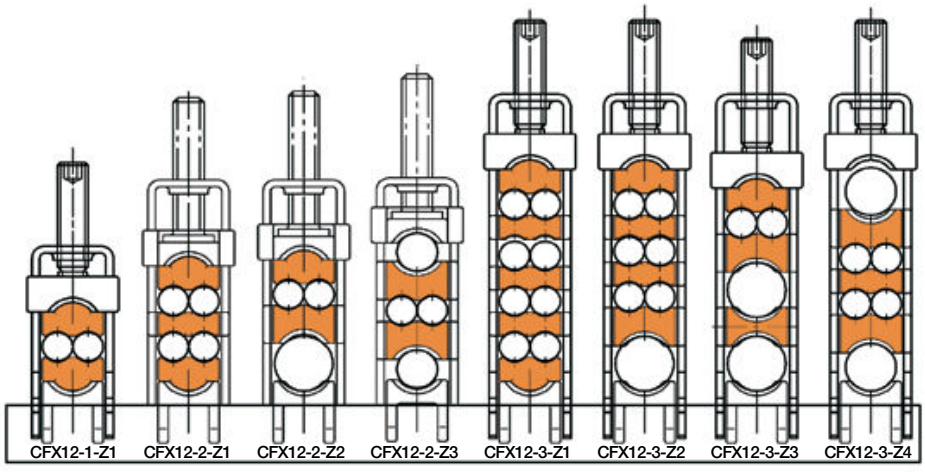
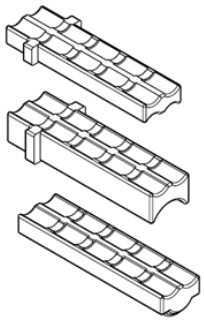
Chainfix Strain Relief Multi-Clamps

Characteristics of igus® Chainfix Multi-Clamps

The proven Chainfix clamps now even more versatile. New parts offer numberless solutions to assemble.

- New universal strain relief
- Save assembly time and space
- Compact and modular
- For small outer diameters
- Cost-effective





New universal saddle clamps

Part No.	Part No. trays as single parts				For cables Max. Diameter	
	CDA-4/4-8	CD-4/4	CD-4/4-8	CD-12	in.	(mm)
CFX12-1-Z1	X (2-piece)	–	–	–	.24	(6)
CFX12-2-Z1	X (2-piece)	X (1-piece)	–	–	.24	(6)
CFX12-2-Z2	X (1-piece)	–	X (1-piece)	–	.24 + .47	(6 + 12)
CFX12-2-Z3	–	–	X (2-piece)	–	.24 + .31	(6 + 8)
CFX12-3-Z1	X (2-piece)	X (3-piece)	–	–	.24	(6)
CFX12-3-Z2	X (1-piece)	X (2-piece)	X (1-piece)	–	.24 + .47	(6 + 12)
CFX12-3-Z3	X (1-piece)	–	X (1-piece)	X (1-piece)	.24 + .47	(6 + 12)
CFX12-3-Z4	–	X (1-piece)	X (2-piece)	–	.24 + .39	(6 + 10)

For stainless-steel version please insert index SS Example: **Part No. CFX-12-3-Z1SS**

Standard material steel zinc-coated

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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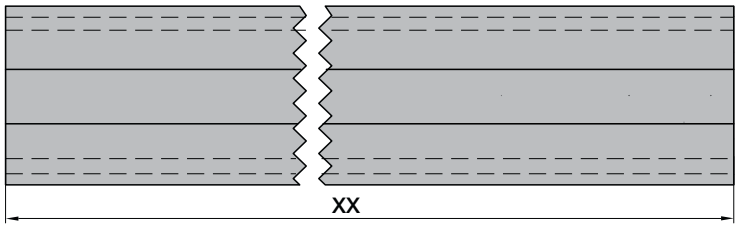
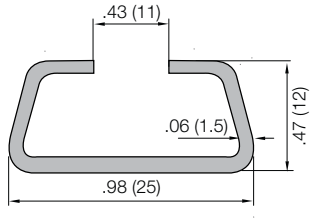
Chainfix Strain Relief Profile Rails

Standard Profile rails Part No. CF-92-42KMA

- For all igus® **CFX** clamps and KMA- mounting brackets with profile rail host-option
- Standard material: galvanized steel **Part No. CF-92-42KMA**
- Also available as stainless steel version (Material stainless steel: 1.4301) please add Index SS , example: **Part No. CF-92-42KMASS**

Standard profile rail Part No. CF-92-42KMA For conventional applications
Can be integrated into KMA with profile rail host-option!



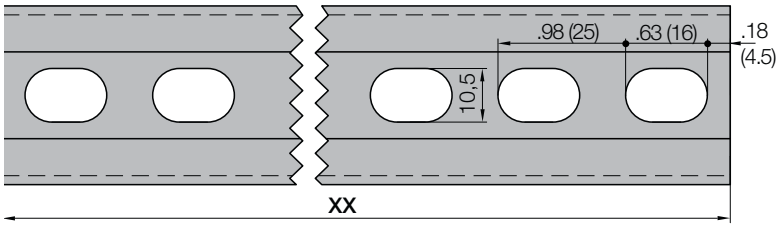


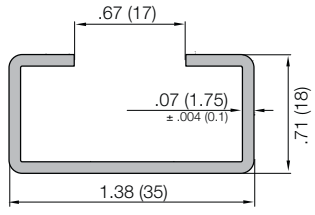
Optional - **For Heavy-Duty applications**

Profile rail Part No. CF-92-52G

- For all igus® **CFXL** clamps
- With increased holding power - even for harsh applications
- Standard material: galvanized steel **Part No. CF-92-52G**
- Also available as stainless steel version (Material stainless steel: 1.4301) please add Index SS , example: **Part No. CF-92-52GSS**

Profile rail Part No. CF-92-52G With increased holding power for harsh conditions
Assembly in front of the E-Chain® - CAN NOT be integrated into KMA mounting bracket!





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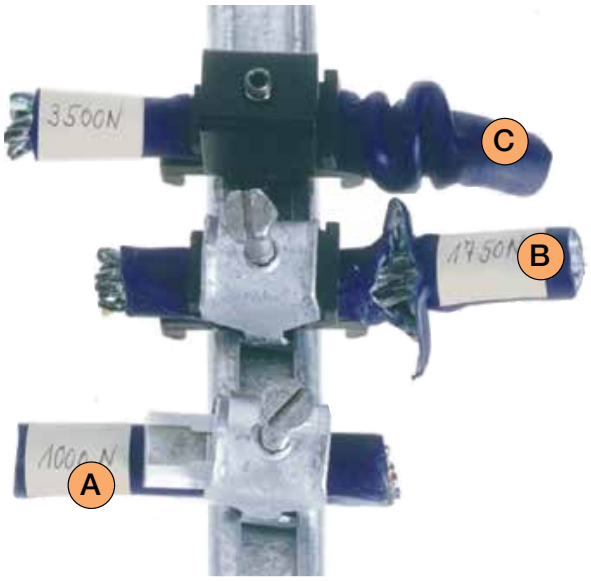
Chainfix Strain Relief Testing Methods

Three times higher tensile strength than other industry-standard clamps

We have tested three different strain relief types:

A. Standard, hot-dipped galvanized steel strain relief clamp with single and double impact-resistant polymer saddle clamp elements (Part No. CF14-1-Z, standard elements)
B. Standard strain relief housings (as used in A) with igumid G clamp saddles (Part No. CFY14-1)
C. igus® Chainfix strain relief elements (Part No. CFX14-1)



Results:

Strain relief element **"A"** saddle clamps loosen at 225 lbs (1,000 N) of pull force. The resulting diagonal position of the saddle clamp distorts the screw.

Strain relief element **"B"** saddle clamps loosen at 393 lbs (1,750 N) of pull force. The improved igumid G saddle clamps attempt to hold the cable, causing the outer jacket to "peel."

Strain relief element **"C"**,igus® new Chainfix system, saddle clamps loosen and slant 5° at 393 lbs (1,750 N). At 562 lbs (2,500 N) of pull force, the cable jacket bunches up behind the clamp and, at 787 lbs (3,500 N) of pull force, the clamps loosen completely and the cable becomes inoperative.

Conclusion:

The tensile strength of the "Chainfix" line of strain relief elements developed by igus® is more than three times higher than the tensile strength of standard strain relief elements.

Test example with cable diameter .41" (10.5 mm)

Tiewrap Plate 2070-ZB with one cable tie
Result: tensile force 65 lbs (290 N)

Chainfix Clip CFC-12-M
Result: tensile force 79 lbs (350 N)

Pull Force Test for igus Tiewrap Plates with Cable Tiewraps

Results:
Two tiewraps are more stable than one tiewrap. If one cable tiewrap is used, **the breaking force is approximately 79 lbs (350 N)**. If the cable is secured with **two** cable tiewraps, **the breaking force increases to 187 lbs (830 N)**, **i.e. pull force resistance more than doubles when using two cable tiewraps.**

Technical data:

Tiewrap plates:	2100-ZB/3100-ZB
Cable:	CF130-07-12
Cable tiewrap:	CFB-001

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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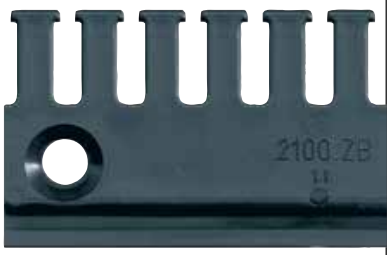
Chainfix Strain Relief Tiewrap Plates

Characteristics of igus® chainfix tiewrap plate Series 2000

Option 1A: Tiewrap plate as single part

- Available as individual component
- Screwed on KMA* with profile rail (*polymer metal mounting bracket)
- Can be stacked onto the mounting bracket
- Can be used at the end of the E-Chain® or within electrical cabinets
- Accessory for igus® E-Chain Systems®



For Series:

E-Z Chain®
- E200/Z200

System E2/000
- 1400/1500/1450/1480
- 2400/2500/2450/2480
- 255

System E2 Tubes
- R117/R118
- R48

System E4-1
- E4-21
- E4-28

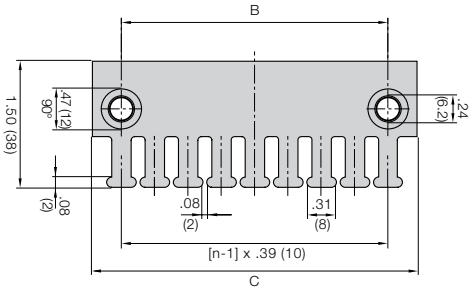
System E6
- E6-29/R6-29
- E6-35
- E6-40

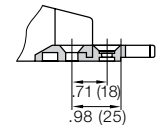
System E6-1
- E61-29

Tiewrap plates as an individual part

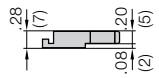
Available as an individual component or can be fixed onto a mounting bracket with the use of a profile rail.

Series 2000





Shown assembled



Single tiewrap plate

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B	
2020-ZB	3	1.18 (30)	.59 (15)	
2030-ZB	4	1.57 (40)	.79 (20)	
2040-ZB	5	1.97 (50)	1.18 (30)	
2050-ZB	6	2.36 (60)	1.57 (40)	
2070-ZB	8	3.15 (80)	2.36 (60)	
2090-ZB	9	3.54 (90)	2.76 (70)	= 2030-ZB + 2040-ZB combined
2100-ZB	10	3.94 (100)	3.15 (80)	
2125-ZB	12	4.72 (120)	3.94 (100)	= 2050-ZB x 2 pieces combined

If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 2020-ZBKMA

Cable tiewraps as individual parts

Cable tiewraps 100 pieces/bag	Width x Length		Maximum Ø		Tensile Strength	
	in.	(mm)	in.	(mm)	lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)

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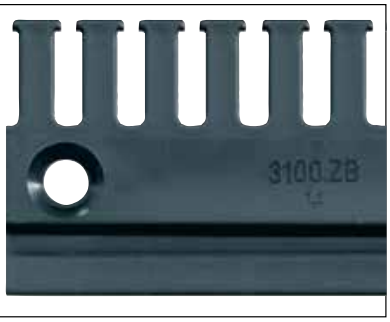
Chainfix Strain Relief Tiewrap Plates

Characteristics of igus® chainfix tiewrap plate Series 3000

Option 1B: Tiewrap plate as single part

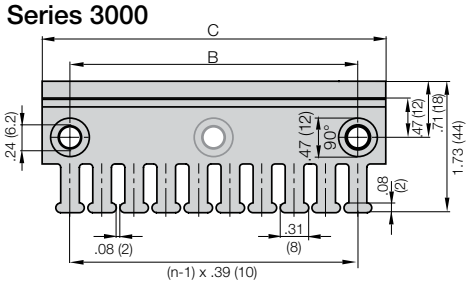
- Available as individual component
- Screwed on KMA* with profile rail (*polymer metal mounting bracket)
- Can be stacked onto the mounting bracket
- Can be used at the end of the E-Chain® or within electrical cabinets
- Accessory for igus® E-Chain Systems®

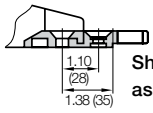


Tiewrap plates as an individual part

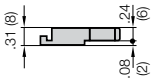
Available as an individual component or can be fixed onto a mounting bracket with the use of a profile rail.

Series 3000





Shown assembled



Single tiewrap plate

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes

If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 3050-ZBKMA

Cable tiewraps as individual parts

Cable tiewraps 100 pieces/bag	Width x Length		Maximum Ø		Tensile Strength	
	in.	(mm)	in.	(mm)	lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)

For Series:

E-Z Chain®
- E26/Z26
- E300/Z300

System E2/000
- 2600/2700/2650/2680
- 3400/3500/3450/3480

System E4-1
- E4-32/H4-32/R4-32
- E4-42/H4-42/R4-42
- E4-56/H4-56/R4-56
- E4-80/H4-80/R4-80
- E4-112/H4-112/R4-112
- 800
- 840

System E4-1 Light
- E4-38L/R4-38L
- E4-48L/R4-48L

System E4/light
- 14040/14140/R18840
- 15050/15150/R19850
- 14240/14340
- 1640

System E6
- E6-52/R6-52
- E6-62
- E6-80L / E6-80

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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Chainfix Strain Relief Tiewrap Plates

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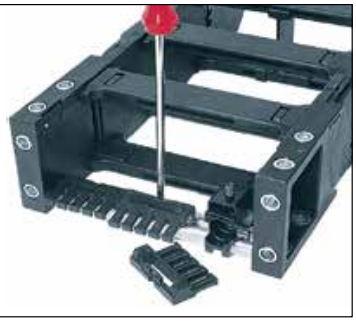
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Characteristics of igus® Chainfix tiewrap plate

Option 2: With clip-on connection for the profile rail

- Can be clipped onto KMA profile rail
- Easy to assemble without any screws
- Easy to remove with screwdriver
- Can be used at the end of the E-Chain® or within electrical cabinets
- Accessory for igus® E-Chain Systems®



Option 2 - Tiewrap plate for fixed crossbars

Part No.	Number of Teeth	Width of Strain Relief	
		in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For Series:

Tiewrap plates for profile rail
For all mounting brackets
with profile rail option

Characteristics of igus® Chainfix tiewrap plate

Option 3: integrated strain relief for E2 E-Tubes - Series R

- Strain relief is hidden within the E-Tube
- Easy to assemble without any screws
- Can be used at the end of the E-Chain® or within electrical cabinets
- Accessory for igus® E-Chain Systems®

Option 3 - Tiewrap plate for E2 E-Tubes Series R

Part No. fixed crossbar	Width		Number of teeth	For Series
	in.	(mm)		
3050-Z	1.97	(50)	5	R68
3075-Z	2.95	(75)	7	R68
5850-Z	1.81	(46)	4	R58

For Series:

E-Tubes Series R
● R58
● R68

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Chainfix Strain Relief Tiewrap Plates

Characteristics of igus® Chainfix tiewrap plates
Option 4: for fixed crossbars
Option 5: for opening crossbars

- Can be fitted to fixed and opening crossbars
- For use with many harnessed cables
- Strain relief on two levels
- Easy to assemble without any screws
- Accessory for igus® E-Chain Systems®

Option 4 - Tiewrap plate for fixed crossbars

Part No. fixed crossbar	Width in.	Width (mm)	Number of teeth	For Series
2050-Z	2.36	(60)	6	240/250, 26/27, E/Z200, 2400/2500, 2600/2700
3050-Z	1.97	(50)	5	340/350, 3400/3500
3075-Z	2.91	(74)	7	340/350, 3400/3500

For Series:

E-Z Chain®
- E200/Z200

System E2 medium
- 240/250
- 26/27
- 340/350

System E2/000
- 2600/2700/2650/2680
- 3400/3500/3450/3480

Option 5 - Tiewrap plate for opening crossbars

Part No. opening crossbar	Width in.	Width (mm)	Number of teeth	For Series
2050-Z	2.36	(60)	6	220, 2650, E4-28, E6-52
3035-ZS	1.38	(35)	3	340/350, 3400/3500
3050-ZS	1.97	(50)	5	340/350, 3400/3500
3075-ZS	2.91	(74)	7	340/350, 3400/3500
3850-ZS	1.89	(48)	5	280/290/R770, 380/390/R780, 2828/2929/R7728, 3838/3938/R7838 E4/H4/R4.32, E4/H4/R4.42, 14240/14340, 15250/15350, E6-62
4550-ZS	1.89	(48)	5	400/410/R880, 4040/4140/R8840, 5050/5150/R9850 E4/H4/R4.56, E4/H4/R4.80, E4/H4/R4.112, 14040/14140/R18840, 14550/14650/19050 15050/15150/R19850, E6-80L, E6-80, 1640/1608
4575-ZS	2.91	(74)	7	400/410/R880, 4040/4140/R8840, 5050/5150/R9850 E4/H4/R4.56, E4/H4/R4.80, E4/H4/R4.112, 14040/14140/R18840, 14550/14650/19050 15050/15150/R19850, E6-80L, E6-80, 1640/1608

For Series:

System E4-1
- E4-28
- E4-32/H4-32/R4-32
- E4-42/H4-42/R4-42
- E4-56/H4-56/R4-56
- E4-80/H4-80/R4-80
- E4-112/H4-112/R4-112

System E4/light
- 14040/14140/R18840
- 15050/15150/R19850
- 14240/14340
- 1640

System E4/4
- 2828/2928/R7728
- 3838/3938/R7838
- 4040/4140/R8840
- 5050/5150/R9850

System E4/00
- 220
- 280/290/R770
- 380/390/R780
- 400/410/R880

System E6
- E6-52/R6-52
- E6-62
- E6-80L / E6-80

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

Chainfix Strain Relief
Chainfix Clip

Characteristics of igus® Chainfix clips

Option 1: Modular clip-on strain relief for the profile rail

- Available for all igus® E-Chain Systems® with profile rails
- Also suitable for assembly in the KMA mounting brackets
- Series of clamps and bottom parts made of plastic for cable diameters ranging from .16" - .94" (4 to 24 mm)
- Quick assembly without any tools
- 2 and 3 layers on top of one another possible
- Each layer can be detached and changed later on
- High tensile forces with single-layer installation, decreases with each layer

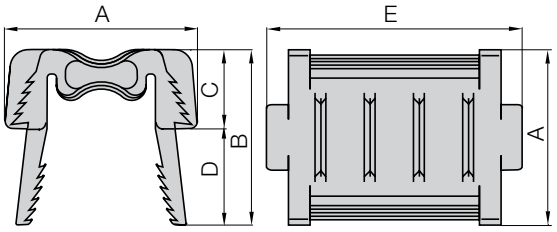
For Series:

Tiewrap plates for profile rail
For all mounting brackets
with profile rail option

Option 1 - Clip-on strain relief for the profile rail

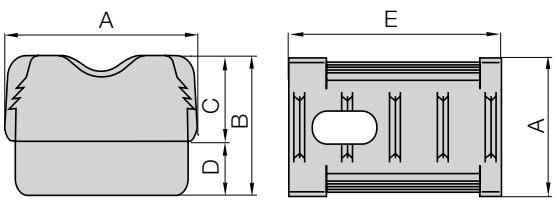
Clamp top part No CFC-XX-M

Cable ø		Part No.	Dimension A		Dimension B		Dimension C		Dimension D		Dimension E	
in.	(mm)	Clamp top	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
.16-.31	(4-8)	**CFC-08-M**	.57	(14.5)	.51	(13.0)	.22	(5.5)	.29	(7.5)	1.18	(30)
.31-.47	(8-12)	**CFC-12-M**	.93	(23.7)	.94	(24.0)	.39	(10.0)	.55	(14.0)	1.42	(36)
.47-.63	(12-16)	**CFC-16-M**	1.28	(32.4)	1.28	(32.5)	.54	(13.6)	.74	(18.9)	1.65	(42)
.63-.79	(16-20)	**CFC-20-M**	1.70	(43.2)	1.54	(39.1)	.69	(17.6)	.45	(11.5)	1.77	(45)
.79-.94	(20-24)	**CFC-24-M**	2.13	(54.0)	1.93	(49.0)	.87	(22.0)	1.06	(27.0)	1.97	(50)



Clamp bottom part No CFC-XX-C

Cable ø		Part No.	Dimension A		Dimension B		Dimension C		Dimension D		Dimension E	
in.	(mm)	Clamp top	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
.16-.31	(4-8)	**CFC-08-C**	.51	(14.5)	.57	(12.5)	1.18	(5.5)	.28	(7)	.94	(24)
.31-.47	(8-12)	**CFC-12-C**	.94	(23.8)	.93	(18.0)	1.42	(11.0)	.28	(7)	1.10	(28)
.47-.63	(12-16)	**CFC-16-C**	1.26	(32.4)	1.28	(23.6)	1.65	(13.6)	.39	(10)	1.26	(32)
.63-.79	(16-20)	**CFC-20-C**	1.54	(43.2)	1.70	(24.6)	1.77	(17.6)	.28	(7)	1.42	(36)
.79-.94	(20-24)	**CFC-24-C**	1.97	(54.0)	2.13	(29.0)	1.97	(22.0)	.28	(7)	1.54	(39)



Chainfix Strain Relief
Chainfix Clip

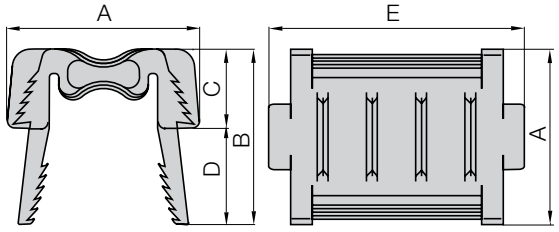
Characteristics of igus® Chainfix clips
Option 2: Clip-on strain relief for opening crossbars

- Available for all igus® E-Chain Systems® with crossbar series **Part. No. 450-XX**.
- Series of clamps and bottom parts made of plastic for cable diameters ranging from .31" to .47" (8 to 12 mm)
- Quick assembly without any tools
- 2 and 3 layers on top of one another possible
- Each layer can be detached and changed later on
- High tensile forces with single-layer installation, decreases with each layer

Option 2 - Clip-on strain relief for opening crossbars

Clamp top part No CFC-XX-M

Cable ø		Part No.	Dimension A		Dimension B		Dimension C		Dimension D		Dimension E	
in.	(mm)	Clamp top	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
.31-.47	(8-12)	**CFC-12-M**	.93	(23.7)	.94	(24)	.39	(10)	.55	(14)	1.42	(36)



For Series:

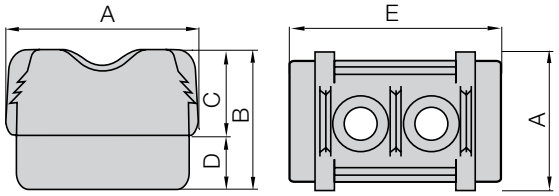
System **E4-1**
- E4-56/H4-56/R4-56
- E4-80/H4-80/R4-80
- E4-112/H4-112/R4-112
- 840

System **E4/light**
- 14040/14140
- 14550/14650
- 15050/15150
- 1640

System E6
- E6-80L
- E6-80

Clamp bottom part No CFC-XX-B

Cable ø		Part No.	Dimension A		Dimension B		Dimension C		Dimension D		Dimension E	
in.	(mm)	Clamp top	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
.31-.47	(8-12)	**CFC-12-B**	.94	(23.8)	.83	(21)	.51	(13)	.31	(8)	1.50	(38)



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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igus®

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Strain Relief Separators

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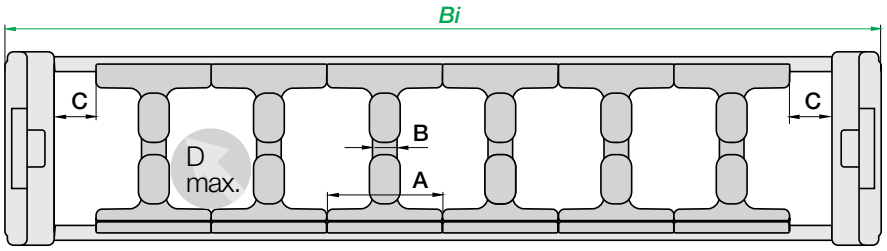
Characteristics of igus® strain relief separators - Separator with integrated strain relief teeth

- For the use in the first or last chain link
- Accessory for igus® E-Chain Systems®
- Easy to assemble without any screws
- For restricted space conditions
- The number **of teeth** is dependent upon the selection of cable (diameter, type) and available space

Strain relief separator with integrated teeth



For Series	Part No. Strain Relief Separator	Number Of Teeth	Dimension A		Dimension B		Dimension C Min. distance L/R		Dimension D max. cable Ø	
			in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
1400/1500	21-1-Z	2	.39	(10)	.16	(4)	–	–	.24	(6)
2400/2500	2020-Z	2	.39	(10)	.16	(4)	–	–	.24	(6)
2450/2480	2020-ZR	2	.39	(10)	.16	(4)	–	–	.24	(6)
2600/2700	262-Z	3	.39	(10)	.16	(4)	–	–	.24	(6)
3400/3500	301-Z	3	.71	(18)	.16	(4)	–	–	.55	(14)
3450/3480	34501-Z	3	.55	(14)	.16	(4)	–	–	.39	(10)
R157/R158	1585-01-Z	3	.87	(22)	.16	(4)	–	–	.71	(18)
R167/R168	1685-01-Z	4	.87	(22)	.16	(4)	–	–	.71	(18)
R48	481-ZR	2	.39	(10)	.14	(3.5)	.39	(10)	.26	(6.5)
E4-21	T2103-Z	2	.31	(8)	.16	(4)	.51	(13)	.16	(4)
E4-28	28-Z	2	.39	(10)	.16	(4)	–	–	.24	(6)
R4-28	28-ZT	2	.39	(10)	.16	(4)	.59	(15)	.24	(6)
T3-29	E6-29-02-Z	2	.31	(8)	.16	(4)	.47	(12)	.16	(4)
E6-29	E6-29-02-Z	2	.31	(8)	.16	(4)	.47	(12)	.16	(4)
E61-29	E6-29-02-Z	2	.31	(8)	.16	(4)	.47	(12)	.16	(4)
E6-35	E6-35-02-Z	3	.31	(8)	.16	(4)	.47	(12)	.16	(4)
E6-40	E6-40-02-Z	3	.51	(13)	.16	(4)	–	–	.31	(8)

For Series:

System E2/000
- 1400/1500
- 2400/2500/2450/2480
- 2600/2700
- 3400/3500/3450/3480

System E2 Tubes
- R157/R158
- R167/R168
- R48

System E4-1
- E4-21
- E4-28/R4-28

System T3
- T3-29

System E6
- E6-29
- E6-35
- E6-40

System E6-1
- E61-29

Strain relief separators are assembled either at the first or last E-Chain® link. For an intermediate strain relief they can alternatively be assembled in the E-Chain®.

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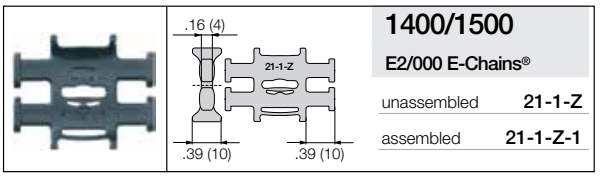
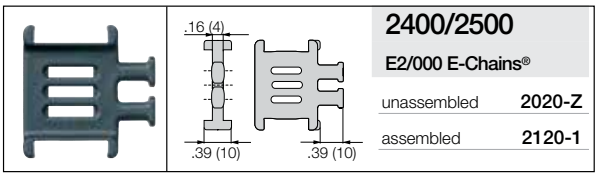
Chainfix Strain Relief
Strain Relief Separators - Product range overview

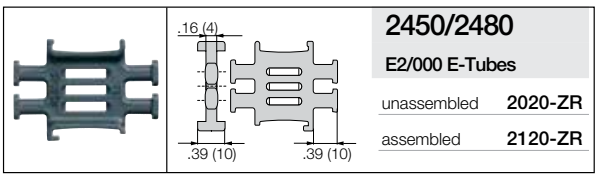
Strain relief separators overview



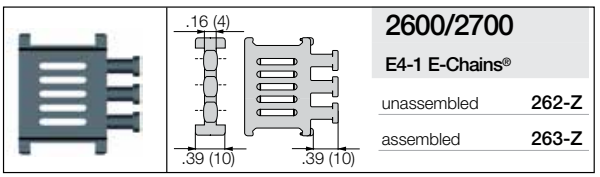
1400/1500
E2/000 E-Chains®
unassembled 21-1-Z
assembled 21-1-Z-1



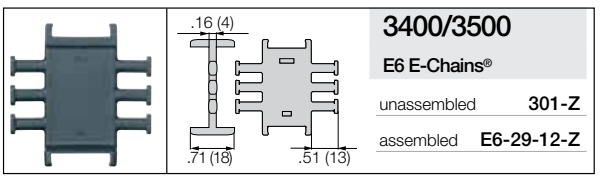
2400/2500
E2/000 E-Chains®
unassembled 2020-Z
assembled 2120-1



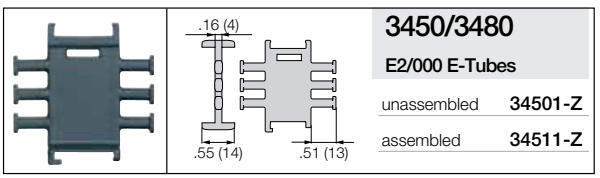
2450/2480
E2/000 E-Tubes
unassembled 2020-ZR
assembled 2120-ZR



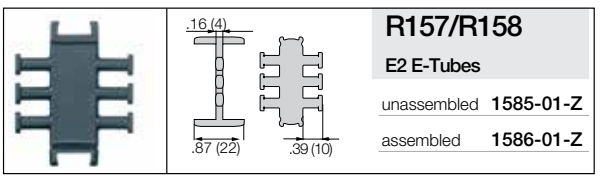
2600/2700
E4-1 E-Chains®
unassembled 262-Z
assembled 263-Z



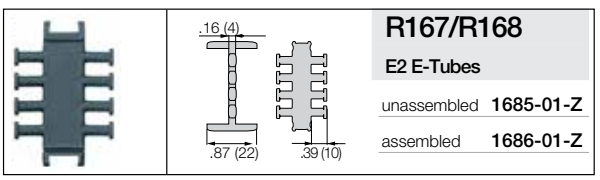
3400/3500
E6 E-Chains®
unassembled 301-Z
assembled E6-29-12-Z



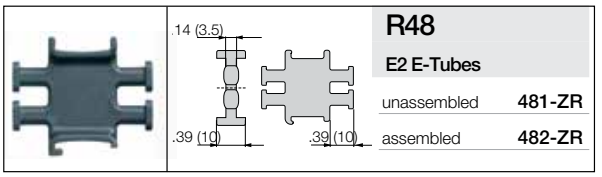
3450/3480
E2/000 E-Tubes
unassembled 34501-Z
assembled 34511-Z



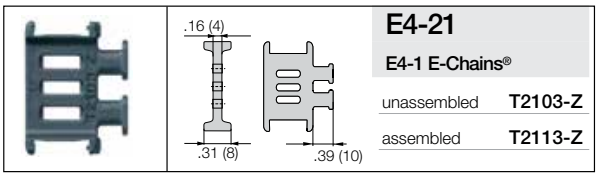
R157/R158
E2 E-Tubes
unassembled 1585-01-Z
assembled 1586-01-Z



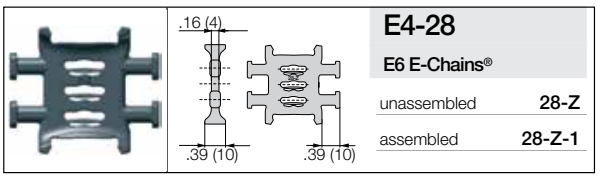
R167/R168
E2 E-Tubes
unassembled 1685-01-Z
assembled 1686-01-Z



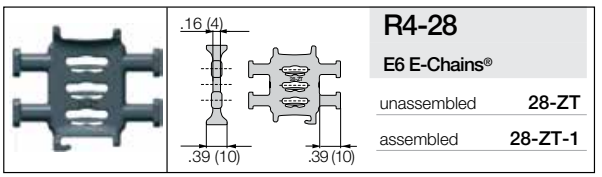
R48
E2 E-Tubes
unassembled 481-ZR
assembled 482-ZR



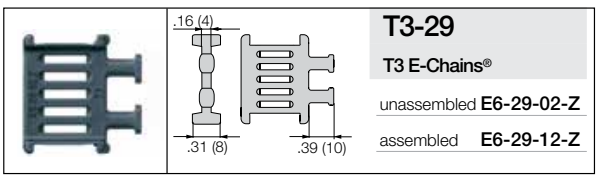
E4-21
E4-1 E-Chains®
unassembled T2103-Z
assembled T2113-Z



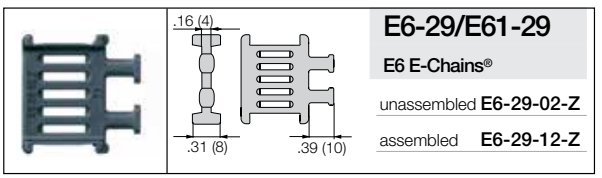
E4-28
E6 E-Chains®
unassembled 28-Z
assembled 28-Z-1



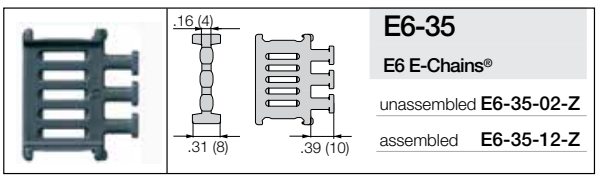
R4-28
E6 E-Chains®
unassembled 28-ZT
assembled 28-ZT-1



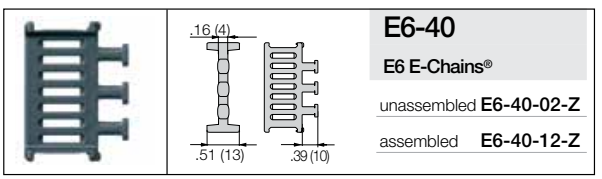
T3-29
T3 E-Chains®
unassembled E6-29-02-Z
assembled E6-29-12-Z



E6-29/E61-29
E6 E-Chains®
unassembled E6-29-02-Z
assembled E6-29-12-Z



E6-35
E6 E-Chains®
unassembled E6-35-02-Z
assembled E6-35-12-Z



E6-40
E6 E-Chains®
unassembled E6-40-02-Z
assembled E6-40-12-Z

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Chainfix

igus®

Chainfix Strain Relief Clip-on Solutions

igus® E-Chain System®
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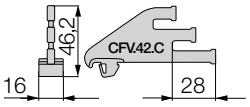
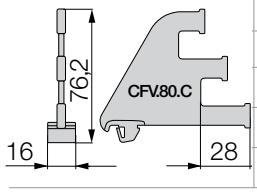
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Strain relief element outside of the E-Chain® cross section

- East strain relief for cables, even in enclosed tubes
- Stepped strain relief - good access when retrofitting several cables with strain reliefs
- Matching for E-Chains® and E-Tubes
- Easy retrofit assembly possible
- Simple installation into profile rails on KMA mounting brackets

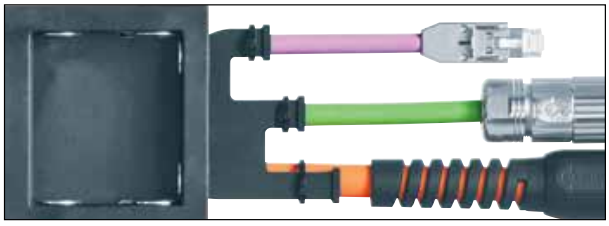
Part No Strain relief element	For E-Chain® Series	For inner height *hi* in.	 (mm)	For use on
CFV-42-C				
	2600/2700/2650/2680	1.38	(35)	KMA* with profile rail
	3400/3500/3450/3480	1.77	(45)	KMA* with profile rail
	E4-32/H4-32/R4-32	1.26	(32)	KMA* with profile rail
	E4-42/H4-42/R4-42	1.65	(42)	KMA* with profile rail
	E4-38L/R4-38L	1.50	(38)	KMA* with profile rail
	E4-48L/R4-48L	1.89	(48)	KMA* with profile rail
CFV-80-C				
	E4-56/H4-56/R4-56	2.20	(56)	KMA* with profile rail
	E4-80/H4-80/R4-80	3.15	(80)	KMA* with profile rail

For Series:

System E2/000
- 2600/2700/2650/2680
- 3400/3500/3450/3480

System E4-1
- E4-32/H4-32/R4-32
- E4-42/H4-42/R4-42
- E4-56/H4-56/R4-56
- E4-80/H4-80/R4-80

System E4-1 Light
- E4-38L/R4-38L
- E4-48L/R4-48L



Fits into E-Chains® and E-Tubes. Strain relief element outside of the E-Chain® cross-section. Stepwise strain relief without space issues - even with different connectors

Easily clipped into the Profile rail or top-hat rail from above - also useful for static applications in control panels, etc.

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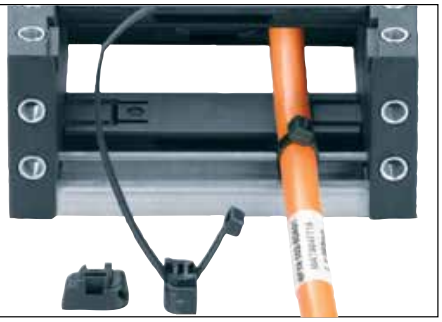
Chainfix Strain Relief Clip-on Solutions

Characteristics of igus® Chainfix nuggets for profile rails

- Universal cable attachment in profile rail
- Simple strain relief - harnessed cable tiewraps
- Minimum space required
- Easy to assemble without any screws and tools
- Adjustable to every E-Chain® filling

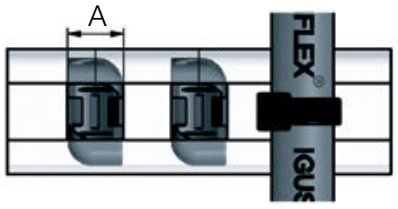


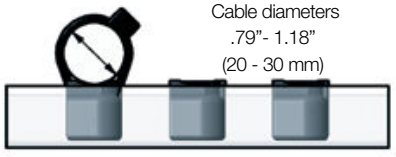
Chainfix nuggets for profile rail

For profile rails	Part No. Nugget	Cable Diameter Max. in.	Cable Diameter Max. (mm)	Dimension A in.	Dimension A (mm)
92-42.../92-42...E	CFN-20	.79	(20)	.43	(10.8)
92-42.../92-42...E	CFN-30-52	1.18	(30)	.65	(16.4)

For Series:

For cable attachment in profile rail
For all mounting brackets with profile rail option





PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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Chainfix

igus®

Chainfix Strain Relief
Strain Relief Connector System

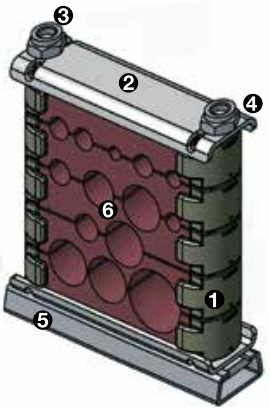
Characteristics of the modular igus® CFB: Polymer strain relief connector system to be mounted onto the profile rail

- Customized strain relief solutions can be offered
- 2 variations available
- Fast assembly by standard screw connection
- Can be mounted in the mounting bracket or in front of the E-Chain®
- Customized production from 1 piece
- Low priced and effective

CFB 907-881- Polymer strain relief connector system

Parts List Description	Part No.	Quantity
① Outer fixing block	**CFB20-1**	N x 2
② Clamping bar	**907-881-1-XXX**	2
③ Threaded bolt with plate	**907-825-2-LLL**	2
④ Hexagon nut M8	**MAT 0040012**	2
⑤ Profile rail (part of KMA)	**92-42-KMA**	1
⑥ Strain relief block	Customer specific	1

Please contact igus® for individual design



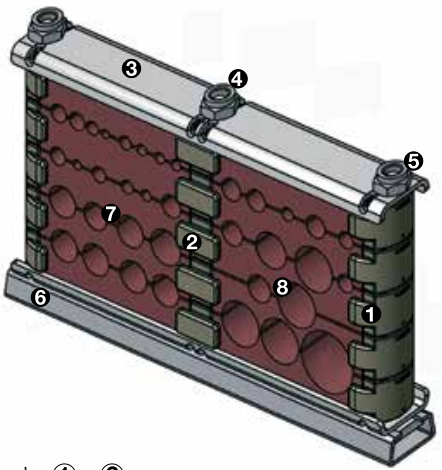
Order key
907-881-XXX-N

N = Number of layers fixing blocks ①
XXX= Bi - 3 mm (mounting bracket)
Part No. with version 881

CFB 907-825- Polymer strain relief connector system

Parts List Description	Part No.	Quantity
① Outer fixing block	**CFB20-1**	N x 2
② Inner fixing block	**CFB20-2**	N
③ Clamping bar	**907-825-1-XXX**	2
④ Threaded bolt with plate	**907-825-2-LLL**	3
⑤ Hexagon nut M8	**MAT 0040012**	3
⑥ Profile rail (part of KMA)	**92-42-KMA**	1
⑦ Strain relief block	Customer specific	1
⑧ Strain relief block	Customer specific	1

Please contact igus® for individual design



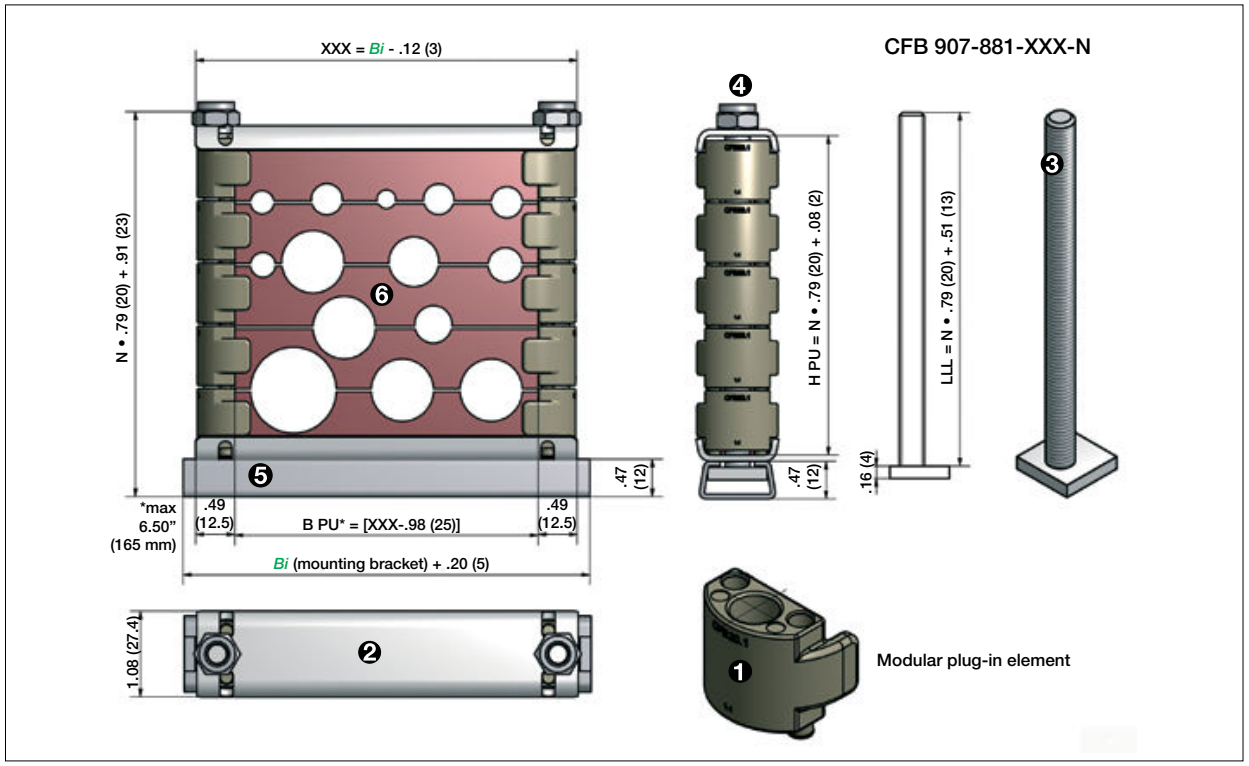
Order key
907-825-XXX-N

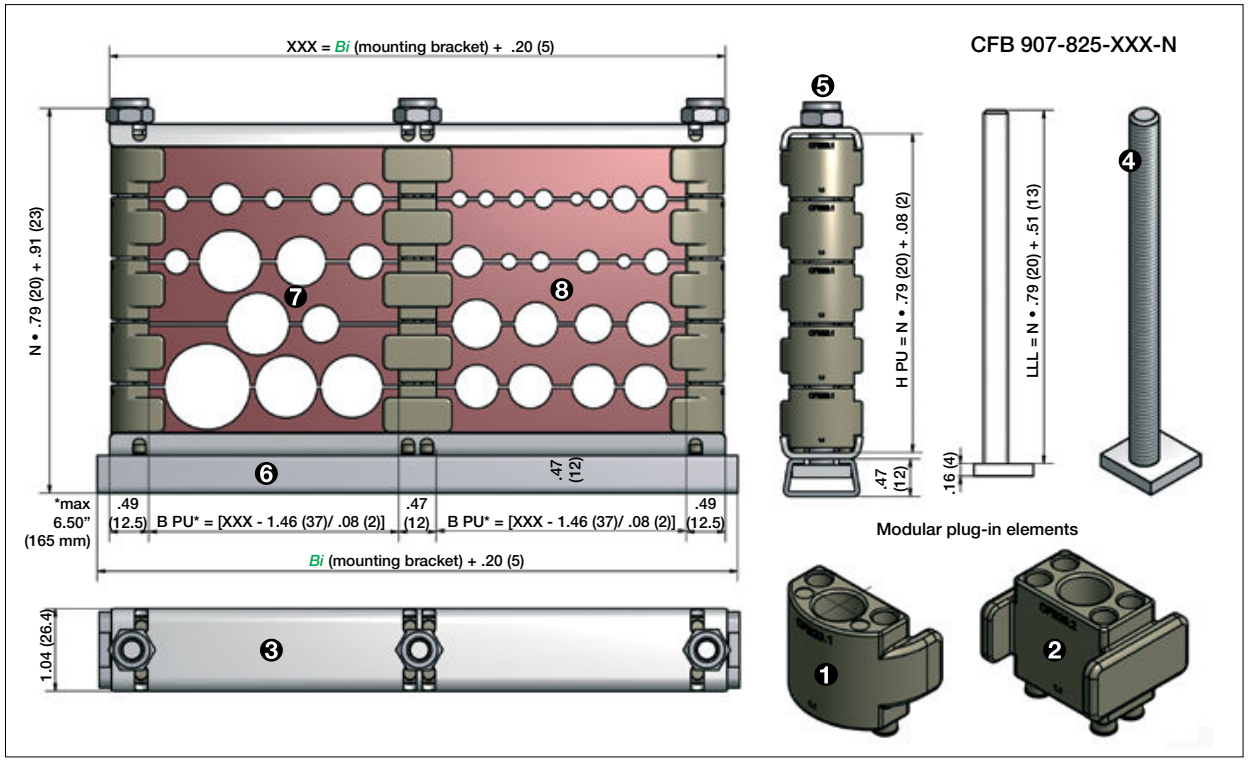
N = number of layers fixing blocks ① + ②
XXX= Bi - mm (mounting bracket)
Part No. with version 825

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Chainfix Strain Relief
Strain Relief Connector System

igus® Chainfix





Delivery time upon request

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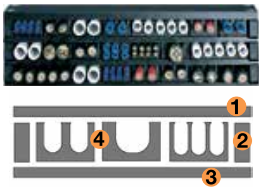
Chainfix

igus®

Chainfix Strain Relief
Strain Relief Block

igus® strain relief block for small hoses and cables

- Modular system for great adaptability
- No hose damage
- Space-saving design
- Hoses and cables can be installed together in the same E-Chain®
- Accommodation of hose diameters from .17 to .55 (4.3 to 14 mm)
- Easy installation - pressing the hose into the locating notch provides reliable fastening without hardware



1 Cover plate
2 Spacers
3 Base plate

4 Grid-dimensioned modules
W = 1.08 (27.5 mm)
H = .63 (16 mm)

The modules accommodate hoses from .17 to .55 (4.3 to 14 mm), 3 x .17 (3 x 4.3 mm) hoses can be fitted on top of each in module CFS-4.3 and 2 hoses can be fitted directly on top of each other in one notch using module CFS-6. The modules have a width of 1.08 (27.5), are inserted into the base plate and then fastened in position with M4 countersunk-head screws. The exception is module CFS-55.9 which offers the capacity for 5 x .35 (5 x 9 mm) hoses with twice the width. The base plate and cover plate are available in widths ranging from 2.95 to 9.45 (75 to 240 mm). The height of the spacers and modules is .63 (16 mm). Several layers can be installed directly above one another.

Part No. Block	Hose Ø mm	Number of Hoses	Width in.	Width (mm)
CFS-4.3	.17 (4.3)	4 – 12	1.08	(27.5)
CFS-6	.24 (6)	3 – 6	1.08	(27.5)
CFS-9	.35 (9)	2	1.08	(27.5)
CFS-55.9	.35 (9)	5	2.16	(55.0)
CFS-10	.39 (10)	2	1.08	(27.5)
CFS-14	.55 (14)	1	1.08	(27.5)

Part No. Base Plate	Part No. Cover Plate	Width in.	Width (mm)
CFSU-75	CFS-P-75	2.95	(75)
CFSU-102.5	CFS-P-102.5	4.04	(102.5)
CFSU-130	CFS-P-130	5.12	(130)
CFSU-185	CFS-P-185	7.28	(185)
CFSU-212	CFS-P-212	8.34	(212)
CFSU-240	CFS-P-240	9.45	(240)

Part No. Spacer	Height in.	Height (mm)
CFSD-16	.63	(16)
CFSD-12	.47	(12)

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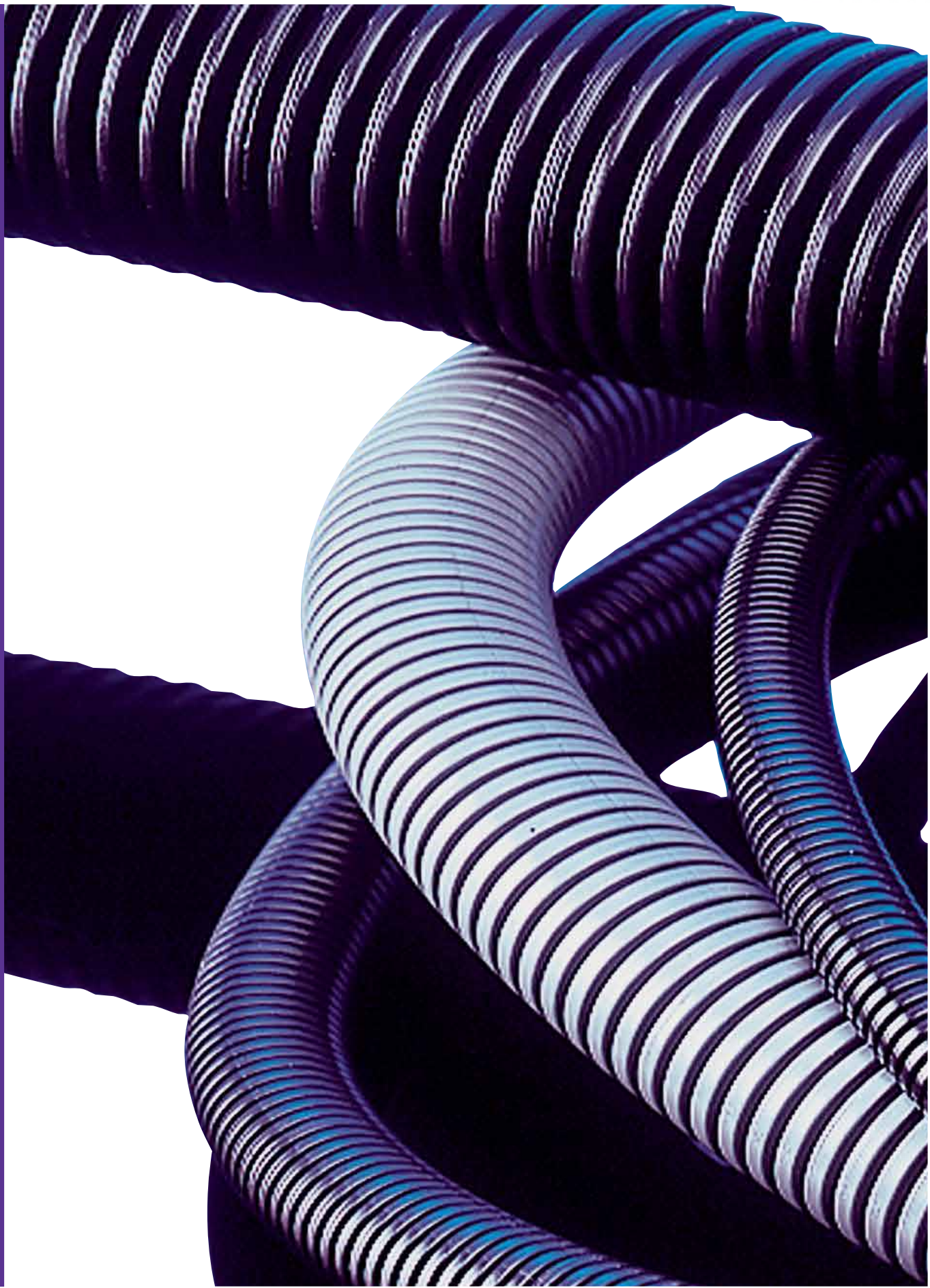

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PMA

PMA Overview

PMAFLEX | Conduits | Cable protection

Product	Description
PMA conduits	
PACOF	Flexible, medium, split
PPCOF	Very flexible, medium, split
LN	Two-part lock nuts
LNO	One-piece split connectors
VCS	Flexible, heavy
PIS/PIH	Highly flexible, medium
CYL	Very flexible, medium

PMAFIX | Connectors | Safety and sealing systems

Product	Description
PMA connectors	
IP66 - stat., IP54 dyn.	Universal safety clip
IP68 - stat., IP67 dyn.	Oval clip
PMAFIX / PMAFLEX	Connectors
PMAFIX connectors VW	90° elbow, PG
PMAFIX connectors VA	45° elbow, metric & PG
PMAFIX connectors VN	Straight, metric
PMAFIX connectors VN	Straight, PG
PMAFIX connectors VB	90° curved elbow, metric & PG
PMAFIX connectors VO	Flange 90°

PMA | Accessories

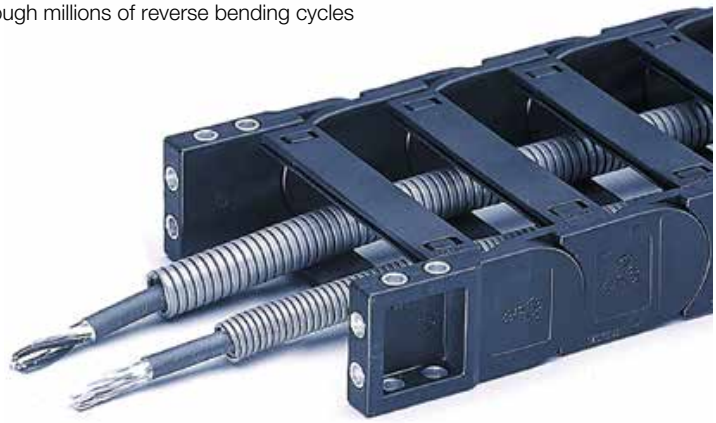
Product	Description
PMA accessories	
PMAFIX FH-O	One-piece system support
PMA VH	System supports
PMA GPS	One-piece system supports
PMA MN	Hexagonal lock nuts, metric & PG
PMA SGB	Tube clamps
PMA 514	Plug screws, metric & PG

PMA Protective Corrugated Tubing

Tubes, connectors, system supports, and accessories

PMA - corrugated conduits, connectors, system support, and accessories

- Wide range of tubes
- Long service life of the tubes especially through millions of reverse bending cycles
- UL-recognized products available
- PMAFIX safety locking system



igus® E-Chain® System E4 combined with PMAFLEX protective tubing and igus Chainflex® CF9

PMA-Program - Wide selection of tubes and systems

The PMA cable protection system is applied wherever the mechanical protection of electrical wires and cables is required. Very flexible types of conduits are especially suitable for the additional protection of leads in E-Chain systems® if required. By combining technical excellence with rigorous international safety standards, PMA meets the demands of industry worldwide - specializing in applications from the machine building industries to high tech manufacturing; heavy plant and vehicle construction; fiber optics, solar energy and robotic applications with high speed and millions of reversed bending cycles.

PMAFLEX - Conduits

PMAFLEX covers different conduit types for a variety of applications in cable protection. The **PMAFLEX** range offers conduits for technically demanding applications and special requirements. Conduit sizes range from 4.5 mm to 125 mm diameters, from lightweight to heavyweight, and pliable to highly flexible. Standard colors are black and grey. Many conduits are specially approved, e.g. CSA, UL Recognition, NF, SNCF, DB, etc.

PMAFIX- Connectors

The designation **PMAFIX** describes a very large range of connectors for PMA conduits with the patented PMA safety clip system. Connectors are available for ingress protection IP66 and IP68. IP66 connectors are fitted with a pre-installed universal safety clip which ensures a quick “push-in” installation. IP68 connectors for increased requirements will be delivered with a special conduit seal cap.<?>

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igus®

PMA Protective Corrugated Tubing

PMA COFLEX Conduit PACOF - medium, flexible, split

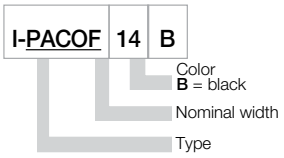
The PMA COFLEX conduit type PACOF has been created for retrofit and pre-loomed applications. New cables can be added to existing arrangements without the need for re-wiring or re-threading within the building of machines and installations. This product is suitable for vehicle manufacturing and building construction. Split connectors and locknuts are available for this product group.

Temperature range:
-40°F to +221°F (-40°C to +105°C), or a short time up to +320°F (+160°C)

Features:
- specially modified PA6 (polyamide 6)
- good closure up to IP50
- self-extinguishing
- halogen-free and cadmium-free

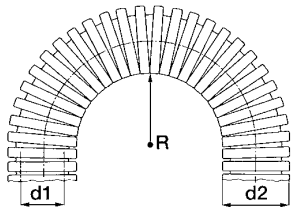
Chemical resistance:
- fuels
- mineral oils
- fats
- alkalis
- weak acids and bases, etc.

Part No. structure



Part No. (Black)	Conduit size Nominal	Conduit size Metric	Inside diameter d1 (mm)	Outside diameter d2 (mm)	Radius (stat.) (mm)	PU (m)
I-PACOF-07B	7	10	5.6	10.0	30	50
I-PACOF-10B	10	12	8.5	12.8	33	50
I-PACOF-12B	12	16	11.0	15.6	35	50
I-PACOF-17B	17	20	15.5	21.1	45	50
I-PACOF-23B	23	25	22.1	28.4	70	50
I-PACOF-29B	29	32	27.2	34.5	120	50
I-PACOF-36B	36	40	32.0	42.4	145	30
I-PACOF-48B	48	50	43.9	54.1	150	30
I-PACOF-70B	70	80	66.0	80.0	220	10

I-PACOF - is suitable for static use only!



** ***stat. R*** = lowest recommended bending radius for static (fixed) installation

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PMA Protective Corrugated Tubing

PMA COFLEX Conduit PPCOF - medium, very flexible, split

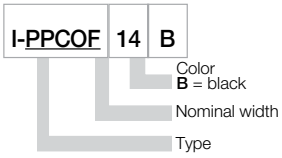
The PMA COFLEX conduit type PPCOF has been created for retrofit and pre-loomed applications. New cables can be added to existing arrangements without the need for re-wiring or re-threading within the building of machines and installations. This product is suitable for vehicle manufacturing and building construction. Split connectors and locknuts are available for this product group.

Temperature range:
-4°F to +221°F (-20 °C to +105 °C), or a short time up to +275°F (+135°C)

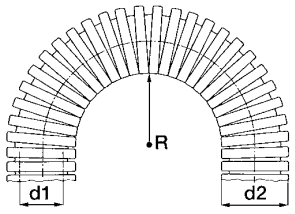
Features:
- specially modified polypropylene
- good closure up to IP50
- self-extinguishing,

Chemical resistance:
- fuels
- mineral oils
- fats
- alkalis
- acids, etc.

Part No. structure



Part No. (Black)	Conduit size Nominal	Conduit size Metric	Inside diameter d1 (mm)	Outside diameter d2 (mm)	Radius (stat.) (mm)	PU (m)
I-PPCOF-07B	7	10	5.9	10	25	50
I-PPCOF-10B	10	12	8.5	12.8	28	50
I-PPCOF-12B	12	16	11.0	15.6	35	50
I-PPCOF-17B	17	20	15.1	21.1	45	50
I-PPCOF-23B	23	25	21.1	28.4	60	50
I-PPCOF-29B	29	32	26.6	34.5	100	50
I-PPCOF-36B	36	40	31.8	42.4	120	30
I-PPCOF-48B	45	50	43.9	54.1	140	30



** ***stat. R*** = lowest recommended bending radius for static (fixed) installation

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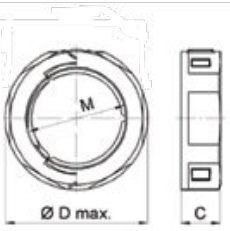
LN - Two-part Lock Nut - metric

These split counter nuts are ideal in conjunction with TN fittings for the smooth re-installation and repair in machinery and plant construction. In addition, this product is becoming increasingly important in automotive construction and in building installation technology.

Temperature range:
-22°F to +212°F (-30 °C to +100 °C), or a short time up to +266°F (+130°C)

Features:
- specially formulated polyamide
- self-extinguishing
- free of halogen, cadmium and phosphor
- very good impact strength



PMA-COFIX LN: Two-part lock nut, metric

Part No. Black	Thread M metric	Fits PMA COFLEX LNO		Outer diameter (mm)	Width C (mm)
I-BLN-M16	M16 x 1.5	I-BLNO-M160	I-BLNO-M162	21.5	8.0
I-BLN-M20	M20 x 1.5	I-BLNO-M202	I-BLNO-M207	29.5	8.0
I-BLN-M25	M25 x 1.5	I-BLNO-M257	I-BLNO-M253	35.5	9.0
I-BLN-M32	M32 x 1.5	I-BLNO-M323	I-BLNO-M329	44.5	12.0
I-BLN-M40	M40 x 1.5	I-BLNO-M409	I-BLNO-M406	53.5	15.0
I-BLN-M50	M50 x 1.5	I-BLNO-M508		69.5	15.0

LNO - One-piece split connector, straight

These split lock nuts are used in conjunction with the connectors TN for repairs or where cable protection systems are installed after wiring has taken place in the machine building and installation industry. Further, these products will be used increasingly in the vehicle building and building construction.

Temperature range:
-22°F to +212°F (-30 °C to +100 °C), or a short time up to +266°F (+130°C)

Features:
- specially formulated polyamide
- IP50
- self-extinguishing
- free of halogen, cadmium and phosphor
- very good impact strength

PMA-COFIX LNO: one-piece split connector

Part No. Black	Thread metric	Fits conduit size NW	Fits conduit size metric	Thread length g (mm)	Overall length L (mm)
I-BLNO-M160	M16 x 1.5	12	16	13.0	36.5
I-BLNO-M162	M16 x 1.5	12	16	13.0	39.5
I-BLNO-M202	M20 x 1.5	12	16	13.0	39.5
I-BLNO-M207	M20 x 1.5	17	20	13.0	43.5
I-BLNO-M257	M25 x 1.5	17	20	14.0	44.5
I-BLNO-M253	M25 x 1.5	23	25	14.0	52.5
I-BLNO-M323	M32 x 1.5	23	25	17.0	56.0
I-BLNO-M329	M32 x 1.5	29	32	17.0	61.0
I-BLNO-M409	M40 x 1.5	29	32	21.0	65.0
I-BLNO-M406	M40 x 1.5	34	40	22.0	74.5
I-BLNO-M508	M50 x 1.5	48	50	22.0	80.5

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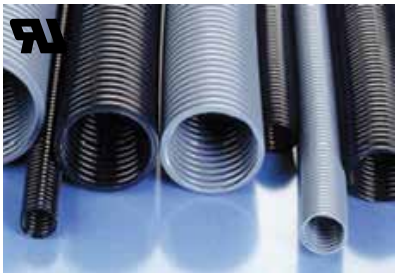
PMA Protective Corrugated Tubing



PMAFLEX Conduits VCS - flexible, heavy

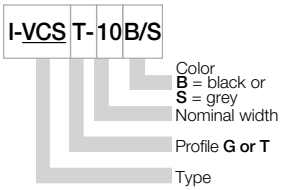
PMAFLEX VCS heavy conduit is characterized by high impact resistance at low temperatures and good weather resistance. These conduits find their application primarily in railway vehicle undercarriages, but are also well-suited to static applications in general construction of machinery or installations.

Temperature range:
-58°F to +221°F (-50 °C to +105 °C), or a short time up to +302°F (+150°C)

Features:
- specially modified PA6 (polyamide 6) for cold impact
- excellent mechanical properties also at low temperatures
- self-extinguishing
- halogen-free and cadmium-free

Chemical resistance:
- fuels
- mineral oils
- fats
- alkalis
- weak acids and bases, etc.

Part No. structure

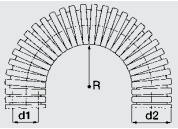


Part No. black	Part No. grey*	Conduit size NW	Conduit size metric	Inside diameter (mm)	Outside diameter (mm)	Radius (stat.)** (mm)	PU (m)
I-VCST-07B	I-VCST-07S	7	10	6.0	10.0	20	100
I-VCST-10B	I-VCST-10S	10	12	9.2	13.0	25	50
I-VCST-12B	I-VCST-12S	12	16	11.8	15.8	30	50
I-VCST-17B	I-VCST-17S	17	20	16.0	21.2	40	50
I-VCSG-17B	I-VCSG-17S	17	20	15.2	21.2	40	50
I-VCSG-23B	I-VCSG-23S	23	25	22.0	28.5	50	50
I-VCSG-29B	I-VCSG-29S	29	32	27.7	34.4	60	50
I-VCSG-36B	I-VCSG-36S	36	40	35.8	42.4	70	30
I-VCSG-48B	I-VCSG-48S	48	50	46.8	54.4	80	30
I-VCSG-56B	I-VCSG-56S	56	68	56.1	67.2	150	30
I-VCSG-70B	I-VCSG-70S	70	80	66.5	80.0	200	10
I-VCSG-95B	I-VCSG-95S	95	106	91.0	106.0	300	10

*Grey part is a special order, call igus® for availability

Fine profile T - tight bending radius

Coarse profile G - high pull-out strength



** ***stat. R*** = lowest recommended bending radius for static (fixed) installation

I-VCST/VCSG - is suitable for static use only!

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PMA Protective Corrugated Tubing

PMAFLEX Conduits PIS/PIH - highly flexible, medium

These highly flexible products are used orimarily in automation applications and for connections subject to intense movements in general machinery construction. Their outstanding material properties make these conduits especially suitable for outdoor applications where they are exposed to intensive sunlight (UV).

Temperature range:
-58°F to +203°F (-50 °C to +95 °C), or a short time up to +302°F (+150°C)

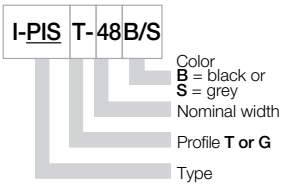
Features:

- specially modified polyamide 12
- **PIS: medium-wall (nominal width 07 to 48**
  PIH: heavy-wall (nominal width 56 to 125)
- self-extinguishing
- halogen-free and cadmium-free
- good mechanical properties also at low temperatures

Chemical resistance:

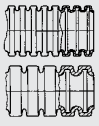
- fuels
- mineral oils
- fats
- alkalis
- acids etc.

Part No. structure

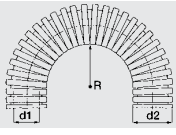


Part No. black	Part No. grey*	Conduit size NW	Conduit size metric	Inside diameter (mm)	Outside diameter (mm)	Radius stat.**/dyn.*** (mm)	PU (m)
I-PIST-07B	I-PIST-07S	7	10	6.2	10.0	15 / 40	50
I-PIST-10B	I-PIST-10S	10	12	9.6	13.0	20 / 50	50
I-PIST-12B	I-PIST-12S	12	16	11.9	15.8	25 / 65	50
I-PIST-17B	I-PIST-17S	17	20	16.4	21.1	30 / 65	50
I-PIST-23B	I-PIST-23S	23	25	22.6	28.4	35 / 90	50
I-PIST-29B	I-PIST-29S	29	32	29.0	34.3	45 / 110	50
I-PIST-36B	I-PIST-36S	36	40	36.5	42.5	60 / 165	30
I-PIST-48B	I-PIST-48S	48	50	47.5	54.5	70 / 180	30
I-PISG-17B	–	17	20	15.2	21.1	30 / 80	50
I-PISG-23B	I-PISG-23S	23	25	21.7	28.4	40 / 100	50
I-PISG-29B	I-PISG-29S	29	32	27.4	34.3	50 / 120	50
I-PISG-36B	I-PISG-36S	36	40	35.8	42.3	60 / 180	30
I-PISG-48B	I-PISG-48S	48	50	46.7	54.2	70 / 200	30
I-PIHG-56B	I-PIHG-56S	56	68	56.3	67.2	110 / 270	30
I-PIHG-70B	I-PIHG-70S	70	80	67.2	79.6	150 / 350	30
I-PIHG-95B	I-PIHG-95S	95	106	91.3	106.0	170 / 450	30
I-PIHG-125B	I-PIHG-125S	125	146	126.5	146.5	350 / 580	20

*Grey part is a special order, call igus® for availability



Fine profile T - tight bending radius
Coarse profile G - high pull-out strength



** ***stat. R*** = lowest recommended bending radius for static (fixed) installation
dyn. R = lowest recommended bending radius for dynamic (flexible) installation

I-PIS/PIH is recommended for highly flexible application

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PMA Protective Corrugated Tubing

PMAFLEX Conduits CYL - very flexible, medium, economy

PMA CYL ECONOMY conduit exhibits very good flexibility and is also suitable for low temperature applications. These conduits are used primarily in construction of machinery and equipment.

Temperature range:
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +302°F (+150°C)

Part No. structure

I-CYL | T- | 29 | B/S

- Color: **B** = black or **S** = grey
- Nominal width
- Profile **T or G**
- Type

Features:
- specially modified polyamide 6/6.6 for cold impact
- good impact strength also at low temperatures
- self-extinguishing
- halogen-free and cadmium-free

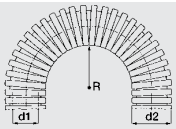
Chemical resistance:
- fuels
- mineral oils
- fats
- alkalis
- weak acids and bases, etc.

Part No. black	Part No. grey*	Conduit size NW	Conduit size metric	Inside diameter (mm)	Outside diameter (mm)	Radius (stat.)** (mm)	PU (m)
I-CYLT-07B	I-CYLT-07S	7	10	6.2	10.0	15	50
I-CYLT-10B	I-CYLT-10S	10	12	9.6	13.0	20	50
I-CYLT-12B	I-CYLT-12S	12	16	12.0	15.8	30	50
I-CYLT-17B	I-CYLT-17S	17	20	16.2	21.2	40	50
I-CYLT-23B	I-CYLT-23S	23	25	22.6	28.5	40	50
I-CYLT-29B	I-CYLT-29S	29	32	29.0	34.5	50	50
I-CYLT-36B	I-CYLT-36S	36	40	36.5	42.5	60	30
I-CYLT-48B	I-CYLT-48S	48	50	47.5	54.5	70	30
I-CYLG-23B	I-CYLG-23S	23	25	21.9	28.5	45	50
I-CYLG-29B	I-CYLG-29S	29	32	27.6	34.5	55	50
I-CYLG-36B	I-CYLG-36S	36	40	36.0	42.5	60	30
I-CYLG-48B	I-CYLG-48S	48	50	47.0	54.5	70	30
I-CYLG-56B	–	56	68	56.3	67.2	120	30
I-CYLG-70B	–	70	80	68.0	80.0	160	30
I-CYLG-95B	–	95	106	91.9	106.0	210	10
I-CYLG-125B	–	125	146	126.5	146.5	450	6

*Grey part is a special order, call igus® for availability

Fine profile T - tight bending radius

Coarse profile G - high pull-out strength



** ***stat. R*** = lowest recommended bending radius for static (fixed) installation

dyn. R = lowest recommended bending radius for dynamic (flexible) installation

I-CYLT/CYLG - is recommended for static use!
(moderate dynamic application possible)

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PMA

igus®

PMAFIX Connectors - Safety and Sealing Systems

IP66 - static, IP54 dynamic - universal safety clip

- One piece Fitting, sealing by cone
- Easy “push-in” installation
- Pre-installed safety clip AFN2
- Fits any type of conduit profile (T and G)
- Excellent pull-out strength
- Re-opening for safety reasons only possible with a screwdriver
- Clip pre-installed in all IP66 connectors

Installation

1 Push in conduit with a slight twist (open using screw-driver on conduit side)

2 Pull back slightly to ensure the locking mechanism is fully engaged

3 To re-open use a screwdriver

IP68 - static - oval clip

- High sealing through additional seal cap
- For highest dynamic applications
- Fits any type of conduit profile (T and G)
- Excellent pull-out strength
- Re-opening for safety reasons only possible with a screwdriver

Installation

1 **A** Conduit, **B** Seal cap, **C** Connector, **D** Oval clip, **E** flat gasket (or O-ring seal)

2 Push seal cap onto end of conduit to achieve IP68

For ease of installation moisten seal cap with water or grease

4 Push conduit with seal cap fully into connector. This guarantees PMA’s unique IP68/67 rating*

5 Install retaining oval clip

6 To re-open use a screwdriver

* For safety reasons, oval clip will not fit if seal cap is not fully installed.

Ensure to follow O-ring manufacturers guidelines when using O-rings for sealing purposes.

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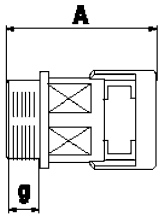
PMAFIX Connectors - Safety and Sealing Systems

PMAFIX - Connectors

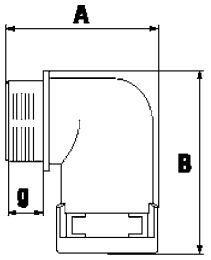
The designation **PMAFIX** describes a very large range of connectors for PMA conduits with the patented PMA safety clip system. Connectors are available for ingress protection IP66 and IP68. IP66 connectors are fitted with a preinstalled universal safety clip which ensures a quick “push-in” installation. IP68 connectors for increased requirements will be delivered with a special conduit seal cap.

Table 1 - **PMAFIX / PMAFLEX** conduit code

Nominal width	PMA code
7	**M**
10	**0**
12	**2**
17	**7**
23	**3**
29	**9**
36	**6**
48	**8**



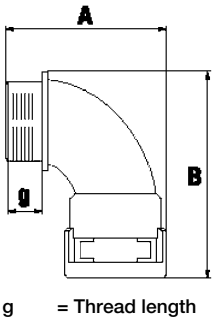
g = Thread length
A = Overall length



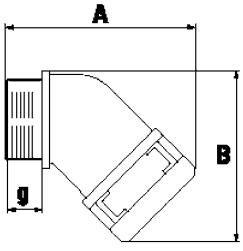
g = Thread length
A x B = External dimensions

Table 2 - Thread codes

Thread metric	PMA code	Thread PG	PMA code
M12 x 1.5	**M12**	PG07	**P07**
M16 x 1.5	**M16**	PG09	**P09**
M20 x 1.5	**M20**	PG11	**P11**
–	–	PG13.5	**P13**
M25 x 1.5	**M25**	PG16	**P16**
M32 x 1.5	**M32**	PG21	**P21**
M40 x 1.5	**M40**	PG29	**P29**
M50 x 1.5	**M50**	PG36	**P36**
M63 x 1.5	**M63**	PG42	**P42**
		PG48	**P48**



g = Thread length
A x B = External dimensions



g = Thread length
A x B = External dimensions

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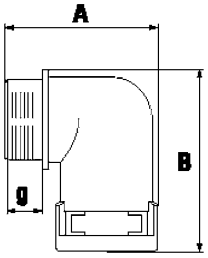


g = Thread length
A x B = External dimensions

PMAFIX Connectors VW - 90° elbow, PG

These **PMAFIX** connectors are used in a wide range of applications. Together with **PMAFLEX** conduits they offer the highest grade of safety and sealing.

Temperature range:
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)

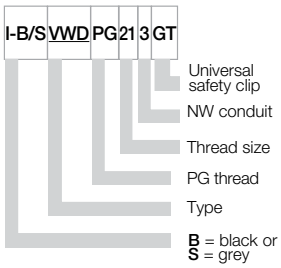
Content of delivery IP66:
Fitting with pre-assembled universal safety clips (AFN2)
Content of delivery IP68:
Fitting with oval clips (OVN2), conduit and thread seal (NVN3, SVN4)

Features:
- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

Part No. IP66	Part No. IP68	Thread PG	Fits to conduit size: NW	Thread metric	External length [mm]	dim. [mm]
I-__VWD-PG07MGT-11	I-__VWV-PG07M	7	7	10	(11.0)	32.0 x 35.0
I-__VWD-PG070GT-11	I-__VWV-PG070	7	10	12	(11.0)	34.0 x 39.5
I-__VWD-PG09MGT-11	—	9	7	10	(11.0)	32.0 x 36.5
I-__VWD-PG090GT-11	I-__VWV-PG090	9	10	12	(11.0)	34.0 x 39.5
I-__VWD-PG092GT-11	I-__VWV-PG092	9	12	16	(11.0)	38.5 x 44.5
I-__VWD-PG11MGT-11	—	11	7	10	(11.0)	32.0 x 38.0
I-__VWD-PG110GT-11	I-__VWV-PG110	11	10	12	(11.0)	34.0 x 41.0
I-__VWD-PG112GT-11	I-__VWV-PG112	11	12	16	(11.0)	38.5 x 46.0
I-__VWD-PG13MGT-11	—	13.5	7	10	(11.0)	32.0 x 39.5
I-__VWD-PG130GT-11	I-__VWV-PG130	13.5	10	12	(11.0)	34.0 x 42.5
I-__VWD-PG132GT-11	I-__VWV-PG132	13.5	12	16	(11.0)	38.5 x 47.5
I-__VWD-PG137GT-11	I-__VWV-PG137	13.5	17	20	(11.0)	43.5 x 58.5
I-__VWD-PG167GT-11	I-__VWV-PG167	16	17	20	(11.0)	43.5 x 58.5
I-__VWD-PG213GT	I-__VWV-PG213	21	23	25	(11.0)	54.0 x 67.0
I-__VWD-PG299GT	I-__VWV-PG299	29	29	32	(12.0)	61.5 x 74.5
I-__VWD-PG366GT	I-__VWV-PG366	36	36	40	(13.0)	72.0 x 98.0
I-__VWD-PG488GT	I-__VWV-PG488	48	48	50	(13.0)	85.5 x 111.0

Fill in the blank with either “B” to order black or “S” to order grey*
For smaller conduit sizes NW 07 to NW 12 appropriate standard elbows of type VB are available
*Grey part is a special order, call igus® for availability

Part No. structure PG



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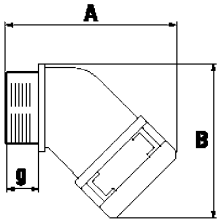


g = Thread length
A x B = External dimensions

PMAFIX Connectors VA - 45° elbow, metric & PG

These **PMAFIX** connectors are used in a wide range of applications. Together with **PMAFLEX** conduits they offer the highest grade of safety and sealing.

Temperature range:
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)

Content of delivery IP66:
Fitting with pre-assembled universal safety clips (AFN2)
Content of delivery IP68:
Fitting with oval clips (OVN2), conduit and thread seal (NVN3, SVN4)

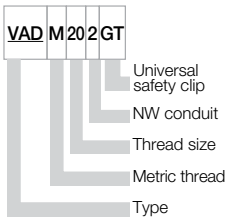
Features:
- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

Part No. IP66	Part No. IP68	Thread metric	Fits to conduit size: NW	metric	Thread length [mm]	External dim. [mm]
I-__VAD-M120GT	—	M12 x 1.5	10	12	11.0	43.5 x 37.0
I-__VAD-M160GT	I-__VAV-M160	M16 x 1.5	10	12	11.0	43.5 x 38.0
I-__VAD-M162GT	I-__VAV-M162	M16 x 1.5	12	16	11.0	48.0 x 40.0
I-__VAD-M202GT	I-__VAV-M202	M20 x 1.5	12	16	11.0	48.0 x 41.5
I-__VAD-M207GT	I-__VAV-M207	M20 x 1.5	17	20	11.0	55.5 x 51.5
I-__VAD-M253GT	I-__VAV-M253	M25 x 1.5	23	25	12.0	65.0 x 58.5
I-__VAD-M329GT	I-__VAV-M329	M32 x 1.5	29	32	15.0	73.5 x 66.5
I-__VAD-M406GT	I-__VAV-M406	M40 x 1.5	36	40	19.0	92.5 x 85.5
I-__VAD-M506GT	I-__VAV-M506	M50 x 1.5	36	40	19.0	100.0 x 89.5
I-__VAD-M508GT	I-__VAV-M508	M50 x 1.5	48	50	19.0	100.0 x 96.0
I-__VAD-M638GT	I-__VAV-M638	M63 x 1.5	48	50	19.0	100.0 x 104.0

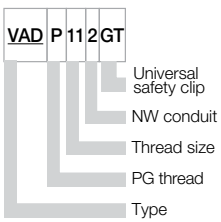
Part No. IP66	Part No. IP68	Thread PG	Fits to conduit size: NW	metric	Thread length [mm]	External dim. [mm]
I-__VAD-P090GT	I-__VAV-P090	9	10	12	11.0	43.5 x 37.0
I-__VAD-P112GT	I-__VAV-P112	11	12	16	11.0	48.0 x 40.0
I-__VAD-P132GT	I-__VAV-P132	13.5	12	16	11.0	48.0 x 41.5
I-__VAD-P137GT	I-__VAV-P137	13.5	17	20	11.0	55.0 x 50.0
I-__VAD-P167GT	I-__VAV-P167	16	17	20	11.0	55.0 x 51.5
I-__VAD-P213GT	I-__VAV-P213	21	23	25	12.0	67.0 x 59.0
I-__VAD-P299GT	I-__VAV-P299	29	29	32	12.0	69.0 x 67.0
I-__VAD-P366GT	I-__VAV-P366	36	36	40	13.0	86.0 x 86.0
I-__VAD-P488GT	I-__VAV-P488	48	48	50	13.0	93.0 x 99.0

Fill in the blank with either “B” to order black or “S” to order grey*
*Grey part is a special order, call igus® for availability

Part No. structure metric



Part No. structure PG



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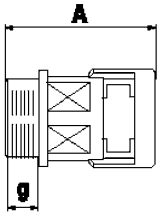


PMAFIX Connectors VN - straight, metric

These **PMAFIX** connectors are used in a wide range of applications. Together with **PMAFLEX** conduits they offer the highest grade of safety and sealing.

Temperature range:
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)

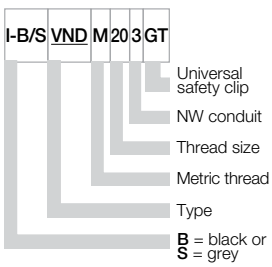
Content of delivery IP66:
Fitting with pre-assembled universal safety clips (AFN2)
Content of delivery IP68:
Fitting with oval clips (OVN2), conduit and thread seal (NVN3, SVN4)

Features:
- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

Part No. IP66	Part No. IP68	Thread metric	Fits to conduit size: NW	metric	Thread length [mm]	Overall length [mm]
I-__VND-M12MGT	I-__VNV-M12M	M12 x 1.5	7	10	11.0	34.5
I-__VND-M120GT	I-__VNV-M120	M12 x 1.5	10	12	11.0	36.5
I-__VND-M160GT	I-__VNV-M160	M16 x 1.5	10	12	11.0	36.5
I-__VND-M162GT	I-__VNV-M162	M16 x 1.5	12	16	11.0	39.5
I-__VND-M202GT	I-__VNV-M202	M20 x 1.5	12	16	11.0	39.5
I-__VND-M207GT	I-__VNV-M207	M20 x 1.5	17	20	11.0	47.5
I-__VND-M257GT	I-__VNV-M257	M25 x 1.5	17	20	12.0	48.5
I-__VND-M253GT	I-__VNV-M253	M25 x 1.5	23	25	12.0	52.0
I-__VND-M323GT	I-__VNV-M323	M32 x 1.5	23	25	15.0	55.5
I-__VND-M329GT	I-__VNV-M329	M32 x 1.5	29	32	15.0	56.0
I-__VND-M409GT	I-__VNV-M409	M40 x 1.5	29	32	19.0	60.0
I-__VND-M406GT	I-__VNV-M406	M40 x 1.5	36	40	19.0	72.5
I-__VND-M506GT	I-__VNV-M506	M50 x 1.5	36	40	19.0	72.0
I-__VND-M508GT	I-__VNV-M508	M50 x 1.5	48	50	19.0	72.5
I-__VND-M638GT	I-__VNV-M638	M63 x 1.5	48	50	19.0	72.0

Fill in the blank with either “B” to order black or “S” to order grey*
*Grey part is a special order, call igus® for availability

Part No. structure metric



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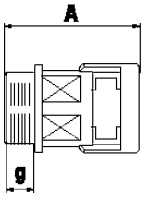


PMAFIX Connectors VN - straight, PG

These **PMAFIX** connectors are used in a wide range of applications. Together with **PMAFLEX** conduits they offer the highest grade of safety and sealing.

Temperature range:
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)

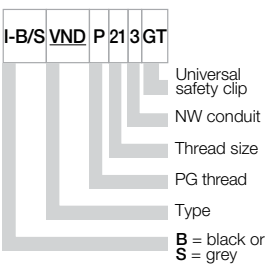
Content of delivery IP66:
Fitting with pre-assembled universal safety clips (AFN2)
Content of delivery IP68:
Fitting with oval clips (OVN2), conduit and thread seal (NVN3, SVN4)

Features:
- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

Part No. IP66	Part No. IP68	Thread PG	Fits to conduit size: NW	metric	Thread length [mm]	Overall length [mm]
I-__VND-P07MGT-11	I-__VNV-P07M	7	7	10	11.0	34.5
I-__VND-P070GT-11	I-__VNV-P070	7	10	12	11.0	36.5
I-__VND-P072GT-11	—	7	12	16	11.0	39.0
I-__VND-P09MGT-11	I-__VNV-P09M	9	7	10	11.0	34.5
I-__VND-P090GT-11	I-__VNV-P090	9	10	12	11.0	36.5
I-__VND-P092GT-11	I-__VNV-P092	9	12	16	11.0	39.0
I-__VND-P097GT-11	I-__VNV-P097	9	17	20	11.0	47.5
I-__VND-P11MGT-11	I-__VNV-P11M	11	7	10	11.0	34.5
I-__VND-P110GT-11	I-__VNV-P110	11	10	12	11.0	36.5
I-__VND-P112GT-11	I-__VNV-P112	11	12	16	11.0	39.0
I-__VND-P117GT-11	I-__VNV-P117	11	17	20	11.0	47.5
I-__VND-P13MGT-11	—	13.5	7	10	11.0	34.5
I-__VND-P130GT-11	I-__VNV-P130	13.5	10	12	11.0	36.5
I-__VND-P132GT-11	I-__VNV-P132	13.5	12	16	11.0	39.0
I-__VND-P137GT-11	I-__VNV-P137	13.5	17	20	11.0	47.5
I-__VND-P160GT-11	—	16	10	12	11.0	36.5
I-__VND-P162GT-11	I-__VNV-P162	16	12	16	11.0	39.0
I-__VND-P167GT-11	I-__VNV-P167	16	17	20	11.0	47.5
I-__VND-P163GT-11	I-__VNV-P163	16	23	25	11.0	51.0
I-__VND-P213GT	I-__VNV-P213	21	23	25	12.0	52.0
I-__VND-P299GT	I-__VNV-P299	29	29	32	12.0	53.0
I-__VND-P296GT	I-__VNV-P296	29	36	40	12.0	67.5
I-__VND-P366GT	I-__VNV-P366	36	36	40	13.0	66.0
I-__VND-P368GT	—	36	48	50	13.0	68.5
I-__VND-P428GT	I-__VNV-P428	42	48	50	13.0	68.5
I-__VND-P488GT	I-__VNV-P488	48	48	50	13.0	66.5

Fill in the blank with either “B” to order black or “S” to order grey*
*Grey part is a special order, call igus® for availability

Part No. structure PG



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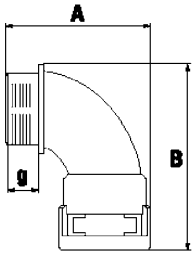


g = Thread length
A x B = External dimensions

PMAFIX Connectors VB - 90° curved elbow, metric & PG

These **PMAFIX** connectors are used in a wide range of applications. Together with **PMAFLEX** conduits they offer the highest grade of safety and sealing.

Temperature range:
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)

Content of delivery IP66:
Fitting with pre-assembled universal safety clips (AFN2)
Content of delivery IP68:
Fitting with oval clips (OVN2), conduit and thread seal (NVN3, SVN4)

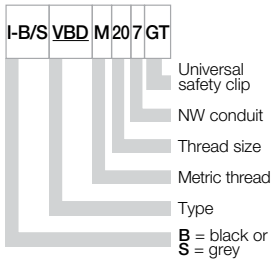
Features:
- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

Part No. IP66	Part No. IP68	Thread metric	Fits to conduit size: NW	Fits to conduit size: metric	Thread length [mm]	External dim. [mm]
I-__VBD-M207GT	I-__VBV-M207	M20 x 1.5	17	20	11.0	47.5 x 73.0
I-__VBD-M257GT	I-__VBV-M257	M25 x 1.5	17	20	12.0	48.5 x 76.0
I-__VBD-M253GT	I-__VBV-M253	M25 x 1.5	23	25	12.0	57.5 x 83.0
I-__VBD-M323GT	I-__VBV-M323	M32 x 1.5	23	25	15.0	61.0 x 87.5
I-__VBD-M329GT	I-__VBV-M329	M32 x 1.5	29	32	15.0	70.5 x 93.0
I-__VBD-M409GT	I-__VBV-M409	M40 x 1.5	29	32	19.0	74.5 x 98.5
I-__VBD-M406GT	I-__VBV-M406	M40 x 1.5	36	40	19.0	85.0 x 121.0
I-__VBD-M506GT	I-__VBV-M506	M50 x 1.5	36	40	19.0	85.0 x 125.0
I-__VBD-M508GT	I-__VBV-M508	M50 x 1.5	48	50	19.0	98.5 x 130.0
I-__VBD-M638GT	I-__VBV-M638	M63 x 1.5	48	50	19.0	98.5 x 138.0

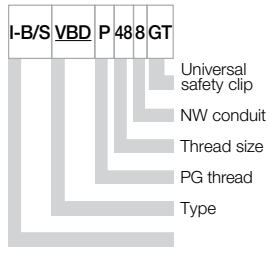
Part No. IP66	Part No. IP68	Thread metric	Fits to conduit size: NW	Fits to conduit size: metric	Thread length [mm]	External dim. [mm]
I-__VBD-P167GT	I-__VBV-P167	16	17	20	11.0	47.4 x 73.0
I-__VBD-P213GT	I-__VBV-P213	21	23	25	12.0	57.5 x 85.0
I-__VBD-P299GT	I-__VBV-P299	29	29	32	12.0	67.5 x 96.0
I-__VBD-P366GT	I-__VBV-P366	36	36	40	13.0	79.0 x 123.0
I-__VBD-P488GT	I-__VBV-P488	48	48	50	13.0	92.5 x 135.0

Fill in the blank with either “B” to order black or “S” to order grey*
*Grey part is a special order, call igus® for availability
For smaller conduit sizes NW 07 to NW 12 appropriate standard elbows of type VW are available

Part No. structure metric



Part No. structure PG



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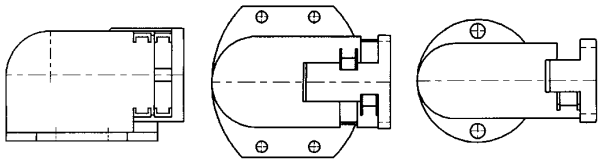
PMAFIX Connectors - Safety and Sealing Systems

PMAFIX Connectors VO - Flange 90°

These **PMAFIX** connectors are used in a wide range of applications. Together with **PMAFLEX** conduits they offer the highest grade of safety and sealing.

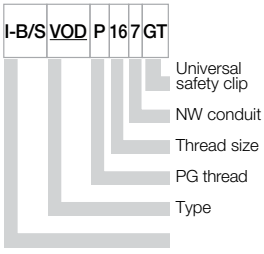
Content of delivery IP66:
Fitting with pre-assembled universal safety clips (AFN2), flange seal (FG04)
Content of delivery IP68:
Fitting with oval clips (OVN2), conduit and thread seal (NVN3, FG04)



Part No. IP66	Part No. IP68	Fits to conduit size: NW	metric	Dimensions width x length x depth	Fixing screws
I-__VOD-P167GT	I-__VOV-P167	17	20	46.0 x 66.0 x 35.5	2 x M5
I-__VOD-P213GT	I-__VOV-P213	23	25	65.5 x 70.0 x 43.0	2 x M6
I-__VOD-P299GT	I-__VOV-P299	29	32	67.0 x 78.0 x 49.5	4 x M6
I-__VOD-P366GT	I-__VOV-P366	36	40	85.0 x 102.0 x 65.5	4 x M6
I-__VOD-P488GT	I-__VOV-P488	48	50	86.0 x 119.0 x 77.5	4 x M6

Fill in the blank with either “B” to order black or “S” to order grey*
*Grey part is a special order, call igus® for availability

Part No. structure PG



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igus®

PMA Connectors - Accessories

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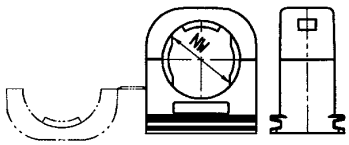
PMAFIX FH-0 - One-piece system supports

The one-piece **PMACLIP** system support is designed for fixation of **PMAFLEX** conduits. This product can be used in all **machine and installation applications** for easy assembly of the PMA system.

Temperature range:
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)



Features:

- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

Part No. black	Part No. grey	Fits to conduit size: NW	metric	Dimensions width x length x depth	Fixing screw
I-BFH-07-0	I-SFH-07-0	7	10	17.0 x 21.5 x 20.0	1 x M4
I-BFH-10-0	I-SFH-10-0	10	12	20.5 x 24.5 x 20.0	1 x M5
I-BFH-12-0	I-SFH-12-0	12	16	24.0 x 27.0 x 20.0	1 x M5
I-BFH-17-0	I-SFH-17-0	17	20	30.0 x 34.0 x 20.0	1 x M6
I-BFH-23-0	I-SFH-23-0	23	25	38.5 x 42.0 x 20.0	1 x M6
I-BFH-29-0	I-SFH-29-0	29	32	45.5 x 48.0 x 20.0	1 x M6
I-BFH-36-0	I-SFH-36-0	36	40	55.5 x 56.0 x 20.0	1 x M6
I-BFH-48-0	I-SFH-48-0	48	50	67.5 x 68.0 x 20.0	1 x M6

PMAFIX VH - System supports

These PMACLIP system supports are designed for support and guidance of PMA conduits with fine or coarse profile and can be used in all machine building and installation applications. The system is safe against turning/movement and offers maximum sucrity with the additional safety clip, variable assembly due to six hole fastening and optimal strain relief due to integrated rib.

Temperature range:
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)

Features:

- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

Part No. Support only	Part No. Locking clip	Part No. Complete	Fits to conduit size: NW	metric	Dimensions width x length x depth	Fixing screw
I-BVH-07	BVH-07-020	BVH-07-000	7	10	17.0 x 21.5 x 20.0	1 x M4
I-BVH-10	BVH-10-020	BVH-10-000	10	12	20.5 x 24.5 x 20.0	1 x M5
I-BVH-12	BVH-12-020	BVH-12-000	12	16	24.0 x 27.0 x 20.0	1 x M5
I-BVH-17	BVH-17-020	BVH-17-000	17	20	35.0 x 36.0 x 36.0	6 x M5
I-BVH-23	BVH-23-020	BVH-23-000	23	25	35.0 x 44.0 x 36.0	6 x M5
I-BVH-29	BVH-29-020	BVH-29-000	29	32	46.0 x 52.0 x 40.0	6 x M5
I-BVH-36	BVH-36-020	BVH-36-000	36	40	53.0 x 58.0 x 60.0	6 x M5
I-BVH-48	BVH-48-020	BVH-48-000	48	50	66.0 x 72.0 x 60.0	6 x M5

PMA Connectors - Accessories

PMAFIX GPS - One-piece System supports for stacking

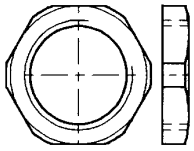
The **PMAFIX** system supports for stacking are specially designed for increased mechanical requirements in the traction and heavy machine building industries. The one-piece systems supports offer a clasp for easy pre-mounting and final assembly. Fixation in standard rails type C and strain relief due to gripping around the conduit. In addition these products are partially stackable.

Temperature range:
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)

Features:
- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

Stacking options
The following nominal widths can be combined for stacking:
- NW 17 with NW23
- NW 29 with NW 36
- NW 48 with NW 56

Part No.	Fits to conduit size			Dimensions		
fine profile	NW	metric	DIN-NW	width	height	depth
BGPS-17	17	20	2	70.0	45.0	30.0
BGPS-23	23	25	2	70.0	45.0	30.0
BGPS-29	29	32	3	85.0	60.0	30.0
BGPS-36	36	40	3	85.0	60.0	30.0
BGPS-48	48	50	4	115.0	90.0	30.0
BGPS-56	56	-	4	115.0	90.0	30.0



PMA MN - Hexagonal Lock Nuts, metric & PG

These hexagonal lock nuts are suitable for a wide range of applications. High torque guarantees a safe connection of the system. Made of reinforced polyamide glass fiber

Temperature range:
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +302°F (+150°C)

Part No. black	Part No. grey	Fits to thread: metric	Wrench size	Dimensions height
I-BMN-M12	I-GMN-M12	M12 x 1.5	17.0	5.0
I-BMN-M16	I-GMN-M16	M16 x 1.5	22.0	5.0
I-BMN-M20	I-GMN-M20	M20 x 1.5	27.0	6.0
I-BMN-M25	I-GMN-M25	M25 x 1.5	32.0	6.0
I-BMN-M32	I-GMN-M32	M32 x 1.5	41.0	7.0
I-BMN-M40	I-GMN-M40	M40 x 1.5	50.0	7.0
I-BMN-M50	I-GMN-M50	M50 x 1.5	60.0	8.0
I-BMN-M63	I-GMN-M63	M63 x 1.5	75.0	8.0

Part No. black	Part No. grey	Fits to thread: PG	Wrench size	Dimensions height
I-BMN-07	I-GMN-07	7	19.0	5.0
I-BMN-09	I-GMN-09	9	22.0	5.0
I-BMN-11	I-GMN-11	11	24.0	5.3
I-BMN-13	I-GMN-13	13.5	27.0	6.3
I-BMN-16	I-GMN-16	16	30.0	6.3
I-BMN-21	I-GMN-21	21	36.0	7.0
I-BMN-29	I-GMN-29	29	46.0	7.0
I-BMN-36	I-GMN-36	36	60.0	8.0
I-BMN-48	I-GMN-48	48	70.0	8.0

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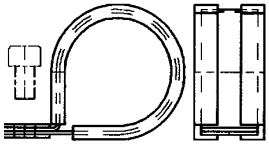
PMA Connectors - Accessories



PMA SGB - Tube clamps

These tube clamps are used for the mounting and smooth connection to the PMA conduits in the general machine and installation applications. They are especially suitable for the mounting of static conduits.

Temperature range: -58°F to +221°F (-50 °C to +105 °C)

Features:

- galvanized steel according to DIN 3016
- Elastomer free of halogen

Part No.	Fits to conduit size NW	Fits to conduit size metric	Dimensions width [mm]	Fixing screw
I-SGB-07	7	10	13.0	1 x M4
I-SGB-09	10	12	13.0	1 x M4
I-SGB-11	12	16	13.0	1 x M4
I-SGB-16	17	20	16.0	1 x M5
I-SGB-21	23	25	16.0	1 x M5
I-SGB-29	29	32	19.0	1 x M6
I-SGB-36	36	40	19.0	1 x M6
I-SGB-48	48	50	19.0	1 x M6

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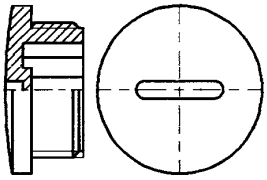
PMA Connectors - Accessories



PMA 514 - Plug Screws, metric & PG

These plug screws are suitable for an accurate termination where no thread holes in casing and distribution boxes are needed.

Temperature range: -4°F to +212°F (-20 °C to +100 °C), or a short time up to +302°F (+150°C)

Features:

- product with metric thread: PA-GF
- product with PG thread: PS
- free of halogen, phosphor and cadmium
- IP54

Part No.	Fits to thread metric	Outside Ø [mm]	Total length [mm]	Thread length [mm]
I-514-M12	M12 x 1.5	15.0	8.0	6.0
I-514-M16	M16 x 1.5	20.0	9.0	6.0
I-514-M20	M20 x 1.5	24.0	9.5	6.0
I-514-M25	M25 x 1.5	30.0	11.5	8.0
I-514-M32	M32 x 1.5	37.0	12.0	8.0
I-514-M40	M40 x 1.5	46.0	13.0	8.0
I-514-M50	M50 x 1.5	56.0	15.0	10.0
I-514-M63	M63 x 1.5	70.0	17.0	12.0

Part No.	Fits to thread PG	Outside Ø [mm]	Total length [mm]	Thread length [mm]
I-514-07	7	15.0	8.0	6.0
I-514-09	9	19.0	9.5	6.5
I-514-11	11	22.0	10.0	6.5
I-514-13	13.5	25.0	10.0	6.5
I-514-16	16	27.0	10.0	6.5
I-514-21	21	33.0	12.0	8.0
I-514-29	29	44.0	11.5	8.0
I-514-36	36	55.0	14.0	10.0
I-514-48	48	68.0	16.0	12.0

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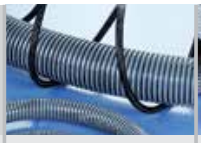
PMA Connectors - Accessories

Standard Corrugated Conduits					
Products	**CYL PA6**	**VCS PA6**	**PIS PA12**	**FH**	**VH**
Tube size: metric / width [mm]	Very flexible, medium wall corrugated conduits	Flexible, very heavy corrugated conduits	Highly flexible medium wall corrugated conduits	PMACLIP - one-piece system support	PMACLIP two-piece system support
10 / 07	CYLT-07* –	VCST-07* –	PIST-07* –	*FH-07-0	*VH-17-000
12 / 10	CYLT-10* –	VCST-10* –	PIST-10* –	*FH-10-0	*VH-23-000
16 / 12	CYLT-12* –	VCST-12* –	PIST-12* –	*FH-12-0	*VH-29-000
20 / 17	CYLT-17* –	VCST-17* VCSG-17*	PIST-17* PISG-17*	*FH-17-0	*VH-36-000
25 / 23	CYLT-23* CYLG-23*	– VCSG-23*	PIST-23* PISG-23*	*FH-23-0	*VH-48-000
32 / 29	CYLT-29* CYLG-29*	– VCSG-29*	PIST-29* PISG-29*	*FH-29-0	
40 / 36	CYLT-36* CYLG-36*	– VCSG-36*	PIST-36* PISG-36*	*FH-36-0	
50 / 48	CYLT-48* CYLG-48*	– VCSG-48*	PIST-48* PISG-48*	*FH-48-0	
		VCSG-56*			
		VCSG-70*			
		VCSG-95*			

* = replaced by “B” for black or “S” for gray T or D = fine profile G = coarse profile

Standard Corrugated Conduits					
Products	**CYL PA6**	**VCS PA6**	**PIS PA12**	**FH**	**VH**
Tube size: metric / width [mm]	Very flexible, medium wall corrugated conduits	Flexible, very heavy corrugated conduits	Highly flexible medium wall corrugated conduits	PMACLIP - one-piece system support	PMACLIP two-piece system support
10 / 07	CYLT-07* –	VCST-07* –	PIST-07* –	*FH-07-0	*VH-17-000
12 / 10	CYLT-10* –	VCST-10* –	PIST-10* –	*FH-10-0	*VH-23-000
16 / 12	CYLT-12* –	VCST-12* –	PIST-12* –	*FH-12-0	*VH-29-000
20 / 17	CYLT-17* –	VCST-17* VCSG-17*	PIST-17* PISG-17*	*FH-17-0	*VH-36-000
25 / 23	CYLT-23* CYLG-23*	– VCSG-23*	PIST-23* PISG-23*	*FH-23-0	*VH-48-000
32 / 29	CYLT-29* CYLG-29*	– VCSG-29*	PIST-29* PISG-29*	*FH-29-0	
40 / 36	CYLT-36* CYLG-36*	– VCSG-36*	PIST-36* PISG-36*	*FH-36-0	
50 / 48	CYLT-48* CYLG-48*	– VCSG-48*	PIST-48* PISG-48*	*FH-48-0	
		VCSG-56*			
		VCSG-70*			
		VCSG-95*			

* = replaced by “B” for black or “S” for gray T or D = fine profile G = coarse profile

JUMBO Corrugated Conduits PMAGRIP				
Products	**PIHG PA12**	**BGG**	**BGO**	**SGS**
Tube size: Width [mm]	Highly flexible medium wall corrugated conduits	PMAGRIP- straight	PMAGRIP- 90° angle	PMAGRIP- tube clamps
56	PIHG-56*	*GG-56	*GO-56	SGS-56
70	PIHG-70*	*GG-70	*GO-70	SGS-70
95	PIHG-95*	*GG-95	*GO-95	SGS-95
125	PIHG-125*	*GG-125	–	SGS-125

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PMA Connectors - Accessories

PMAFIX						
Products	**IP66 - VN**	**IP66 - VA**	**IP66 - VW**	**IP66 - VB**	**IP68 - VNZ**	**MN**
Thread Typ	PMAFIX straight	PMAFIX 45° angle	PMAFIX 90° angle	PMAFIX 90° elbow angle	Straight with strain relief	PMA hexagonal lock nuts
M12x1.5	*VND-M12MGT	–	*VWD-M12MGT	–	–	*MN-M12
M12x1.5	*VND-M120GT	*VAD-M120GT	*VWD-M120GT	–	–	*MN-M12
M16x1.5	*VND-M162GT	*VAD-M162GT	*VWD-M162GT	–	*VNZ-M162S	*MN-M16
M20x1.5	*VND-M207GT	*VAD-M207GT	*VWD-M207GT	*VBD-M207GT	*VNZ-M207S	*MN-M20
M25x1.5	*VND-M253GT	*VAD-M253GT	*VWD-M253GT	*VBD-M253GT	*VNZ-M253S	*MN-M25
M32x1.5	*VND-M329GT	*VAD-M329GT	*VWD-M329GT	*VBD-M329GT	*VNZ-M329S	*MN-M32
M40x1.5	*VND-M406GT	*VAD-M406GT	*VWD-M406GT	*VBD-M406GT	*VNZ-M406S	*MN-M40
M50x1.5	*VND-M508GT	*VAD-M508GT	*VWD-M508GT	*VBD-M508GT	*VNZ-M508S	*MN-M50

* = replaced by “B” for black or “S” for gray

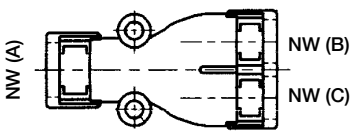
PMAFIX						
Products		**IP66 - VOD**	**IP66 - VY**	**IP66 - FT/VT**	**IP66 - FV**	**SGB**
Tube size: metric	width [mm]	PMAFIX flange 90°	PMAFIX Y-distribution piece	PMAFIX T-distribution piece	PMAFIX V-distribution piece	PMAFIX-tube clamps
10	07	–	–	–	–	SGB-07
12	10	–	*VYD-100707GT	*FTD-101010GT	*FVD-100707GT	SGB-09
16	12	–	*VYD-121010GT	*FTD-121212GT	*FVD-121010GT	SGB-11
20	17	*VOD-P167GT	*VYD-171212GT	*FTD-171717GT	*FVD-171212GT	SGB-16
25	23	*VOD-P213GT	*VYD-231717GT	*VTD-232323GT	*FVD-231717GT	SGB-21
32	29	*VOD-P299GT	*VYD-292323GT	*FTD-292929GT	–	SGB-29
40	36	*VOD-P366GT	*VYD-362929GT	*VTD-363636GT	–	SGB-36
50	48	*VOD-P488GT	*VYD-483636GT	–	–	SGB-48

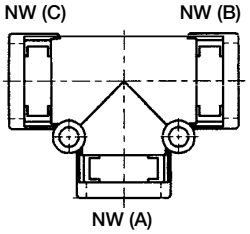
* = replaced by “B” for black or “S” for gray

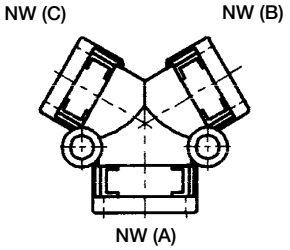
PMAFIX - Order Example

XXXX-10 07 07 XX

PMAFIX - Distribution Piece







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