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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 90,000 products from stock help finding the right solution for your specific needs. From individual components from stock to complete, ready-to-install “ready-chain”® energy supply systems within days - igus® the-chain follows your production.

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 respectively 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. Delivery time® in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

No minimum order value! No surcharges!

You can find our prices online at www.igus.eu

Guarantee

Beyond the legal warranty we also vouch for wear and tear. With a warranty certificate!

“8 to 8 plus Saturday” service

Monday till Friday 8:00 am to 8:00 pm and Saturday from 8:00 am to 12:00 pm

Hotline

Phone +49 2203 9649-800
Fax +49 2203 9649-222

Onlineshop www.igus.eu

Product finder, configurator, online catalogs, CAD modules and many 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 catalogue contains more than 90,000 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 +49 2203 9649-800
“Emergency-Service” around the clock.
90,000 products from stock.
No minimum order quantities, no surcharges.

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

© igus® GmbH - 07/2013

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

24h/90,000

DIN EN ISO 9001:2008

ISO/TS 16949:2009
**the-chain**

**igus® e-chains® are lifelines to automated systems**

E-chains® are the umbilical cord of modern machines. They are constantly moving and supply power, data and energy. 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 to constantly improve our product range.

**Universal applications for igus® e-chains®**
- Multitude of possibilities in terms of movement and length
- To carry sensitive bus, data cables and fibre optics cables and energy sources such as electricity, gas, air and liquids
- To accommodate very high dynamic loads and stringent service life requirements
- Handle very different environments and climates
- Space-saving installation
- High speeds and accelerations can be achieved
- Modular systems allow quick assembly and retrofit

**Save time and money when purchasing and utilising e-chains®!**
- 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 worldwide

Find a video online
www.igus.de/automated

![Crossbars](image)

Proven toughness - strength testing in the igus® laboratory

Assembled to your exact requirements

The award-winning igus® e-chains® are certified and tested

![Optimum service life for cables - Reduce cable wear with igus® polymer crossbars](image)

Cable Wear [mm]

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Igus® interior separation systems significantly lengthen the life cycle of cables and enable neat layout of e-chains®.

Filling guidelines ► from page 122

Notes, calculations and load diagrams are provided ► from page 95
Your production processes must remain trouble-free, and that means your energy supply systems too. This requires fully reliable operation by all relevant components, including cables. igus® was the first company to develop complete e-chain-systems®. igus® chainflex® cables and e-chains® are offered together from a single source with a system guarantee depending on the application involved design principles based on knowledge of cables and exhaustive test Series since 1989 prevent machine downtimes in plants all over the world today.

7 rules for making a good cable

1. Strain-relieved core
Empty space arises at the core of the cable depending on the number and cross-section of the conductors. This core space should be filled to the greatest possible extent with a proper rope (not with the usual fillers or dummy wires made of waste material). This reliably braces the surrounding strands and prevents them from sliding into the middle of the cable.

2. Strands
Experience has shown that the strand structure should be as flexible as possible. Although very thin individual wires result in very flexible conductors, these are highly susceptible to damage. Extensive test Series have helped to determine which combination of wire diameter, strand pitch and strand direction optimizes bending resistance.

3. Core insulation
Insulating materials must be designed so that they do not stick together once inside the cable. Furthermore, the insulation should brace the individual wires of the cable. For this purpose, we use only the best PVC and TPE extruded at high pressure and proven in millions of kilometres of wire forming part of e-chain® applications.

4. Braids
Braids must have an optimized, short pitch around a stable, strain-resistant core. To co-exist properly with the insulating materials, braids must allow movement over a certain range. Starting from a quantity of 12 cores stranding in bundles should be applied.

5. Inner jacket
A gusset-filling, extruded inner jacket should be used instead of low-cost non-woven fabric, filler or tracer. This permits secure longitudinal routing of the braid. It also prevents the braid from loosening and drifting.

6. Shielding
The shield should generally have a taut structure with an optimized angle of twist about an extruded inner jacket. Loose, open structures or, worse yet, purely circumferential windings notably reduce electromagnetic compatibility and can fail easily as a result of wire breakage. A taut shield braid makes the underlying wire braid more resistant to torsional strain.

7. Outer jacket
An external jacket made of ideal materials can meet a wide range of specifications: From UV resistance through low-temperature flexibility and oil resistance to cost-effectiveness. However, all external jackets should have the following in common: Highly resistant to abrasion without sticking and highly flexible while still supportive. In addition, all external jackets should be extruded at high pressure (gusset-filling).

QuickPin 2.0 - Online connector-cable-configurator page 23
Order separate catalog online www.igus.eu/eu/chainflex or phone +49 2203 9649-0

chainflex® lasts.
Or your money back.

Conventional “chain suitable” cable (left) and igus® chainflex®- special cable with 7 rules for a secure cable (right)
“Basic” readychain®
Simple, harnessed e-chainsystems® including installed cables without plug connections, labelled and tail-lengths according to your specifications.
Delivery time*: 3 days

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, related plugs and add-ons.

Shorten turnaround times by half
Thanks to sophisticated logistics, igus® is able to supply complete systems within 10 days of the guaranteed deadline 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 our facility prior to delivery. igus® is certified in accordance with DIN EN ISO 9001:2008 and ISO/TS 16949:2009 in the field of energy chains® with cables and harnessing, as well as plastic plain bearings.

www.igus.eu/eu/readychain
Find a video online www.igus.eu/eu/RC_movie

“Standard” readychain®
Simple, harnessed e-chainsystems® including installed cables with all plug connections, labelled and tail-lengths according to your specifications.
Delivery time*: 3-5 days

Figure left: “Premium” readychain®
A harnessed e-chainsystem® with cables of all kinds, as well as plugs, connectors, tail-lengths and components according to your specifications. Special shafts and plain bearings machined according to your specifications.
Delivery time*: 10 days

*Delivery time means time until shipping of goods (after technical release)
Quality from the igus® laboratory: Tested and proven every day.

Applications involving high cycle counts, speeds and accelerations or demanding environmental conditions require proven systems especially when it comes to e-chains®, cables, polymer slide bearings and linear systems. igus® regularly conducts tests at its own laboratory under realistic conditions. Every year, we conduct more than 15,000 for e-chains®, cables an polymer 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 and hydraulic and pneumatic hoses. Our laboratory is at your disposal. Should we lack data for your application type, we will gladly conduct tests according to your requirements.

Find a video online www.igus.de/testlab

igus® system warranty - Every application is different. igus® warranty certificates will be issued for your application individually. Ask for igus® warranty: “chain, cable, guarantee”

Push Pull forces speed up to 10 m/s, acceleration up to 200 m/s² are tested by igus®

Long travel test field: 125 m travel length, speed 300 m/min

igus® dynamic bending test

Cables are also tested for torsion properties

Noise level test inside an igus® acoustic cell

igus® ESD-tests in the production line

Electronic check and archiving for every chain production run

Figure center: Partial view, igus® test-lab: More than 80 tests every day with e-chains® and chainflex®-cables

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

Available from stock. Delivery time*: in 24h or today! Delivery time*: 24-48h Delivery time*: 3-5 work days Delivery time*: 10 work days
*Delivery time means time until shipping of goods (after technical release)

8 to 8 plus Saturday service
Over 90,000 products ex-stock! Order 0.1 m of chainflex® cable, just one e-chain® link or two bearings without surcharges. Invoices and acknowledgements available by post, fax or e-mail. There are 2,150 employees in Germany and 30 international subsidiaries and offices to guarantee a rapid delivery worldwide.
● Delivery and consultation daily from 8 am to 8 pm, Saturday from 8 am to 12 pm
● No minimum order values
● No surcharges
● Order tracking on the Internet right up to the point of delivery
● Simple returns procedure

i-net customer information system
At www.igus.eu track your orders in real time with igus® i-net. Just request a password, log into i-net and track your jobstatus via a webcam. igus® i-net shipment tracking permits a monitoring of deliveries from igus® outlet right up to your doorstep.
● Detailed order data including an overview of target and actual deadlines
● Order confirmation via post, fax or e-mail as required
● Track your orders via webcam igus® delivery service - No minimum order quantities, no surcharges.
www.igus.eu/eu/deliveryservice

For example: One e-chain® link, 6 m of e-chain®, 3 strain-relief elements

For example: 11.46 m of e-chains® with interior separators, mounting brackets and strain relief elements according to your specifications. Additional with loose accessories as chainflex®-cables, guiding troughs, mounting brackets, strain reliefs and assembly parts

For example: “Basic” readychain®: Simple customized e-chainsystems® including installed cables without plug connections, labeled and tail-lengths according to your specifications.

For example: Premium readychain®: Complex customized e-chainsystem® including cables as well as plug connections, mounting brackets, tail-lengths and components according to your specifications.

Available from stock.

Individual components

Customized e-chainsystems®

Simple pre-fabricated systems

Complex pre-fabricated systems

Request order tracking here:
www.igus.eu/eu/i-net

8 to 8 plus Saturday service

Over 90,000 products ex-stock! Order 0.1 m of chainflex® cable, just one e-chain® link or two bearings without surcharges. Invoices and acknowledgements available by post, fax or e-mail. There are 2,150 employees in Germany and 30 international subsidiaries and offices to guarantee a rapid delivery worldwide.
● Delivery and consultation daily from 8 am to 8 pm, Saturday from 8 am to 12 pm
● No minimum order values
● No surcharges
● Order tracking on the Internet right up to the point of delivery
● Simple returns procedure

i-net customer information system
At www.igus.eu track your orders in real time with igus® i-net. Just request a password, log into i-net and track your jobstatus via a webcam. igus® i-net shipment tracking permits a monitoring of deliveries from igus® outlet right up to your doorstep.
● Detailed order data including an overview of target and actual deadlines
● Order confirmation via post, fax or e-mail as required
● Track your orders via webcam igus® delivery service - No minimum order quantities, no surcharges.
www.igus.eu/eu/deliveryservice

For example: One e-chain® link, 6 m of e-chain®, 3 strain-relief elements

For example: 11.46 m of e-chains® with interior separators, mounting brackets and strain relief elements according to your specifications. Additional with loose accessories as chainflex®-cables, guiding troughs, mounting brackets, strain reliefs and assembly parts

For example: “Basic” readychain®: Simple customized e-chainsystems® including installed cables without plug connections, labeled and tail-lengths according to your specifications.

For example: Premium readychain®: Complex customized e-chainsystem® including cables as well as plug connections, mounting brackets, tail-lengths and components according to your specifications.

Available from stock.

Individual components

Customized e-chainsystems®

Simple pre-fabricated systems

Complex pre-fabricated systems

Request order tracking here:
www.igus.eu/eu/i-net
The igus® story since 1964 until today

Innovation with plastics

The igus® story begins on October 15th, 1964 with Günter Blase in a double garage in Cologne-Mülheim. In its first 20 years, igus® operated as a supplier of intricate technical plastic components. In 1983, son Frank Blase started to concentrate on full products like e-chainsystems® and Polymer Bearings and established a separate marketing department. Between 1985 and today, igus® expanded from 40 to over 2150 staff members distributed all over the world. igus® will continue to invest in expansion in the coming years. Modern materials have opened up further opportunities for innovative products.

Today: Automated plastic production

Today: Large tool development and production facility
For us customers have the same significance as the sun to life on earth. The sun gives light, warmth and energy - our customers give us ideas, work and money.

Investments in better technology and faster delivery times
Catalog items have to be on stock, to mount the modules according to customer requests within hours and shipped. igus® send out from stock in 24 hours or at the same day. We deliver from batch size one and have no minimum order value. igus® are continuing their growth trend and is focusing more than ever on sophisticated yet simpler solutions for all innovations and investments. Nine facilities worldwide were expanded 2012 by between 50% and 250%; last year, the factory in Cologne already expanded by 60% in 2009 and is being expanded by more 10,000 m² in 2013, and innovation speed stepped up to 134 product innovations (2013). New capacities are being created particularly in the readychain® factory, which is already designed to produce about 50,000 pre-assembled cables per month.

Excerpt of architect’s briefing...
“In October 1988, igus® acquired a plot sized about 40,000 m² in the Porz-Lind district of Cologne. This will be the future site of development, production, sales, administration and planning. As the centre of all activities, this location will serve as the new igus® headquarters. igus® has made preparations for fast growth, fast change and flexible response in all areas...Offering the necessary facilities and technology, the new “igus” premises” will also be designed to promote staff performance. The interior and exterior will be designed to reflect the enterprise’s products and key philosophy: innovation - service - reliability, the customer being comparable to a solar system’s centre orbited by all igus® staff and igus® entities dedicated toward solving the customer’s problems.”
QuickLink - igus® e-chains® on the internet!

Go online and make use of all advantages at www.igus.eu 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: ePlan-Download
- Personal support
- Catalog, CD and sample ordering forms

Example: www.igus.eu/eu/2400

Create your complete e-chain® with cables. A complete e-chainsystem® at few mouse clicks

Take a tour: www.igus-CAD.com

“Search” - e-chain® product finder
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® via Drag & Drop. The configuration can be transferred 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.
**igus® the-chain**

Quickly and easily find the matching energy supply system

---

**igus® online - The desired cable within 3 minutes using the chainflex® custom cable configurator**

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**the-chain: e-chains® and cables for your motion (beta version)**

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<th>Vertical movement</th>
<th>Circular movement</th>
<th>Other movement</th>
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<td>Unsupported</td>
<td>Supported</td>
<td>Supported</td>
<td>Supported</td>
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- Max. travel
- Max. speed
- Max. fill weight
- Max. acceleration
- Min. temperature
- Max. load
- Tightness
- Oil resistance of the cables

- Quick selection
- 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.eu/the-chain**

---

**igus® revolutionises the production of custom cables that are not shown in any catalogue**

Based on the “igus® chainflex® supply chain organization”, igus® is now in a position to supply customers with an almost “infinite” variety of customised cables and to manufacture at igus® tested quality with a fast turnaround. This program combines igus® “tested chainflex® quality from the chainflex®/e-chain® lab (more than 1,750 m² floorspace) with the specific requirements of our customers.

The new chainflex® custom cable on-line tool provides the option to select:
- the cable type
- the configuration
- the shielding
- the jacket material
- the colour
- the custom labeling...

Starting immediately, this custom chainflex® cable can be ordered within 3 minutes at the daily prices starting at 300 m, and is shipped within 3 weeks.

**Online-tool:**

**www.igus.eu/eu/CCC**
igus® online configurator for interior separation
www.igus.eu/eu/quickchain100

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

QuickPin 2.0 - connector-cable configurator, directly integrated in ePLAN P8
In only 3 minutes you choose out of more than 950 chainflex® cables and 3,000 connector components, configure cables online, order directly and generate an ePLAN electric P8 macro
- Create a new configuration directly from ePLAN
- Opening of existing configuration
- Verification of cable configuration
- Acquisition of existing configuration via the download manager for cable macros
- Available in ePLAN P8
- 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 configured cable to the shopping basket and inquire, order or memorize for a later order
- Possibility to recall inquired cables from order history for new inquiries
- Online pricing, including copper charge
- Save design work: free of charge delivery of ePLAN electric P8 macro of the configured cable
- Harnessing from one source - 100 % tested
- Details of your personal contact person available on the spot
- No installation required
- Many languages available
- Individual connector specification or components by manufacturers part numbers available

Find a video online
www.igus.eu/eu/quickpin-demo

igus® online configurator for interior separation!
Quickly and accurately to the correct 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 min. bending radius
- 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.eu/eu/quickchain100

Change the e-chain® and accurately select the correct width directly in the configurator - Cable overview for better handling

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

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

www.igus.eu/eu/quickcad-download

igus® applications.
Many example applications with igus® e-chainsystems® from next page

New for your tablet - igus® WebGuide app
Fast and intuitive access to the desired product, facilitated by reducing the required information to a minimum and tight integration with on-line configurators, videos and CAD data. Find - review - configure - order at a touch. The app is available for free at Apple’s app store and at the Google Play store.
More information www.igus.eu/webguide

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 specifically application can be derived from it. igus® is unable to assume liability of any nature for damage, loss or injury resulting from application of the products. We recommend that you always check 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 iglidur G.
Practical examples: Installation methods

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\textsuperscript{®} with opening crossbars for gentle guidance of large hoses

Several igus\textsuperscript{®} e-chains\textsuperscript{®} for various requirements on this torch cutting machine

A host of standing igus\textsuperscript{®} E2/000 e-chains\textsuperscript{®} reliably supply this machining center

Igus\textsuperscript{®} E4 e-tubes - unsupported, standing, or nested - supply this CNC machine. Fill weight up to 24 kg/m and \( v = 50 \) m/s

The igus\textsuperscript{®} E4 clamp chain additionally guides an igus\textsuperscript{®} E2/000 e-chain\textsuperscript{®} filled with cables
Practical examples: Installation methods

- Two fully harnessed E2/000 e-chains® with high fill weight, side mounted
- Unsupported application with harnessed e-chainsystem® E4
- E2/000 - high stability in this elevator with an height of 160 m
- Series R68 works in an apple-sorting-machine: humidity and dirt
- Standing application with System E4 and fixed KMA mounting brackets
- Drive simulator: High fill weights (60 kg/m) with E4 System

Data gloves with easy chain® Series E03 - Protect the sensors which makes it easier to take off an put on the gloves. Inner height of 5 mm
Applications: long strokes

Solutions with igus® e-chainsystems®

Igus® e-chainsystems® 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

www.igus.eu/eu/EKPraxis

Find a video online

www.vector-award.eu

The worldwide longest e-chain® travel of 615 m 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 low vibrations

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

Igus® steel guide trough used in a shelf conveyor application, series 3500 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-alu-trough = up to 75% less driving power

Travel up to 195 m with the igus® System E4, safely guided in an igus® steel trough

www.igus.eu/eu/EKPraxis
Applications: machine tools

Portal milling machine with fully closed E4 e-tube with special material igumid HT. 850°C 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 - here 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 45 m 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 deployed 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. 20 meters 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-alu-trough in a RTG-crane. Long travel with the E4 system

Stable guidance without oscillation. Long travel with 32 m, crane operating speed 80 m/min.

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

E4 with extension link at a ship loader for coal unloading. Travel 105 m, speed 240 m/min, load 53 kg/m

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

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 - \(a = 4 \text{ m/s}^2, v = 6 \text{ m/s}\).

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

Igus® System E6 - High acceleration (8 g) and ESD safety.

Nested e-chains® reduce vibrations and improve milling accuracy Series E6.62.

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

Long travel and side mounted installation with the vibration-free and low noise Series E6.29 in this camera application.
Applications: circular & 3D-movements

- E4 "RBR" - application in a telescope - cold temperatures and snow - failsafe
- Laser measuring telescope with triflex® R. Rotary motion in both directions ≤ 310° possible at high speeds ≤ 20 m/s
- An igus® twisterband guides the energy of the 5-axis cutting heat in this wood working machine, safe and cost-effective
- Circular movement with System E4 - safe energy supply on cranes
- triflex® R in a magnesium die-casting industry (heat, dirt, oil, metal chips, dust, etc.) - failsafe
- E2 mini, Series B15 - The motor spindle has a swivelling range of approx. 230°

easy triflex® e-chains® for multidimensional movements on a production line
### Products overview

#### Cost-effective, easy to fill
- Simply press cables in easy chain® | Version E
- Simply press cables in easy chain® | Version Z

#### Cost effective
- Loop e-chain® on one step System E1

#### For simple applications
- Zip fastening e-chains® and e-tubes
- Fast assembly with zipper e-chains®
- Fast assembly with zipper e-tubes

#### Zip fastening e-chains® and e-tubes
- Zip-open along outer radius, fast assembly
- Zip-open along outer radius, fast assembly

#### Smallest e-chains®
- Smallest sizes, one-piece E2 micro | Non snap-open
- Smallest sizes, one-piece E2 micro | Snap-open
- Smallest sizes, two-piece E2 micro | Snap-open

#### Small e-chains®
- Small sizes, one-piece E2 mini | Non snap-open
- Small sizes, one-piece E2 mini | Snap-open with film-hinge
- Small sizes, two-piece E2 mini | Snap-open

#### Allround e-chains® and e-tubes
- Small sizes, two-piece E2 mini | Snap-open
- Medium sizes, e-chain®, two-piece E2/000 | Snap-open
- Medium sizes, e-chain®, two-piece E2/000 | Snap-open

#### Chip protection
- Snap-open along inner radius. Excellent chip protection E2 e-tubes | R100

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<th>Easy chain®</th>
<th>Version E</th>
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## Products overview

### Protection against dirt, dust and chips

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<td>Removable lids along outer radius</td>
<td>E2 e-tubes</td>
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<tr>
<td>Openable along outer radius</td>
<td>RX e-tubes</td>
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### E4.1 - universal E4 modular kit, e-chains® and e-tubes for almost any application

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
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<tr>
<td>Standard, 4-piece, openable</td>
<td>E4.1</td>
</tr>
<tr>
<td>Standard, 4-piece, openable</td>
<td>H4.1</td>
</tr>
<tr>
<td>Standard, 4-piece, hinged, removable lids</td>
<td>R4.1</td>
</tr>
</tbody>
</table>

### E4.1 light - light design

- 4-piece, swivable, less weight
- E4.1 light: e-chains® and e-tubes

### E4.1 - low weight, economic and stable

- 4-piece, openable
- E4.1 | Crossbars every link
- E4.1 | Crossbars every 2nd link

### Highly flexible

- For highly dynamic applications, low noise
- T3: e-chains® | T-band

### Highly dynamic

- Super quiet in small spaces
- E3: e-chains®

### E6 - extremely low-noise

- Super quiet, low vibration, cleanroom
- E6: e-chains®

### E6.1 - 2nd generation

- Super quiet, low vibration, cleanroom
- E6.1: e-chains®

### Robotic- and 3D e-chains® and e-tubes

- Robotic: 3D, chip-resistant
- triflex® R TRC: closed design
- Robotic: 3D, simply press cables in
- triflex® R TRE: "easy"-design
- Robotic: 3D, light and economical
- triflex® R TRL: light design

### New in this catalog

- E4.112
- E4/light | e-tubes
- E4.1 light | e-chains® and e-tubes
- E4/light | e-chains® and e-tubes
- E4.1 light | e-chains® and e-tubes
- E4.1 light | e-chains® and e-tubes
- E4.1 light | e-chains® and e-tubes

Find the perfect fit e-chain® quickly online: www.igus.eu/eu/finder

Find e-chains® for any movement: www.igus.eu/the-chain
### Products overview

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<th>Robotic- and 3D</th>
<th>For 3D-applications</th>
<th>3D, closed</th>
<th>Circular movements</th>
<th>Rotary motion</th>
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<td>Robotic: 3D, with snap lock mechanism triflex® R TRLF</td>
<td>easy triflex®</td>
<td>3D applications, new generation triflex®, Closed version</td>
<td>Circular movements, first-generation triflex®, Operable</td>
<td>Rotary motion, small space, compact triflex® R TRLF</td>
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<td>easy triflex®: “easy”-design, simple filling from 2 sides ➔ from page 1052</td>
<td>Protection against dirt and chips, combined circle- and stroke-movements ➔ from page 1066</td>
<td>Circular e-chains®, rotary and spiral movements up to 540°, high loads ➔ from page 1062</td>
<td>Rotary motions in small spaces, 20 times around its own axis ➔ from page 1130</td>
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### Guiding media reliably

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<th>Further strain relief options</th>
<th>Guiding media reliably</th>
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<td>For maximum pull forces, adjustable Clamps</td>
<td>For universal tiewrap, bolted or clip-on Tiewrap plates</td>
<td>The alternative to the cable drum e-spool</td>
</tr>
<tr>
<td>CFX</td>
<td>Multi-Clamps</td>
<td>New in this catalog</td>
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<tr>
<td>CFXL</td>
<td>Clip-on connection for the C-profile Tiewrap plates</td>
<td>CFX standard clamps and CFXL with wide chainfix Adapter: Save assembly time, space and money. Compact and modular chainfix-Adapters. Save assembly time, space and money. Compact and modular</td>
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<tr>
<td>CFXL</td>
<td>High tensile forces, modular, clip-on Clips</td>
<td>Low space requirements, used for versatile motions of various media ➔ from page 1142</td>
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<th>Strain relief for hoses</th>
<th>Aluminum SuperTrough</th>
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<td>Strain relief separators</td>
<td>Strain relief for hoses Blocks</td>
<td>Heavy-duty version, for Heavy-Duty use Aluminum SuperTrough</td>
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<tr>
<td>For top hat rail and C-profile Nuggets</td>
<td>Conventional</td>
<td>Aluminum SuperTrough</td>
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<tr>
<td>For top hat rail and C-profile separators</td>
<td>CFB</td>
<td>Aluminum SuperTrough</td>
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<td>Separators with integrated strain relief</td>
<td>Conventional blocks and CFB polymer strain relief connector system, for many cables in a very confined space ➔ from page 1173</td>
<td>Basic version, for general use Aluminum SuperTrough</td>
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<td>Easy strain relief with cable twine ➔ from page 1170</td>
<td>The igus® standard guide trough. Very simple, modular assembly ➔ from page 1184</td>
<td>Heavy-duty version use Aluminum SuperTrough</td>
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<tr>
<td>Completely simple and universal cable fixation for top hat rail and C-profile ➔ from page 1172</td>
<td>Recommended for Heavy-Duty use ➔ from page 1185</td>
<td>Stable, rugged for Heavy-Duty applications Steel guide troughs</td>
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<tr>
<td>Conventional blocks and CFB polymer strain relief connector system, for many cables in a very confined space ➔ from page 1173</td>
<td>For applications in rough environments. Huge product range ➔ from page 1210</td>
<td>Steel guide troughs</td>
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### Find the perfect fit e-chain® quickly online ➔ www.igus.eu/eu/finder

### Find e-chains® for any movement ➔ www.igus.eu/the-chain
Products overview

Further guide trough systems
- Energy supply for crane girders, guidefast
- Less light and dirt through Tubular troughs | System RS
- Cost-effective, easy assembly Snap-in troughs | System SP
- Support tray tool kit Support tray
- Self-guiding e-chainsystem®. No guide troughs required

New in this catalog
- Economical energy supply for crane girders and indoor cranes, quickly installed from page 1242
- Resistant to dirt. Easy assembly and cost-effective from page 1246
- Very small trough. Easy assembly and cost-effective from page 1252
- Support tray tool kit for support of the lower run, cost-effective from page 1258

E-chains® for long travels
- Heavy-duty for demanding applications: E4/4HD | Crossbars every link
- Heavy-duty fully enclosed E4/4HD | e-tubes, enclosed

Energy efficiency system for long travels
- System P4 | profile-rol e-chain®
- Rolling instead of gliding rol e-chain® | Crossbars every link
- Rolling instead of gliding rol e-chain® | e-tubes, fully enclosed
- Self-guiding, for System E4.1 autoglide | Option 01
- Self-guiding, for System E2/000 autoglide | Option 02
- Self-guiding, with easy chain® design autoglide | Option 03

New in this catalog
- Reduce 57% energy consumption. For very long travels, high speeds from page 1284
- Robust for long travels up to 800 m from page 1304
- Robust for long travels up to 800 m from page 1304
- Self-guiding e-chainsystem®, No guide troughs required from page 1320
- Self-guiding e-chainsystem®, No guide troughs required from page 1320
- Self-guiding e-chainsystem®, No guide troughs required from page 1320

Special solutions for long travels
- Self-guiding, with special glide elements autoglide | Option 04
- Unsupported travels up to 50 m, in chip areas guidelok horizontal
- Safe vertical guidance guidelok slimline F
- Enclosed plastic trough lint flizz®
- Small e-chains® in aluminum profile micro flizz®
- Fast project planning, completely from stock: Modular system for projects

New in this catalog | MF10
- Upper run guide for long travels, unsupported in critical chip areas from page 1352
- For e-chains® in high-speed rack feeders. No swinging of the e-chain®, high reliability through guiding rails from page 1354
- Enclosed polymer trough, cost-effective from page 1356
- Master long travels with the smallest e-chains® without failures from page 1360
- Faster quotations, faster project planning from page 1370

Find the perfect fit e-chain® quickly online | www.igus.eu/eu/finder
Find e-chains® for any movement | www.igus.eu/the-chain
## Technical Details

### easy chain® - very easy to fill, simply press cables in

#### E-Version | Split crossbar along the outer radius

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Inner height hi [mm]</th>
<th>Inner width Bi [mm]</th>
<th>Outer height ha [mm]</th>
<th>Outer width Ba [mm]</th>
<th>Bending radius R [mm]</th>
<th>Pitch [mm]</th>
<th>Unsupported fill weight max [kg/m]</th>
<th>Unsupported length FL max [m]</th>
<th>Long travel max [m]</th>
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#### Z-Version | Split crossbar along the inner radius

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<th>Series / Product</th>
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<th>Inner width Bi [mm]</th>
<th>Outer height ha [mm]</th>
<th>Outer width Ba [mm]</th>
<th>Bending radius R [mm]</th>
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<th>Unsupported fill weight max [kg/m]</th>
<th>Unsupported length FL max [m]</th>
<th>Long travel max [m]</th>
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<td>Z06</td>
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<td>ø 6.5</td>
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<td>16.5 - 26.5</td>
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<td>0.55</td>
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<tr>
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<td>ø 7</td>
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<td>0.6</td>
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<tr>
<td>Z08</td>
<td>14.7</td>
<td>ø 10 / 10 - 50</td>
<td>19.3</td>
<td>18.2 - 58.2</td>
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<td>0.7</td>
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<td>Z14</td>
<td>19</td>
<td>ø 13</td>
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<td>27 - 62</td>
<td>30.5</td>
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<tr>
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<td>ø 28</td>
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<td>2.25</td>
<td>-</td>
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<tr>
<td>Z300.2</td>
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<td>ø 18</td>
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<td>64</td>
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<td>Z300.3</td>
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<td>ø 18</td>
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<td>170</td>
<td>67</td>
<td>8</td>
<td>2.25</td>
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</table>
### System E1 - modular, 1-piece strip design for simple applications

**e-chains** | Snap-open along the outer radius

<table>
<thead>
<tr>
<th>Series</th>
<th>Product</th>
<th>Inner height Bi [mm]</th>
<th>Outer height ha [mm]</th>
<th>Outer width Ba [mm]</th>
<th>Ø cable max.</th>
<th>Bending radius R [mm]</th>
<th>Length FL [mm]</th>
<th>Unsupported fill weight max [kg/m]</th>
<th>Unst. length max [m]</th>
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<td>15,5</td>
<td>16,5</td>
<td>18</td>
<td>20</td>
<td>upon request</td>
<td>–</td>
<td>–</td>
<td>○ ● ▲ ● ● ● ● ● ● ● ● ● ● ● ● ●</td>
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<td>21 - 44</td>
<td>25</td>
<td>26 - 49</td>
<td>28</td>
<td>25,5</td>
<td>upon request</td>
<td>–</td>
<td>–</td>
<td>○ ● ▲ ● ● ● ● ● ● ● ● ● ● ● ● ●</td>
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<td>18 ø 16</td>
<td>15</td>
<td>26</td>
<td>20</td>
<td>28</td>
<td>25,25</td>
<td>upon request</td>
<td>–</td>
<td>–</td>
<td>○ ● ▲ ● ● ● ● ● ● ● ● ● ● ● ● ●</td>
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<td>E1.20</td>
<td>20 ø 18</td>
<td>15</td>
<td>27</td>
<td>22</td>
<td>28</td>
<td>25</td>
<td>upon request</td>
<td>–</td>
<td>–</td>
<td>○ ● ▲ ● ● ● ● ● ● ● ● ● ● ● ● ●</td>
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</tbody>
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**System E1 - modular, 1-piece strip design for simple applications**

**snapchain** - fit cable assemblies quickly in bunches

**e-chains** | Loops to be opened along the outer radius

<table>
<thead>
<tr>
<th>Series</th>
<th>Product</th>
<th>Loop length [mm]</th>
<th>Pitch [mm]</th>
<th>Inner height Bi [mm]</th>
<th>Ø cable max.</th>
<th>Outer height ha [mm]</th>
<th>Ø cable max.</th>
<th>Outer width Ba [mm]</th>
<th>Length FL [mm]</th>
<th>Bending radius R [mm]</th>
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<th>Unst. length max [m]</th>
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<td>TE26.120</td>
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<td>63 - 200</td>
<td>56</td>
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</table>

**e-chains** | Loops to be opened along the inner radius

**zipper e-chains** and **e-tubes** - lightning-fast opening and closing

**e-chains** | Zip-open along the outer radius

<table>
<thead>
<tr>
<th>Series</th>
<th>Product</th>
<th>Loop length [mm]</th>
<th>Pitch [mm]</th>
<th>Inner height Bi [mm]</th>
<th>Ø cable max.</th>
<th>Outer height ha [mm]</th>
<th>Ø cable max.</th>
<th>Outer width Ba [mm]</th>
<th>Length FL [mm]</th>
<th>Bending radius R [mm]</th>
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<td>13</td>
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<td>–</td>
<td>–</td>
<td>–</td>
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<tr>
<td>08</td>
<td>10,3 ø 8</td>
<td>6 - 64</td>
<td>20</td>
<td>0,4</td>
<td>0,55</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<td>15 ø 12,5</td>
<td>10 - 50</td>
<td>19,3</td>
<td>0,7</td>
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<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
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</tr>
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<td>15 - 100</td>
<td>26 - 113</td>
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<td>1,2</td>
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<tr>
<td>17</td>
<td>32 ø 28</td>
<td>15 - 100</td>
<td>25,5 - 113</td>
<td>30,5</td>
<td>1</td>
<td>1</td>
<td>–</td>
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**e-tubes** | Zip-open along the outer radius

<table>
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<th>Series</th>
<th>Product</th>
<th>Loop length [mm]</th>
<th>Pitch [mm]</th>
<th>Inner height Bi [mm]</th>
<th>Ø cable max.</th>
<th>Outer height ha [mm]</th>
<th>Ø cable max.</th>
<th>Outer width Ba [mm]</th>
<th>Length FL [mm]</th>
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<td>–</td>
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<td>–</td>
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<tr>
<td>R09</td>
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<td>19,3</td>
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<td>R15</td>
<td>17 ø 15</td>
<td>25 - 80</td>
<td>30,5</td>
<td>1,5</td>
<td>1,2</td>
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<td>–</td>
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<tr>
<td>R17</td>
<td>32 ø 28</td>
<td>15 - 63</td>
<td>30,5</td>
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</tr>
</tbody>
</table>

2) ESD-option, available from stock. Delivery time in 24h or today!

Find the perfect fit e-chain® quickly online: [www.igus.eu/eu/finder](http://www.igus.eu/eu/finder)

Find e-chains® for any movement: [www.igus.eu/the-chain](http://www.igus.eu/the-chain)
### E2 micro - one-piece e-chains®, small sizes

**Non-snap-open**

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Inner width [mm]</th>
<th>Inner height [mm] + cable max. [mm]</th>
<th>Outer width [mm] + cable max.</th>
<th>Outer height [mm] + cable max.</th>
<th>Pitch [mm]</th>
<th>Unsupported fill weight max [%]</th>
<th>Unsupported length FL [m]</th>
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<td>5</td>
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<td>6 - 64</td>
<td>12.5</td>
<td>12 - 70</td>
<td>18 - 83</td>
<td>13</td>
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<td>10.5</td>
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<td>6 - 64</td>
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<td>12.5 - 71</td>
<td>18 - 83</td>
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<td>0.48</td>
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<tr>
<td>08</td>
<td>15</td>
<td>12</td>
<td>10 - 50</td>
<td>19.3</td>
<td>18.2 - 58.2</td>
<td>25 - 48</td>
<td>20</td>
<td>0.75</td>
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</table>

**Snap-open along inner radius**

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Inner width [mm]</th>
<th>Inner height [mm] + cable max. [mm]</th>
<th>Outer width [mm] + cable max.</th>
<th>Outer height [mm] + cable max.</th>
<th>Pitch [mm]</th>
<th>Unsupported fill weight max [%]</th>
<th>Unsupported length FL [m]</th>
<th>Long travel max [m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>074</td>
<td>10.9</td>
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<td>15</td>
<td>16.3</td>
<td>18 - 38</td>
<td>20</td>
<td>0.4</td>
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<td>094</td>
<td>14.3</td>
<td>13</td>
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<td>19.3</td>
<td>18.2</td>
<td>28 - 48</td>
<td>20</td>
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</tr>
</tbody>
</table>

### E2 mini - one/two-piece e-chains®, small and medium sizes

**Non-snap-open**

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Inner width [mm]</th>
<th>Inner height [mm] + cable max. [mm]</th>
<th>Outer width [mm] + cable max.</th>
<th>Outer height [mm] + cable max.</th>
<th>Pitch [mm]</th>
<th>Unsupported fill weight max [%]</th>
<th>Unsupported length FL [m]</th>
<th>Long travel max [m]</th>
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<tbody>
<tr>
<td>10</td>
<td>18</td>
<td>16</td>
<td>15 - 100</td>
<td>23</td>
<td>26 - 113</td>
<td>28 - 180</td>
<td>30.5</td>
<td>1.5</td>
</tr>
<tr>
<td>11.031</td>
<td>23</td>
<td>21</td>
<td>31</td>
<td>28</td>
<td>41.2</td>
<td>45 - 70</td>
<td>30.5</td>
<td>1.5</td>
</tr>
<tr>
<td>11.080</td>
<td>28</td>
<td>25</td>
<td>80</td>
<td>33.4</td>
<td>93</td>
<td>38</td>
<td>30.5</td>
<td>1.5</td>
</tr>
<tr>
<td>11.1/11.2</td>
<td>41</td>
<td>22.5</td>
<td>15 - 25</td>
<td>46</td>
<td>25.5 - 35.5</td>
<td>40 - 100</td>
<td>30.5</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**Snap-open along inner radius**

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Inner width [mm]</th>
<th>Inner height [mm] + cable max. [mm]</th>
<th>Outer width [mm] + cable max.</th>
<th>Outer height [mm] + cable max.</th>
<th>Pitch [mm]</th>
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<th>Unsupported length FL [m]</th>
<th>Long travel max [m]</th>
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</thead>
<tbody>
<tr>
<td>14</td>
<td>20</td>
<td>16</td>
<td>15 - 50</td>
<td>25</td>
<td>26 - 61</td>
<td>28 - 125</td>
<td>30.5</td>
<td>0.5</td>
</tr>
<tr>
<td>B15</td>
<td>17</td>
<td>14</td>
<td>15 - 100</td>
<td>23</td>
<td>26 - 113</td>
<td>38 - 180</td>
<td>30.5</td>
<td>1.5</td>
</tr>
<tr>
<td>B17</td>
<td>32</td>
<td>28</td>
<td>38</td>
<td>39</td>
<td>35.5 - 48.5</td>
<td>48 - 125</td>
<td>30.5</td>
<td>1</td>
</tr>
<tr>
<td>F17</td>
<td>32</td>
<td>14</td>
<td>15</td>
<td>39</td>
<td>26</td>
<td>48</td>
<td>30.5</td>
<td>1.5</td>
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**Snap-open along outer radius**

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Inner width [mm]</th>
<th>Inner height [mm] + cable max. [mm]</th>
<th>Outer width [mm] + cable max.</th>
<th>Outer height [mm] + cable max.</th>
<th>Pitch [mm]</th>
<th>Unsupported fill weight max [%]</th>
<th>Unsupported length FL [m]</th>
<th>Long travel max [m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>B15</td>
<td>17</td>
<td>14</td>
<td>15 - 100</td>
<td>23</td>
<td>26 - 113</td>
<td>38 - 180</td>
<td>30.5</td>
<td>1.5</td>
</tr>
<tr>
<td>B17</td>
<td>32</td>
<td>28</td>
<td>15 - 100</td>
<td>39</td>
<td>25.5 - 48.5</td>
<td>48 - 125</td>
<td>30.5</td>
<td>1</td>
</tr>
</tbody>
</table>

### Next generation of small igus® e-chains®

- Lighter, more stable and easier to open
- In 2 sizes available
- An e-chain® opener is included with every Series E2.1 that can be opened, which significantly reduces installation time
- Many accessories

More information: www.igus.eu/E2.1open
### Technical Details | E2/000

#### E2/000 e-chain® - two-piece e-chains®, the E2 standard!

**e-chains® | Snap-open along inner radius**

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Inner height h1 [mm]</th>
<th>Inner width b1 [mm]</th>
<th>Outer height h2 [mm]</th>
<th>Outer width b2 [mm]</th>
<th>Pitch [mm]</th>
<th>Unsupported fill weight max [kg/m]</th>
<th>Unsupported length Lmax [m]</th>
<th>Long travel Lmax [m]</th>
<th>Interior separation possibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1400</td>
<td>ø 18</td>
<td>15 - 125</td>
<td>28</td>
<td>28.5 - 138.5</td>
<td>35 - 180</td>
<td>33.3</td>
<td>2</td>
<td>1.75</td>
<td>75 (1)</td>
</tr>
<tr>
<td>2400</td>
<td>ø 23</td>
<td>25 - 125</td>
<td>35</td>
<td>41 - 141</td>
<td>55 - 250</td>
<td>46</td>
<td>5</td>
<td>2.25</td>
<td>100 (1)</td>
</tr>
<tr>
<td>2600</td>
<td>ø 32</td>
<td>50 - 175</td>
<td>50</td>
<td>66 - 194</td>
<td>63 - 250</td>
<td>56</td>
<td>8</td>
<td>2.75</td>
<td>120 (1)</td>
</tr>
<tr>
<td>3400</td>
<td>ø 42</td>
<td>50 - 250</td>
<td>64</td>
<td>70 - 270</td>
<td>75 - 300</td>
<td>67</td>
<td>13</td>
<td>3</td>
<td>150 (1)</td>
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#### e-chains® | Snap-open along outer radius

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Inner height h1 [mm]</th>
<th>Inner width b1 [mm]</th>
<th>Outer height h2 [mm]</th>
<th>Outer width b2 [mm]</th>
<th>Pitch [mm]</th>
<th>Unsupported fill weight max [kg/m]</th>
<th>Unsupported length Lmax [m]</th>
<th>Long travel Lmax [m]</th>
<th>Interior separation possibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500</td>
<td>ø 18</td>
<td>15 - 125</td>
<td>28</td>
<td>28.5 - 138.5</td>
<td>35 - 180</td>
<td>33.3</td>
<td>2</td>
<td>1.75</td>
<td>75 (1)</td>
</tr>
<tr>
<td>2500</td>
<td>ø 23</td>
<td>25 - 125</td>
<td>35</td>
<td>41 - 141</td>
<td>55 - 250</td>
<td>46</td>
<td>5</td>
<td>2.25</td>
<td>100 (1)</td>
</tr>
<tr>
<td>2700</td>
<td>ø 32</td>
<td>50 - 175</td>
<td>50</td>
<td>66 - 194</td>
<td>63 - 250</td>
<td>56</td>
<td>8</td>
<td>2.75</td>
<td>120 (1)</td>
</tr>
<tr>
<td>3500</td>
<td>ø 42</td>
<td>50 - 250</td>
<td>64</td>
<td>70 - 270</td>
<td>75 - 300</td>
<td>67</td>
<td>13</td>
<td>3</td>
<td>150 (1)</td>
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</table>

#### Half e-tubes | Snap-open along inner radius

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Inner height h1 [mm]</th>
<th>Inner width b1 [mm]</th>
<th>Outer height h2 [mm]</th>
<th>Outer width b2 [mm]</th>
<th>Pitch [mm]</th>
<th>Unsupported fill weight max [kg/m]</th>
<th>Unsupported length Lmax [m]</th>
<th>Long travel Lmax [m]</th>
<th>Interior separation possibilities</th>
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</thead>
<tbody>
<tr>
<td>1450</td>
<td>ø 18</td>
<td>15 - 125</td>
<td>28</td>
<td>28.5 - 138.5</td>
<td>75 - 180</td>
<td>33.3</td>
<td>2</td>
<td>1.75</td>
<td>75 (1)</td>
</tr>
<tr>
<td>2450</td>
<td>ø 23</td>
<td>25 - 125</td>
<td>35</td>
<td>41 - 141</td>
<td>75 - 250</td>
<td>46</td>
<td>5</td>
<td>2.25</td>
<td>100 (1)</td>
</tr>
<tr>
<td>2650</td>
<td>ø 32</td>
<td>50 - 175</td>
<td>50</td>
<td>66 - 194</td>
<td>100 - 250</td>
<td>56</td>
<td>8</td>
<td>2.75</td>
<td>120 (1)</td>
</tr>
<tr>
<td>3450</td>
<td>ø 42</td>
<td>50 - 250</td>
<td>64</td>
<td>70 - 270</td>
<td>125 - 300</td>
<td>67</td>
<td>13</td>
<td>3</td>
<td>150 (1)</td>
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</table>

#### e-tubes | Snap-open along inner radius

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Inner height h1 [mm]</th>
<th>Inner width b1 [mm]</th>
<th>Outer height h2 [mm]</th>
<th>Outer width b2 [mm]</th>
<th>Pitch [mm]</th>
<th>Unsupported fill weight max [kg/m]</th>
<th>Unsupported length Lmax [m]</th>
<th>Long travel Lmax [m]</th>
<th>Interior separation possibilities</th>
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<tbody>
<tr>
<td>1480</td>
<td>ø 18</td>
<td>15 - 125</td>
<td>28</td>
<td>28.5 - 138.5</td>
<td>75 - 180</td>
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<td>2</td>
<td>1.75</td>
<td>75 (1)</td>
</tr>
<tr>
<td>2480</td>
<td>ø 23</td>
<td>25 - 125</td>
<td>35</td>
<td>41 - 141</td>
<td>75 - 250</td>
<td>46</td>
<td>5</td>
<td>2.25</td>
<td>100 (1)</td>
</tr>
<tr>
<td>2680</td>
<td>ø 32</td>
<td>50 - 175</td>
<td>50</td>
<td>66 - 194</td>
<td>100 - 250</td>
<td>56</td>
<td>8</td>
<td>2.75</td>
<td>120 (1)</td>
</tr>
<tr>
<td>3480</td>
<td>ø 42</td>
<td>50 - 250</td>
<td>64</td>
<td>70 - 270</td>
<td>125 - 300</td>
<td>67</td>
<td>13</td>
<td>3</td>
<td>150 (1)</td>
</tr>
</tbody>
</table>

---

1) Conditionally suitable in inner radii  
2) ESD-option, available from stock. Delivery time in 24h or today!
### Technical Details e-tubes

#### E2 R100 - two-piece e-tube, hinged lids

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Outer height ( ha ) [mm]</th>
<th>Outer width ( Ba ) [mm] from - to</th>
<th>Pitch [mm]</th>
<th>Unsupported fill weight max [kg/mm]</th>
<th>Unsupported length ( FL ) max [m]</th>
<th>Interior separation possibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>R117 21 ø 17</td>
<td>20 - 100</td>
<td>28</td>
<td>30.5, 1.5, 1.2</td>
<td>-</td>
<td>-</td>
<td>○ ○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>R157 40 ø 37</td>
<td>40 - 200</td>
<td>50</td>
<td>46, 8, 2.25</td>
<td>-</td>
<td>-</td>
<td>○ ○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>R167 50 ø 46</td>
<td>50 - 250</td>
<td>64</td>
<td>58.8, 10, 2.5</td>
<td>-</td>
<td>-</td>
<td>○ ○ ○ ○ ○ ○</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Inner height ( H ) [mm]</th>
<th>Inner width ( B ) [mm] from - to</th>
<th>Bending radius ( R ) [mm] from - to</th>
<th>Pitch [mm]</th>
<th>Unsupported fill weight max [kg/mm]</th>
<th>Unsupported length ( FL ) max [m]</th>
<th>Interior separation possibilities</th>
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</thead>
<tbody>
<tr>
<td>R118 21 ø 17</td>
<td>25 - 80</td>
<td>28</td>
<td>30.5, 1.5, 1.2</td>
<td>-</td>
<td>-</td>
<td>○ ○ ○ ○ ○ ○</td>
<td></td>
</tr>
<tr>
<td>R158 40 ø 37</td>
<td>40 - 200</td>
<td>50</td>
<td>46, 8, 2.25</td>
<td>-</td>
<td>-</td>
<td>○ ○ ○ ○ ○ ○</td>
<td></td>
</tr>
<tr>
<td>R168 50 ø 46</td>
<td>50 - 250</td>
<td>64</td>
<td>58.8, 10, 2.5</td>
<td>-</td>
<td>-</td>
<td>○ ○ ○ ○ ○ ○</td>
<td></td>
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</table>

#### E2 R - two-piece e-tubes, small pitch

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Inner height ( H ) [mm]</th>
<th>Inner width ( B ) [mm] from - to</th>
<th>Pitch [mm]</th>
<th>Unsupported fill weight max [kg/mm]</th>
<th>Unsupported length ( FL ) max [m]</th>
<th>Interior separation possibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>R48 25 ø 22</td>
<td>25 - 130</td>
<td>36</td>
<td>30.3, 1, 1.5</td>
<td>50</td>
<td>-</td>
<td>○ ○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>R58 35 ø 32</td>
<td>30 - 200</td>
<td>50</td>
<td>33.3, 8, 2.3</td>
<td>75</td>
<td>-</td>
<td>○ ○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>R68 45 ø 42</td>
<td>50 - 250</td>
<td>64</td>
<td>36, 10, 2.5</td>
<td>100</td>
<td>-</td>
<td>○ ○ ○ ○ ○ ○</td>
</tr>
</tbody>
</table>

#### RX - full chip protection without undercuts, projecting edges and gaps

<table>
<thead>
<tr>
<th>System RX</th>
<th>Inner height ( H ) [mm]</th>
<th>Inner width ( B ) [mm] from - to</th>
<th>Pitch [mm]</th>
<th>Unsupported fill weight max [kg/mm]</th>
<th>Unsupported length ( FL ) max [m]</th>
<th>Interior separation possibilities</th>
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</thead>
<tbody>
<tr>
<td>RX32 42 ø 37</td>
<td>80</td>
<td>56</td>
<td>32, 4</td>
<td>1,7</td>
<td>-</td>
<td>○ ○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>RX48 52 ø 48</td>
<td>100</td>
<td>50</td>
<td>48, 9</td>
<td>2.1</td>
<td>-</td>
<td>○ ○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>RX56 65 ø 42</td>
<td>120</td>
<td>84</td>
<td>48, 9</td>
<td>2.1</td>
<td>-</td>
<td>○ ○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>RX82 68 ø 56</td>
<td>120</td>
<td>100</td>
<td>56, 11</td>
<td>2.3</td>
<td>-</td>
<td>○ ○ ○ ○ ○ ○</td>
</tr>
</tbody>
</table>

### Find the perfect fit e-chain® quickly online!

[www.igus.eu/eu/finder](http://www.igus.eu/eu/finder)

Find e-chains® for any movement!

[www.igus.eu/the-chain](http://www.igus.eu/the-chain)
### System E4.1

#### E4.1 - ONE e-chain® family for all applications

**Can be opened from both sides - the E4 standard!**

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Inner height Bi [mm]</th>
<th>Inner width Wi [mm] from - to</th>
<th>Outer height ha [mm]</th>
<th>Outer width Wo [mm] from - to</th>
<th>Bending radius R [mm] from - to</th>
<th>Pitch [mm]</th>
<th>Unsupported fill weight max [kg]</th>
<th>Unsupported length FLmax [m]</th>
<th>Long travel max [m]</th>
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<tbody>
<tr>
<td>E4.21</td>
<td>21 α 18</td>
<td>30 - 140</td>
<td>28</td>
<td>44 - 154</td>
<td>38 - 200</td>
<td>30,5</td>
<td>4</td>
<td>2,5</td>
<td>120</td>
</tr>
<tr>
<td>E4.28</td>
<td>28 α 25</td>
<td>40 - 300</td>
<td>42</td>
<td>60 - 320</td>
<td>55 - 250</td>
<td>46</td>
<td>10</td>
<td>2,5</td>
<td>200</td>
</tr>
<tr>
<td>E4.32</td>
<td>32 α 28</td>
<td>50 - 400</td>
<td>54</td>
<td>73 - 423</td>
<td>63 - 300</td>
<td>56</td>
<td>15</td>
<td>3,3</td>
<td>200</td>
</tr>
<tr>
<td>E4.42</td>
<td>42 α 38</td>
<td>50 - 400</td>
<td>64</td>
<td>76 - 426</td>
<td>75 - 350</td>
<td>67</td>
<td>37</td>
<td>4</td>
<td>300</td>
</tr>
<tr>
<td>E4.56</td>
<td>56 α 50</td>
<td>50 - 600</td>
<td>84</td>
<td>84 - 634</td>
<td>125 - 500</td>
<td>91</td>
<td>62,5</td>
<td>5</td>
<td>400</td>
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<td>E4.80</td>
<td>80 α 72</td>
<td>50 - 600</td>
<td>108</td>
<td>100 - 650</td>
<td>150 - 1000</td>
<td>111</td>
<td>80</td>
<td>6,2</td>
<td>400</td>
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<td>E4.112 New</td>
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<td>140</td>
<td>102 - 652</td>
<td>200 - 1000</td>
<td>143</td>
<td>85</td>
<td>6,5</td>
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<td>200 α 184</td>
<td>200 - 600</td>
<td>236</td>
<td>260 - 660</td>
<td>325 - 1000</td>
<td>250</td>
<td>90</td>
<td>8</td>
<td>450</td>
</tr>
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<td>B40</td>
<td>204 α 184</td>
<td>100 - 563</td>
<td>236</td>
<td>160 - 623</td>
<td>325 - 1000</td>
<td>250</td>
<td>90</td>
<td>8</td>
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</tr>
<tr>
<td>E4.350</td>
<td>350 α 315</td>
<td>400 - 800</td>
<td>450</td>
<td>540 - 940</td>
<td>500 - 1000</td>
<td>470</td>
<td>600</td>
<td>6,2</td>
<td>-</td>
</tr>
<tr>
<td>H4.32</td>
<td>32 α 28</td>
<td>50 - 400</td>
<td>54</td>
<td>73 - 423</td>
<td>63 - 300</td>
<td>56</td>
<td>15</td>
<td>3,3</td>
<td>200</td>
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<tr>
<td>H4.42</td>
<td>42 α 38</td>
<td>50 - 400</td>
<td>64</td>
<td>76 - 426</td>
<td>75 - 350</td>
<td>67</td>
<td>37</td>
<td>4</td>
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<tr>
<td>H4.56</td>
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<td>50 - 600</td>
<td>84</td>
<td>84 - 634</td>
<td>135 - 500</td>
<td>91</td>
<td>62,5</td>
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<tr>
<td>H4.80</td>
<td>80 α 72</td>
<td>50 - 600</td>
<td>108</td>
<td>100 - 650</td>
<td>150 - 1000</td>
<td>111</td>
<td>80</td>
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</tr>
<tr>
<td>H4.112 New</td>
<td>112 α 100</td>
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<td>140</td>
<td>102 - 652</td>
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<td>143</td>
<td>85</td>
<td>6,5</td>
<td>450</td>
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<tr>
<td>R4.28</td>
<td>28 α 25</td>
<td>50 - 300</td>
<td>42</td>
<td>70 - 320</td>
<td>75 - 250</td>
<td>46</td>
<td>10</td>
<td>2,5</td>
<td>200</td>
</tr>
<tr>
<td>R4.32</td>
<td>32 α 28</td>
<td>50 - 300</td>
<td>54</td>
<td>73 - 323</td>
<td>125 - 300</td>
<td>56</td>
<td>15</td>
<td>3,3</td>
<td>200</td>
</tr>
<tr>
<td>R4.42</td>
<td>42 α 38</td>
<td>50 - 300</td>
<td>64</td>
<td>76 - 326</td>
<td>125 - 350</td>
<td>67</td>
<td>37</td>
<td>4</td>
<td>300</td>
</tr>
<tr>
<td>R4.56</td>
<td>56 α 50</td>
<td>75 - 462</td>
<td>84</td>
<td>109 - 497</td>
<td>150 - 500</td>
<td>91</td>
<td>62,5</td>
<td>5</td>
<td>400</td>
</tr>
<tr>
<td>R4.80</td>
<td>80 α 72</td>
<td>150 - 462</td>
<td>108</td>
<td>200 - 513</td>
<td>200 - 1000</td>
<td>111</td>
<td>80</td>
<td>6,2</td>
<td>400</td>
</tr>
<tr>
<td>R4.112 New</td>
<td>108 α 100</td>
<td>200 - 400</td>
<td>140</td>
<td>102 - 652</td>
<td>250 - 1000</td>
<td>143</td>
<td>85</td>
<td>6,5</td>
<td>450</td>
</tr>
</tbody>
</table>

*New in this catalog

2) ESD-option, available from stock. Delivery time in 24h or today!
### Technical Details

#### System E4.1 light

**Legend**
- **Standard**
- **Limited suitability**
- **Options**
- **Especially suitable**

**Operating principle**

**Series / Product**

<table>
<thead>
<tr>
<th>E4.1L New</th>
<th>R4.48L New</th>
</tr>
</thead>
<tbody>
<tr>
<td>38 ø 34</td>
<td>48 ø 43</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Inner height H [mm]</th>
<th>Inner width B [mm]</th>
<th>Outer height ha [mm]</th>
<th>Outer width Bb [mm]</th>
<th>Bending radius R [mm]</th>
<th>Inner width B [mm]</th>
<th>Outer width Bb [mm]</th>
<th>Pitch [mm]</th>
<th>Unsupported fill weight max [kg/m]</th>
<th>Unsupported length Fx max [m]</th>
<th>Long travel max [m]</th>
<th>Interior separation possibilities</th>
<th>Separators</th>
<th>Full-width shelves</th>
<th>ESD/ATEX</th>
<th>Cleanroom</th>
<th>UL-V2 / V0</th>
<th>Low noise</th>
<th>Price index</th>
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<tbody>
<tr>
<td>50 - 175</td>
<td>80</td>
<td>175 - 54</td>
<td>66 - 191</td>
<td>1063 - 300</td>
<td>56</td>
<td>13</td>
<td>2,75</td>
<td>80</td>
<td>100</td>
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<td>50 - 175</td>
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<td>175 - 64</td>
<td>70 - 195</td>
<td>075 - 350</td>
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#### E4.1L light - specialty: light weight, high dynamics, cost effective

**New** in this catalog

- Crossbars are swivelable on both sides, openable on the inner- and outer radius

#### E4.1L - standard version

**New** in this catalog

- Crossbars every 2nd link - standard version

<table>
<thead>
<tr>
<th>E4.48L New</th>
<th>R4.48L New</th>
</tr>
</thead>
<tbody>
<tr>
<td>38 ø 34</td>
<td>48 ø 43</td>
</tr>
</tbody>
</table>

#### E4.1L - fully enclosed - Lids are swivelable on both sides, openable on the inner- and outer radius

**New** in this catalog

- Crossbars every 2nd link - standard version

<table>
<thead>
<tr>
<th>E4.48L New</th>
<th>R4.48L New</th>
</tr>
</thead>
<tbody>
<tr>
<td>38 ø 34</td>
<td>48 ø 43</td>
</tr>
</tbody>
</table>

#### E4.1L - fully enclosed - protection against chips, dust and dirt

**New** in this catalog

- Crossbars every 2nd link - standard version

<table>
<thead>
<tr>
<th>E4.48L New</th>
<th>R4.48L New</th>
</tr>
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<tbody>
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<td>48 ø 43</td>
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</table>

**E4/light** - specialty: light weight, cost effective

**New** in this catalog

- Crossbars every 2nd link - standard version

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<tr>
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<tbody>
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<td>48 ø 43</td>
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#### E4/light - specialty: light weight, cost effective

**New** in this catalog

- Crossbars every 2nd link - standard version

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<th>R4.48L New</th>
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<tbody>
<tr>
<td>38 ø 34</td>
<td>48 ø 43</td>
</tr>
</tbody>
</table>

**e-chains**

**e-tubes**
### Technical Details

#### System T3, E3, E6, E6.1

**Legend**
- ● Standard
- ○ Limited suitability
- ▲ Options
- ■ Especially suitable

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Inner height Bi [mm]</th>
<th>Inner width B [mm]</th>
<th>Outer height ha [mm]</th>
<th>Outer width Ba [mm]</th>
<th>Pitch [mm]</th>
<th>Unsupported fill weight max [kg/mm]</th>
<th>Unsupported length Fx max [m]</th>
<th>Long travel max [m]</th>
<th>Interior separation possibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>T3 - 3-piece, T-shaped band e-chain®, very light weight and quiet</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E3.29</td>
<td>ø 25</td>
<td>30 - 140</td>
<td>35</td>
<td>55 - 165</td>
<td>38</td>
<td>15</td>
<td>1</td>
<td>1,45</td>
<td>–</td>
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</table>

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Inner height Bi [mm]</th>
<th>Inner width B [mm]</th>
<th>Outer height ha [mm]</th>
<th>Outer width Ba [mm]</th>
<th>Pitch [mm]</th>
<th>Unsupported fill weight max [kg/mm]</th>
<th>Unsupported length Fx max [m]</th>
<th>Long travel max [m]</th>
<th>Interior separation possibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E3 - 3-piece e-chain®, small, high dynamics, smooth and low noise</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>E3.10</td>
<td>ø 8</td>
<td>20 - 60</td>
<td>15</td>
<td>32 - 72</td>
<td>15 - 48</td>
<td>16,7</td>
<td>0,3</td>
<td>0,7</td>
<td>–</td>
</tr>
<tr>
<td>E3.15</td>
<td>ø 13</td>
<td>20 - 60</td>
<td>20</td>
<td>32 - 72</td>
<td>32 - 75</td>
<td>16,7</td>
<td>0,7</td>
<td>0,9</td>
<td>–</td>
</tr>
<tr>
<td>E3.22</td>
<td>ø 20</td>
<td>20 - 60</td>
<td>27</td>
<td>32 - 72</td>
<td>44 - 75</td>
<td>16,7</td>
<td>0,85</td>
<td>1,2</td>
<td>–</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Inner height Bi [mm]</th>
<th>Inner width B [mm]</th>
<th>Outer height ha [mm]</th>
<th>Outer width Ba [mm]</th>
<th>Pitch [mm]</th>
<th>Unsupported fill weight max [kg/mm]</th>
<th>Unsupported length Fx max [m]</th>
<th>Long travel max [m]</th>
<th>Interior separation possibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E6 - 6-piece e-chain®, for extremely low-noise operations</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E6.29</td>
<td>ø 25</td>
<td>30 - 140</td>
<td>35</td>
<td>46 - 156</td>
<td>55 - 150</td>
<td>22</td>
<td>3</td>
<td>1,75</td>
<td>–</td>
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<tr>
<td>E6.35</td>
<td>ø 31</td>
<td>30 - 140</td>
<td>42</td>
<td>50 - 160</td>
<td>55 - 150</td>
<td>25</td>
<td>6</td>
<td>1,9</td>
<td>–</td>
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<tr>
<td>E6.40</td>
<td>ø 36</td>
<td>40 - 130</td>
<td>54</td>
<td>60 - 120</td>
<td>63 - 200</td>
<td>27,8</td>
<td>10</td>
<td>2,75</td>
<td>60 1)</td>
</tr>
<tr>
<td>E6.52</td>
<td>ø 46</td>
<td>40 - 300</td>
<td>65</td>
<td>64 - 324</td>
<td>75 - 250</td>
<td>30</td>
<td>15</td>
<td>3</td>
<td>80 1)</td>
</tr>
<tr>
<td>E6.62</td>
<td>ø 54</td>
<td>50 - 400</td>
<td>84</td>
<td>86 - 436</td>
<td>115 - 350</td>
<td>50</td>
<td>43</td>
<td>4</td>
<td>100 1)</td>
</tr>
<tr>
<td>E6.80L</td>
<td>ø 72</td>
<td>87 - 550</td>
<td>108</td>
<td>115 - 578</td>
<td>175</td>
<td>65</td>
<td>25</td>
<td>2,5</td>
<td>–</td>
</tr>
<tr>
<td>E6.80</td>
<td>ø 72</td>
<td>50 - 600</td>
<td>108</td>
<td>100 - 650</td>
<td>150 - 450</td>
<td>65</td>
<td>55</td>
<td>5,25</td>
<td>120 1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Inner height Bi [mm]</th>
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<th>Outer height ha [mm]</th>
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<th>Unsupported length Fx max [m]</th>
<th>Long travel max [m]</th>
<th>Interior separation possibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E6.1 - even more smooth running, easier to open, for cleanroom applications</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>E6.1.29 New*</td>
<td>ø 25</td>
<td>30 - 140</td>
<td>35</td>
<td>44 - 144</td>
<td>55 - 150</td>
<td>22</td>
<td>3,5</td>
<td>1,5</td>
<td>–</td>
</tr>
<tr>
<td>E6.1.52 New*</td>
<td>ø 46</td>
<td>40 - 300</td>
<td>65</td>
<td>64 - 324</td>
<td>75 - 250</td>
<td>30</td>
<td>11</td>
<td>1,7</td>
<td>–</td>
</tr>
</tbody>
</table>

*New in this catalog

1) In preparation / upon request

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Find the perfect fit e-chain® quickly online: [www.igus.eu/eu/finder](http://www.igus.eu/eu/finder)

Find e-chains® for any movement: [www.igus.eu/the-chain](http://www.igus.eu/the-chain)
### triflex® R - 3D e-chain® for robot applications

**TRC** | Closed design
---|---
TRC.30 | ø 10 | ø 10 | ø 34.5 | ø 34.5 | 50 | 11.3 | - | - | - | ● | - | - | 1) | ○ | ● | ● | ● | ● | 1024
TRC.40 | ø 13 | ø 13 | ø 43 | ø 43 | 58 | 13.9 | - | - | - | ● | - | - | | ○ | ● | ● | ● | 1024
TRC.60 | ø 19.5 | ø 19.5 | ø 65 | ø 65 | 87 | 20.4 | - | - | - | ● | - | - | | ○ | ● | ● | ● | 1024
TRC.70 | ø 22 | ø 22 | ø 81 | ø 81 | 110 | 25.6 | - | - | - | ● | - | - | | ○ | ● | ● | ● | 1024
TRC.85 | ø 31 | ø 31 | ø 94.5 | ø 94.5 | 135 | 30.6 | - | - | - | ● | - | - | | ○ | ● | ● | ● | 1024
TRC.100 | ø 35.5 | ø 35.5 | ø 108 | ø 108 | 145 | 34.5 | - | - | - | ● | - | - | | ○ | ● | ● | ● | 1024
TRC.125 | ø 41 | ø 41 | ø 135 | ø 135 | 182 | 44.6 | - | - | - | ● | - | - | | ○ | ● | ● | ● | 1024

**TRE** | “easy”-design for fast installation of cables and hoses
---|---
TRE.30 | ø 10 | ø 10 | ø 34.5 | ø 34.5 | 50 | 11.3 | - | - | - | ● | - | - | | ○ | ● | ● | ● | 1024
TRE.40 | ø 13 | ø 13 | ø 43 | ø 43 | 58 | 13.9 | - | - | - | ● | - | - | | ○ | ● | ● | ● | 1024
TRE.60 | ø 19.5 | ø 19.5 | ø 65 | ø 65 | 87 | 20.4 | - | - | - | ● | - | - | | ○ | ● | ● | ● | 1024
TRE.70 | ø 22 | ø 22 | ø 81 | ø 81 | 110 | 25.6 | - | - | - | ● | - | - | | ○ | ● | ● | ● | 1024
TRE.85 | ø 31 | ø 31 | ø 94.5 | ø 94.5 | 135 | 30.6 | - | - | - | ● | - | - | | ○ | ● | ● | ● | 1024
TRE.100 | ø 35.5 | ø 35.5 | ø 108 | ø 108 | 145 | 34.5 | - | - | - | ● | - | - | | ○ | ● | ● | ● | 1024
TRE.125 | ø 41 | ø 41 | ø 135 | ø 135 | 182 | 44.6 | - | - | - | ● | - | - | | ○ | ● | ● | ● | 1024

**TRL** | Light version with “easy”-design
---|---
TRL.30 | ø 10 | ø 10 | ø 34.5 | ø 34.5 | 50 | 11.3 | - | - | - | ● | - | - | | ○ | ● | ● | ● | 1024
TRL.40 | ø 13 | ø 13 | ø 43 | ø 43 | 58 | 13.9 | - | - | - | ● | - | - | | ○ | ● | ● | ● | 1024
TRL.60 | ø 19.5 | ø 19.5 | ø 65 | ø 65 | 87 | 20.4 | - | - | - | ● | - | - | | ○ | ● | ● | ● | 1024
TRL.70 | ø 22 | ø 22 | ø 81 | ø 81 | 110 | 25.6 | - | - | - | ● | - | - | | ○ | ● | ● | ● | 1024
TRL.85 | ø 31 | ø 31 | ø 94.5 | ø 94.5 | 135 | 30.6 | - | - | - | ● | - | - | | ○ | ● | ● | ● | 1024
TRL.100 | ø 35.5 | ø 35.5 | ø 108 | ø 108 | 145 | 34.5 | - | - | - | ● | - | - | | ○ | ● | ● | ● | 1024

**TRLF** | Light version with snap lock mechanism
---|---
TRLF.65 | ø 22 | ø 22 | ø 70.2 | ø 70.2 | 100 | 23.1 | - | - | - | ● | - | - | | ○ | ● | ● | ● | 1024
TRLF.85 | ø 30 | ø 30 | ø 94.5 | ø 94.5 | 135 | 31 | - | - | - | ● | - | - | | ○ | ● | ● | ● | 1024
TRLF.100 | ø 35.5 | ø 35.5 | ø 108 | ø 108 | 145 | 34.5 | - | - | - | ● | - | - | | ○ | ● | ● | ● | 1024

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<th>Pitch [mm]</th>
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<th>Unsupported length FLmax [m]</th>
<th>Long travel max [m]</th>
<th>Price index</th>
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</thead>
<tbody>
<tr>
<td>E332.25</td>
<td>25</td>
<td>25</td>
<td>34</td>
<td>34</td>
<td>48 - 200</td>
<td>14,5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1060</td>
</tr>
<tr>
<td>E332.32</td>
<td>32</td>
<td>32</td>
<td>50</td>
<td>50</td>
<td>75 - 250</td>
<td>25</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1060</td>
</tr>
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<td>E332.50</td>
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<td>50</td>
<td>68</td>
<td>68</td>
<td>100 - 250</td>
<td>30</td>
<td>-</td>
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<td>75</td>
<td>96</td>
<td>96</td>
<td>140 - 300</td>
<td>36</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1060</td>
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<td>E333.25</td>
<td>25</td>
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<td>34</td>
<td>34</td>
<td>48 - 200</td>
<td>14,5</td>
<td>-</td>
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<td>-</td>
<td>1062</td>
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<tr>
<td>E333.32</td>
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<td>32</td>
<td>50</td>
<td>50</td>
<td>75 - 250</td>
<td>25</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>E333.50</td>
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<td>36</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1062</td>
</tr>
</tbody>
</table>

**Technical Details**

- **easy triflex®** - for 3D motion, simple filling from 2 sides
  - "easy"-design for fast installation of cables and hoses
  - “easy”-design for fast installation of cables and hoses

- **triflex®** - for 3D motion, closed
  - Closed design
  - Openable

- **Legend**
  - ● Standard
  - ○ Limited suitability
  - ▲ Options
  - ■ Especially suitable

- **Series / Product**
  - E332.25
  - E332.32
  - E332.50
  - E332.75
  - E333.25
  - E333.32
  - E333.50
  - E333.75

- **Inner height hi [mm]**
  - 25, 32, 50, 75

- **Inner width Bi [mm]**
  - 25, 32, 50, 75

- **Outer height ha [mm]**
  - 34, 50, 68, 96

- **Outer width Ba [mm]**
  - 34, 50, 68, 96

- **Bending radius R [mm]**
  - 48 - 200, 75 - 250, 100 - 250, 140 - 300

- **Pitch [mm]**
  - 14,5

- **Unsupported fill weight max [kp/m]**
  - -

- **Unsupported length FLmax [m]**
  - -

- **Long travel max [m]**
  - -

- **Interior separation possibilities**
  - -

- **Options**
  - -

- **Price index**
  - 1060, 1062, 1074, 1077
Technical Details

### twisterchain® new - higher loads and speeds for circular/spiral movements

<table>
<thead>
<tr>
<th>Series/Product</th>
<th>Inner height Ha [mm]</th>
<th>Inner width Hb [mm]</th>
<th>Outer height Ha [mm]</th>
<th>Outer width Hb [mm]</th>
<th>Bending radius R [mm]</th>
<th>Fill weight max [kg/m] 180°</th>
<th>Fill weight max [kg/m] 360°</th>
<th>For new designs we recommend twisterchain® new!</th>
</tr>
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<tbody>
<tr>
<td>TC32</td>
<td>32 ø 28</td>
<td>87.5 - 150</td>
<td>108.5 - 171</td>
<td>100 - 250</td>
<td>56</td>
<td>4</td>
<td>2</td>
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<tr>
<td>TC42</td>
<td>42 ø 38</td>
<td>87.5 - 200</td>
<td>110.5 - 223</td>
<td>100 - 250</td>
<td>67</td>
<td>6</td>
<td>3.6</td>
<td>●●●●</td>
</tr>
<tr>
<td>TC56</td>
<td>56 ø 50</td>
<td>125 - 200</td>
<td>155.0 - 230</td>
<td>150 - 400</td>
<td>91</td>
<td>8</td>
<td>5</td>
<td>●●●●</td>
</tr>
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</table>

### Higher speeds and loads

Openable along inner radius from both sides:

- **TC32**: 32 ø 28, 87.5 - 150 mm, 108.5 - 171 mm, 100 - 250 mm, 56 kg/m, 4 kg/m, 2 kg/m, ●●●●
- **TC42**: 42 ø 38, 87.5 - 200 mm, 110.5 - 223 mm, 100 - 250 mm, 67 kg/m, 6 kg/m, 3.6 kg/m, ●●●●
- **TC56**: 56 ø 50, 125 - 200 mm, 155.0 - 230 mm, 150 - 400 mm, 91 kg/m, 8 kg/m, 5 kg/m, ●●●●

### twisterchain® classic - first generation for circular and spiral movements

Openable from both sides:

- **2208**: 28 ø 25, 52.5 - 112.5 mm, 80 - 140 mm, 55 - 150 mm, 44 kg/m, 1.5 kg/m, 1 kg/m, ●●●●
- **2808**: 32 ø 29, 50 - 150 mm, 81 - 181 mm, 100 - 250 mm, 56 kg/m, 2 kg/m, 1 kg/m, ●●●●
- **3808**: 42 ø 39, 50 - 200 mm, 85 - 235 mm, 100 - 250 mm, 67 kg/m, 3 kg/m, 1.8 kg/m, ●●●●
- **4008**: 56 ø 53, 50 - 200 mm, 93 - 243 mm, 150 - 400 mm, 91 kg/m, 4 kg/m, 2.5 kg/m, ●●●●

### twisterband (7000° rotation) - rotary movements in minimum space

Snap-open with film-hinge or to be opened with "easy"-design:

<table>
<thead>
<tr>
<th>Inner width B [mm]</th>
<th>Outer height ha [mm]</th>
<th>Outer width Hb [mm]</th>
<th>Bending radius R [mm]</th>
<th>Fill weight max [kg/m] 180°</th>
<th>Fill weight max [kg/m] 360°</th>
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<tbody>
<tr>
<td>9</td>
<td>23</td>
<td>42</td>
<td>80 - 140</td>
<td>24</td>
<td>35</td>
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<td>44</td>
<td>54</td>
<td>81 - 181</td>
<td>34</td>
<td>57</td>
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<tr>
<td>18</td>
<td>44</td>
<td>64</td>
<td>85 - 235</td>
<td>34</td>
<td>57</td>
</tr>
<tr>
<td>22</td>
<td>75</td>
<td>84</td>
<td>93 - 243</td>
<td>44</td>
<td>77</td>
</tr>
</tbody>
</table>

- **TB12.23.09**: 9 ø 7, 23 mm, 42 mm, 80 - 140 mm, 24 kg/m, 35 kg/m, ●●●●
- **TB20.44.12**: 12 ø 9, 44 mm, 54 mm, 81 - 181 mm, 34 kg/m, 57 kg/m, ●●●●
- **TB20.44.18**: 18 ø 14, 44 mm, 64 mm, 85 - 235 mm, 34 kg/m, 57 kg/m, ●●●●
- **TB30.75.22**: 22 ø 17, 75 mm, 84 mm, 93 - 243 mm, 44 kg/m, 77 kg/m, ●●●●

### Technical Details

- **Legend**:
  - ● Standard
  - ○ Limited suitability
  - ▲ Options
  - ■ Especially suitable

- **Series / Product**: Inner height Ha [mm] + Inner width Hb [mm] + Outer height Ha [mm] + Outer width Hb [mm] + Bending radius R [mm] + Fill weight max [kg/m] 180° + Fill weight max [kg/m] 360° + For new designs we recommend twisterchain® new!

- **Options**
  - ●●●●
  - ●●●●
  - ●●●●
  - ○○○○
  - ○○○○
  - ○○○○

- **For new designs we recommend twisterchain® new!**
  - ●●●●

- **E-spool** - the alternative to cable drums: New in this catalog
  - Cable-friendly and guides various media safely
  - Guide many different cables in very narrow spaces
  - Different media and diameters in the same drum are feasible
  - Energy supply in all directions is possible
  - Space-saving, no "chain junction"
  - No lower run is left behind, the paths remain free

- **More information** www.igus.eu/eu/esd from page 1142

- **Technical Details**
  - **twisterchain® new** - higher loads and speeds for circular/spiral movements
  - **twisterchain® classic** - first generation for circular and spiral movements
  - **twisterband** (7000° rotation) - rotary movements in minimum space

- **Find the perfect fit e-chain® quickly online**: www.igus.eu/eu/finder

- **Find e-chains® for any movement**: www.igus.eu/the-chain

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### Technical Details

#### chainfix strain relief

|-----------------------------|---------------|------------------------|-------------------|----------------------|-----------------------------|-----------------------|---------------------|------|
| Clamps and stainless steel clamps - for maximum pull forces  
CFX X Single, double, triple standard clamps | 6 - 42 | X | X | X | X | X | 1158 |
| CFXL X Single, double, triple clamps with wide base for maximum pull forces | 6 - 42 | X | X | X | X | X | 1159 |
| Saddle elements - bottom and stacker saddles | 6 - 42 | X | X | X | X | X | 1160 |
| chainfix Multi-Clamps X | 6 - 42 | X | X | X | X | X | 1161 |

#### Standard C-profiles and C-profiles for Heavy-Duty applications

| Standard C-profiles Part No. CF.92.42. | 6 - 42 | X | X | X | X | X | 1162 |
| C-profiles Part No. CF.92.52. with increased pull force (mounting in front of e-chain®) | 6 - 42 | X | X | X | X | X | 1162 |

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

| Option 1A: Tiewrap plates as single part Series 2000 + cable tiewraps | max. 36 | X | X | X | X | X | X | 1164 |
| Option 1B: Tiewrap plates as single part Series 3000 + cable tiewraps | max. 36 | X | X | X | X | X | X | 1165 |

#### Tiewrap plates, with clip-on connection for the C-profile

| Option 2: Tiewrap plates with clip-on connection for the C-profile | 6 - 42 | X | X | X | X | X | X | 1166 |
| Option 3: Integrated strain relief for E2 e-tubes - Series R | 6 - 42 | X | X | X | X | X | X | 1167 |
| Option 4: Tiewrap plates for fixed crossbars | 6 - 42 | X | X | X | X | X | X | 1168 |
| Option 5: Tiewrap plates for opening crossbars | 6 - 42 | X | X | X | X | X | X | 1169 |

#### Clips - high pull forces, plug-in

| Option 1: for all e-chains® with C-profiles and  
also suitable for assembly in the KMA mounting brackets | 4 - 24 | X | X | X | X | X | X | 1168 |
| Option 2: Clip-on strain relief for opening crossbars | 4 - 24 | X | X | X | X | X | X | 1169 |

#### Strain relief separators - with integrated teeth

| Separator with integrated strain relief - easy strain relief with tiewrap | 20 - 30 | X | X | X | X | X | X | 1170 |

#### Nuggets - for top hat rail and C-profile

| Option 1: Complete simple and universal cable fixation,  
for diameter with Ø 20 mm and Ø 30 mm | ≤ 30 | X | X | X | X | X | X | 1172 |
| Option 2: Fastening through clipping onto standard top hat rail | ≤ 20 | X | X | X | X | X | X | 1172 |

#### Blocks - special strain relief for hoses

| Conventional igus® blocks - strain relief for hoses  
CFB polymer strain relief connector system,  
many cables in a very confined space | 4.3 - 14 | Please contact igus® for individual designing | 1173 |

1) Standard material: galvanized steel. Also available as stainless steel-version (material stainless steel: 1.4301)

X = available for this Series  
= not available

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Please contact igus® for individual designing

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Find e-chains® for any movement: www.igus.eu/the-chain
### Technical Details - Guide troughs

**Super-alu-trough - Basic version, for general use**

**Basic version - igus’ recommended standard trough system**

<table>
<thead>
<tr>
<th></th>
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<tbody>
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<td>77</td>
<td>E4.21</td>
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<td>1190</td>
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<td>1196</td>
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<tr>
<td>972.30.SL / 972.32.SL</td>
<td>117</td>
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<td>-</td>
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<td>1198</td>
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<td>144</td>
<td>E4.42/R4.42</td>
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<td>1202</td>
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<tr>
<td>974.30.SL / 974.32.SL</td>
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<td>E4.56/R4.56</td>
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<td>-</td>
<td>1204</td>
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<tr>
<td>975.30.SL / 975.32.SL</td>
<td>236</td>
<td>E4.80/R4.80</td>
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</table>

**Super-alu-trough - Heavy-Duty version, for Heavy-Duty use**

**Heavy-Duty version - For high load applications**

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Series E2 mini</th>
<th>System E4.1</th>
<th>System E4.1 light</th>
<th>System E4/light</th>
<th>Material of side parts (see legend)</th>
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</thead>
<tbody>
<tr>
<td>972.30.SL / 972.32.SL</td>
<td>117</td>
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<td>-</td>
<td>-</td>
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<tr>
<td>973.30.SL / 973.32.SL</td>
<td>144</td>
<td>E4.42/R4.42</td>
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</tr>
<tr>
<td>974.30.SL / 974.32.SL</td>
<td>184</td>
<td>E4.56/R4.56</td>
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<td>-</td>
<td>-</td>
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<tr>
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</table>

**Specialty: Steel guide trough, for harsh environments**

**Steel Guide Trough - Very stable and rugged for heavy-duty applications**

<table>
<thead>
<tr>
<th>System E4.1 light</th>
<th>System E4/light</th>
<th>System E6</th>
<th>Price index</th>
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</thead>
<tbody>
<tr>
<td>E4.28/R4.28</td>
<td>E4.38/R4.38</td>
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<td>-</td>
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<td>E4.32/R4.32</td>
<td>E4.42/R4.42</td>
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<td>-</td>
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<tr>
<td>E4.42/R4.42</td>
<td>E4.56/R4.56</td>
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<tr>
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<td>E4.80/R4.80</td>
<td>-</td>
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</tbody>
</table>

**Steel Guide Trough - One-piece, U-shaped, special solution for Series 10, B15, 15**

<table>
<thead>
<tr>
<th>System E4.1 light</th>
<th>System E4/light</th>
<th>System E6</th>
<th>Price index</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.28/R4.28</td>
<td>E4.38/R4.38</td>
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<td>-</td>
</tr>
<tr>
<td>E4.32/R4.32</td>
<td>E4.42/R4.42</td>
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<tr>
<td>E4.42/R4.42</td>
<td>E4.56/R4.56</td>
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<tr>
<td>E4.56/R4.56</td>
<td>E4.80/R4.80</td>
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</table>

*New* in this catalog

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**Find e-chains® for any movement**: [www.igus.eu/the-chain](http://www.igus.eu/the-chain)
Technical Details

Further guide troughs systems

Legend of materials:
- Steel, powder coated
- Galvanized steel
- Stainless steel upon request
- Galvanized steel/polymer

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Outer height</th>
<th>Material</th>
<th>Price index</th>
<th>Page</th>
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</thead>
<tbody>
<tr>
<td>GP13.30/31.025</td>
<td>113</td>
<td>Steel</td>
<td>1244</td>
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<td>GP9.30.31.05</td>
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<td>GP9.30.31.07</td>
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<td>Steel</td>
<td>1244</td>
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<tr>
<td>GP9.30.31.05</td>
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</tbody>
</table>

guidefast - energy supply for crane girders

Economical energy supply for crane girders and indoor cranes

- GP13.30/31.025 Nov* 113
- GP9.30.31.05 Nov* 113
- GP9.30.31.07 Nov* 113
- GP9.30.31.10 Nov* 113

Tubular trough system RS - lets light and chips through

Cost-effective guide trough

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Outer height</th>
<th>Material</th>
<th>Price index</th>
<th>Page</th>
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</thead>
<tbody>
<tr>
<td>92.70 / 92.71</td>
<td>90</td>
<td>Steel</td>
<td>1248</td>
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<td>93.70 / 93.71</td>
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<td>126,3</td>
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</table>

Snap-in trough system SP - simple and cost effective

Very narrow trough, fast assembly

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Outer height</th>
<th>Material</th>
<th>Price index</th>
<th>Page</th>
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<tbody>
<tr>
<td>91.930</td>
<td>55,5</td>
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<tr>
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<td>76,6</td>
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Support tray tool kit, for support of the lower run

Support tray - Type 01

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Outer height</th>
<th>Material</th>
<th>Price index</th>
<th>Page</th>
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</thead>
<tbody>
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<tr>
<td>59.010/011.10</td>
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<td>59.010/011.15</td>
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Support tray - Type 02

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Outer height</th>
<th>Material</th>
<th>Price index</th>
<th>Page</th>
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<tbody>
<tr>
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*New in this catalog
### Technical Details

**e-chains® for long travel applications**

<table>
<thead>
<tr>
<th>Series / Product</th>
<th>Inner height (mm)</th>
<th>Outer height (mm)</th>
<th>Pitch (mm)</th>
<th>Unsupported fill weight max (kg/m)</th>
<th>Unsupported length FL max (m)</th>
<th>Long travel max (m)</th>
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<tbody>
<tr>
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<tr>
<td>4040HD</td>
<td>56</td>
<td>50 - 600</td>
<td>104 - 654</td>
<td>135 - 300</td>
<td>&gt;350</td>
<td>⬤ ⬤ ⬤ ⬤ ⬤ ▲ - - -</td>
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<tr>
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<td>80</td>
<td>74</td>
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<td>200 - 500</td>
<td>&gt;500</td>
<td>⬤ ⬤ ⬤ ⬤ ⬤ ▲ - - -</td>
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</tbody>
</table>

**Legend**

- ● Standard
- ○ Limited suitability
- ▲ Options
- ■ Especially suitable

### System P4 profile-rol e-chain® - reduce 57% energy consumption, high speeds

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### Rol e-chain® - rolling instead of gliding, robust

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### Rol e-chain® RHD Heavy-Duty - particularly high additional loads

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### Technical Details

#### e-chains® for long travel applications | autoglide

**Legend**
- ● Standard
- ○ Limited suitability
- ▲ Options
- ■ Especially suitable

**Opening principle**
- Series / Product
- Inner height $h$ [mm] + cable max.
- Inner width $b$ [mm] from - to
- Outer height $H$ [mm] + cable max.
- Outer width $B$ [mm] from - to
- Bending radius $R$ [mm] from - to
- Pitch [mm]
- Unsupported fill weight max. [kg/m]
- Unsupported length $L_{max}$ [m]
- Long travel $L_{max}$ [m]
- Interior separation possibilities

#### Options

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<tr>
<th>Option 01 - for E4.1</th>
<th>Self-guiding e-chains*</th>
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<tr>
<td>E4.32AG 32 $\varnothing$ 28</td>
<td>112 - 262 54 136 - 286 100 - 300 56 5,0 - 7,0* - 60,0 ● ● ● ○ ○ ▲ - 1324</td>
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<td>E4.42AG 42 $\varnothing$ 38</td>
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*New* in this catalog

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*Find the perfect fit e-chain* quickly online: [www.igus.eu/eu/finder](http://www.igus.eu/eu/finder)

*Find e-chains* for any movement: [www.igus.eu/the-chain](http://www.igus.eu/the-chain)
**Technical Details**

**Special solutions**

**Long travels without guide troughs**

### Technical Details

**Legend of materials**

- ● Aluminum, sea water-resistant
- ■ Galvanized steel
- ▲ Stainless steel upon request
- ▲ Galvanized steel/polymer

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<tr>
<th>Description</th>
<th>Typical industries and applications</th>
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<th>Travel speed max. (m/s)</th>
<th>Inner heights (mm)</th>
<th>Price index</th>
<th>Page</th>
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<td>guidelok horizontal - unsupported travels up to 50 m, in chip areas</td>
<td>● Machine tools ● Applications in the chip area ● Wherever a gliding application is not recommended</td>
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<td>● Automated storage/retrieval systems ● Lifts ● Revolving storage systems ● Diagonal lifts ● All vertical applications</td>
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<td>● Sewage treatment plants ● Rainwater overflow basins ● Galvanic equipment ● Cranes</td>
<td>- 120</td>
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<td>● Indoor-crane ● Storage and retrieval machines ● Industry gates ● Control panels ● Studio equipment (lighting)</td>
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**Selection by inner heights**

### In its entirety, this system encompasses the igus® e-chain®, lbt flizz® guide trough and - as an option - fully configured igus® chainflex® cables. The lbt flizz® guide trough is a modular kit comprising of extruded guide profiles and a supporting frame with continuous tubes providing stabilization.

**guidelok horizontal - unsupported travels up to 50 m, in chip areas**

Upper run guide for long travels, self-supporting in chip areas. Unsupported travels up to 50 m are possible. Chips cannot get stuck between upper and lower run. Modular system with few parts.

**guidelok slimline F - safe and fast vertical guidance**

For e-chains® in high-speed rack feeders - up to 7 m/s and 10 m/s². No swinging of the e-chain®, high reliability through lever mechanism and guiding rails. No bouncing of e-chains® in vertical applications with horizontal dynamics.

**lbt flizz® - enclosed plastic trough**

In its entirety, this system encompasses the igus® e-chain®, lbt flizz® guide trough and - as an option - fully configured igus® chainflex® cables. The lbt flizz® guide trough is a modular kit comprising of extruded guide profiles and a supporting frame with continuous tubes providing stabilization.

**micro flizz® - small e-chains® in aluminum profile**

Compact, cost-saving complete system for safe guidance of energy, data and air. Maintenance-free alternative for power bar.

---

**Modular system for projects - fast, all ex stock**

Special components, tested and approved in numerous projects, have now become available as a modular standard system. Faster quotations. Faster project planning from page 1370

---

**Typical industries and applications**

- Sewage treatment plants
- Rainwater overflow basins
- Galvanic equipment
- Cranes

**Travel speed max. (m/s)**

- 7 m/s
- 10 m/s²

**Inner heights (mm)**

- 11 mm
- 13 mm
- 20 mm

---

**Find the perfect fit e-chain® quickly online**

- www.igus.eu/eu/finder

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**Find e-chains® for any movement**

- www.igus.eu/the-chain
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- E3.15 (page 101)
- E6 (pages 102-103)
- E6.29 (page 104)
- E6 (pages 105-106)

**easy chain®, System E1, snapchain**
- easy chain® (page 107)
- E03 (page 108)
- E04 (page 109)
- E04/05/06 (page 110)
- E06/06 (page 111)
- E06/05/06 (page 112)

**System E2 micro, mini, E2/000**
- System E2 Light (page 113)
- R15 (page 114)
- E07 (page 115)

**von connector**
- R07 (page 116)
- R05 (page 117)
- R09 (page 118)

**Guide troughs, e-chains® and special solutions for long travel applications**
- Guide troughs, e-chains® and special solutions for long travel applications (page 119)

**PMA cable protection**
- PMA FlexX (page 120)

**Technical annex**
- Fax forms (page 121)
- igus® addresses (page 122)

**Legacy products are available over the long-term**
- Type series E4/00, E4/4, E4/10 and E2 medium can be found in the separate “Classics Catalogue.” For new designs, we recommend the equivalent, technically improved, and identical e-chain® series. The entire product range is available over the long-term. The entire product range can be found on-line using the corresponding quicklink, along with all relevant data for ordering and configuring. Or in the separate igus® classics catalogue: [www.igus.eu/eu/classics](http://www.igus.eu/eu/classics)

**Find e-chains® for any movement**
- [www.igus.eu/the-chain](http://www.igus.eu/the-chain)
## Pictograms

### Accessibility of e-chains® and e-tubes

- **Easy-chains® principle:** Simply press cables in.
- **Zipper principle:** Zip-open along the outer radius.
- **Snop-open along the outer radius:** Simple filling from 2 sides with easy principle.
- **RX e-tubes:** Operable along outer radius.
- **triflex® R:** Closed design.
- **triflex® R, 'easy' design:** For fast installation of cables and hoses.
- **triflex® R, light version with 'easy' design:** Light version with snap lock mechanism.

### Price index

- **Igus® calculation:** Low price category.
- **Mounting brackets:** Medium price category.
- **Strain relief:** Highest price category.

## Selection guide: Designing e-chains®

1. **Dimensioning e-chains®**
   - Determine the size of the e-chain® based on the specified installation space of your machine and/or the selected filling (such as the number of cables/outer diameter of cable).

2. **Determine fill weight**
   - Determine fill weight of cables and/or media hoses in [kg/m] using chainflex® quick selection or manufacturer specification.

3. **Determine length of travel**
   - Compare the fill weight calculated in (point 2) to the maximum fill weight of the selected e-chain® and check suitability for unsupported application.

4. **Unsupported length**
   - The maximum unsupported length initially depends on the fill weight and the e-chain® selected.
   - At the same time, there are three different levels of unsupported lengths: FLG - Recommended Range of Application FLB - Permitted Sag FLX - Critical Sag.
   - Recommended Range of Application:
     - FLG: Recommended Range of Application
     - FLB: Permitted Sag
     - FLX: Critical Sag
   - Shown in the catalog:
     - FLG: Recommended Range of Application
     - FLB: Permitted Sag
     - FLX: Critical Sag
   - FLG: Recommended Range of Application
   - FLB: Permitted Sag
   - FLX: Critical Sag

5. **Unsupported length**
   - The unsupported length initially depends on the fill weight and the e-chain® selected.
   - At the same time, there are three different levels of unsupported lengths:
     - FLG: Recommended Range of Application
     - FLB: Permitted Sag
     - FLX: Critical Sag
   - Recommended Range of Application:
     - FLG: Recommended Range of Application
     - FLB: Permitted Sag
     - FLX: Critical Sag

6. **Unsupported length**
   - The unsupported length initially depends on the fill weight and the e-chain® selected.
   - At the same time, there are three different levels of unsupported lengths:
     - FLG: Recommended Range of Application
     - FLB: Permitted Sag
     - FLX: Critical Sag
   - Recommended Range of Application:
     - FLG: Recommended Range of Application
     - FLB: Permitted Sag
     - FLX: Critical Sag

7. **Unsupported length**
   - The unsupported length initially depends on the fill weight and the e-chain® selected.
   - At the same time, there are three different levels of unsupported lengths:
     - FLG: Recommended Range of Application
     - FLB: Permitted Sag
     - FLX: Critical Sag
   - Recommended Range of Application:
     - FLG: Recommended Range of Application
     - FLB: Permitted Sag
     - FLX: Critical Sag

8. **Unsupported length**
   - The unsupported length initially depends on the fill weight and the e-chain® selected.
   - At the same time, there are three different levels of unsupported lengths:
     - FLG: Recommended Range of Application
     - FLB: Permitted Sag
     - FLX: Critical Sag
   - Recommended Range of Application:
     - FLG: Recommended Range of Application
     - FLB: Permitted Sag
     - FLX: Critical Sag

9. **Unsupported length**
   - The unsupported length initially depends on the fill weight and the e-chain® selected.
   - At the same time, there are three different levels of unsupported lengths:
     - FLG: Recommended Range of Application
     - FLB: Permitted Sag
     - FLX: Critical Sag
   - Recommended Range of Application:
     - FLG: Recommended Range of Application
     - FLB: Permitted Sag
     - FLX: Critical Sag

## Quicklinks

- **Quicklinks**
  - Quick links for more information and additional features on each page.
  - Visit directly your chosen product online.

## Additional criteria

- **Preferred Series**
- **IF product design award**
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-chainsystem. Whether you have a circular motion, a continuously circulating motion, a suspended or upright application, a long travel distance, high loads or a motion in space - igus® plastic e-chains® will help you solve nearly any type of energy supply problem, quickly, confidently 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 at 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 expansive igus® construction kit (more than 90,000 e-chain® versions and 1,030 chainflex® cables), you will generally always find the solution to match your needs and application: from the individual component to the completed assembly at your facility. We have developed a new online tool to help you find these resources with greater ease. www.igus.eu/eu/the-chain. Should you have trouble finding exactly the product you need, our developers are of course at your disposal to help you design the-chain.

Laboratory 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.

Online tool | www.igus.eu/eu/the-chain

More than 1500 m testlab for e-chains® and chainflex®-cables. Up to 15,000 tests per year
**igus® Terms | Alphabetical Order**

**Short cuts and description**
- \( \alpha \) = The rotation angle of the rotating machine element [°]
- \( \Delta M \) = Deviation of the center point [mm]
- \( a \) = Acceleration [m/s²]
- \( AR \) = Outer radius, e-chain [mm]
- \( Ba \) = Outer e-chain’ width [mm]
- \( BI \) = Inner e-chain’ width [mm]
- \( B_{oa} \) = Guide trough outer width [mm]
- \( B_{oi} \) = Guide trough inner width [mm]
- \( D \) = Over length e-chain’ radius in final position [mm]
- \( D_L \) = Over length for long travels gliding [mm]
- \( FL_{ug} \) = Unsupported length with sag [m]
- \( FL_{ug} \) = Unsupported straight length [m]
- \( FL_{ul} \) = Unsupported lower run [m]
- \( FZ_{max} \) = Maximum additional load [kg/m]
- \( H \) = Nominal clearance height [mm]
- \( H_a \) = Outer e-chain’ height [mm]
- \( H_b \) = Installation height with lowered mounting [mm]
- \( ha \) = Outer e-chain’ height [mm]
- \( K \) = Required clearance height [mm]
- \( Hi \) = Inner e-chain’ height [mm]
- \( H_{oa} \) = Outer trough height [mm]
- \( H_{oi} \) = Inner trough height [mm]
- \( IR \) = Inner radius, e-chain’ (twisterchain®) [mm]
- \( K \) = Add-on for bending radius [mm]
- \( K_2 \) = Further add-on if the mounting bracket location is set lower (for long travels) [mm]
- \( L_k \) = e-chain’ length [mm]
- \( n \) = Number of links [1]
- \( \eta_{Mon} \) = Number of installation sets (left/right) [1]
- \( \eta_{hu} \) = Number of trough sets (left/right) [1]
- \( R \) = Bending radius [mm]
- \( RBR \) = Reverse bending radius [mm]
- \( S \) = Length of travel [mm]
- \( S/2 \) = Half length of travel [mm]
- \( T \) = Pitch [mm]
- \( V \) = Speed (travel) [m/s]
- \( X_1 \) = Inner machine-construction space (twisterchain®) [mm]
- \( X_2 \) = Outer radius e-chain’, including clearance (twisterchain®) [mm]

**Calculation | e-chain®-Lengths and Camber**

**Calculation of e-chain’ lengths**
If the fixed end of the e-chain® is located in the center of the travel, the e-chain’ length \( L_k \) is calculated by using half the length of travel and adding the value \( K \) for the curved 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.

\[ L_k = \frac{S}{2} + K \]

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.

\[ L_k = \frac{S}{2} + \Delta M + K \]

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” e-chains® are available on 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 \( H_2 \), which specifies the necessary clearance height, taking the camber into account. Upon request, we can deliver e-chains® without camber for restricted space applications - however, these “no camber” e-chains® do not have the same load-bearing capacity. Please consult igus®.

**Principle of camber for igus® e-chains®**

Necessary clearance height - depends on the camber of the e-chain®. Find values for the necessary clearance height \( H_2 \) on each product page.

**Application examples and more information online**

www.igus.eu
The FLG type of installation always generates the longest service life and can be operated with the max. values for speed and acceleration.

Unsupported applications
If the upper run of the e-chain operates without touching the lower run over the entire travel, it is called an “unsupported” application. The distance between 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 among three types of unsupported length:

01) Unsupported with straight upper run FLG

The “FLG” e-chain applies when the upper run either has camber, is straight, or has a maximum of 10-50 mm sag, depending on the size of the e-chain. The “FLG” type of installation is always preferred. The e-chain runs quietly and is not exposed to any additional vibration.

02) Unsupported with permitted sag FLB

The “FLB” e-chain applies when the sag amounts to more than 10-50 mm, depending on the e-chain® size, and less than a defined maximum sag. This maximum sag is dependent on the type of e-chain®. The “FLB” 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 “FLB,” 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® or e-tube should be replaced at that time. Please contact us if your application reaches critical 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 stronger igus® e-chain®
● Support the e-chain® in the unsupported area (this possibility has restrictions for acceleration, speed and noise as a consequence - three fundamental examples are detailed to below - please consult igus® if you are considering this possibility - we will gladly provide you with a detailed proposal)
● Use a “multiband” e-chain® or “nest” two e-chains® inside one another (please consult igus® regarding these options)
● Design the travel distance as a “gliding application”.

Unsupported Short Travels

Example for unsupported straight FLG

Unsupported applications

A) The overall “straight, unsupported travel” can be increased here by a maximum of 50% of the FLG and in case of option B) by a maximum of 100%

Support of the “FLG” area. A) The overall “straight, unsupported travel” can be increased here by a maximum of 50% of the FLG, and in case of option B) by a maximum of 100%

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

For every igus® e-chain® or e-tube, you will find the values for “FLG” and “FLB” 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®

More application examples for short travel applications > www.igus.eu
Unsupported | Short Travels

We recommend pivoting mounting brackets as standard! We recommend locking mounting brackets as standard if high speeds > 20 m/s or accelerations > 20 m/s².

More application examples for short travel applications ➤ www.igus.eu

Unsupported | Noise-Optimized

Minimize noise levels with igus® e-chainsystems

The igus® program offers you optimal noise-reduction e-chains. The table below briefly illustrates the differences in noise level among various e-chains. In addition to the e-chain®, the running surface, the dynamics and the cable and hose package play a role in overall noise generation. Have our specialists design the quietest e-chainsystem® for your application, for example:

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 2 m/s and with an unsupported length of 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 smoothly due to their small 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 1.5 m/s with an unsupported length. Due to the special rubber pads (in red pictured) of the System E4, the noise will be extremely damped. The standard version of E4 is already very reduced in noise due to their special designed stop dog.

Selected noise tests - external noise corrected measurement values

<table>
<thead>
<tr>
<th>e-chain®</th>
<th>System</th>
<th>Averaging of the corrected sound pressure levels</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>igus Series T3.29</td>
<td>T3</td>
<td>≤ 33 dB(A)</td>
<td>unsupervised 1.0 m/s²</td>
</tr>
<tr>
<td>igus Series E3.22</td>
<td>E3</td>
<td>≤ 38 dB(A)</td>
<td>unsupervised 1.8 m/s²</td>
</tr>
<tr>
<td>igus Series E6.52</td>
<td>E6</td>
<td>≤ 46 dB(A)</td>
<td>unsupervised 2.0 m/s²</td>
</tr>
<tr>
<td>igus Series 221.0</td>
<td>E4/00</td>
<td>≤ 46 dB(A)</td>
<td>unsupervised 1.5 m/s²</td>
</tr>
<tr>
<td>igus Series E4/42</td>
<td>E4.1</td>
<td>≤ 46 dB(A)</td>
<td>unsupervised 1.0 m/s²</td>
</tr>
<tr>
<td>igus Series 295.0</td>
<td>E2 medium</td>
<td>≤ 50 dB(A)</td>
<td>unsupervised 1.5 m/s²</td>
</tr>
<tr>
<td>igus Series e-band</td>
<td>E-band</td>
<td>≤ 59 dB(A)</td>
<td>unsupervised 1.5 m/s²</td>
</tr>
<tr>
<td>Chain 1 Third Party Product</td>
<td>e-band</td>
<td>≤ 77 dB(A)</td>
<td>unsupervised 2.0 m/s²</td>
</tr>
<tr>
<td>Chain 2 Third Party Product</td>
<td>e-band</td>
<td>≤ 68 dB(A)</td>
<td>unsupervised 2.0 m/s²</td>
</tr>
<tr>
<td>Chain 3 Third Party Product</td>
<td>e-band</td>
<td>≤ 73 dB(A)</td>
<td>unsupervised 2.0 m/s²</td>
</tr>
</tbody>
</table>

Source: TÜV Rheinland, except Series E3.22, Source igus laboratory

We have received an official certificate from the Rheinland Technical Inspection Authority (TÜV Rheinland Berlin-Brandenburg) and we are able to provide you with a copy on request.

More application examples for short travel applications ➤ www.igus.eu

Speed, acceleration and 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 FLG service life. Max. values for acceleration, speed and service life are achieved only with e-chains® incorporating the FLG service life design. FLG designed e-chainsystems® can sustain very high loads. To date, a peak acceleration of 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. 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 FLG or unsupported, with sag FLG.

Mounting surfaces

Unsupported e-chains® normally require some type of surface on which the lower portion of the e-chain® runs. A wide range of configurations is available, as the drawings on the right demonstrate. Many material options are feasible: Metals, polymers, stone, wood, concrete, glass, etc. We also have solutions to minimize the noise generated by the e-chain® 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. Stiffening mounting brackets compensate for the camber, can be installed more easily and decrease the load on the first e-chain® link in operation. Exceptions: if the acceleration is greater than 20 m/s² or if the height is limited to the FLG measurement, locking mounting brackets keep the e-chain® under the FLG measurement.

Unsupported lower run

e-chains® without support along the lower run have restricted use. The value FLG usually must be determined in a test by igus®. The maximum permissible amount of the projection depends on the fill weight, the selected e-chain®, the dynamics, and other factors, because the various combinations of these parameters can produce very different results. If the lower run of the e-chain® cannot be supported over the whole travel, please consult igus®.

Standard values of max. speed and acceleration:

 Unsupported FLG

\[ V_{\text{max}} \text{ (m/s)} = 20 \ 3 \]
\[ V_{\text{peak}} \text{ (m/s)} = 50 \ - \]
\[ a_{\text{max}} \text{ (m/s²)} = 200 \ 6 \]
\[ a_{\text{peak}} \text{ (m/s²)} = 784 \ - \]

Standard value of FLG service life: 10 million cycles

The table below briefly illustrates the differences in noise level among various e-chains

![Image](image-url)

![Image](image-url)

More application examples for short travel applications ➤ www.igus.eu

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

Different surfaces + guide troughs are possible
Find the values for "FL₆" and "FL₇" also ► in every individual Series chapter!
Unsupported | **Straight FL\textsubscript{G}** | Fill weights up to 9.0 kg/m

Load diagram use unsupported

 Unsupported length FL\textsubscript{G} [m] Length of travel S [m]

0 0.5 1.0 1.5 2.0 2.5 3.0

0 2.0 4.0 6.0

Important information

- Fill weight: Weight of all cables and hoses, including contents (for media hoses) within the e-chain, typically given [kg/m]
- FL\textsubscript{G}: unsupported e-chain with straight upper run
- FL\textsubscript{B}: unsupported e-chain with permitted sag
- To the right of the FL\textsubscript{G} 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.

The maximum travel always amounts to $2 \times S + 2 \times FL\textsubscript{G}$ if the fixed end is in the center of the travel. In this case, the following applies:

**e-chain** length: $L_{e} = \frac{S}{2} + K$

$S$ = Length of travel

$R$ = Bending radius

$H$ = Nominal clearance height

$H_{R}$ = Required clearance height

$K = \pi \times R + (2 \times T)$. Add-on for bending radius

Find the values for "FL\textsubscript{G}" and "FL\textsubscript{B}" also in every individual Series chapter!

Diagramm Series

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

- easy chain \> page 146
- E2/000 \> page 400
- E2/RX e-tubes \> page 488
- E4.1 \> page 612
- E6 \> page 916
- E6.1 \> page 994

Unsupported FL\textsubscript{B} | **Sag FL\textsubscript{B}** | Fill weights up to 9.0 kg/m

Load diagram use unsupported

 Unsupported length FL\textsubscript{B} [m] Length of travel S [m]

0 0.5 1.0 1.5 2.0 2.5 3.0

0 2.0 4.0 6.0
Important information

1. Fill weight - Weight of all cables and hoses, including contents (for media hoses) within the e-chain®, typically given [kg/m]
2. FLG - Unsupported e-chain® with straight upper run
3. FLB - Unsupported e-chain® with permitted sag
4. To the right of the FLB graph of the diagram, the application is shown in "critical sag", which must be avoided!

These values are essential for:
1. Finding a suitable e-chain® for your fill weight and travel distance
2. 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®

Important information

- unsupported e-chain® with straight upper run
- unsupported e-chain® with permitted sag
- To the right of the FLB graph of the diagram, the application is shown in "critical sag", which must be avoided!

These values are essential for:
1. Finding a suitable e-chain® for your fill weight and travel distance
2. 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®

Diagramm Series

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

- E2/000 [page 400]
- E2/RX e-tubes [page 488]
- E4.1 [page 612]
- E4.1 light [page 746]
- E4/light [page 774]
- E6 [page 916]
- E6.1 [page 994]

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

e-chain® length: \( L_e = \frac{S}{2} + K \)

- \( S \) = Length of travel
- \( R \) = Bending radius
- \( H \) = Nominal clearance height
- \( H_r \) = Required clearance height
- \( K = \pi \times R + (2 \times T) \) Add-on for bending radius
**Gliding | Long Travels**

**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 diagrams below show 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: \( L_k = S/2 + K_2 \). 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.

---

**Advantages lowered moving end**
- Space saving
- Longer travels
- Higher service life

---

**Recommended ratio of inner width \( b_i \) and bending radius \( R \)**

The minimum inner width of an e-chain® on long travels depends on its bending radius. igus® specifies: \( b_{i, \text{min.}} \geq \frac{R}{4} \)

---

**Example of lowered mounting height**

---

**Long travel with E4 rol e-chain®, guided in a igus® steel guide trough**

\[
L_k = S/2 + K_2
\]

\[
S = \text{Length of travel}
\]

\[
S/2 = \text{Half length of travel}
\]

\[
R = \text{Bending radius}
\]

\[
\Delta CL = \text{Offset fixed point}
\]

\[
H_2 = \text{Trough inner height}
\]

\[
D_2 = \text{Over length for long travels gliding}
\]

\[
K_2 = \text{Add-on}^{*}
\]

\*with lowered mounting

---

**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 \([m]\)
- Travel speed \([m/min]\) or \([m/s]\)
- Acceleration \([m/s^2]\)
- Fill weight \([kg/m]\)
- Maximum cable/hose outer diameter \([mm]\)
- Type and number of cables and hoses
- Required bending radius \([mm]\)
- Cycle frequency \([n/day]\ or \([n/hour]\)
- Technical environment

---

**Advantages for long travel applications with igus® e-chains®**

- Travels over 800 m
- 6 m/s speed (up to 10 m/s possible after consultation with igus®)
- Service life of 10 years and more with igus® e-chainsystems®
- Fill weights up to 70 kg/m

**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

---

**More examples for long travel applications**

www.igus.eu
Gliding | Long Travels

Trends in long travel applications
Very long travels with igus® e-chain®.
Rolling instead of gliding:
75% less push/pull forces due to special roller links. Travels up to 800 m are possible. Longest igus® travel of 615 m with rol e-chain® and chainflex® cables.

Long travel systems “off the reel” save already at the state of assembling
Complete custom-made e-chain systems with cables, connectors, strain relief are delivered on the reel and “rolled off” into the preassembled Guide Troughs. Time savings of 50 % possible.

Long travels without guide troughs
Our autoglide system consists of self-guiding e-chains® for travels up to 50 m travel lengths (speed 1,5 m/s) due to special gliding elements on the crossbars.

Long travels with very small e-chains®
micro flizz® offers the guidance of cables inside a small e-chain® with high acceleration on long travel applications.

PPDS - Push Pull Force Detection System
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 a calculated specification. If a variance occurs the plant can be automatically stopped with the help of the PPDS system. 3 PPDS systems are available:

- PPDS “basic”
- PPDS “advanced”
- PPDS “pro”

Product benefits
- 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

Potential applications
Facilities susceptible to interference, such as conveyor systems in power plants, waste incineration systems, and chemical plants, or crane building. Generally with long travel distances that have high fail-safe requirements. For long travel distances, if tensile and compressive force monitoring is needed.

PPDS “basic” - Push/Pull force calculation 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 100 m travel at a reasonable price. It consists of the PPF-Sensor (igus® force sensor), the PPDS Easy 2.0 Evaluation unit and a ready-to-install set with connection cables and assembled connectors for the evaluation unit.

Low-cost system protection
Emergency Shutdown or alarming in case of system overload
Space saving design

PPDS “advanced” - Push/Pull force calculation 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 Easy 2.0 evaluation unit.

PPDS “pro” - Push/Pull force calculation for very long travels
The system for very long travels, where the highest level of reliability is inevitable. Here the Full PPDS evaluation is used, which can estimate the force limits depending on the position. A load cell is mounted to the floating moving arm.

You can find an online video at www.igus.eu/PPDSbasic
Gliding | Long Travels

Long travels with igus’ 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. Principle sketches are shown on this page. The height of the trough must be at least twice that of the e-chain’s link height. The sides must provide a chamfered opening. The trough inner width is the same as the e-chain’s outer width, plus 4 mm (on Alu SuperTroughs) $B_a = B + 4$. 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’s 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 levelled 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.

Glide friction values for igus’ e-chains’ made of igumid G and various glide bars

<table>
<thead>
<tr>
<th>igumid</th>
<th>igus’ polymer</th>
<th>Glide</th>
<th>Anodized</th>
<th>Stainless</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>barigulen</td>
<td>sheet steel</td>
<td>aluminum</td>
<td>steel</td>
</tr>
<tr>
<td>Friction value</td>
<td>0.19</td>
<td>0.45</td>
<td>0.54</td>
<td>0.48</td>
</tr>
</tbody>
</table>

Travel speeds and accelerations

Travel speeds up to 5 m/s in continuous operation are possible and in use on current applications. In special cases, even higher speeds are possible. For example, E4 e-chains achieve speeds of 22 m/s and accelerations of 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.

Service life

We offer service life calculations for your application based on our extensive gliding application experience. As developers of polymer plain bearings, we possess vast material behavior knowledge which we apply to the development of e-chains as well. Units with 200 m travels have been in operation for 8 years with minimum maintenance. Units up to 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 rough 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 capabilities. 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 conduits 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.

Technical data - Gliding applications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel max</td>
<td>600 - 800 m</td>
</tr>
<tr>
<td>Travel speed max</td>
<td>10 m/s</td>
</tr>
<tr>
<td>Travel acceleration max</td>
<td>dependent on calculation, can be 50 m/s and more</td>
</tr>
<tr>
<td>Fill weight maximum</td>
<td>dependent on calculation, can be 70 kg/m and more</td>
</tr>
</tbody>
</table>

Glide friction values for igus’ e-chains’ made of igumid G and various glide bars

Glide friction values for igus’ e-chains’ made of igumid G and various glide bars

More examples for long travel applications ▶ www.igus.eu

If the fixed point is in the center of the travel, use half of the glide trough with glide bars ... and the other half of the guide trough without glide bars.

Various guide trough systems are available

Guide Troughs, page 1176

A) Aluminum SuperTrough without glide bars - upper run glides on the lower run
B) Aluminum SuperTrough with glide bars. We recommend the use of polymer glide bars from igus’ made of igulen. They are optimally matched to the e-chain’s material and achieve the lowest values for friction, noise and wear.

Aluminum SuperTrough-set ▶ Glide bar ▶ Installation set “Basic” ▶ C-profile

Material 1.4571/1.4404
Seawater resistant
Corrosion-free guide troughs are available in the material:
▶ Normally galvanized
▶ Upon request:
Stainless steel
Material 1.4571/1.4404
Seawater resistant aluminum

Automated storage/retrieval system with System E2 and chains’ cables - travels up to 80 m and speed of 4.5 m/s

Special properties - Long travel applications

For higher fill weights igus develops unconventional solutions and delivers standard parts from stock or special parts from stock or on short notice. e-chains that are nested can be used in gliding applications when there is width restriction. Guide troughs with special wall heights are required. e-chains’ running side by side or in “multiband” design can also be used.

More examples for long travel applications ▶ www.igus.eu
The E4.1 system is one of igus® best solutions for hanging applications. Hanging and standing e-chains® can reach to very different points.

In most cases, vertical motion applications do not require lateral guidance. Lateral acceleration can occur in two directions - guidance is necessary.

Vertical, hanging applications
In accordance with the principle of “hanging” applications, heights of over 100 m are possible with igus® e-chains®. e-chains® with interior separation allow many different types of cables and 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 hoses lay in the e-chain® and how they are secured at the end points: All cables and hoses must be hung so that they bear their own weight. The e-chain® fulfills the function of orderly conduit bundling only 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 and hoses are the basic prerequisites for hanging installations - Cables must be able to move freely and bear their own weight.

Vertical motion with lateral acceleration
If lateral acceleration occurs, lateral guidance of the e-chain® must be provided in most cases. The diagram to the right shows the principle 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. The 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 e-chain® further.

Application | Vertical Hanging

Vertical hanging applications
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Typical application areas:
- Storage and retrieval equipment, lifters, elevators, builder’s and crane lifts, hoists, AKL’s
- More information online ▶ www.igus.eu/eu/guidelok

More application examples for hanging applications ▶ www.igus.eu
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 e-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 e-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 whole 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 make use of our consulting services.

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

Technical data - vertical - standing applications
Max. stroke height - without support: 4 m
Max. stroke height - with support of the first e-chain® links: 6 m
Max. stroke height - with full support: 20 m
v_max (dependent upon stroke height and weight): 20 m/s
a_max (dependent upon stroke height and weight): 50 m/s^2

We recommend locking mounting brackets for standing applications

Locking KMA mounting brackets with flush mounting

U-shaped supported e-tube for high lateral acceleration

More examples for standing applications ▶ www.igus.eu

Technical data - Zig-Zag
Travel max.: 40 m (more upon request)
v_max: 0.4 m/s depending on the application, please check with igus®
a_max: 1.0 m/s depending on the application, please check with igus®

We recommend pivoting mounting brackets for Zig-Zag applications

Degradation 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 and hoses which adjust the stage height must be accommodated. Lack of space almost invariably presents particular difficulties. The photo above shows an e-chain® in a “Zig-Zag” configuration produced by incorporating reverse bend radii or “RBR”. The unstretched e-chain® is stored in a “bucket”. If the platform is raised, the e-chain® unfolds, generating little or no noise. This construction is possible with the E4.1 System as well as many other types. Please consult igus® for these kinds of applications.

Technical data - Zig-Zag
Max. stroke height - without support: 20 m possible
Max. expansion length: 13 m
Cable bending radius up to 250 mm

Liftband
New in this catalog
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.
- Alternative to Zig-Zag solution
- Lighter and smaller installation space
- Vertical applications implemented with ease
- Speeds up to 1 m/s
- Acceleration up to 2 m/s^2
- Max. expansion length: 13 m
- Cable bending radius up to 250 mm

More information ▶ www.igus.eu/liftband

More examples for Zig-Zag applications ▶ www.igus.eu
Application | Side-Mounted

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 e-chain® width, in effect, becomes the height. As this “height” increases, the e-chainsystem 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 e-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.

Cables and hoses

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

System E4/light e-tube in direct chip area

Long travel, gliding

Side-mounted e-chains® can travel over 100 m with adequate guidance. All e-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®.

E4 e-chains® assembled in an unsupported manner on the traveling column machine. The Y and Z axes have a travel of 8,000 mm and 1,750 mm at a speed of 25 meters per minute.

More examples for side-mounted applications ▶ www.igus.eu

More examples for side-mounted applications ▶ www.igus.eu
Application | Rotary Motion | RBR

Rotary motion with "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. E4.32.15.32.0 describes a Series E4.32 e-chain with an inner width of 150 mm, standard bending radius of R = 100 mm and RBR of 425 mm. Most rotary motions can be achieved with the RBR option. Angles of rotation up to 540° have been realized. Below is an example of rotary motion using an RBR e-chain. Please consult igus for your particular application.

Rotary motions 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 radii, 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 (in this case, standard 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.

Application | Rotary Motion | RBR

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 equipped as standard with "RBR". For all other types, "RBR" means custom-made, and we will be more than willing to offer you this option, igus e-chains with "RBR", available as standard triflex R, easy triflex and triflex R. 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 any special inquiry.

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Table of "RBR" e-chains available from stock

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>03.05.10/70</td>
<td>E2 micro</td>
</tr>
<tr>
<td>05.16.018/018</td>
<td>E2 micro</td>
</tr>
<tr>
<td>06.20.018/018</td>
<td>E2 micro</td>
</tr>
<tr>
<td>06.30.018/018</td>
<td>E2 micro</td>
</tr>
<tr>
<td>06.64.018/018</td>
<td>E2 micro</td>
</tr>
<tr>
<td>10.1.028/028</td>
<td>E2 mini</td>
</tr>
<tr>
<td>10.1.039/600</td>
<td>E2 mini</td>
</tr>
<tr>
<td>10.1.048/048</td>
<td>E2 mini</td>
</tr>
<tr>
<td>10.1.075/220</td>
<td>E2 mini</td>
</tr>
<tr>
<td>10.2.028/028</td>
<td>E2 mini</td>
</tr>
<tr>
<td>10.2.039/600</td>
<td>E2 mini</td>
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<tr>
<td>10.2.048/048</td>
<td>E2 mini</td>
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<td>10.2.075/220</td>
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<td>E2 mini</td>
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<td>E2 mini</td>
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<tr>
<td>10.4.028/028</td>
<td>E2 mini</td>
</tr>
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</table>

Technical data - rotary motion RBR

<table>
<thead>
<tr>
<th>max. angle of rotation</th>
<th>V max</th>
<th>a max</th>
</tr>
</thead>
<tbody>
<tr>
<td>540°</td>
<td>2.0 m/s</td>
<td>20 m/s</td>
</tr>
</tbody>
</table>

Guide trough systems RM and MRM for RBR solutions

< next page>
Guide Troughs | Rotary Motion | RBR

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.

System RM - Guide troughs for rotary motion 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 ideally suited also 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 be easily added, thereby enabling rotary motions up to 900 degrees and more
- Compact design enables the operation even in tight spaces, extendable "at will"
- High additional loads possible
- E-chains® can be freely assembled
- Peripheral speeds up to 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

- Is the defined rotation angle of the lower layer reached, the next upper module is carried along automatically due to an integrated anchorage system
- The construction minimizes potential interferences. The Multi-Rotation Module System is ideal for rotary applications, heavy loads and for rough environments
- Contrary to e.g. sliding contacts, the e-chain® can also guide hoses for air, gas or fluids, as well as bus and fibre optic cables
- Use also under harsh environmental conditions

Rotary Motion with twisterchain®

Higher loads and smoother running. Igus® new generation of twisterchain® new circular e-chains® significantly improved smoothness, stability and strength. The twisterchain® new has a modular construction for width, height and radius and therefore provides very flexible use in applications where rotating movements up to 540° are required.

- Rotary speeds up to 1 m/s and more
- Rotaty/spiral movements up to 540°
- Sturdier through intermediate link - more additional load possible
- With the new generation of twisterchain® guide troughs - Safe assembly time and costs - increase cycle life
- Cable-friendly, smooth interior
- Crossbars snap-open along inner radius

Twisterband - 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.

- 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, builds very close around the rotary axis
- Can be reliably used in various installation positions (horizontal or vertical)
- Compact, modular and lightweight

C-chain® - modular kit of continuously revolving e-chains®

Igus® offers standardized modules of the c-chain® system for many e-chains® of the series E4.1. This enables quick product solutions that are customized best to the application. The avoidance of unused down journeys creates new perspectives.

- Compact, modular ready-to-install system
- Energy supply plus bus cable and pneumatics
- Speeds up to 3 m/s
- Travel distances up to 50 m and more

Typical application areas:

- Robots, handling machines
- Packaging machines
- Glass machines
- General mechanical engineering

Product range c-chain®

- E4.21.050.075
- E4.32.050.075
- E4.36.050.075
- E4.42.050.075
- E4.56.050.075
- E4.80.050.075
- E4.42.050.075
- E4.42.15.300°
- E4.42.06.300°
- E4.42.06.400°
- E4.42.15.300°

www.igus.eu/eu/c-chain

www.igus.eu/eu/twisterconfigurator

www.igus.eu/eu/twisterband

www.igus.eu/eu/c-chain

Typical application areas:

- Offshore, stacker and reclaimers, bucket-wheel excavators, rotary cranes, other rotating applications

Online RBR-configurator | www.igus.eu/eu/rbr-configurator
Distribution rules | Cable and Hose Packages

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 supplies in one system. We recommend the optimal separation layout of the cables and hoses in the e-chain®, but you, the customer, are still allowed to make the first choice. It is possible, for instance, to maintain minimum distances between bus and motor cables and mix pneumatic, electric and hydraulic in the same compartments. In addition to the quality of the cables used, the arrangement of each conduit within the e-chain® and the space allowed, are important for the service life of the system. Various separation options enable the adaptation of the e-chain® 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.

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 smaller cables or hoses next to one another must not amount to more than one and a half times the cable/hose diameter.

Orderly laid cables with igus® interior separation

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-chain®. 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 0.5 m/s and cycles over 10,000 p.a. 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 and 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 (i.e. hydraulic hoses). Generally, the faster and more frequently the e-chain® operates, the more important the exact positioning of the cables and hoses inside the e-chain® becomes. Due to the wide variety of the possibilities, we strongly recommend you take advantage of our free consultation services for your specific applications. igus® tips: Interior Separation configurator ➤ www.igus.eu/eu/quickchain100.

Bending radius R
The bending radius of our e-chain® depends on the "thickest" or "stiffest" cable or hose in your application. The bending 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 bending radii for cables and hoses refers to use at normal temperatures - other bending radii may be recommended. Please ask your cable or hose supplier for details. We recommend complete e-chain® systems - where bending radii for all cables and hoses, interior separation and service life are optimally matched. igus® chainflex® cables permit the smallest bending radius of 4 x d for one million strokes.

E-chain® with extension links supports a smaller e-chain® with electric cables

Application examples and more information online ➤ www.igus.eu
**Distribution rules | Cable and Hose Packages**

**Round electrical cables**

For electrical cables, the round cable is a safe, modular and cost-effective solution for e-chainsystems. We recommend the following criteria for selecting the proper round electrical cables:
1. **Small minimum bending radius and mounting height**
2. **Strain relief integrated directly into the mounting bracket**
3. **Uncomplicated installation process** - no hanging, laying out, etc., of cables.
4. **Long service life at minimum bending radius**
5. **Service life expectations for your application (short or long travel, hanging, etc.)**
6. **Test data on service life from realistic tests**
7. **Flexible shields for shielded cables**
8. **Abrasion-resistant and non-adhesive outer jackets**
9. **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.

**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 e-chain's “upper run” using igus® “floating” strain relief must be implemented. In some cases, one-sided strain relief on the moving end can be tolerated.
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.

We will be pleased to provide you with recommendations for complete e-chainsystems:

- **Bending radii of all cables and hoses, interior separation and service life** are then optimally intermatched.

**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.

**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 and hoses.

**Hydraulic hoses**

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

**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, one-sided strain relief on the moving end can be tolerated.

**Rollclip**

Rollclip - in almost all cases, the broad, smooth and rounded surfaces of all igus® e-chains 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.
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.

Strain Relief Elements | chainfix

Strain relief for electrical cables
Strain relief can consist of standard elements or can be custom-made. For most applications, our standard program of C-profiles with 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 bending 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 on 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.

Features of chainfix clamps
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 C-profile. ● 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
Separate parts in switch cabinet construction or machine assembly. ● Strain relief accessory for igus’ e-chainsystems. ● Attachment to mounting brackets. ● Integration into the C-profile of KMA (polymer/metal mounting brackets).

Tiewrap plates with clip-on connection for the C-profile
The plates 3050.ZC and 3075.ZC can be clipped directly into the C-profile 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 C-profile
- Integrated strain relief for E2 e-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 4 mm to 24 mm. chainfix clip is available for C-profiles, 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.

chainfix nugget - for top hat rail and C-profile

- Option 1: Universal cable fixation, for diameter with Ø 20 mm and Ø 30 mm
- Option 2: Fastening through clipping onto standard top hat rail
- The smart helper for electricians in the machine building industry
- Accessory for all KMA with integrated C-profile
- Strain relief for top hat rail
- Easy to assemble, without any screws and tools
- Adjustable to every e-chain filling
- Very small space requirement
- Easy strain relief due to fixation with pre-harnessed cable strap

Strain relief separator
- Can be integrated in mounting bracket
- Strain-relief separator can be positioned as required
- Double strain relief possible
- Easy installation, cost-effective
- For most Series available from stock

Credit © igus GmbH
**Technical Environment | igus® 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 from page 134

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**Technical Environment**

**Fire resistance**
- Radiation
- Weathering
- Cold, heat
- Explosion areas

**Vacuum**
- Hot chips
- Dirt, dust
- Cleanroom
- Chemicals

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**igus® factory - automatic compounding and conveyor belt for igumid G**

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**Flammability of igumid G**

The flame retardant characteristics of igumid G can be described using various classifications: Test approach VDE 0304 Parts 3.5, 70 - classification E. Tested according to UL94 “Standard Tests for Flammability of Plastic Materials for Parts in Devices and Appliances” classification 94 HB for 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 easy chains® and Series 14 are made of from igumid G.

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**Flammability of igumid NB**

All easy e-chains® and Series 14, F17 e-chains® are made from the flame retardant igumid NB material. These e-chains® have the following flame retardant classifications:
- UL94 classification - V2
- VDE 0304 Parts 3.5, 70 classification - IIb
- DIN 4102 flamability of materials - B-2

Please consult igus® for material availability of V0

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**Temperature resistance**

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

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**Resistance to radiation**

Igus® offers several solutions for high radiation areas. Igmid G is very resistant to high-energy radiation. Under gamma radiation, in the range of 8 x 10⁰ r, the mechanical properties of igumid G change very little. Please consult igus®.

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**Magnetically detectable plastic e-chains®**

For the food- and tobaccoindustry

- New in this catalog
- 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 1.0 mm can be recognized for fragments passing at speeds of 20 m/min

More information: www.igus.eu/eu/detectable-chain

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128 More on “plastics for longer life” | www.igus.eu/eu/plasticsforlongerlife

Application examples and more information online | www.igus.eu
Technical Environment | ESD & ATEX

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 “2H1/200” 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 of 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.

100% of the produced ESD e-chains® are checked for their continuous conductivity “from one end to the other”.

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
- Short delivery times: 08:00 - 20:00 h - ordering and delivery service

Conductivity of igus® products from igumid ESD

In contrast to temporarily acting applied conductive surface coatings or volatile incorporated antistatic agents, the used additives grant a long lasting and maintenance-free conductivity. An e-chain® is not sufficient to ensure sufficient conductivity, if only the individual components exhibit conductivity, but the whole e-chain® from one to the other end must have a continuous conductivity. All products in this catalog are optimized in this regard and the continuous conductivity is measured and documented prior to delivery by a 100% test.

Only e-chains® that have passed this test are provided with the test seal and delivered. Color® of igumid ESD products: similar to RAL 7015, slate-gray to secure distinguishability with standard materials. (Exception: Cover zipper e-chains® series 0700 - here black in color)

More information online | www.igus.eu/atex

More information online | www.igus.eu/esd
Technical Environment | Cleanroom and ESD

Safe and clean with e-chains

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 environments demand very high wear resistance of moving parts. e-chains®, for example, must be very wear resistant, in order to meet normal requirements for such a sensitive environment.

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

<table>
<thead>
<tr>
<th>Classification</th>
<th>Report Number</th>
<th>Speed [m/s]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E6.29.060.150.0.CR*</td>
<td>IG 1303-640-1</td>
<td>0.5, 1.0, 2.0</td>
</tr>
<tr>
<td>T3.29.050.0 CR**</td>
<td>IG 1303-640-1</td>
<td>0.5, 1.0, 2.0</td>
</tr>
<tr>
<td>T3.29.050.0 CR**</td>
<td>IG 1303-640-1</td>
<td>0.5, 1.0, 2.0</td>
</tr>
<tr>
<td>IG 0308-295 2.0</td>
<td>IG 1303-640-1</td>
<td>0.5, 1.0, 2.0</td>
</tr>
<tr>
<td>IG 1303-640-1 0.5 / 1.0 / 2.0</td>
<td>IG 0308-295 2.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

*special material "cleanroom"

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

<table>
<thead>
<tr>
<th>Measuring point</th>
<th>Field strength [V/cm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Value (4 hours)</td>
<td>1500.050.038.0</td>
</tr>
<tr>
<td>2. Value (28 hours)</td>
<td>IG 0704-400</td>
</tr>
<tr>
<td>3. Value (44 hours)</td>
<td>IG 0704-400</td>
</tr>
<tr>
<td>4. Value (48 hours)</td>
<td>IG 0704-400</td>
</tr>
</tbody>
</table>

Level 1 ESD-compatibility acc. to SEMI E78-0998 for E6.29.050.055.0

Technical Environment | Dirty Environments

Spatter, hot chips

Laboratory tests and numerous field applications have proved that igus® e-chains® and e-tubes reliably protect cables in welding robots and machine tools since 20 years. e-tubes made from the igus® igumid HT material are resistant against hot chips up to 850°C (1,562°F), no chips stick. This opens new possibilities for replacing more complex and expensive steel tubes. Product range: All standard E2 and E4 e-tube sizes, upon request. Please note: igumid G in direct contact with large amounts of melted aluminum is not recommended.

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.

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 135 shows an excerpt of the precise details concerning resistance to chemicals. Acid-resistant e-chains® are available upon request.

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.

Table on resistance to chemicals | page 135

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

Compost sludge - numerous related references available upon request

More information and certificates for cleanroom products | www.igus.eu/cleanroom

Application examples and more information online | www.igus.eu
Material data igumid

<table>
<thead>
<tr>
<th>Material data table</th>
<th>Units of measure</th>
<th>Values igumid G</th>
<th>Values igumid NB</th>
<th>Values igumid ESD</th>
<th>Values igumid TE</th>
<th>Values igumid GE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical properties</td>
<td>Yield stress (dry/wet)</td>
<td>MPa</td>
<td>190/130</td>
<td>78/40</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Elongation at break (dry/wet)</td>
<td>%</td>
<td>604/006</td>
<td>20/210</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Elasticity module (tensile test)</td>
<td>MPa</td>
<td>9000/7000</td>
<td>2900/1200</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Limit of elasticity (bending)</td>
<td>MPa</td>
<td>7.800(1)</td>
<td>3.000(2)</td>
<td>9.500(3)</td>
<td>1.290(4)</td>
</tr>
<tr>
<td></td>
<td>Bending strength</td>
<td>MPa</td>
<td>240(6)</td>
<td>120(7)</td>
<td>230(8)</td>
<td>55(9)</td>
</tr>
<tr>
<td></td>
<td>Hardness Shore D</td>
<td>–</td>
<td>79(11)</td>
<td>79(12)</td>
<td>83(13)</td>
<td>72(14)</td>
</tr>
<tr>
<td>General properties</td>
<td>Density</td>
<td>g/m³</td>
<td>1.37</td>
<td>1.14</td>
<td>1.2</td>
<td>1.02</td>
</tr>
</tbody>
</table>

Absorption of humidity 23%/50% RF

Max. water absorption % by weight

Electrical properties

Specific transitional resistance Ω/cm

Surface resistance RAO Ω

Thermal properties

Lower application temperature °C / °F

Upper long-term application temp. °C / °F

Upper short-term application temp. °C / °F

Thermal behavior

Lower short-term application temp. °C / °F

Upper short-term application temp. °C / °F

Material certificates

Fire resistance as per UL94

Silicone-free

Halogen-free

2000/95/EC (RoHS)

Material data igumid Colors

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

Black e-chains* available from stock! Delivery time for special colors: from 5 work days.

Technical Environment | Chemical Resistance

Chemical Resistance of igumid

<table>
<thead>
<tr>
<th>Medium</th>
<th>Concentration Weight %</th>
<th>igumid G</th>
<th>igumid NB</th>
<th>igumid ESD</th>
<th>igumid TE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>100</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formic acid (aqueous)</td>
<td>2</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ammonia (aqueous)</td>
<td>10</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gasoline</td>
<td>100</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzole</td>
<td>100</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bitumen</td>
<td>100</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boric acid (aqueous)</td>
<td>10</td>
<td>+</td>
<td>O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Butyric acid</td>
<td>100</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcium chloride (aqueous)</td>
<td>Sat. aq. sol.</td>
<td>+</td>
<td>O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chlorinated hydrocarbons</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chlorine water</td>
<td>Sat. aq. sol.</td>
<td>–</td>
<td>–</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic acid (aqueous)</td>
<td>1</td>
<td>O</td>
<td>–</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diesel oil</td>
<td>100</td>
<td>+</td>
<td>+</td>
<td></td>
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<tr>
<td>Acetic acid</td>
<td>2</td>
<td>+</td>
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<tr>
<td>Color</td>
<td></td>
<td>+</td>
<td>+</td>
<td></td>
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</tr>
<tr>
<td>Fats, cooking</td>
<td></td>
<td>+</td>
<td>+</td>
<td></td>
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<tr>
<td>Fluorinated hydrocarbons</td>
<td>+</td>
<td>+</td>
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</tr>
<tr>
<td>Formaldehyde (aqueous)</td>
<td>30</td>
<td>O</td>
<td>O</td>
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</tr>
<tr>
<td>Hydraulic oils</td>
<td></td>
<td>+</td>
<td>O</td>
<td></td>
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<tr>
<td>Caudic potash</td>
<td>10</td>
<td>+</td>
<td>+</td>
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</tr>
<tr>
<td>Potassium carbonate (aqueous)</td>
<td>60</td>
<td>+</td>
<td>+</td>
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<tr>
<td>Potassium sulphate (aqueous)</td>
<td>100</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methyl acetate</td>
<td>100</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milk</td>
<td></td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
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<tr>
<td>Mineral oil</td>
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<tr>
<td>Sodium carbonate (aqueous)</td>
<td>50</td>
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<td></td>
</tr>
<tr>
<td>Oil, cooking</td>
<td></td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil, lubricating oil</td>
<td></td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oleic acid</td>
<td>100</td>
<td>+</td>
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<td>Polyester resins (with styrene)</td>
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<td>Hydrochloric acid</td>
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<td>Zinc sulfate (aqueous)</td>
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Material data table

Units of Values Values Values Values Values Values
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<th>Materials</th>
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<th>TE</th>
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<td>Mechanical properties</td>
<td>Yield stress (dry/wet)</td>
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<td>Elongation at break (dry/wet)</td>
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<td>20/210</td>
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<td>Elasticity module (tensile test)</td>
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<td>2900/1200</td>
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<td>Limit of elasticity (bending)</td>
<td>MPa</td>
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<td>3.000(2)</td>
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<td>Bending strength</td>
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<td>120(7)</td>
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</table>

Absorption of humidity 23%/50% RF

Max. water absorption % by weight

Electrical properties

Specific transitional resistance Ω/cm

Surface resistance RAO Ω

Thermal properties

Lower application temperature °C / °F

Upper long-term application temp. °C / °F

Upper short-term application temp. °C / °F

Material certificates

Fire resistance as per UL94

Silicone-free

Halogen-free

2000/95/EC (RoHS)

Material data igumid Colors

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

Black e-chains* available from stock! Delivery time for special colors: from 5 work days.

*Values upon request

Resistance classes

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

Application examples and more information online ➤ www.igus.eu

More on “plastics for longer life” ➤ www.igus.eu/plasticsforlongerlife

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

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 and 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/EG.

IPA Cleanroom

A lot of e-chains® are suitable for the use in cleanrooms according to DIN EN ISO 14644-1. Confirmed by the IPA Fraunhofer Institute.

UL, CSA, CE, CE and VDE

All igumid-materials for e-chains® and e-tubes have got the UL-material approval. The material igumid NB has got 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 lot 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® CF.BUS035 is CC Link certified.
- DESINA: Many chainflex® cables are Desina-compliant.

Clearly quieter

igus® e-chains® systems are clearly quieter. In the acoustic laboratory of the TÜV and the igus® GmbH different e-chains® were compared (see also noise-optimized e-chains® page 99).

igumid

The material igumid is free from toxins, according 2002/95/EC (RoHS).

iF Design Award

26 iF Design Awards since 1987  www.igus.eu/iF

More information and certificates online  www.igus.eu
readychain® | You determine igus® delivers

You determine the degree of harnessing

Any degree of harnessing is possible
We harness from simple e-chainsystems® 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.

From easy ...................................... to project

You determine the size

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

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

You determine 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 facilitate your entry

readychain® "Basic"  readychain® "Standard"  readychain® "Premium"

Reduce the number of suppliers and orders by 75%
- 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

Customer-related production

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

Assembled energy supply systems, connectors and cables from igus®
Everything from one source - directly from the manufacturer

Ready to install assembled e-chainsystems®

from batch size 1

From one off to mass production

From easy

From short

From one off to mass production

From easy

From short
**3 shifts, 127 employees only for assembling, 13 project engineers, 500 orders/week, over 3,000 m² floor space**

In the igus® readychain® factory, we assemble customized e-chain systems®. All under one roof. All from one source.

Modern production processes, one-off or mass production

Customized cable assembling

11 readychain® factories worldwide

100% tested

---

**Everything from one source**

The readychain® system includes pre-assembled, customized energy chain systems®. The “plug in and ready” solutions are configured, manufactured and delivered according to individual customer specifications. The use of the mounting rack can yield benefits even at low volumes.

---

**Flexible components**

The telescoping supports and braces of the readychain® rack allow flexible adaptation to the installation situation on site. Changes in mass production can be undertaken easily. By the latching mechanism, additional components can also be easily attached to the rack subsequently.

---

**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, as with conventional welded transport racks.

---

**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.

Your guide to reduced processing costs - Achieve your target in hours instead of days with the new modular transport rack from igus®

igus.eu/readychain-rack
readychain® | Cable assembling

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

Process reliability ... Crimp force monitored ... automated ... time-optimized

Harnessing and final inspection of all harnessed cables
Twist-free cable handling and fully automated crimping machines

Computer supported high-voltage testing stations
Drive cables in accordance with 20 manufacturer standards

---

readychain® | readycable® - harnessed cables

readycable® - harnessed cables in 24h-48h or today

Allen Bradley
Heidenhain
B&R
Jetter
Baumüller
Lenze
Beckhoff
LTi DRiVES
Berger Lahr
NUM
Control Techniques
Omron
Danaher Motion
Rexroth
ELAU
SEW
Fagor
Siemens
Fanuc
Stöber

• igus® offers over 2,830 defined drive cables according to 20 different manufacturers standards
• Servo, power and signal/encoder cables
• No cutting costs and no surcharges for small quantities and packaging
• Cable length up to the centimeter to customer
• Smallest bending radii from 7.5 x d
• Reduce storage costs and increase cash flow

Hoses and electrical cables to your needs using QuickPin 2.0

QuickPin 2.0
Connector-Cable-Configurator with integrated EPLAN P8.
www.igus.eu/eu/quickpin

igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu
The igus® assembly service

Your complete system solution from a single source, including final assembly on-site. Including guarantee* and at a predictable fixed price!

Assembly service | Your system solution from a single source

igus® assembly service
We undertake the acceptance, design, harnessing, delivery, including the completed assembly of your energy supply system, on-site on your installation. More information online www.igus.eu/eu/assemblyservice

New installation
● Assessment of local conditions by an igus® specialist
● Quotations provided at predictable fixed prices
● Plannable assembly schedules and flexible assembly dates
● Assembly also at night, on weekends or holidays
● Fast and accurate installation by qualified personnel
● Everything up to the installation from a single source, including guarantee*

Retrofits/upgrades
● Upgrade and retrofit concepts from igus® for reconfiguring existing energy supply systems to e-chainsystems®
● To expand the range of applications
● Reducing costs and energy consumption
● Increasing service-life

Maintenance
● Preventive maintenance of complex e-chainsystems® in order to promptly recognize and remedy any damage or obstruction, therefore extending the service-life of your system

Inspection
● Assessing the technical condition of e-chains®, guide troughs, cables and strain reliefs
● Determining repair and maintenance needs
● Reporting of deficiencies and risks, improvement proposals
● Documentation of the system condition in the test report

Supervisor service
● Support by the igus® specialist for the in-house assembly of your energy supply system
● Briefing and training of your assembly, service and maintenance staff during the assembly of your e-chainsystem®
● Final inspection of your assembly

igus® e-chainsystems® quickly assembled on-site
● Steelmill cranes
● Bunker cranes
● Handling operations
● Ship’s cranes
● Sewage treatment plants
● Conveyor plants
● Composters
● Coal firing
● Storage and retrieval systems
● Power plants
● Processing gantries
● Robots

*Guarantee applies to wear-related failures of igus® components based on yet to be agreed technical parameters. igus® assembly service not entirely available in all countries. Please ask your local igus® sales people for further details!
Easy to fill and very cost-effective
easy to fill and very cost-effective - easy chain®

easy chains® are available with exterior (version E) press fit access, as well as interior (version Z) access. The assembly time reductions are a primary reason to choose easy chains®. Their material, igumid NB, presents more application opportunities with: Optimal elasticity, UL94-V2 classification and excellent cleanroom qualities. Their one-piece design keeps the easy chain® very cost-effective.

Typical industries and applications
- General machinery
- Cleanroom applications
- Electronic apparatus
- Office equipment
- Vending machines
- Packaging machines
- Machine tools

IPA Qualification Certificate - Report IG 0308-295:
ISO Class 2, according to DIN EN ISO 14644-1 for easy chain®, Series E14.3.038 at v = 1,0 m/s

- Electrically conductive
- ESD/ATEX versions upon request

42 dB(A) - Value determined at the igus® test lab: v = 1,0 m/s unsupported, Series E06.10.038.0

UL94-V2 classification

With easy chain® rotatory and torsional motions are possible

Machinery of all kinds feature igus® easy chains® - reduces assembly times

Series E14 on server unit, removable for maintenance purposes. Cleanroom Class 2 ISO is standard

easy chain® on adjustable office furniture with UL94 - V2 Classification

Just push the cables into the e-chain® with your thumb - and it’s ready. Pull out cable by hand.

Assembly time: Insert of 2 cables Ø 6 and 10 mm. We can present you with more details about this and other tests

Reduce time up to 80%
### Contents | Selection Table

**easy chain® - Version "E"**
Split crossbar along outer radius
1 / 2 / 3 / 4- chamber system

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width</th>
<th>Outer height</th>
<th>Bending radius</th>
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<tbody>
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<td>28 - 48</td>
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easy chain® - Version "Z"
Split crossbar along inner radius
1 / 2 / 3-chamber system

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<td>9</td>
<td>37</td>
<td>12.5</td>
<td>18 - 38</td>
<td>0.40</td>
</tr>
<tr>
<td>Z065.3</td>
<td>11.3</td>
<td>9</td>
<td>39.3</td>
<td>15</td>
<td>18 - 38</td>
<td>0.60</td>
<td>172</td>
</tr>
<tr>
<td>Z26.3</td>
<td>37.1</td>
<td>47</td>
<td>167</td>
<td>50</td>
<td>63 - 250</td>
<td>2.00</td>
<td>194</td>
</tr>
<tr>
<td>Z300.3</td>
<td>48.5</td>
<td>46</td>
<td>170</td>
<td>64</td>
<td>75 - 300</td>
<td>2.25</td>
<td>200</td>
</tr>
</tbody>
</table>

---

**easy chain® | Assembly instructions**

1. Push and click, snap in pin
2. Release side link, twist and pull apart
3. Press in cable
4. Pull out cable

---

- **Technical data, overview** page 152
- **e-chain links as single parts, overview** page 153
- **Configuration options and order keys, overview** page 154

*Available from stock. Delivery time in 24h or today!*

*Delivery time means time until shipping of goods after technical release*

You can find an assembly video on the web www.igus.eu/eu/video
### e-chain® Technical Data - easy chain®

<table>
<thead>
<tr>
<th>Gliding speed / acceleration (maximum)</th>
<th>max. 3 [m/s] / max. 10 [m/s]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed / acceleration FLg, max.</td>
<td>max. 20 [m/s] / max. 200 [m/s]</td>
</tr>
<tr>
<td>Speed / acceleration FLg, max.</td>
<td>max. 3 [m/s] / max. 6 [m/s]</td>
</tr>
<tr>
<td>e-chain material - permitted temperature °C, igumid NB</td>
<td>-40° up to +80° C</td>
</tr>
<tr>
<td>Mounting brackets material - permitted temperature °C, igumid G</td>
<td>-40° up to +120° C</td>
</tr>
<tr>
<td>Flammability class: igumid NB = VDE 0304 IIC UL94-V2 / igumid G = VDE 0304 IIC UL94-HB</td>
<td></td>
</tr>
</tbody>
</table>

### Installation methods overview, maximum travels - easy chain®

**e-chain® Series**

<table>
<thead>
<tr>
<th>Series</th>
<th>Unsuspended application</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
<th>Rotary application</th>
<th>Zig-zag application</th>
</tr>
</thead>
<tbody>
<tr>
<td>E03</td>
<td>≤ 0,40 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>E04</td>
<td>≤ 0,55 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>E045</td>
<td>≤ 0,40 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>E06</td>
<td>≤ 0,55 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>E065</td>
<td>≤ 0,60 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>E08</td>
<td>≤ 1,00 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>E14</td>
<td>≤ 0,65 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>E20</td>
<td>≤ 1,75 m</td>
<td>≤ 10,00 m</td>
<td>≤ 1,50 m</td>
<td>≤ 0,50 m</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>E16</td>
<td>≤ 2,00 m</td>
<td>≤ 10,00 m</td>
<td>≤ 1,50 m</td>
<td>≤ 0,50 m</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>E26</td>
<td>≤ 2,00 m</td>
<td>≤ 10,00 m</td>
<td>≤ 1,50 m</td>
<td>≤ 0,50 m</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>E300</td>
<td>≤ 2,25 m</td>
<td>≤ 10,00 m</td>
<td>≤ 1,50 m</td>
<td>≤ 0,50 m</td>
<td>with rework</td>
<td>upon request</td>
</tr>
</tbody>
</table>

### easy chain® | e-chain® links as single parts | Overview

#### Part No. one- and two-piece e-chain® links as single parts - easy chain®

**Overview**

<table>
<thead>
<tr>
<th>Part No. one- and two-piece e-chain® links as single parts</th>
<th>One-piece</th>
<th>e-chain® link</th>
<th>Part No. one- and two-piece e-chain® links as single parts</th>
<th>One-piece</th>
<th>e-chain® link</th>
</tr>
</thead>
<tbody>
<tr>
<td>E03 Split crossbar along outer radius</td>
<td>E03.Bi,R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E04 Split crossbar along outer radius</td>
<td>E04.Bi,R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E045 Split crossbar along outer radius</td>
<td>E045.Bi,R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E06 Split crossbar along outer radius</td>
<td>E06.Bi,R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E065 Split crossbar along outer radius</td>
<td>E065.Bi,R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E08 Split crossbar along outer radius</td>
<td>E08.Bi,R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E14 Split crossbar along outer radius</td>
<td>E14.Bi,R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E20 Split crossbar along outer radius</td>
<td>E20.Bi,R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E16 Split crossbar along outer radius</td>
<td>E16.Bi,R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E26 Split crossbar along outer radius</td>
<td>E26.Bi,R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E300 Split crossbar along outer radius</td>
<td>E300.Bi,R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### e-chain® One-piece | e-chain® link | Part No. one- and two-piece e-chain® links as single parts | One-piece | e-chain® link |

<table>
<thead>
<tr>
<th>e-chain® One-piece</th>
<th>e-chain® link</th>
<th>Part No. one- and two-piece e-chain® links as single parts</th>
<th>One-piece</th>
<th>e-chain® link</th>
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</thead>
<tbody>
<tr>
<td>E03.Bi,R</td>
<td></td>
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<td></td>
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<tr>
<td>E04.Bi,R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E045.Bi,R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E06.Bi,R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E065.Bi,R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E08.Bi,R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E14.Bi,R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E20.Bi,R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E16.Bi,R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E26.Bi,R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E300.Bi.R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Installation methods overview, maximum travels - easy chain®

<table>
<thead>
<tr>
<th>E03</th>
<th>≥ 0,40 m</th>
<th>upon request</th>
<th>upon request</th>
<th>upon request</th>
<th>with rework</th>
<th>upon request</th>
</tr>
</thead>
<tbody>
<tr>
<td>E04</td>
<td>≥ 0,55 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>E045</td>
<td>≥ 0,40 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>E06</td>
<td>≥ 0,55 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>E065</td>
<td>≥ 0,60 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>E08</td>
<td>≥ 1,00 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>E14</td>
<td>≥ 0,65 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>E20</td>
<td>≥ 1,75 m</td>
<td>≤ 10,00 m</td>
<td>≤ 1,50 m</td>
<td>≤ 0,50 m</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>E16</td>
<td>≥ 2,00 m</td>
<td>≤ 10,00 m</td>
<td>≤ 1,50 m</td>
<td>≤ 0,50 m</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>E26</td>
<td>≥ 2,00 m</td>
<td>≤ 10,00 m</td>
<td>≤ 1,50 m</td>
<td>≤ 0,50 m</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>E300</td>
<td>≥ 2,25 m</td>
<td>≤ 10,00 m</td>
<td>≤ 1,50 m</td>
<td>≤ 0,50 m</td>
<td>with rework</td>
<td>upon request</td>
</tr>
</tbody>
</table>

#### Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
### easy chain® Options with order keys (based on Series E200)

<table>
<thead>
<tr>
<th>Order key</th>
<th>Standard color black, with mounting brackets:</th>
</tr>
</thead>
<tbody>
<tr>
<td>E200.05.150.0</td>
<td>1,0 m E200.05.150.0 + 2050.34PZ</td>
</tr>
</tbody>
</table>

#### Data glove with easy chain® Series E03
- Protect the sensors which makes it easier to take off and put on the gloves. Inner height of only 5 mm

### Order example | Order key and color options

**Order example for complete e-chain® Series E200 (1,0 m), color black, with mounting brackets:**

- e-chain® (1,0 m) Please indicate e-chain® length or number of links: 1,0 m or 22 links: 1,0 m E200.05.150.0
- Mounting brackets: 1 set (+ tiewrap plates) 2050.34PZ

**Order text:** 1,0 m E200.05.150.0 + 2050.34PZ

#### General igus® color options for e-chains® and e-tubes

<table>
<thead>
<tr>
<th>Color</th>
<th>Order index</th>
<th>Color</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>.0</td>
<td>White</td>
<td>.1</td>
</tr>
<tr>
<td>Slate grey</td>
<td>.0</td>
<td>Gray white</td>
<td>.15</td>
</tr>
<tr>
<td>Gray brown</td>
<td>.0</td>
<td>Orange</td>
<td>.2</td>
</tr>
<tr>
<td>Dusty grey</td>
<td>.3</td>
<td>Yellow</td>
<td>.4</td>
</tr>
<tr>
<td>Black e-chains</td>
<td>.31</td>
<td>Light grey</td>
<td>.34</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Color</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard color black</td>
<td>.0</td>
</tr>
<tr>
<td>Bending radius R</td>
<td>.0</td>
</tr>
<tr>
<td>Width index</td>
<td>.0</td>
</tr>
</tbody>
</table>

### Quick assembly with ESD!
- easy chain® also available as ESD version
  - Easy to fill on the outer/inner radius
  - Access to the cables without opening and closing of lids
  - Cost-effective one piece design e-chain®
  - Interior separation available
  - Mounting brackets with integrated strain relief

**More information:** [www.igus.eu/eu/esd](http://www.igus.eu/eu/esd)

#### 155 3D-CAD files, configurators, PDF ➔ [www.igus.eu/eu/eesychain](http://www.igus.eu/eu/eesychain)
**Simply press cables in, for smallest spaces**

**When to use Series E03:**
- igus® smallest e-chain® - inner dimensions: 5 x 5 mm
- If a very small e-chain® with an inner height of 5 mm and smallest bending radii are required
- For inner widths up to 10 mm
- For unsupported lengths up to 0.40 m and fill weights up to 0.24 kg/m
- If easy filling without opening and closing of lids is required
- If smooth running is required
- If a lightweight and cost-effective e-chain® is required

**When to use a different igus® Series:**
- If very high loads and long unsupported travels occur
  - Series 04 E2 micro, page 306
- If a non-opening e-chain® is required
  - Series 03 E2 micro, page 302

**Unsupported Applications**

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height $H_F$. Please consult igus® if space is particularly restricted. More information ► Design, page 95

**Technical Data**

Speed, material, temperature and flammability class ► page 152

- **Pitch** = 10 mm/link
- **Links/m** = 100 (1000 mm)
- **Chain length** = $S/2 + K$

The required clearance height: $H_F = H + 10 \, \text{mm}$ (with 0.1 kg/m fill weight)

**Available from stock. Delivery time in 24h or today!**

“Delivery time means time until shipping of goods (after technical release)"
**Series E03 | Split crossbar along outer radius**

<table>
<thead>
<tr>
<th>Bi</th>
<th>Ba</th>
<th>R</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>8.7</td>
<td>010</td>
<td>0.030</td>
</tr>
<tr>
<td>7</td>
<td>10.7</td>
<td>010</td>
<td>0.040</td>
</tr>
<tr>
<td>10</td>
<td>13.7</td>
<td>010</td>
<td>0.050</td>
</tr>
</tbody>
</table>

1) Crossbars do not overlap! Gap = 1 mm  
2) Crossbars do not overlap! Gap = 2 mm

*Ba* pin dimension approx. 0.1 - 0.3 mm wider!

Supplement Part No. with required radius; (R) Example: E03.05.028.0

---

**Polymer pivoting, one-piece | Universal for e-chains**

**Recommended for unsupported applications**

**Width**

<table>
<thead>
<tr>
<th>Index</th>
<th>Part No.</th>
<th>Dim. A</th>
</tr>
</thead>
<tbody>
<tr>
<td>05.</td>
<td>03.05.12Z</td>
<td>8.7</td>
</tr>
<tr>
<td>07.</td>
<td>03.07.12Z</td>
<td>10.7</td>
</tr>
<tr>
<td>10.</td>
<td>03.10.12Z</td>
<td>13.7</td>
</tr>
</tbody>
</table>

Material mounting bracket: igumid G, permitted temp. -40°C up to +120°C, VDE 0304 IIC UL94-HB

---

**Additional Features**

- One-piece mounting bracket
- With integrated strain relief
- Corrosion-resistant
- Adapter plate for rapid installation

---

**Adapter plate for rapid installation: for all sizes of Part No. 03.10.QF**

The adapter has broken edges so that it can be adapted to the respective chain width. It is not absolutely necessary when attaching the mounting brackets. The mounting brackets can also be screwed on without the adapter plate.
**easy chain® | Series E04 | Introduction**

**Simply press cables in, low weight**

**When to use Series E04:**
- Small igus® e-chain®
  - Inner dimensions: 7 x 7 mm
- If a small e-chain® with an inner height of 7.0 mm and small bending radii is required
  - For unsupported lengths up to 0.55 m and fill weights up to 0.35 kg/m
- If easy filling without opening and closing of lids is required
  - If smooth running is required
- If a lightweight and cost-effective e-chain® is required
  - For high accelerations

**When to use a different igus® Series:**
- If very high loads and long unsupported travels occur
  - Series 06 E2 micro, page 318
- If a non-opening e-chain® is required
  - Series 04 E2 micro, page 306

**Flexible:**
- Torsional motions possible

**Clean:**
- Dirt-repellent exterior

**Secure:**
- “Push-button principle” for better stability

**Available from stock. Delivery time in 24h or today!**

**Dimensions**

- **Unsupported**
  - Pitch = 16.7 mm/link
  - Links/m = 60 (1002 mm)
  - Chain length = \( S/2 + K \)

**Technical Data**

<table>
<thead>
<tr>
<th>R</th>
<th>015</th>
<th>018</th>
<th>028</th>
<th>038</th>
<th>048</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>40</td>
<td>46</td>
<td>66</td>
<td>86</td>
<td>106</td>
</tr>
<tr>
<td>D</td>
<td>45</td>
<td>48</td>
<td>58</td>
<td>68</td>
<td>78</td>
</tr>
<tr>
<td>K</td>
<td>85</td>
<td>90</td>
<td>125</td>
<td>155</td>
<td>185</td>
</tr>
</tbody>
</table>

The required clearance height: \( H_F = H + 10 \text{ mm} \) (with 0.1 kg/m fill weight)
**easy chain® | Series E04 | Product Range | Standard**

**Series E04 | Split crossbar along outer radius**

<table>
<thead>
<tr>
<th>Bi (mm)</th>
<th>Ba (mm)</th>
<th>R (mm)</th>
<th>Weight (kg/m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>040.07.R07</td>
<td>7</td>
<td>13</td>
<td>~ 0.08</td>
</tr>
</tbody>
</table>

- Crossbars do not overlap! Gap = 2.5 mm
- Special solution with opening gap 0.8 mm: Part No. E04.07.015.0 available
- Ba pin dimension approx. 0.1 - 0.3 mm wider!
- Supplement Part No. with required radius (R); Example: E04.07.038.0

**Order key**

**E04. 07. 038. 0**

- Standard color: black
- Bending radius: R
- Width index: Bi (depends on Bi)

**Configuration options and order keys, overview ► page 154**

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

---

**Polymer pivoting, one-piece | Universal for e-chains®**

**Recommended for unsupported applications**

**Width Index**

<table>
<thead>
<tr>
<th>Index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A (mm)</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>07</td>
<td>040.07.12PZ</td>
<td>040.07.12</td>
<td>12</td>
<td>1</td>
</tr>
</tbody>
</table>

Material mounting bracket: igumid G, permitted temp. -40° up to +120° C, VDE 0304 IIC UL94-HB

**Bending radii [mm]**

- Moving end: 17
- Fixed end: 17

**Possible installation conditions for assembled mounting bracket:**

- For the preassembled mode please add index A1...A4; e.g. 040.07.12 PZ A2

**Additional Features**

- Quickfix - the complete, detachable mounting unit. Part No. 040.07.05 available from stock
- Quickfix - mounting bracket with dowel, available from stock

**Part No. structure**

<table>
<thead>
<tr>
<th>Single-part order</th>
<th>Mounting bracket</th>
<th>Moving end</th>
<th>Mounting bracket</th>
<th>Fixed end</th>
</tr>
</thead>
<tbody>
<tr>
<td>040.07.PZ A2</td>
<td>(install + tiewrap plate)</td>
<td></td>
<td>(install + tiewrap plate)</td>
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</tr>
<tr>
<td>040.07.PZ A2</td>
<td>(install + tiewrap plate)</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Weight [kg/m]**

- Split crossbar

---

**Easy chain® | Series E04 | Mounting brackets**

**Polymer pivoting, one-piece | Universal for e-chains®**

**Recommended for unsupported applications**

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A (mm)</th>
<th>Number of teeth</th>
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<tbody>
<tr>
<td>07</td>
<td>040.07.12PZ</td>
<td>040.07.12</td>
<td>12</td>
<td>1</td>
</tr>
</tbody>
</table>

Material mounting bracket: igumid G, permitted temp. -40° up to +120° C, VDE 0304 IIC UL94-HB

**Bending radii [mm]**

- Moving end: 17
- Fixed end: 17

**Possible installation conditions for assembled mounting bracket:**

- For the preassembled mode please add index A1...A4; e.g. 040.07.12 PZ A2

**Additional Features**

- Quickfix - the complete, detachable mounting unit. Part No. 040.07.05 available from stock
- Quickfix - mounting bracket with dowel, available from stock

**Part No. structure**

<table>
<thead>
<tr>
<th>Single-part order</th>
<th>Mounting bracket</th>
<th>Moving end</th>
<th>Mounting bracket</th>
<th>Fixed end</th>
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<tbody>
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**Weight [kg/m]**

- Split crossbar

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**Polymer pivoting, one-piece | Universal for e-chains®**

**Recommended for unsupported applications**

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Material mounting bracket: igumid G, permitted temp. -40° up to +120° C, VDE 0304 IIC UL94-HB

**Bending radii [mm]**

- Moving end: 17
- Fixed end: 17

**Possible installation conditions for assembled mounting bracket:**

- For the preassembled mode please add index A1...A4; e.g. 040.07.12 PZ A2

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**Weight [kg/m]**

- Split crossbar

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**Polymer pivoting, one-piece | Universal for e-chains®**

**Recommended for unsupported applications**

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Material mounting bracket: igumid G, permitted temp. -40° up to +120° C, VDE 0304 IIC UL94-HB

**Bending radii [mm]**

- Moving end: 17
- Fixed end: 17

**Possible installation conditions for assembled mounting bracket:**

- For the preassembled mode please add index A1...A4; e.g. 040.07.12 PZ A2

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**Weight [kg/m]**

- Split crossbar

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**Polymer pivoting, one-piece | Universal for e-chains®**

**Recommended for unsupported applications**

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Material mounting bracket: igumid G, permitted temp. -40° up to +120° C, VDE 0304 IIC UL94-HB

**Bending radii [mm]**

- Moving end: 17
- Fixed end: 17

**Possible installation conditions for assembled mounting bracket:**

- For the preassembled mode please add index A1...A4; e.g. 040.07.12 PZ A2

**Additional Features**

- Quickfix - the complete, detachable mounting unit. Part No. 040.07.05 available from stock
- Quickfix - mounting bracket with dowel, available from stock

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</tr>
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</tr>
<tr>
<td>040.07.PZ A2</td>
<td>(install + tiewrap plate)</td>
<td></td>
<td>(install + tiewrap plate)</td>
<td></td>
</tr>
</tbody>
</table>
Introduction

**Simply press cables in, small pitch, smooth running**

*When to use Series E045-Z045:*
- If a small e-chain® with an inner height of 9.4 mm and small pitch is required
- For inner widths up to 27 mm
- For unsupported lengths up to 0.4 m and fill weights up to 0.25 kg/m
- If easy filling without opening and closing of lids is required
- Small pitch for low-noise, smooth running
- If a lightweight and cost-effective e-chain® is required

*When to use a different igus® Series:*
- If very high loads and long unsupported travels occur
  - Series 06 E2 micro, page 318
- If high stability is required
  - Series 06 E2 micro, page 318

**Dimensions**

 Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height HF. Please consult igus® if space is particularly restricted. More information ➤ Design, page 95

**Example**

Fill weight = 0.125 [kg/m]
Unsupported length FLg = 0.32 m
Length of travel = 0.64 m

**Technical Data**

Speed, material, temperature and flammability class ➤ page 152

**Pitch** = 13 mm/link

**Links/m** = 77 (1001 mm)

**Chain length** = $\frac{S}{2} + K$

<table>
<thead>
<tr>
<th>R</th>
<th>018</th>
<th>028</th>
<th>038</th>
</tr>
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<tbody>
<tr>
<td>H</td>
<td>48.5</td>
<td>68.5</td>
<td>88.5</td>
</tr>
<tr>
<td>D</td>
<td>44</td>
<td>54</td>
<td>64</td>
</tr>
<tr>
<td>K</td>
<td>85</td>
<td>115</td>
<td>150</td>
</tr>
</tbody>
</table>

The required clearance height: $HF = H + 10$ mm (with 0.1 kg/m fill weight)

**Available from stock. Delivery time in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

3D-CAD files, configurators, PDF ➤ www.igus.eu/eu/E045
Series E045 | Split crossbar along outer radius | 1 / 2 / 3- chamber system  
Series Z045 | Split crossbar along inner radius | 1 / 2- chamber system

<table>
<thead>
<tr>
<th>Chamber system</th>
<th>Split crossbar along outer radius</th>
<th>Bi</th>
<th>Ba</th>
<th>R</th>
<th>Bending radii</th>
<th>Weight</th>
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<tr>
<td>1-chamber</td>
<td>E045.10.R.O</td>
<td>10</td>
<td>16</td>
<td>018</td>
<td>028</td>
<td>038</td>
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<tr>
<td></td>
<td>E045.16.R.O</td>
<td>16</td>
<td>23</td>
<td>018</td>
<td>028</td>
<td>038</td>
</tr>
</tbody>
</table>

1) Crossbars do not overlap! Gap = 2 mm

| 2-chamber       | E045.2/7.R.O                     | 7  | 7  | 018| 028 | 038 | ≈ 0.13 |
|                 | E045.2/9.R.O                     | 9  | 9  | 018| 028 | 038 | ≈ 0.14 |

2) Crossbars do not overlap! Gap = 2.25 mm

| 3-chamber       | E045.3/9.R.O                     | 9  | 9  | 018| 028 | 038 | ≈ 0.17 |

3) Crossbars do not overlap! Gap = 2.25 mm

Ba: pin dimension approx. 0.1 - 0.3 mm wider! *With available up on request, please consult our delivery time.

Supplement Part No. with required radius (R) Example: E045.16.038.0

Order key
E045. 16. 038. 0 Version “E”: Split crossbar along outer radius
Z045. 16. 038. 0 Version “Z”: Split crossbar along inner radius

Configuration options and order keys, overview ➤ page 154

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

Polymer one-piece, one side pivoting | Universal for e-chains®
Recommended for unsupported applications

<table>
<thead>
<tr>
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<tbody>
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<td>.10</td>
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<td>0450.10.12</td>
<td>–</td>
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<td>–</td>
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<tr>
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<td>10</td>
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<tr>
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<td>0450.16.16</td>
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<td>10</td>
<td>2</td>
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<tr>
<td>.2/9</td>
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<td>0450.20.20</td>
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<td>10</td>
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<tr>
<td>.3/7</td>
<td>0450.30.30PZ</td>
<td>0450.30.30</td>
<td>22</td>
<td>36</td>
<td>20</td>
<td>3</td>
</tr>
</tbody>
</table>

Material mounting bracket: igumid G, permitted temp. -40° up to +120° C, VDE 0304 IEC 6194H8-1

0450.10. - 0450.20. center bores only / 0450.30. outer bores only

Mounting bracket with strain relief tiewrap plate has reductions of ø 3 mm / ø 6 mm, 90°.
Mounting bracket without strain relief tiewrap plate only has holes of ø 3 mm.

Possible installation conditions:
For the preassembled mode please add index A2 or A4 ➤ e.g. 045.10.12A2
Possible installation conditions:
For the preassembled mode please add index A2 or A4 ➤ e.g. 045.10.12A2

Single-part order
Mounting bracket Moving end 0450.10.1PZ A2 (preas. + tiewrap plate)
Mounting bracket Fixed end 0450.10.3PZ A2 (preas. + tiewrap plate)

Polymer one-piece, one side pivoting | Universal for e-chains®
Recommended for unsupported applications

<table>
<thead>
<tr>
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<tr>
<td>.2/7</td>
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<td>0450.16.16</td>
<td>2</td>
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Material mounting bracket: igumid G, permitted temp. -40° up to +120° C, VDE 0304 IEC 6194H8-1

0450.10. - 0450.20. center bores only / 0450.30. outer bores only

Mounting bracket with strain relief tiewrap plate has reductions of ø 3 mm / ø 6 mm, 90°.
Mounting bracket without strain relief tiewrap plate only has holes of ø 3 mm.

Possible installation conditions:
For the preassembled mode please add index A2 or A4 ➤ e.g. 045.10.12A2
Possible installation conditions:
For the preassembled mode please add index A2 or A4 ➤ e.g. 045.10.12A2

Single-part order
Mounting bracket Moving end 0450.10.1PZ A2 (preas. + tiewrap plate)
Mounting bracket Fixed end 0450.10.3PZ A2 (preas. + tiewrap plate)
**Series E06-Z06**

**Introduction**

Simply press cables in, low weight

When to use Series E06-Z06:
- If a small e-chain® with an inner height of 10,7 mm (Version E) or 10,5 mm (Version Z) and small bending radii is required
- For inner widths up to 20 mm
- For unsupported lengths up to 0,55 m and fill weights up to 0,45 kg/m
- If easy filling without opening and closing of lids is required
- If smooth running is required
- If a lightweight and cost-effective e-chain® is required

When to use a different igus® Series:
- If very high loads and long unsupported travels occur
  - Series 06 E2 micro, page 318
- If a non-opening e-chain® is required
  - Series 04 E2 micro, page 306
- Version Z not suitable for gliding applications
  - Series 07 zipper, page 242

**Dimensions**

- **Unsupported applications**
  - Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height \( H_F \). Please consult igus® if space is particularly restricted. More information ➤ Design, page 95

**Technical Data**

- **Pitch** = 20 mm/link
- **Links/m** = 50 (1000 mm)
- **Chain length** = \( S/2 + K \)

---

**Example**

- Fill weight = 0,25 [kg/m]
- Unsupported length \( FL_B = 0,48 \) m
- Length of travel \( S = 0,96 \) m

---

**Available from stock. Delivery time in 24h or today!**

- "Delivery time means time until shipping of goods (after technical release)"

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**3D-CAD files, configurators, PDF ➤ www.igus.eu/eu/E06**

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igus® GmbH Germany | Phone +49 2203 9649-800 | Fax –222 | info@igus.de | www.igus.eu
Easy Chain® Series E06-Z06 Product Range Standard

**Series E06** | Split crossbar along outer radius
**Series Z06** | Split crossbar along inner radius

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Bi (mm)</th>
<th>Ba (mm)</th>
<th>R (mm)</th>
<th>Weight [kg/m]</th>
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<tbody>
<tr>
<td>E06.10.R0</td>
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<td>E06.16.R0</td>
<td>16</td>
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<td>0</td>
<td>0.16</td>
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<tr>
<td>E06.20.R0</td>
<td>20</td>
<td>26.5</td>
<td>0</td>
<td>0.18</td>
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</tbody>
</table>

1) Crossbars do not overlap! Gap ≥ 5.5 mm
Special solution with opening gap 3.5 mm Part No. E06.10.018.0.03
Supplement Part No. with required radius (R) Example: E06.10.018.0

**Order key**

**E06.10.018.0** Version "E" Split crossbar along outer radius
**Z06.10.018.0** Version "Z" Split crossbar along inner radius

**Configuration options and order keys, overview** Page 154

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

Easy Chain® Series E06-Z06 Mounting brackets

Polymer locking, one-piece | Universal for e-chains

**Recommended for unsupported applications**

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<th>Width Index</th>
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<th>Part No. full set without tiewrap plates</th>
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<tr>
<td>10</td>
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<td>060.20.12</td>
<td>27.0</td>
<td>2</td>
</tr>
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Material mounting bracket (iguuni G, permitted temp. -40°C up to +120°C, VDE 0304 IIC UL94-HB)

- One-piece mounting bracket
- Available with or without strain relief tiewrap plates
- Corrosion-resistant
- Inner and outer attachment possible
- Various installation options on the fixed end and/or the moving end

Minimum bending radius of 20mm

**Part No. structure**

060.10.QS PZ A1
060.10.12.PZ A1
060.10.16.PZ A1
060.10.20.PZ A1
060.10.40.PZ A1

Available from stock. Delivery time in 24h or today!

**Single-part order**

Mounting bracket Moving end 060.10.1 PZ A1 (preass. + tiewrap plate)
Mounting bracket Fixed end 060.10.2 PZ A1 (preass. + tiewrap plate)

**Additional Features**

Quickfix - mounting bracket with dowel, available from stock

Quickfix - the complete, detachable mounting unit. Part No. 060.10.05, Part No. 060.16.05, Part No. 060.20.05, Part No. 060.40.05 available from stock
**Introduction**

**easy chain®** Series E065-Z065

**Simply press cables in, very small pitch, smooth running**

*When to use Series E065-Z065:*

- If a small e-chain® with an inner height of 11.3 mm and small pitch is required
- For inner widths up to 36 mm
- For unsupported lengths up to 0.6 m and fill weights up to 0.45 kg/m
- If easy filling without opening and closing of lids is required
- Small pitch for low-noise, smooth running
- If a lightweight and cost-effective e-chain® is required

*When to use a different igus® Series:*

- If very high loads and long unsupported travels occur
  ▶ Series 06 E2 micro, page 318
- If high stability is required
  ▶ Series 06 E2 micro, page 318

**Available from stock. Delivery time® in 24h or today!**

*“Delivery time means time until shipping of goods (after technical release)”*

---

**Dimensions**

**Unsupported applications**

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height **HF**. Please consult igus® if space is particularly restricted. More information ▶ Design, page 95

---

**Technical Data**

**Pitch**

= 15 mm/link

**Links/m**

= 67 (1005 mm)

**Chain length**

= \( \frac{S}{2} + K \)

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<th>R</th>
<th>018</th>
<th>028</th>
<th>038</th>
</tr>
</thead>
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<td>H</td>
<td>51</td>
<td>71</td>
<td>91</td>
</tr>
<tr>
<td>D</td>
<td>48</td>
<td>58</td>
<td>68</td>
</tr>
<tr>
<td>K</td>
<td>90</td>
<td>120</td>
<td>150</td>
</tr>
</tbody>
</table>

The required clearance height: **HF** = **H** + 10 mm (with 0.2 kg/m fill weight)

---

**Original size 1:1**

**Outer height 12.5 mm**

1-, 2-, 3- or 4-chamber system available

---

**3D-CAD files, configurators, PDF** ▶ www.igus.eu/eu/E065
**Series E065** | Split crossbar along outer radius | 1 / 2 / 3 / 4- chamber system  
**Series Z065** | Split crossbar along inner radius | 3-chamber system

<table>
<thead>
<tr>
<th>Chamber system</th>
<th>Spilt crossbar along outer radius</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Bending radii [mm]</th>
<th>Weight [kg/m]</th>
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<td>Z065.16.01</td>
<td>16</td>
<td>24.8</td>
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<td>028</td>
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<td>Z065.29.02</td>
<td>9/9</td>
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<td>028</td>
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</tr>
<tr>
<td>4-chamber E065.49.04</td>
<td>Z065.49.04</td>
<td>9/9/9/9</td>
<td>49.3</td>
<td>018</td>
<td>028</td>
</tr>
</tbody>
</table>

Ba pin dimension approx. 0.2 - 0.4 mm wider!  
*Width available upon request, please consult igus® for delivery time.*

Supplement Part No. with required radius (R) Example: E065.16.038.0

**Polymer locking, one-piece | Universal for e-chains®**  
**Recommended for unsupported applications**

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>0650.16.12PZ</td>
<td>0650.16.12</td>
<td>-</td>
<td>22.5</td>
<td>2</td>
</tr>
<tr>
<td>29</td>
<td>0650.29.12PZ</td>
<td>0650.29.12</td>
<td>-</td>
<td>27</td>
<td>2</td>
</tr>
<tr>
<td>39</td>
<td>0650.39.12PZ</td>
<td>0650.39.12</td>
<td>22</td>
<td>37</td>
<td>3</td>
</tr>
<tr>
<td>49</td>
<td>0650.49.12PZ</td>
<td>0650.49.12</td>
<td>32</td>
<td>47</td>
<td>4</td>
</tr>
</tbody>
</table>

Material mounting bracket: igumid G, permitted temp. -40° up to +120° C, VDE 0304 IC UL94-HB  
0650.16 - 0650.9/2, center boxes only / 0650.3/9 - 0650.4/9, outer boxes only

**Available from stock. Delivery time** in 24h or today!  
*Delivery time means time until shipping of goods (after technical release)*
**Introduction**

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

**FLB**

**FLG**

**S/2**

**H**

**D**

**K**

**R**

**R**

**S**

**Unspecified length**

**Length of travel**

**Fill weight**

**unsupported length**

**Nominal clearance height**

**Required clearance height**

**Overlength e-chain®**

**Series E08·Z08**

**Dimensions**

**Unsupported**

**Speed, material, temperature and flammability class**

**Pitch**

**Links/m**

**Chain length**

**Example**

**Fill weight = 0.5 [kg/m]**

**Unsupported length FLB = 0.65 m**

**Length of travel S = 1.30 m**

**Free length FLG / FLB[m]**

**The required clearance height:**

**HF = H + 15 mm** (with 0.3 kg/m fill weight)

**When to use Series E08-Z08:**

- If a small e-chain® with an inner height of 14.6 mm (Version E) or 14.7 mm (Version Z) and small bending radii is required
- For inner widths up to 50 mm
- For unsupported lengths up to 1.0 m and fill weights up to 0.7 kg/m
- If easy filling without opening and closing of lids is required
- If smooth running is required
- If a lightweight and cost-effective e-chain® is required

**When to use a different igus® Series:**

- If very high loads and long unsupported travels occur
  - **Series 09 zipper**, page 250
- Version E, not suitable for gliding applications
  - **Series 09 zipper**, page 250

**Clean:**

- Dirt-repellent exterior

**Flexible:**

- Torsional motions possible

**Save time:**

- Simply press cables in

**Rapid installation:**

- Easy to fill from the inner radius (Version “Z”) or outer radius (Version “E”)

**Universal:**

- Mounting bracket with strain relief option

**Cleanroom:**

- Suitable for cleanroom applications

**Cost-effective:**

- Low price with one-piece design

**Cost-effective:**

- Low price with one-piece design

**Technology Data**

**Pitch**

- 20 mm/link

**Links/m**

- 50 (1000 mm)

**Chain length**

- \( \frac{S}{2} + K \)

**When to use Series E08·Z08:**

- If a small e-chain® with an inner height of 14.6 mm (Version E) or 14.7 mm (Version Z) and small bending radii is required
- For inner widths up to 50 mm
- For unsupported lengths up to 1.0 m and fill weights up to 0.7 kg/m
- If easy filling without opening and closing of lids is required
- If smooth running is required
- If a lightweight and cost-effective e-chain® is required

**When to use a different igus® Series:**

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  - **Series 09 zipper**, page 250
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  - **Series 09 zipper**, page 250

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- Dirt-repellent exterior

**Flexible:**

- Torsional motions possible

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**Rapid installation:**

- Easy to fill from the inner radius (Version “Z”) or outer radius (Version “E”)

**Universal:**

- Mounting bracket with strain relief option

**Cleanroom:**

- Suitable for cleanroom applications

**Cost-effective:**

- Low price with one-piece design

**Cost-effective:**

- Low price with one-piece design

**Technology Data**

**Pitch**

- 20 mm/link

**Links/m**

- 50 (1000 mm)

**Chain length**

- \( \frac{S}{2} + K \)
**Series E08** | **Split crossbar along outer radius**
**Series Z08** | **Split crossbar along inner radius**

<table>
<thead>
<tr>
<th>Bi</th>
<th>Ba</th>
<th>R</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>18,2</td>
<td>025</td>
<td>028</td>
</tr>
<tr>
<td>16</td>
<td>24,2</td>
<td>025</td>
<td>028</td>
</tr>
<tr>
<td>20</td>
<td>28,2</td>
<td>025</td>
<td>028</td>
</tr>
<tr>
<td>30</td>
<td>38,2</td>
<td>025</td>
<td>028</td>
</tr>
<tr>
<td>40</td>
<td>48,2</td>
<td>025</td>
<td>028</td>
</tr>
<tr>
<td>50</td>
<td>58,2</td>
<td>025</td>
<td>028</td>
</tr>
</tbody>
</table>

1) Crossbars do not overlap! Gap = 5,5 mm
2) Crossbars do not overlap! Gap = 4 mm

**Order key**

**E08.10.028.0** Version "E" | Split crossbar along outer radius
**Z08.10.028.0** Version "Z" | Split crossbar along inner radius

Configuration options and order keys, overview ➤ page 154

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

**Polymer locking, one-piece | Universal for e-chains**

Recommended for unsupported applications

**Width** | **Part No.** | **Part No. full set with** | **Part No. full set without** | **Dim. A** | **Dim. B** | **Number of teeth**
| Index | relief tiewrap plates | relief tiewrap plates | [mm] | [mm] | |
|---|---|---|---|---|---|---|
| 10 | 080.10.12.PZ | 080.10.12 | - | 18.2 | 1 |
| 16 | 080.16.12.PZ | 080.16.12 | - | 24.2 | 2 |
| 20 | 080.20.12.PZ | 080.20.12 | - | 28.2 | 2 |
| 30 | 080.30.12.PZ | 080.30.12 | 22 | 38.2 | 3 |
| 40 | 080.40.12.PZ | 080.40.12 | 32 | 48.2 | 4 |
| 50 | 080.50.12.PZ | 080.50.12 | 42 | 58.2 | 5 |

Bending radius R

Material mounting bracket: igumid G, permitted temp. -40° up to +120° C, VDE 0304 IIC UL94-HB

Single-part order

Mounting bracket Moving end
**080.10.1.PZ** A2

Mounting bracket Fixed end
**080.10.2.PZ** A2

Possible installation conditions for assembled mounting brackets:

For the **preassembled** mode please add index A1...A4 ➤ e.g. 080.10.12.PZA1

Additional Features

**Quickfix** - mounting bracket with dowel, available from stock

**Quickfix - the complete, detachable mounting unit, available from stock**

**Mounting brackets**

**Series E08-Z08** | Mounting brackets

<table>
<thead>
<tr>
<th>Moving end</th>
<th>Fixed end</th>
</tr>
</thead>
<tbody>
<tr>
<td>080..1(PZ)</td>
<td>080..2(PZ)</td>
</tr>
</tbody>
</table>

Easy chain® | Series E08-Z08 | Product Range | Standard
### easy chain® Series E14-Z14 | Introduction

#### Simply press cables in, cost-effective

When to use Series E14-Z14:
- If an e-chain® with an inner height of 19 mm and small bending radii is required
- For inner widths up to 50 mm
- For unsupported lengths up to 0.65 m and fill weights up to 0.5 kg/m
- If easy filling without opening and closing of lids is required
- If smooth running is required
- If a lightweight and cost-effective e-chain® is required

When to use a different igus® Series:
- If very high loads and long unsupported travels occur
  - Series B15 E2 mini, page 380
- Version 2 not suitable for gliding applications
  - Series B15 E2 mini, page 380

#### Cleanroom ISO Class 2:

Suitable for clean-room applications

#### Cost-effective:

Low price with one-piece design

#### Save time:

Simply press cables in

#### Flexible:

Torsional motions possible

#### Clean:

Dirt-repellent exterior

#### Cable-friendly:

Cable conserving interior

#### Rapid installation:

Easy to fill from the inner radius (Version “Z”) or outer radius (Version “E”)

---

### easy chain® Series E14-Z14 | Dimensions | Unsupported

#### Dimensions

<table>
<thead>
<tr>
<th>Pitch</th>
<th>= 30.5 mm/link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Links/m</td>
<td>= 33 (1.006,5 mm)</td>
</tr>
<tr>
<td>Chain length</td>
<td>= ( \frac{S}{2} + K )</td>
</tr>
</tbody>
</table>

#### Pitch

- \( R \)
- \( H \)
- \( D \)
- \( K \)
- \( S \)
- \( R_P \)
- \( R_L \)

#### 3D-CAD files, configurators, PDF

[www.igus.eu/eu/E14](http://www.igus.eu/eu/E14)

---

### Easy chain® Series E14-Z14 | Dimensions | Unsupported

#### Example

Fill weight = 0.5 [kg/m]  
Unsupported length \( F_{L_L} = 0.6 \) m  
Length of travel \( L = 1.2 \) m

#### Unsupported length \( F_{L_L} / F_{L_B} \) [m]

| Length of travel \( S \) [m] |
|---|---|
| 0 | 0.5 | 1.0 | 1.5 | 2.0 |
| 0 | 1.0 | 2.0 | 3.0 | 4.0 |

#### Chain length \( S \) [m]

| Length of travel \( S \) [m] |
|---|---|
| 0 | 1.0 | 2.0 | 3.0 | 4.0 |
| 0 | 1.0 | 2.0 | 3.0 | 4.0 |

---

### Easy chain® Series E14-Z14 | Dimensions | Unsupported

#### Required clearance height: \( H_F = H + 10 \) mm (with 0.2 kg/m fill weight)

---

### Easy chain® Series E14-Z14 | Dimensions | Unsupported

#### Notes:

1. Cleanroom - Series E14.3.038.0, more details ▶ page 132

---

### Easy Chain® Series E14-Z14 | Dimensions | Unsupported

#### Available from stock. Delivery time in 24h or today!

“Delivery time means time until shipping of goods (after technical release)
**Series E14 | Split crossbar along outer radius**
**Series Z14 | Split crossbar along inner radius**

<table>
<thead>
<tr>
<th>Bi</th>
<th>Ba</th>
<th>R</th>
<th>Weight (kg/m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>27</td>
<td>028</td>
<td>038</td>
</tr>
<tr>
<td>25</td>
<td>37</td>
<td>028</td>
<td>038</td>
</tr>
<tr>
<td>38</td>
<td>50</td>
<td>028</td>
<td>038</td>
</tr>
<tr>
<td>50</td>
<td>62</td>
<td>028</td>
<td>038</td>
</tr>
</tbody>
</table>

---

**Order key**

**E14. 1. 028. 0** Version "E" Split crossbar along outer radius

**Z14. 1. 028. 0** Version "Z" Split crossbar along inner radius

---

**Configuration options and order keys, overview ➤ page 154**

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

---

**Polymer locking, one-piece | Universal for e-chains®**

Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>114.1.12PZ</td>
<td>114.1.12P</td>
<td></td>
<td>26.3</td>
<td>2</td>
</tr>
<tr>
<td>2.</td>
<td>114.2.12PZ</td>
<td>114.2.12P</td>
<td>10</td>
<td>36.3</td>
<td>3</td>
</tr>
<tr>
<td>3.</td>
<td>114.3.12PZ</td>
<td>114.3.12P</td>
<td>23</td>
<td>49.3</td>
<td>4</td>
</tr>
<tr>
<td>4.</td>
<td>114.4.12PZ</td>
<td>114.4.12P</td>
<td>35</td>
<td>61.3</td>
<td>5</td>
</tr>
</tbody>
</table>

Material mounting bracket: igumid G, permitted temp. -40° up to +120° C, VDE 0304 IIC UL94-HB

---

**Additional Features**

- **Quickfix** - the complete, detachable mounting unit, available from stock
- **Quickclip** - mounting bracket with dowel, available from stock

---

**Easy chain® Series E14-Z14 | Mounting brackets**

**Moving end**

114...1P(Z)

**Fixed end**

114...2P(Z)

---

**Part No. structure**

114.2.12PZA1

A... must be indicated on preassembled configurations

- Full set locking = 12
- Mounting brackets for selected width index

---

**Supplement Part No. with required radius (R) Example: E14.1.028.0**

---

**Available from stock. Delivery time* in 24h or today!**
Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)

3D-CAD files, configurators, PDF ➤ www.igus.eu/eu/E200

Texto en español

### easy chain® | E200-Z200 | Introduction

**Simply press cables in, medium size**

*When to use Series E200-Z200:*
- If a medium-sized e-chain® with an inner height of 24.3 mm is required
- For inner widths up to 100 mm
- For unsupported lengths up to 1.75 m and fill weights up to 2.0 kg/m
- If easy filling without opening and closing of lids is required
- If smooth running is required
- If a lightweight and cost-effective e-chain® is required

*When to use a different igus® Series:*
- If very high loads and long unsupported travels occur
  ➤ E200 Series 2400/2450/2480/2500, page 426
- If single-extrusion crossbars are required
  ➤ E200 Series 2400/2450/2480/2500, page 426

**Dimensions**

<table>
<thead>
<tr>
<th>R</th>
<th>055</th>
<th>075</th>
<th>100</th>
<th>150</th>
<th>200</th>
</tr>
</thead>
<tbody>
<tr>
<td>H²</td>
<td>145</td>
<td>185</td>
<td>235</td>
<td>335</td>
<td>435</td>
</tr>
<tr>
<td>D</td>
<td>142</td>
<td>162</td>
<td>187</td>
<td>237</td>
<td>287</td>
</tr>
<tr>
<td>K</td>
<td>265</td>
<td>330</td>
<td>410</td>
<td>565</td>
<td>725</td>
</tr>
</tbody>
</table>

The required clearance height: \(H_r = H + 40\) mm (with 2.0 kg/m fill weight)

**Unsupported applications**

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height \(H_r\). Please consult igus® if space is particularly restricted. More information ➤ Design, page 95

**Technical Data**

- Speed, material, temperature and flammability class ➤ page 152
- Cleanroom: Suitable for clean-room applications
- Clean: Dirt-repellent exterior
- Cable-friendly: Cable conserving interior
- Universal: Mounting bracket with strain relief option
- Cost-effective: Low price with one-piece design
- Flexible: Torsional motions possible
- Rapid installation: Easy to fill from the inner radius (Version “Z”) or outer radius (Version “E”)
- Save time: Simply press cables in

**Unsupported**

Example

- Fill weight: \(1.0\) kg/m
- Unsupported length \(F_L = 1.4\) m
- Length of travel: \(S = 2.8\) m

E200·Z200 Series E200·Z200

**Support**

- igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu
**Series E200 | Split crossbar along outer radius | 1 / 2 - chamber system**

**Series Z200 | Split crossbar along inner radius | 1 / 2 - chamber system**

<table>
<thead>
<tr>
<th>Chamber system</th>
<th>Split crossbar along outer radius</th>
<th>Bi</th>
<th>Ba</th>
<th>R Bending radii</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-chamber</td>
<td>E200.05.R.0</td>
<td>57</td>
<td>74</td>
<td>055</td>
<td>≈ 0.70</td>
</tr>
<tr>
<td></td>
<td>Z200.05.R.0</td>
<td>94</td>
<td>74</td>
<td>075</td>
<td>100</td>
</tr>
</tbody>
</table>

| 2-chamber       | E200.2/35.R.0                    | 37/37 | 94.4 | 055 | 075 | 100 | 150 | 200 | ≈ 0.79 |
|                 | Z200.2/35.R.0                    | 120 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |

**Ba** pin dimension approx. 0.1 - 0.3 mm wider!

Supplement Part No. with required radius (R) Example: **E200.05.150.0**

---

**Order key**

**E200. 05. 150. 0** Version "E" Split crossbar along outer radius

**Z200. 05. 150. 0** Version "Z" Split crossbar along inner radius

**Weight [kg/m]**

<table>
<thead>
<tr>
<th>Ba</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>05</td>
<td>0.70</td>
</tr>
<tr>
<td>07</td>
<td>0.79</td>
</tr>
<tr>
<td>10</td>
<td>0.82</td>
</tr>
</tbody>
</table>

**Configuration options and order keys, overview ➤ page 154**

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)
Polymer pivoting, one-piece | Standard | Universal for e-chains®
Recommended for unsupported and gliding applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Part No. full set with tiewrap plate + 10 cable tiewraps</th>
<th>Dim. A [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>.05</td>
<td>2050.34PZB</td>
<td>2050.34PZ</td>
<td>2050.34PZK1</td>
<td>44</td>
<td>6</td>
</tr>
<tr>
<td>.2/35</td>
<td>2070.34PZB</td>
<td>2070.34PZ</td>
<td>2070.34PZK1</td>
<td>64</td>
<td>8</td>
</tr>
<tr>
<td>.2/50</td>
<td>2100.34PZB</td>
<td>2100.34PZ</td>
<td>2100.34PZK1</td>
<td>90</td>
<td>10</td>
</tr>
</tbody>
</table>

Material mounting bracket: igumid G, permitted temp. -40° up to +120°C, VDE 0304 IIC UL94-HB

Possible installation conditions for assembled mounting brackets:
For the preassembled mode please add index A1...A4: e.g. 2050.34PZB A1

Single-part order
Mounting bracket Moving end 2050.34PZB+A1 (preass. + tiewrap plate)
Mounting bracket Fixed end 2050.4PZB A1 (preass. + tiewrap plate)

Strain relief, e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options ➔ from page 1148

---

Polymer locking | Universal for e-chains®
Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Part No. full set with tiewrap plate + 10 cable tiewraps</th>
<th>Dim. A [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>.05</td>
<td>2050.12PZB</td>
<td>2050.12PZ</td>
<td>2050.12PZK1</td>
<td>44</td>
<td>6</td>
</tr>
<tr>
<td>.2/35</td>
<td>2070.12PZB</td>
<td>2070.12PZ</td>
<td>2070.12PZK1</td>
<td>64</td>
<td>8</td>
</tr>
<tr>
<td>.2/50</td>
<td>2100.12PZB</td>
<td>2100.12PZ</td>
<td>2100.12PZK1</td>
<td>90</td>
<td>10</td>
</tr>
</tbody>
</table>

Material mounting bracket: igumid G, permitted temp. -40° up to +120°C, VDE 0304 IIC UL94-HB

Possible installation conditions for assembled mounting brackets:
For the preassembled mode please add index A1...A4: e.g. 2050.12PZB A1

Single-part order
Mounting bracket Moving end 2050.12PZB A1 (preass. + tiewrap plate)
Mounting bracket Fixed end 2050.2PZB A1 (preass. + tiewrap plate)

Strain relief, e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options ➔ from page 1148
easy chain® | E16·Z16 | Introduction

- **Simply press cables in, medium size**

**When to use Series E16-Z16:**
- If a medium-sized e-chain® with an inner height of 32 mm is required
- For unsupported lengths up to 1,0 m
- If smooth running is required
- If a lightweight and cost-effective e-chain® is required

- **When to use a different igus® Series:**
- If very high loads and long unsupported travels occur
  - E2/000 Series 2600/2650/2680/2700, page 444
- If single-extrusion crossbars are required
  - E2/000 Series 2600/2650/2680/2700, page 444

- **Universal:** Mounting bracket with strain relief option
- **Cleanroom:** Suitable for cleanroom applications
- **Cost-effective:** Low price with one-piece design
- **Save time:** Simply press cables in
- **Flexible:** Torsional motions possible
- **Rapid installation:** Easy to fill from the inner radius (Version “Z”) or outer radius (Version “E”)
- **Cable-friendly:** Cable conserving interior
- **Clean:** Dirt-repellent exterior

- **Available from stock. Delivery time® in 24h or today!**
  - Delivery time means time until shipping of goods (after technical release)

- **3D-CAD files, configurators, PDF► www.igus.eu/eu/E16**

---

**Unsupported e-chains** feature positive camber over short travels. This must be accounted for when specifying the clearance height $H_F$. Please consult igus® if space is particularly restricted. More information ► Design, page 95

**Technical Data**

Speed, material, temperature and flammability class ► page 152

- **Pitch** $= 30.5 \text{ mm/lin}$
- **Links/m** $= 33 (1006.5 \text{ mm})$
- **Chain length** $= \frac{S}{2} + K$

**When to use Series E16-Z16:**
- If a medium-sized e-chain® is required
- For inner widths up to 100 mm
- For unsupported lengths up to 1,0 m
- If easy filling without opening and closing of lids is required
- If smooth running is required
- If a lightweight and cost-effective e-chain® is required

**When to use a different igus® Series:**
- If very high loads and long unsupported travels occur
  - E2/000 Series 2600/2650/2680/2700, page 444
- If single-extrusion crossbars are required
  - E2/000 Series 2600/2650/2680/2700, page 444

**Cleanroom:** Suitable for clean-room applications

**Cost-effective:** Low price with one-piece design

**Flexible:** Torsional motions possible

**Rapid installation:** Easy to fill from the inner radius (Version “Z”) or outer radius (Version “E”)

**Cable-friendly:** Cable conserving interior

**Clean:** Dirt-repellent exterior

**Available from stock. Delivery time® in 24h or today!**
  - Delivery time means time until shipping of goods (after technical release)

**3D-CAD files, configurators, PDF► www.igus.eu/eu/E16**
**Series E16** | **Split crossbar along outer radius**

**Series Z16** | **Split crossbar along inner radius**

<table>
<thead>
<tr>
<th>Bi (mm)</th>
<th>Ba (mm)</th>
<th>R (mm)</th>
<th>Weight (kg/m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>E16.2.R, R</td>
<td>Z16.2.R, R</td>
<td>23</td>
<td>37.5</td>
</tr>
<tr>
<td>E16.3.R, R</td>
<td>Z16.3.R, R</td>
<td>36</td>
<td>50.5</td>
</tr>
<tr>
<td>E16.4.R, R</td>
<td>Z16.4.R, R</td>
<td>48</td>
<td>62.5</td>
</tr>
<tr>
<td>E16.5.R, R</td>
<td>Z16.5.R, R</td>
<td>63</td>
<td>78.5</td>
</tr>
<tr>
<td>E16.6.R, R</td>
<td>Z16.6.R, R</td>
<td>80</td>
<td>95.5</td>
</tr>
<tr>
<td>E16.7.R, R</td>
<td>Z16.7.R, R</td>
<td>100</td>
<td>115.3</td>
</tr>
</tbody>
</table>

Special solution with opening gap 3 mm Part No. E16.2.100.0.R0, with opening gap 5 mm Part No. Z16.2.105.0.R0

Bi pin dimension approx. 0.3 – 0.7 mm wider! 1) Radius 040 available only for E16.2 / Z16.3 / Z16.4

*Radius available upon request, please consult igus.

Supplement Part No. with required radius (R): E16.3.060.0

**Order key**

**E16.3.060.0**

**Z16.3.060.0**

**Version “E”** Split crossbar along outer radius

**Version “Z”** Split crossbar along inner radius

- Standard color black
- Bending radius R
- Width index depends on Bi
- Series / Type

**Configuration options and order keys, overview** ➤ page 154

*Delivery time means time until shipping of goods (after technical release)*

**Polymer locking, one-piece | Universal for e-chains**

**Recommended for unsupported applications**

**Width index**

<table>
<thead>
<tr>
<th>Part No. full set with tielstrap plates</th>
<th>Part No. full set without tielstrap plates</th>
<th>Dim. A</th>
<th>Dim. B</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. 117.2.12PZ 117.2.12P</td>
<td>12 35.5 3</td>
<td>117.3.12P 117.3.12P</td>
<td>25 40.5 4</td>
<td></td>
</tr>
<tr>
<td>3. 117.4.12PZ 117.4.12P</td>
<td>37 60.5 5</td>
<td>117.5.12P 117.5.12P</td>
<td>48 70.0 6</td>
<td></td>
</tr>
<tr>
<td>5. 117.6.12PZ 117.6.12P</td>
<td>65 93.0 8</td>
<td>117.7.12P 117.7.12P</td>
<td>85 113.0 10</td>
<td></td>
</tr>
</tbody>
</table>

Material mounting bracket: igumid G, permitted temp. -40°C up to +120°C, VDE 0304 IIC UL94-HB

**One-piece mounting bracket**

- Available with or without
- strain relief tielstrap plates

- Corrosion-resistant

- Various installation options on the fixed end and/or the moving end

- Inner and outer attachment possible

**Weight**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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<td>1300</td>
<td>1400</td>
<td>1480</td>
<td>1570</td>
<td>1730</td>
<td>1850</td>
</tr>
</tbody>
</table>

**Recommended for unsupported applications**

- One-piece mounting bracket
- Available with or without
- strain relief tielstrap plates
- Corrosion-resistant
- Various installation options on the fixed end and/or the moving end
- Inner and outer attachment possible

**Additional Features**

- **Quicksnap** - the complete, detachable mounting unit, available from stock
- **Quickfix** - mounting bracket with dowel, available from stock

**Part No. structure**

117.2.12PA A1 A2 A3 A4

A1 must be indicated on preassembled configurations

**Single-part order**

- Mounting bracket: Moving end
- Mounting bracket: Fixed end

**Order key**

117.2.1ZP A1 (w/ tielstrap plates)

117.2.2ZP A1 (w. + tielstrap plates)

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)
### Introduction

**Series E26·Z26**

- **Dimensions**
- **Unsupported**

#### Easy Chain®

**Series E26·Z26**

- **Introduction**
- **Dimensions**
- **Unsupported**

**Dimensions**

- **Pitch** = 56 mm/link
- **Links/m** = 18 (1,008 mm)
- **Chain length** = \( \frac{S}{2} + K \)

#### Universal

- Mounting bracket with strain relief option

#### Cleanroom

- Suitable for cleanroom applications

#### Cost-effective

- Low price with one-piece design

#### Save time

- Simply press cables in

#### Flexible

- Torsional motions possible

#### Rapid installation

- Easy to fill from the inner radius (Version “Z”) or outer radius (Version “E”)

#### Cable-friendly

- Cable conserving interior

#### Clean

- Dirt-repellent exterior

#### When to use Series E26·Z26:

- **Medium size**
  - If a medium-sized e-chain® with an inner height of 36.5 mm is required
  - For inner widths up to 75 mm
  - For unsupported lengths up to 2.0 m and fill weights up to 4.0 kg/m
  - If easy filling without opening and closing of lids is required
  - If smooth running is required
  - If a lightweight and cost-effective e-chain® is required

- **When to use different igus® Series**
  - If very high loads and long unsupported travels occur
  - E2/000 Series 2600/2650/2680/2700, page 444
  - If single-extrusion crossbars are required
  - E2/000 Series 2600/2650/2680/2700, page 444

- **When to use Series E200·Z200:**
  - If a medium-sized e-chain® with an inner height of 36.5 mm is required
  - For inner widths up to 75 mm
  - For unsupported lengths up to 2.0 m and fill weights up to 4.0 kg/m
  - If easy filling without opening and closing of lids is required
  - If smooth running is required
  - If a lightweight and cost-effective e-chain® is required

**When to use Series E200·Z200:**

- If a medium-sized e-chain® with an inner height of 36.5 mm is required
- For inner widths up to 75 mm
- For unsupported lengths up to 2.0 m and fill weights up to 4.0 kg/m
- If easy filling without opening and closing of lids is required
- If smooth running is required
- If a lightweight and cost-effective e-chain® is required

**Technical Data**

- **Speed, material, temperature and flammability class**
  - page 152

**Available from stock. Delivery time** in 24h or today!

- Delivery time means time until shipping of goods (after technical release)

**3D-CAD files, configurators, PDF**

- www.igus.eu/eu/E26
### Series E26 | Split crossbar along outer radius | 1 / 2 / 3- chamber system

### Series Z26 | Split crossbar along inner radius | 1 / 2 / 3- chamber system

<table>
<thead>
<tr>
<th>Chamber system</th>
<th>Split crossbar along outer radius</th>
<th>Bending radii</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-chamber</td>
<td>E26.07.R,0  Z26.07.R,0</td>
<td>75</td>
<td>92</td>
</tr>
<tr>
<td>2-chamber</td>
<td>E26.2/45.R,0  Z26.2/45.R,0</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>3-chamber</td>
<td>E26.3/45.R,0  Z26.3/45.R,0</td>
<td>47</td>
<td>47</td>
</tr>
</tbody>
</table>

**Ba** pin dimension approx. 0.3 - 0.5 mm wider!

Supplement Part No. with required radius (R) Example: E26.07.150.0

### Order key

- **E26.07.150.0** Version "E" Split crossbar along outer radius
- **Z26.07.150.0** Version "Z" Split crossbar along inner radius

**Standard color black**

- **Bending radius R**
- **Width index (depends on Bi)**
- **Series / Type**

### Configuration options and order keys, overview ► page 154

**Available from stock. Delivery time* in 24h or today!**

- *Delivery time means time until shipping of goods (after technical release)**

---

*Serie E26-Z26 | Product Range | Standard

**easy chain®** on a 2 stage telescopic work platform

igus® GmbH Germany | Phone +49 2203 9649-800 Fax 222 | info@igus.de | www.igus.eu
Polymer pivoting, one-piece | Standard | Universal for e-chains®
Recommended for unsupported and gliding applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Full set with tiewrap plate + 10 cable tiewraps</th>
<th>Dim. A [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>07</td>
<td>2607.34PZB</td>
<td>2607.34PZ</td>
<td>2607.34PZK1</td>
<td>55</td>
<td>7</td>
</tr>
<tr>
<td>2/45.</td>
<td>2610.34PZB</td>
<td>2610.34PZ</td>
<td>2610.34PZK1</td>
<td>80</td>
<td>10</td>
</tr>
<tr>
<td>3/45.</td>
<td>2615.34PZB</td>
<td>2615.34PZ</td>
<td>2615.34PZK1</td>
<td>130</td>
<td>15</td>
</tr>
</tbody>
</table>

Material mounting bracket: igumid G, permitted temp. -40° up to +120° C, VDE 0304 IIC UL94-HB

Possible installation conditions for assembled mounting brackets:
For the preassembled mode please add index A1...A4 e.g. 2607.34PZB A1

A1... must be indicated on preassembled configurations:
- Strain relief with detachable tiewrap plates
- Corrosion-resistant
- Variable traverse angle
- Various installation options on the fixed end and/or the moving end

Part No. structure
2607.34 PZ A2

Single-part order
Mounting bracket Moving end
2607.3 PZ A2 (press. + tiewrap plate)
Mounting bracket Fixed end
2607.4PZ A2 (press. + tiewrap plate)

Strain relief, e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock.
The complete chainfix range with order options ▶ from page 1148

Polymer locking | Universal for e-chains®
Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Full set with tiewrap plate + 10 cable tiewraps</th>
<th>Dim. A [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>07</td>
<td>2607.12PZB</td>
<td>2607.12PZ</td>
<td>2607.12PZK1</td>
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<td>2615.12PZ</td>
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<td>130</td>
<td>15</td>
</tr>
</tbody>
</table>

Material mounting bracket: igumid G, permitted temp. -40° up to +120° C, VDE 0304 IIC UL94-HB

Possible installation conditions for assembled mounting brackets:
For the preassembled mode please add index A1...A4 e.g. 2607.12PZB A1

A1... must be indicated on preassembled configurations:
- For very high speed and/or acceleration
- If space is limited for height (the H measurement)
- Various installation options on the fixed end and/or the moving end

Part No. structure
2607.12 PZB A1

Single-part order
Mounting bracket Moving end
2607.1 PZB A1 (press. + tiewrap plate)
Mounting bracket Fixed end
2607.2 PZB A1 (press. + tiewrap plate)

Strain relief, e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock.
The complete chainfix range with order options ▶ from page 1148

With integrated strain relief tiewrap plates A…must be indicated on preassembled configurations.
Full set = 34
Mounting brackets for selected width index

Polymer pivoting, one-piece | Standard | Universal for e-chains®
Recommended for unsupported and gliding applications

Polymer locking | Universal for e-chains®
Recommended for vertical hanging and standing applications

Possible installation conditions for assembled mounting brackets:
For the preassembled mode please add index A1...A4 e.g. 2607.34PZB A1

A1... must be indicated on preassembled configurations:
- Strain relief with detachable tiewrap plates
- Corrosion-resistant
- Variable traverse angle
- Various installation options on the fixed end and/or the moving end

Part No. structure
2607.34 PZ A2

Single-part order
Mounting bracket Moving end
2607.3 PZ A2 (press. + tiewrap plate)
Mounting bracket Fixed end
2607.4PZ A2 (press. + tiewrap plate)

Strain relief, e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock.
The complete chainfix range with order options ▶ from page 1148

igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu
### Simply press cables in, large inner height

**When to use Series E300-Z300:**
- If a medium-sized e-chain® with an inner height of 48,5 mm is required
- For inner widths up to 75 mm
- For unsupported lengths up to 2,25 m and fill weights up to 8,0 kg/m
- If easy filling without opening and closing of lids is required
- If smooth running is required
- If a lightweight and cost-effective e-chain® is required

**When to use a different igus® Series:**
- If very high loads and long unsupported travels occur
  - E2/000 Series 3400/3450/3480/3500, page 462
- If single-extrusion crossbars are required
  - E2/000 Series 3400/3450/3480/3500, page 462

### Dimensions

<table>
<thead>
<tr>
<th>Pitch</th>
<th>Links/m</th>
<th>Chain length</th>
</tr>
</thead>
<tbody>
<tr>
<td>67</td>
<td>15 (1,005 mm)</td>
<td>S/2 + K</td>
</tr>
</tbody>
</table>

The required clearance height: \( H_F = H + 40 \text{ mm} \) (with 2,5 kg/m fill weight)

**Nota Bene:**
- Pitch = 67 mm/link
- Links/m = 15 (1,005 mm)
- Chain length = \( S/2 + K \)

**Technical Data**

- Speed, material, temperature and flammability class page 152

**Unsupported applications**

Un-supported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height \( H_F \). Please consult igus® if space is particularly restricted. More information [Design, page 95](#).

**Available from stock. Delivery time® in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

- Delivery time means time until shipping of goods (after technical release)

**Universal**
- Mounting bracket with strain relief option

**Cleanroom**
- Suitable for cleanroom applications

**Cost-effective**
- Low price with one-piece design

**Save time**
- Simply press cables in

**Flexible**
- Torsional motions possible

**Cable-friendly**
- Cable conserving interior

**Clean**
- Dirt-repellent exterior

**Rapid installation**
- Easy to fill from the inner radius (Version “Z”) or outer radius (Version “E”)

**Secure**
- Interior separation with shelves possible

**igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu**
### Optional shelving for Series E300.3/45 · Z300.3/45

Shelving enables subdivision of the inner space of the e-chain® Series E300.3/45 and Z300.3/45. This option makes sense in applications with many thin cables with similar diameters. For a consequent subdivision, full-width shelves can be arranged at 7 different heights (in 7 mm increments).

### Configuration options and order keys, overview ➤ page 154

**Order key**

- **E300.075.150.0** Version "E" Split crossbar along outer radius
- **Z300.075.150.0** Version "Z" Split crossbar along inner radius

**Supplement Part No. with required radius (R)** Example: **E300.075.150.0**

**Ba:** pin dimension approx. 0.3 - 0.5 mm wider!

### Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
Polymer pivoting, one-piece | Standard | Universal for e-chains™
Recommended for unsupported and gliding applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Full set with tiewrap plate + 10 cable tiewraps</th>
<th>Dim. A [mm]</th>
<th>Number of teeth</th>
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</thead>
<tbody>
<tr>
<td>.075</td>
<td>E3075.34PZB</td>
<td>E3105.34PZ</td>
<td>53</td>
<td>7</td>
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<tr>
<td>.2/.45</td>
<td>E3105.34PZ</td>
<td>E3105.34PZ</td>
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<tr>
<td>.3/.45</td>
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<td>E3115.34PZ</td>
<td>128</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

Material mounting bracket: igumid G, permitted temp. -40° up to +120° C, VDE 0304 IIC UL94-HB

Possible installation conditions for assembled mounting brackets:
For the preassembled mode please add index A1...A4 e.g. E3075.34PZB A2

Part No. structure
E3075.34PZB A2
A must be indicated on preassembled configurations
With integrated strain relief tiewrap plates
Full set = 34
Mounting brackets for selected width index

Strain relief, e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock.

Polymer locking | Universal for e-chains™
Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with tiewrap plates</th>
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<td>.2/.45</td>
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<td></td>
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<tr>
<td>.3/.45</td>
<td>E3115.12PZ</td>
<td>E3115.12PZ</td>
<td>128</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

Material mounting bracket: igumid G, permitted temp. -40° up to +120° C, VDE 0304 IIC UL94-HB

Possible installation conditions for assembled mounting brackets:
For the preassembled mode please add index A1...A4 e.g. E3075.12PZB A1

Part No. structure
E3075.12PZB A1
A must be indicated on preassembled configurations
Strain relief with chainfix tiewrap plates
Corrosion-resistant
Variable traverse angle
Various installation options on the fixed end and/or the moving end

Strain relief, e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock.

Easy chain® E300·Z300 Mounting brackets
Pivoting

Moving end E3...3PZB(B)
Fixed end E3...4PZB(B)

Possible installation conditions for assembled mounting brackets:
For the preassembled mode please add index A1...A4 e.g. E3075.34PZB A2

Single-part order
Mounting bracket Moving end E3075.3 PZB A2 (preass. + tiewrap plate)
Mounting bracket Fixed end E3075.4 PZB A2 (preass. + tiewrap plate)

Easy chain® E300·Z300 Mounting brackets
Locking

Moving end E3...1PZB(B)
Fixed end E3...2PZB(B)

Possible installation conditions for assembled mounting brackets:
For the preassembled mode please add index A1...A4 e.g. E3075.12PZB A1

Single-part order
Mounting bracket Moving end E3075.1 PZB A1 (preass. + tiewrap plate)
Mounting bracket Fixed end E3075.2 PZB A1 (preass. + tiewrap plate)

Strain relief, e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock.

3D-CAD files, configurators, PDF ➤ www.igus.eu/eu/E300 ➤ www.igus.eu/eu/Z300

igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu
System E1
One-piece strip design, modular and cost-effective
**Modular, one-piece strip design for simple applications - E1**

**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 classification

Harnessigus® System E1 in a bottle deposit machine

Series E1.17.021.028 in an electric wheelchair - cable supply on the scissors lifting system

The igus®-System E1 is very cost-effective at high quantities and ideal for automotive applications
System E1 e-chain® on one strip - snap-open along outer radius

### Contents

<table>
<thead>
<tr>
<th>Series</th>
<th>hi [mm]</th>
<th>bi [mm]</th>
<th>ba [mm]</th>
<th>ha [mm]</th>
<th>R [mm]</th>
<th>Segment length [mm]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1.10.013</td>
<td>10</td>
<td>13</td>
<td>16.5</td>
<td>15.5</td>
<td>18</td>
<td>200</td>
<td>212</td>
</tr>
<tr>
<td>E1.17.021</td>
<td>17</td>
<td>21</td>
<td>26</td>
<td>25</td>
<td>28</td>
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<td>31</td>
<td>36</td>
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<td>28</td>
<td>204</td>
<td>214</td>
</tr>
<tr>
<td>E1.17.044</td>
<td>17</td>
<td>44</td>
<td>49</td>
<td>25</td>
<td>28</td>
<td>255</td>
<td>214</td>
</tr>
<tr>
<td>E1.18.015</td>
<td>18</td>
<td>15</td>
<td>20</td>
<td>26</td>
<td>28</td>
<td>127.5</td>
<td>216</td>
</tr>
<tr>
<td>E1.20.015</td>
<td>20</td>
<td>15</td>
<td>22</td>
<td>27</td>
<td>28</td>
<td>250</td>
<td>218</td>
</tr>
</tbody>
</table>

Available from stock. Delivery time in 24h or today!

*Delivery time means time until shipping of goods (after technical release)*

### System E1 - e-chain® on one strip - easy to shorten...

...and to lengthen

### Technical Data

- Material - permitted temperature °C, igumid NB Application-oriented, upon request
- Flammability class igumid NB VDE 0304 IIC UL94-V2

You can find an assembly video on the web [www.igus.eu/eu/video](http://www.igus.eu/eu/video)
**Series E1.10 | snap-open along outer radius**

<table>
<thead>
<tr>
<th>E1.10</th>
<th>Bi</th>
<th>Ba</th>
<th>R</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>013</td>
<td>13</td>
<td>16,5</td>
<td>018</td>
<td>0,0164</td>
</tr>
</tbody>
</table>

**When to use Series E1.10:**
- If a very small e-chain® with an inner height of 5 mm is required
- If simple filling is required
- If an economical e-chain® is required
- If small assembly cost is required
- If a simple solution is required
- For lower duty or cycle life

**When to use a different igus® Series:**
- High load applications
  - Series E045 easy chain®, page 164
  - Series 07 zipper, page 242
- High cycle applications
  - Series E045 easy chain®, page 164
  - Series 07 zipper, page 242

**Dimensions**

```
<table>
<thead>
<tr>
<th>Series</th>
<th>Segment length Dim A [mm]</th>
<th>No. of links per segment</th>
<th>Number of segments/m</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1.10</td>
<td>200</td>
<td>10</td>
<td>5 (1000 mm)</td>
</tr>
</tbody>
</table>
```

**Required clearance height:** \( H_f = H + 40 \) mm

More radii upon request, please consult igus® for delivery time!
When to use Series E1.17:
- If a very small e-chain® with an inner height of 17 mm is required
- If simple filling is required
- If an economical e-chain® is required
- If small assembly cost is required
- If a simple solution is required
- For lower duty or cycle life

When to use a different igus® Series:
- High load applications
- Series E08 easy chain®, page 176
- Series 15 zipper, page 206
- High cycle applications
- Series E08 easy chain®, page 176
- Series 15 zipper, page 206

**Available from stock. Delivery time in 24h or today!**
*Delivery time means time until shipping of goods (after technical release)
**E1.18 Series E1.18 | Introduction**

- **e-chain® on one strip, small size**
  - **When to use Series E1.18:**
    - If a very small e-chain® with an inner height of 18 mm is required
    - If a simple filling is required
    - If an economical e-chain® is required
    - If small assembly cost is required
    - If a simple solution is required
    - For lower duty or cycle life

- **Weight**
  - kg/Segment

<table>
<thead>
<tr>
<th>Series</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R [mm]</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1.18</td>
<td>015</td>
<td>15</td>
<td>20</td>
<td>028</td>
</tr>
</tbody>
</table>

- **Dimensions**
  - UL94-V2 classification
  - Moving end
  - Fixed end
  - Inner height = 18 mm
  - Pitch = 25.25 mm/link
  - Chain length = \( \frac{S}{2} + K \)

- **Series E1.18 | snap-open along outer radius**
  - Supplement Part No. with required radius (R) Example: E1.18.015.028.0

- **Supplement Part No. with required radius (R)**
  - Example: E1.18.015.028.0

- **Series No. of links per segment**
  - E1.18 015.R.0

- **When to use a different igus® Series:**
  - High load applications
  - Series E14 easy chain®, page 180
  - Series 15 zipper, page 260
  - High cycle applications
  - Series E14 easy chain®, page 180
  - Series 15 zipper, page 260

- **Flexible:**
  - Different materials and colors available upon request

- **Practical:**
  - Easy fastening through strip bore each link

- **Available from stock. Delivery time in 24h or today!**
  - Delivery time means time until shipping of goods (after technical release)

- **3D-CAD files, configurators, PDF www.igus.eu/eu/E1.18**

- **Economical:**
  - Lightweight and cost-effective

- **Easy to lengthen:**
  - Strips can simply be snapped together

- **Easy to shorten:**
  - Separation at each segment

- **Save time:**
  - Snap-open lids for easy filling

- **Save space:**
  - Compact design with smooth outer contour

- **Variable:**
  - Different materials and colors available upon request

- **Practical:**
  - Easy fastening through strip bore each link

- **3D-CAD files, configurators, PDF www.igus.eu/eu/E1.18**

- **Economical:**
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- **Easy to lengthen:**
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- **Easy to shorten:**
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- **Save space:**
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- **Variable:**
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- **3D-CAD files, configurators, PDF www.igus.eu/eu/E1.18**

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- **Save space:**
  - Compact design with smooth outer contour

- **Variable:**
  - Different materials and colors available upon request

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- **3D-CAD files, configurators, PDF www.igus.eu/eu/E1.18**

- **Economical:**
  - Lightweight and cost-effective

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  - Strips can simply be snapped together

- **Easy to shorten:**
  - Separation at each segment

- **Save time:**
  - Snap-open lids for easy filling

- **Save space:**
  - Compact design with smooth outer contour

- **Variable:**
  - Different materials and colors available upon request

- **Practical:**
  - Easy fastening through strip bore each link

- **3D-CAD files, configurators, PDF www.igus.eu/eu/E1.18**

- **Economical:**
  - Lightweight and cost-effective

- **Easy to lengthen:**
  - Strips can simply be snapped together

- **Easy to shorten:**
  - Separation at each segment

- **Save time:**
  - Snap-open lids for easy filling

- **Save space:**
  - Compact design with smooth outer contour

- **Variable:**
  - Different materials and colors available upon request

- **Practical:**
  - Easy fastening through strip bore each link

- **3D-CAD files, configurators, PDF www.igus.eu/eu/E1.18**
System E1 | Series E1.20 | Introduction

Economical: lightweight and cost-effective

Easy to lengthen: strips can simply be snapped together

Easy to shorten: separation at each segment

Save time: snap-open lids for easy filling

Save space: compact design with smooth outer contour

Variable: different materials and colors available upon request

Practical: Easy fastening through strip bore each link

+ e-chain® on one strip, small size

When to use Series E1.20:
- If a very small e-chain® with an inner height of 20 mm is required
- If simple filling is required
- If an economical e-chain® is required
- If small assembly cost is required
- If a simple solution is required
- For lower duty or cycle life

When to use a different igus® Series:
- High load applications
  - Series E14 easy chain®, page 180
  - Series 15 zipper, page 260
- High cycle applications
  - Series E14 easy chain®, page 180
  - Series 15 zipper, page 260

More radii upon request, please consult igus® for delivery time!

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Delivery time means time until shipping of goods (after technical release)

3D-CAD files, configurators, PDF www.igus.eu/eu/E1.20

Series E1.20 | snap-open along outer radius | Lids to open reciprocally

<table>
<thead>
<tr>
<th>Series</th>
<th>B1 [mm]</th>
<th>Ba [mm]</th>
<th>R [mm]</th>
<th>Weight [kg/Segment]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1.20.015.0</td>
<td>15</td>
<td>22</td>
<td></td>
<td>≈ 0.0443</td>
</tr>
</tbody>
</table>

Supplement Part No. with required radius (R) Example: E1.18.15.028.0

Dimensions

<table>
<thead>
<tr>
<th>Series</th>
<th>Segment length A [mm]</th>
<th>No. of links per segment</th>
<th>Number of segments/m</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1.20.015.0</td>
<td>250</td>
<td>10</td>
<td>4 (1000 mm)</td>
</tr>
</tbody>
</table>

UL94-V2 classification

UL94-V2 classification

System E1 | Series E1.20 | Product Range | Dimensions

When to use a different igus® Series:
- High load applications
  - Series E14 easy chain®, page 180
  - Series 15 zipper, page 260
- High cycle applications
  - Series E14 easy chain®, page 180
  - Series 15 zipper, page 260

3D-CAD files, configurators, PDF www.igus.eu/eu/E1.20

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*Delivery time means time until shipping of goods (after technical release)

More radii upon request, please consult igus® for delivery time!
igus®
snapchain
Fit cable assemblies quickly in bunches
fit cable assemblies quickly in bunches - snapchain

igus® snapchain economical e-chains® for simple fillings. snapchains are easy to assemble and cost-effective. If an easy solution for minor number of travels is required.

Typical industries and applications
● Switch cubicle construction
● Electrical equipment
● Computer cubicles
● Office furniture
● Wherever cables are moved infrequently

Contents

Technical Data

<table>
<thead>
<tr>
<th>Series</th>
<th>Length loops</th>
<th>Pitch</th>
<th>Bending radius</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[mm]</td>
<td>[mm]</td>
<td>[mm]</td>
<td></td>
</tr>
<tr>
<td>TE14.50</td>
<td>50</td>
<td>30.5</td>
<td>028 - 125</td>
<td>224</td>
</tr>
<tr>
<td>TE26.120</td>
<td>120</td>
<td>56</td>
<td>063 - 200</td>
<td>224</td>
</tr>
<tr>
<td>TZ14.50</td>
<td>50</td>
<td>30.5</td>
<td>028 - 125</td>
<td>226</td>
</tr>
<tr>
<td>TZ26.120</td>
<td>120</td>
<td>56</td>
<td>063 - 200</td>
<td>226</td>
</tr>
</tbody>
</table>

Version TE -
Loops to be opened along the outer radius

Version TZ -
Loops to be opened along the inner radius

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)
Save time: Fit cable assemblies quickly in bunches

Flexible: Adjust and change loops at any time

Opening principle: Version TE14 can be opened along the outer and TZ14 can be opened along the inner radius

Economical: Favorable alternative to complex hinged cable trays

Simple: Well-suited to short lengths, ideally 5 - 10 links

Flexible: Can be bent in 1 or 2 directions (RBR)

**Fit cable assemblies quickly in bunches**

When to use Series TE14·TZ14:
- If simple filling is required
- If an economical e-chain® is required
- If small assembly cost is required
- If a simple solution is required
- For lower duty or cycle life

When to use a different igus® Series:
- High load applications
- easy chain®
- zipper
- High cycle applications
- easy chain®
- zipper

**Series TE14 | Loops to be opened along the outer radius**

<table>
<thead>
<tr>
<th>R</th>
<th>Bending radii</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>TE14.050.R.0*</td>
<td>028</td>
<td>125</td>
</tr>
<tr>
<td>TZ14.050.R.0</td>
<td>038</td>
<td>100</td>
</tr>
</tbody>
</table>

*Available as RBR (Reverse bending radius) Part No. TE26.120.Radius/Radius

Supplement Part No. with required radius (R) Example: TE26.120.100.0

**Dimensions**

3D-CAD files, configurators, PDF  www.igus.eu/eu/snapchain

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
**Introduction**

**Save time:**
- Fit cable assemblies quickly in bunches

**Flexible:**
- Adjust and change loops at any time

**Opening principle:**
- Version TE26 can be opened along the outer and TZ26 can be opened along the inner radius

**Economical:**
- Favorable alternative to complex hinged cable trays

**Simple:**
- Well-suited to short lengths, ideally 5 - 10 links

**Flexible:**
- Can be bent in 1 or 2 directions (RBR)

---

**Fit cable assemblies quickly in bunches**

When to use Series TE26·TZ26:
- If simple filling is required
- If an economical e-chain® is required
- If small assembly cost is required
- If a simple solution is required
- For lower duty or cycle life

**When to use a different igus® Series:**
- High load applications
- easy chain®
- zipper
- High cycle applications
- easy chain®
- zipper

---

**Dimensions**

- **Pitch:** 56 mm/link
- **Links/m:** 18 (1,008 mm)
- **Chain length:** \( \frac{5}{2} + K \)

- **Cable package max.:** 47 mm

---

**Series TE26 | Loops to be opened along the outer radius**

**Series TZ26 | Loops to be opened along the inner radius**

<table>
<thead>
<tr>
<th>R</th>
<th>Bending radii</th>
</tr>
</thead>
<tbody>
<tr>
<td>to be opened along the outer radius</td>
<td>to be opened along the inner radius</td>
</tr>
<tr>
<td>TE26.120.R.0*</td>
<td>TZ26.120.R.0</td>
</tr>
<tr>
<td>~0.43</td>
<td></td>
</tr>
</tbody>
</table>

*Available as RBR (Reverse bending radius) Part No. TE26.120.Radius/Radius

Supplement Part No. with required radius (R) Example: TE26.120.100.0
Zip fastening e-chains® e-tubes - zipper

zipper e-chains® convince in practicality and performance. The “zipper” function makes them a very useful product to reduce assembly time. The small pitch, the tough-elastic zipper-band, and the sturdy link work well in high-acceleration environments. The zipper Series is one of the most popular e-chain® Series in demanding applications.

- 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: 100 m/s² and more are possible
- Interior separation possible for larger versions (Series 09, 15, 17)

Typical industries and applications
- Pick & place robots
- Semi-conductor machines
- Linear motors, actuators
- Measuring equipment
- Machine tools (zipper e-tube)

Cleanroom Class 1 (ISO class 3) for zipper Series 15, tested by the Dryden Engineering Company, California

58 dB(A) tested in igus® lab, v = 1.0 m/s unsupported, Series 09.50.020.0

UL94-V0 classifications upon request

Electrically conductive ESD/ATEX versions, several Series available from stock

Contents, selection table and assembly instructions next page
Contents | Selection Table

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width</th>
<th>Outer height</th>
<th>Bending radius</th>
<th>Unsupported length max.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>047</td>
<td>9.0</td>
<td>10 - 16</td>
<td>16.0 - 22.0</td>
<td>12.5</td>
<td>18 - 38</td>
<td>0.40</td>
<td>238</td>
</tr>
<tr>
<td>07</td>
<td>10.3</td>
<td>6 - 64</td>
<td>12.5 - 71.0</td>
<td>15.0</td>
<td>18 - 48</td>
<td>0.55</td>
<td>242</td>
</tr>
<tr>
<td>09</td>
<td>15.0</td>
<td>10 - 50</td>
<td>18.2 - 58.2</td>
<td>19.3</td>
<td>28 - 48</td>
<td>1.00</td>
<td>250</td>
</tr>
<tr>
<td>15</td>
<td>17.0</td>
<td>15 - 100</td>
<td>26.0 - 113.0</td>
<td>24.0</td>
<td>38 - 180</td>
<td>1.20</td>
<td>260</td>
</tr>
<tr>
<td>17</td>
<td>32.0</td>
<td>15 - 100</td>
<td>25.5 - 113.0</td>
<td>39.0</td>
<td>63 - 125</td>
<td>1.00</td>
<td>276</td>
</tr>
</tbody>
</table>

zipper -
two-piece e-chains*
zip-open along outer radius

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width</th>
<th>Outer height</th>
<th>Bending radius</th>
<th>Unsupported length max.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>R07</td>
<td>10.3</td>
<td>10 - 50</td>
<td>16.5 - 57.0</td>
<td>15.0</td>
<td>38 - 48</td>
<td>0.55</td>
<td>246</td>
</tr>
<tr>
<td>R09</td>
<td>15.0</td>
<td>10 - 50</td>
<td>18.2 - 58.2</td>
<td>19.3</td>
<td>48 - 100</td>
<td>1.00</td>
<td>256</td>
</tr>
<tr>
<td>R15</td>
<td>17.0</td>
<td>25 - 80</td>
<td>36.0 - 94.0</td>
<td>24.0</td>
<td>63 - 180</td>
<td>1.20</td>
<td>268</td>
</tr>
<tr>
<td>R17</td>
<td>32.0</td>
<td>15 - 63</td>
<td>26.0 - 74</td>
<td>39.0</td>
<td>63 - 125</td>
<td>1.20</td>
<td>282</td>
</tr>
</tbody>
</table>

zipper -
two-piece e-tubes
Protection against dirt and chips,
zip-open along outer radius

Configuration options and order keys, overview | page 236

Assembly instructions

1. Push and click
2. Snap lids together, position, push and snap
3. Simple opening and closing - all lids fit like a “zipper”
4. For separating release side link, then twist and pull apart

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)

Assembly video available online at www.igus.eu/eu/zipper_assembly
### Technical Data - zipper

- **Gilding speed / acceleration (maximum)**: max. 10 [m/s] / max. 50 [m/s]
- **Speed / acceleration FLg max.**
  - FLg ≤ 0.40 m
  - FLg ≤ 0.55 m
  - FLg ≤ 1.0 m
  - FLg ≤ 1.2 m
- **Material lower part - permitted temperature °C, igumid G**: -40° up to +120° C
- **Material lid - permitted temperature °C, igumid TE**: -40° up to +70° C
- **Flammability class, igumid G**: VDE 0304 IIC UL94-HB

### Installation methods overview, maximum travels - zipper

<table>
<thead>
<tr>
<th>Series</th>
<th>e-chain ® / e-tube</th>
<th>Unsupported application</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
</tr>
</thead>
<tbody>
<tr>
<td>047</td>
<td>≤ 0.40 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td></td>
</tr>
<tr>
<td>07</td>
<td>≤ 0.55 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td></td>
</tr>
<tr>
<td>09</td>
<td>≤ 1.0 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>≤ 1.2 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>≤ 1.0 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
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<tr>
<td>R07</td>
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<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
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</tr>
<tr>
<td>R09</td>
<td>≤ 1.0 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td></td>
</tr>
<tr>
<td>R15</td>
<td>≤ 1.2 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td></td>
</tr>
<tr>
<td>R17</td>
<td>≤ 1.0 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td></td>
</tr>
</tbody>
</table>

**Available from stock. Delivery time* in 24h or today!**

* Delivery time means time until shipping of goods (after technical release)
**Configuration options and order key** (based on Series 15)

**Order example | Order key and color options**

**Order example for complete e-chain** Series 15 (1,0 m), color black, with mounting brackets and interior separation:

<table>
<thead>
<tr>
<th>e-chain (1,0 m)</th>
<th>Please indicate e-chain length or number of links: 1,0 m or 33 links</th>
<th>15.025.038.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ Mounting brackets</td>
<td>1 set (with integrated strain relief)</td>
<td>10.25.34PZ</td>
</tr>
<tr>
<td>+ Interior separation</td>
<td>with 2 separators assembled every 2nd link</td>
<td>2 x 154</td>
</tr>
</tbody>
</table>

**Order text:** 1,0 m 15.025.038.0 + 10.25.34PZ + 2 x 154

**Color options for e-chains** and e-tubes

<table>
<thead>
<tr>
<th>Color</th>
<th>Color index</th>
<th>Order example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black, Standard, from stock</td>
<td>0</td>
<td>15.025.038.0</td>
</tr>
<tr>
<td>Slate grey only ESD material</td>
<td>.5</td>
<td><img src="igus.de" alt="" /></td>
</tr>
<tr>
<td>Grey only HT material</td>
<td>.2</td>
<td><img src="igus.de" alt="" /></td>
</tr>
<tr>
<td>Dusty grey special color only e-chains</td>
<td>.4</td>
<td><img src="igus.de" alt="" /></td>
</tr>
<tr>
<td>White special color</td>
<td>.1</td>
<td><img src="igus.de" alt="" /></td>
</tr>
<tr>
<td>Grey white special color</td>
<td>.15</td>
<td><img src="igus.de" alt="" /></td>
</tr>
<tr>
<td>Orange special color</td>
<td>.2</td>
<td><img src="igus.de" alt="" /></td>
</tr>
<tr>
<td>Yellow special color</td>
<td>.4</td>
<td><img src="igus.de" alt="" /></td>
</tr>
<tr>
<td>Light grey special color</td>
<td>.14</td>
<td><img src="igus.de" alt="" /></td>
</tr>
</tbody>
</table>

**Order key 15.025.038.0**

- Standard color black
- Bending radius R
- Width index (depends on Bi)
- Series / Type

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

**zipper e-chains** e.g. in automatic equipment - reduce assembly time

**zipper | Application**
When to use Series 047:

- If a very small e-chain® with an inner height of 9 mm and smallest bending radii are required
- For inner widths up to 16 mm
- For unsupported lengths up to 0.40 m and fill weights up to 0.25 kg/m
- Small pitch for smooth running
- If fast, zipper-like accessibility to cables is required
- If quick insertion of cables with preassembled connectors is required

When to use a different igus® Series:

- If easy filling without opening and closing is required
  Series E04 easy chain®, page 160

Fast opening, small pitch, smooth running

Example:

- Fill weight = 0.125 [kg/m]
- Unsupported length FLG = 0.3 m
- Length of travel S = 0.6 m

The required clearance height:

\[ HF = H + 10 \text{ mm} \] (with 0.2 kg/m fill weight)

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please consult igus® if space is particularly restricted. More information Design, page 95

Available from stock. Delivery time® in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
zipper | e-chains® | Series 047 | Product Range | Standard

**e-chain® | Series 047 | zip-open along outer radius**

<table>
<thead>
<tr>
<th>e-chain® zip-open along outer radius</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Bending radii [mm]</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>047. 10, R.0</td>
<td>10</td>
<td>16</td>
<td>018, 028, 038</td>
<td>≈ 0.10</td>
</tr>
<tr>
<td>047. 16, R.0</td>
<td>16</td>
<td>22</td>
<td>018, 028, 038</td>
<td>≈ 0.11</td>
</tr>
</tbody>
</table>

Supplement Part No. with required radius (R) Example: 047.10.038.0

**Order key**

047. 10. 038. 0 e-chain®

- Standard color black
- Bending radius R
- Width index (depends on Bi)
- Series / Type

**e-chain® links as single parts, overview** ▶ page 235

**Configuration options and order keys, overview** ▶ page 236

Available from stock. **Delivery time in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

---

**zipper | e-chains® | Series 047 | Mounting brackets**

**Polymer one-piece, one side pivoting | Universal for e-chains®**

**Recommended for unsupported applications**

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set with tie wrap plates</th>
<th>Part No. full set without tie wrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>10, ▶</td>
<td>0450.10.12PZ</td>
<td>0450.10.12</td>
<td>16</td>
<td>–</td>
<td>1</td>
</tr>
<tr>
<td>16, ▶</td>
<td>0450.16.12PZ</td>
<td>0450.16.12</td>
<td>22</td>
<td>10</td>
<td>2</td>
</tr>
</tbody>
</table>

Possible installation conditions:

- For the preassembled mode please add index A2 or A4 e.g. 0450.10.12PZA2

**Part No. structure**

A... must be indicated on preassembled mode

- Mounting brackets for selected width index

**Single-part order**

- Mounting bracket Moving end 0450.10.1 PZ A2 (press + tie wrap plate)
- Mounting bracket Fixed end 0450.10.3PZ A2 (press + tie wrap plate)

---

**Mounting bracket with strain relief tie wrap plate has reductions of ø 3 mm / ø 6 mm 90°**

**Mounting bracket without strain relief tie wrap plate only has holes of ø 3 mm**

**With integrated strain relief tie wrap plates**

Possible installation conditions on the fixed end and/or the moving end

---

**Available from stock. Delivery time in 24h or today!**
**Fast opening, for smallest spaces**

**When to use Series 07:**
- If a very small e-chain® with an inner height of 10,3 mm and smallest bending radii are required
- For inner widths up to 64 mm
- For unsupported lengths up to 0,55 m and fill weights up to 0,4 kg/m
- Small pitch for smooth running
- If fast, zipper-like accessibility to cables is required
- If quick insertion of cables with preassembled connectors is required

**When to use a different igus® Series:**
- If a fully enclosed e-tube with zipper opening mechanism is required
  - Series R07 zipper e-tube, page 246
- If a cheaper, easy openable e-chain® is required
  - Series B07 E2 micro, page 322
- If cable installation without opening of lids is required
  - Series E06 easy chain® micro, page 318

**Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height HF. Please consult igus® if space is particularly restricted. More information Design, page 95**

---

**Dimensions**

**Unsupported**

<table>
<thead>
<tr>
<th>Pitch</th>
<th>20 mm/link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Links/m</td>
<td>50 (1000 mm)</td>
</tr>
<tr>
<td>Chain length</td>
<td>S/2 + K</td>
</tr>
</tbody>
</table>

**Technical Data**

- Speed, material, temperature and flammability class page 234
- Available from stock. Delivery time* in 24h or today!
  - *Delivery time means time until shipping of goods (after technical release)

---

**Example**

<table>
<thead>
<tr>
<th>Fill weight [kg/m]</th>
<th>Unsupported length FLg = 0,52 m</th>
<th>Length of travel = 1,04 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>0,25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The required clearance height: HF = H + 10 mm (with 0,2 kg/m fill weight)

- Radius 048 only for Series 07.64 - for other widths available upon request, please consult igus® for delivery time
- FLs = with straight upper run
- FLg = with permitted sag
- R = Bending radius
- K = Overlength e-chain, radius in final position
- H = Nominal clearance height
- HF = Required clearance height
- R = R + "safety"
ESD/ATEX permanently conductive e-chains® - Several widths with delivery from stock:
Inner widths Bi 10 - 50, Bending radii R 018 - 038. Full ESD product range www.igus.eu/ESD

Order key
07. 40. 038. 0 e-chain®

Polymer locking, one-piece | Universal for e-chains®
Recommended for unsupported applications

Possible installation conditions for assembled mounting brackets:
For the preassembled mode please add index A1... A4 e.g. 060.40.12PZA1

Additional Features
Quicksnap - the complete, detachable mounting unit.
Quickfix - mounting bracket with dowel, available upon request
Fast opening, enclosed zipper-band

When to use Series R07:
- If a very small e-tube with an inner height of 10.3 mm and smallest bending radii are required
- For inner widths up to 50 mm
- For unsupported lengths up to 0.55 m and fill weights up to 0.4 kg/m
- If chip protection is required
- Small pitch for smooth running
- If fast, zipper-like accessibility to cables is required
- If quick insertion of cables with preassembled connectors is required

When to use a different igus® Series:
- If an e-chain® with zipper opening mechanism is required
  - Series 07 zipper e-chain®, page 242
  - If a cheaper, easy openable e-chain® is required
  - Series 807 E2 micro, page 322
- If cable installation without opening of lids is required
  - Series E06 easy chain®, page 168
- If opening of the links is not necessary
  - Series 06 E2 micro, page 318

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height HF. Please consult igus® if space is particularly restricted. More information ▶ Design, page 95

Fixed opening, enclosed zipper-band

When to use Series FL:
- If robust, high load bearing zipper-band is required
- For unsupported lengths up to 2 m and fill weights up to 4 kg/m
- If bend radii of > 2000 mm are required
- If minimum bend radii of 300 mm are required
- If fully supported and preassembled connectors are required

When to use a different igus® Series:
- If non-steel e-chain® is required
  - Series 07 zipper e-chain®, page 242
  - If an e-chain® is required
  - Series 807 E2 micro, page 322
- If cable installation without opening of lids is required
  - Series E06 easy chain®, page 168
- If opening of the links is not necessary
  - Series 06 E2 micro, page 318

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

3D-CAD files, configurators, PDF ▶ www.igus.eu/eu/R07
### e-tube | Series R07 | zip-open along outer radius

<table>
<thead>
<tr>
<th>R tubing</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R bending radii [mm]</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>R07.06, R0</td>
<td>06</td>
<td>12.5</td>
<td>038</td>
<td>048</td>
</tr>
<tr>
<td>R07.10, R0</td>
<td>10</td>
<td>16.5</td>
<td>038</td>
<td>048</td>
</tr>
<tr>
<td>R07.16, R0</td>
<td>16</td>
<td>22.5</td>
<td>038</td>
<td>048</td>
</tr>
<tr>
<td>R07.20, R0</td>
<td>20</td>
<td>27</td>
<td>038</td>
<td>048</td>
</tr>
<tr>
<td>R07.30, R0</td>
<td>30</td>
<td>37</td>
<td>038</td>
<td>048</td>
</tr>
<tr>
<td>R07.40, R0</td>
<td>40</td>
<td>47</td>
<td>038</td>
<td>048</td>
</tr>
<tr>
<td>R07.64, R0</td>
<td>64</td>
<td>71</td>
<td>038</td>
<td>048</td>
</tr>
</tbody>
</table>

*Width available upon request, please consult igus® for delivery time

**Supplementary Part No. with required radius (R): Example: R07.40.038.0**

### Order key
- **R07. 40. 038. 0** e-tube
- **R07. 40. 038. A1, A2, A3, A4** e-tube
- **R07. 40. 038.0** e-tube

### Additional Features
- **Polymer locking, one-piece** Universal for e-tubes
- **Recommended for unsupported applications**

### Configuration options and order keys, overview ➤ page 236

**Possible installation conditions for assembled mounting brackets:**
For the **preassembled** mode please add index A1...A4 ➤ e.g. **060.40.12PZA1**

**Quickfix** - mounting bracket with dowel, available upon request

**Quicksnap** - the complete, detachable mounting unit.
**Introduction**

- **Fast opening, high accelerations**
  - **When to use Series 09:**
    - If a very small e-chain® with an inner height of 15 mm and smallest bending radii are required
    - For inner widths up to 50 mm
    - For unsupported lengths up to 1.0 m and fill weights up to 0.7 kg/m
    - Small pitch for smooth running
    - If fast, zipper-like accessibility to cables is required
    - If quick insertion of cables with preassembled connectors is required

- **When to use a different igus® Series:**
  - If a fully enclosed e-tube with zipper opening mechanism is required
    - Series R09 zipper e-tube, page 256
  - If a cheaper, easy openable e-chain® is required
    - Series B09 E2 micro, page 340
  - If cable installation without opening of lids is required
    - Series E08 easy chain®, page 176
  - If an e-chain® snap-open along inner radius with film-hinge is required
    - Series 094 E2 micro, page 330
  - If opening of the links is not necessary
    - Series 08 E2 micro, page 334

---

**Dimensions**

**Unsupported**

- Pitch = 20 mm/link
- Links/m = 50 (1000 mm)
- Chain length = S/2 + K

<table>
<thead>
<tr>
<th>Pitch</th>
<th>028</th>
<th>038</th>
<th>048</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>75</td>
<td>95</td>
<td>115</td>
</tr>
<tr>
<td>D</td>
<td>68</td>
<td>78</td>
<td>88</td>
</tr>
<tr>
<td>K</td>
<td>130</td>
<td>160</td>
<td>195</td>
</tr>
</tbody>
</table>

The required clearance height: Hₚ = H + 15 mm (with 0.3 kg/m fill weight)
### Slotted separator B09.2

Slotted separator B09.2 is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

### Full-width shelf 110.X

This option makes sense in applications with many thin cables with similar diameters. For a consequent subdivision.

### Full-width shelves

<table>
<thead>
<tr>
<th>Width X</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>016</td>
<td>110.16</td>
<td>111.16</td>
</tr>
<tr>
<td>020</td>
<td>110.20</td>
<td>111.20</td>
</tr>
<tr>
<td>040</td>
<td>110.40</td>
<td>111.40</td>
</tr>
<tr>
<td>050</td>
<td>110.50</td>
<td>111.50</td>
</tr>
</tbody>
</table>

---

**Supplement Part No. with required radius (R)** Example: **09.40.048.0**
zipper | e-chains® | Series 09 | Mounting brackets

Polymer locking, one-piece | Universal for e-chains®
Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.</td>
<td>080.10. 12PZ</td>
<td>080.10. 12</td>
<td>–</td>
<td>18.2</td>
<td>1</td>
</tr>
<tr>
<td>16.</td>
<td>080.16. 12PZ</td>
<td>080.16. 12</td>
<td>–</td>
<td>24.2</td>
<td>2</td>
</tr>
<tr>
<td>20.</td>
<td>080.20. 12PZ</td>
<td>080.20. 12</td>
<td>–</td>
<td>28.2</td>
<td>2</td>
</tr>
<tr>
<td>30.</td>
<td>080.30. 12PZ</td>
<td>080.30. 12</td>
<td>22</td>
<td>38.2</td>
<td>3</td>
</tr>
<tr>
<td>40.</td>
<td>080.40. 12PZ</td>
<td>080.40. 12</td>
<td>32</td>
<td>48.2</td>
<td>4</td>
</tr>
<tr>
<td>50.</td>
<td>080.50. 12PZ</td>
<td>080.50. 12</td>
<td>42</td>
<td>58.2</td>
<td>5</td>
</tr>
</tbody>
</table>

Additional Features

Quickfix - mounting bracket with dowel, available upon request
Quicksnap - the complete, detachable mounting unit, Part Nos. 080.20.QS, 080.30.QS available from stock

Possible installation conditions for assembled mounting brackets:
For the preassembled mode please add index A1…A4 e.g. 080.40.12PZ A1

Single-part order
Mounting bracket - Moving end
080.40.1 PZ A1 (preass. + tiewrap plate)
Mounting bracket - Fixed end
080.40.2 PZ A1 (preass. + tiewrap plate)

Part No. structure
080.40.12 PZ A1
A… must be indicated on preassembled configurations
With integrated strain relief tiewrap plates
Full set = 12
Mounting brackets for selected width index

Polymer locking, one-piece
Available with or without strain relief tiewrap plates
Corrosion-resistant
Inner and outer attachment possible
Various installation options on the fixed end and/or the moving end
**Fast opening, enclosed zipper-band**

**When to use Series R09:**
- If a very small e-tube with an inner height of 15 mm and smallest bending radii are required
- For inner widths up to 50 mm
- For unsupported lengths up to 1,0 m and fill weights up to 0.7 kg/m
- If chip protection is required
- Small pitch for smooth running
- If fast, zipper-like accessibility to cables is required
- If quick insertion of cables with preassembled connectors is required

**When to use a different igus® Series:**
- If an e-chain® with zipper opening mechanism is required
  - Series 09 zipper e-chain®, page 250
- If a cheaper, easy openable e-chain® is required
  - Series B09 E2 micro, page 340
- If cable installation without opening of lids is required
  - Series E08 easy chain®, page 176
- If an e-chain® snap-open along inner radius with film-hinge is required
  - Series 094 E2 micro, page 330
- If opening of the links is not necessary
  - Series 08 E2 micro, page 334

**Unsupported e-chains®** feature positive camber over short travels. This must be accounted for when specifying the clearance height HF. Please consult igus® if space is particularly restricted. More information → Design, page 95

---

**Dimensions**

<table>
<thead>
<tr>
<th>Chain length</th>
<th>Pitch</th>
<th>Links/m</th>
<th>Speed, material, temperature and flammability class</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20 mm/link</td>
<td>50 (1000 mm)</td>
<td>page 234</td>
</tr>
</tbody>
</table>

**Technical Data**

** Unsupported e-chains**

- Original size 1:1
- Outer height 19.3 mm
- Lightweight and stable
- For high accelerations
- Small pitch for low-noise, smooth running
- Can be separated and joined at each link
- Protection against dirt and chips
- Two-piece link design

**Example**

- Fill weight = 0.5 [kg/m]
- Unsupported length FLB = 0.63 m
- Length of travel = 1.26 m

The required clearance height: HF = H + 15 mm (with 0.3 kg/m fill weight)

**Available from stock. Delivery time in 24h or today!**

*“Delivery time means time until shipping of goods (after technical release)*

- 3D-CAD files, configurators, PDF ▶ www.igus.eu/eu/R09

---

igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu
e-tube | Series R09 | zip-open along outer radius

<table>
<thead>
<tr>
<th>e-tube zip-open</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Bending radii [mm]</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>R09.10.R0</td>
<td>10</td>
<td>18.2</td>
<td>048, 075, 100</td>
<td>0.23</td>
</tr>
<tr>
<td>R09.16.R0</td>
<td>16</td>
<td>24.2</td>
<td>048, 075, 100</td>
<td>0.26</td>
</tr>
<tr>
<td>R09.20.R0</td>
<td>20</td>
<td>28.2</td>
<td>048, 075, 100</td>
<td>0.27</td>
</tr>
<tr>
<td>R09.30.R0</td>
<td>30</td>
<td>38.2</td>
<td>048, 075, 100</td>
<td>0.30</td>
</tr>
<tr>
<td>R09.40.R0</td>
<td>40</td>
<td>48.2</td>
<td>048, 075, 100</td>
<td>0.33</td>
</tr>
<tr>
<td>R09.50.R0</td>
<td>50</td>
<td>58.2</td>
<td>048, 075, 100</td>
<td>0.36</td>
</tr>
</tbody>
</table>

Supplement Part No. with required radius (R) Example: R09.40.048.0

Order key
R09. 40. 048. 0 e-tube

Standard color black
Bending index R
Width index (depends on Bi)
Series / Type

Polymer locking, one-piece | Universal for e-tubes
Recommended for unsupported applications

**Width Index**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Dimensions [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.</td>
<td>080.10.12PZ</td>
<td>18.2, 1</td>
</tr>
<tr>
<td>16.</td>
<td>080.16.12PZ</td>
<td>24.2, 2</td>
</tr>
<tr>
<td>20.</td>
<td>080.20.12PZ</td>
<td>28.2, 2</td>
</tr>
<tr>
<td>30.</td>
<td>080.30.12PZ</td>
<td>38.2, 3</td>
</tr>
<tr>
<td>40.</td>
<td>080.40.12PZ</td>
<td>48.2, 4</td>
</tr>
<tr>
<td>50.</td>
<td>080.50.12PZ</td>
<td>58.2, 5</td>
</tr>
</tbody>
</table>

Possible installation conditions for assembled mounting brackets:
For the preassembled mode please add index A1...A4 e.g. 080.40.12PZ A1

**Additional Features**

- Quickfix - mounting bracket with dowel, available upon request
- Quickswap - complete, detachable mounting unit. Part Nos. 080.20.05, 080.30.05 available from stock

**Configuration options and order keys**, overview ➤ page 236

**Available from stock. Delivery time** in 24h or today!
*Delivery time means time until shipping of goods (after technical release)*

**zipper | e-tubes | Series R09 | Product Range | Standard**

**zipper | e-tubes | Series R09 | Mounting brackets**

**Polymer locking, one-piece | Universal for e-tubes**

**Recommended for unsupported applications**

- One-piece mounting bracket
- Available with or without strain relief tiewrap plates
- Corrosion-resistant
- Inner and outer attachment possible
- Various installation options on the fixed end and/or the moving end

**Part No. structure**

080.40.12PZ A1

mounting brackets for selected index

**Available from stock. Delivery time** in 24h or today!
*Delivery time means time until shipping of goods (after technical release)*

**Configuration options and order keys**, overview ➤ page 236

**Available from stock. Delivery time** in 24h or today!
*Delivery time means time until shipping of goods (after technical release)*

**zipper | e-tubes | Series R09 | Product Range | Standard**

**zipper | e-tubes | Series R09 | Mounting brackets**

**Polymer locking, one-piece | Universal for e-tubes**

**Recommended for unsupported applications**

- One-piece mounting bracket
- Available with or without strain relief tiewrap plates
- Corrosion-resistant
- Inner and outer attachment possible
- Various installation options on the fixed end and/or the moving end

**Part No. structure**

080.40.12PZ A1

mounting brackets for selected index

**Available from stock. Delivery time** in 24h or today!
*Delivery time means time until shipping of goods (after technical release)*

**Configuration options and order keys**, overview ➤ page 236

**Available from stock. Delivery time** in 24h or today!
*Delivery time means time until shipping of goods (after technical release)*

**zipper | e-tubes | Series R09 | Product Range | Standard**

**zipper | e-tubes | Series R09 | Mounting brackets**

**Polymer locking, one-piece | Universal for e-tubes**

**Recommended for unsupported applications**

- One-piece mounting bracket
- Available with or without strain relief tiewrap plates
- Corrosion-resistant
- Inner and outer attachment possible
- Various installation options on the fixed end and/or the moving end

**Part No. structure**

080.40.12PZ A1

mounting brackets for selected index

**Available from stock. Delivery time** in 24h or today!
*Delivery time means time until shipping of goods (after technical release)*

**Configuration options and order keys**, overview ➤ page 236

**Available from stock. Delivery time** in 24h or today!
*Delivery time means time until shipping of goods (after technical release)*
Fast opening, high stability

- When to use Series 15:
  - If a very small e-chain® with an inner height of 17 mm and smallest bending radii are required
  - For inner widths up to 100 mm
  - For unsupported lengths up to 1,20 m and fill weights up to 1,5 kg/m
  - If high stability and excellent service life is required
  - Small pitch for smooth running
  - If fast, zipper-like accessibility to cables is required

- When to use a different igus® Series:
  - If a fully enclosed e-tube with zipper opening mechanism is required
    - Series R15 zipper e-tube, page 268
  - If snap-open accessibility along the inner radius is required
    - Series B15i E2 mini, page 380
  - If snap-open links are not necessary
    - Series 10 E2 mini, page 356
  - If torsion occurs
    - Series E14 easy chain®, page 180

### Technical Data

<table>
<thead>
<tr>
<th>R</th>
<th>038</th>
<th>048</th>
<th>075</th>
<th>100</th>
<th>110</th>
<th>125</th>
<th>145</th>
<th>180</th>
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<tbody>
<tr>
<td>H</td>
<td>99</td>
<td>119</td>
<td>173</td>
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<td>380</td>
<td>410</td>
<td>455</td>
<td>520</td>
<td>630</td>
</tr>
</tbody>
</table>

The required clearance height: 

\[ H_F = H + 20 \text{ mm} \] (with 1,0 kg/m fill weight)

Before using this Series on long travels please consult igus®.

- Unsuppored applications
  - Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height \( H_F \). Please consult igus® if space is particularly restricted. More information ▶ Design, page 95

---

**For high accelerations**

- Available from stock. Delivery time* in 24h or today!
  - *Delivery time means time until shipping of goods (after technical release)

igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu
**e-chain® | Series 15 | zip-open along outer radius**

<table>
<thead>
<tr>
<th>e-chain® zip-open along outer radius</th>
<th>Bi</th>
<th>Ba</th>
<th>R Bending radii</th>
<th>Weight</th>
</tr>
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<tbody>
<tr>
<td>15.015,R.0</td>
<td>15</td>
<td>26</td>
<td>038 048 075 100 110 125 145 180</td>
<td>0.35</td>
</tr>
<tr>
<td>15.025,R.0</td>
<td>25</td>
<td>36</td>
<td>038 048 075 100 110 125 145 180</td>
<td>0.40</td>
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<tr>
<td>15.038,R.0</td>
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<td>49</td>
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<td>0.46</td>
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<tr>
<td>15.050,R.0</td>
<td>50</td>
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<tr>
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<td>63</td>
<td>76</td>
<td>038 048 075 100 110 125 145 180</td>
<td>0.63</td>
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<tr>
<td>15.6,R.0</td>
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<tr>
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<td>100</td>
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<td>038 048 075 100 110 125 145 180</td>
<td>0.76</td>
</tr>
</tbody>
</table>

Before using this Series on long travels please consult igus®.

**Order key**

15.025.038.0

**Separators, full-width shelves - in the standard configuration separators are assembled every 2nd e-chain® link!**

**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 155**

Side plate for use with full-width shelf 110.X and slotted separator153.

**Full-width shelf 110.X**

This option makes sense in applications with many thin cables with similar diameters. For a consequent subdivision. Full-width shelves can be arranged at 3 different heights (in 5 mm increments).

**Full-width shelves**

<table>
<thead>
<tr>
<th>Width X</th>
<th>un assembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>015</td>
<td>110.15</td>
<td>111.15</td>
</tr>
<tr>
<td>025</td>
<td>110.25</td>
<td>111.25</td>
</tr>
<tr>
<td>038</td>
<td>110.38</td>
<td>111.38</td>
</tr>
<tr>
<td>050</td>
<td>110.50</td>
<td>111.50</td>
</tr>
<tr>
<td>063</td>
<td>110.63</td>
<td>111.63</td>
</tr>
<tr>
<td>080</td>
<td>110.80</td>
<td>111.80</td>
</tr>
</tbody>
</table>

**Configuration options and order keys, overview » page 236**

**Available from stock. Delivery time® in 24h or today!**

*Delivery time means time until shipping of goods (after technical release).*
### Polymer pivoting, one-piece | Standard | Universal for e-chains®
Recommended for unsupported and gliding applications

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No.</th>
<th>Part No. full set with tiewrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>015</td>
<td>1015.34PZ</td>
<td>1015.34P</td>
<td>17</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>025</td>
<td>1025.34PZ</td>
<td>1025.34P</td>
<td>17</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>038</td>
<td>1038.34P</td>
<td>1038.34P</td>
<td>17</td>
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<td>1050.34P</td>
<td>17</td>
<td>10</td>
<td>5</td>
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<td>060</td>
<td>1060.34P</td>
<td>1060.34P</td>
<td>17</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>070</td>
<td>1070.34P</td>
<td>1070.34P</td>
<td>17</td>
<td>10</td>
<td>8</td>
</tr>
</tbody>
</table>

- A: ...must be indicated on preassembled configuration
- B: Strain relief with detachable tiewrap plates
- C: Variable traverse angle
- D: Corrosion-resistant
- E: Various installation options on the fixed end and/or the moving end

### Polymer locking, one-piece | Universal for e-chains®
Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No.</th>
<th>Part No. full set with tiewrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>015</td>
<td>1015.12PZ</td>
<td>1015.12P</td>
<td>17</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>025</td>
<td>1025.12PZ</td>
<td>1025.12P</td>
<td>17</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>038</td>
<td>1038.12P</td>
<td>1038.12P</td>
<td>17</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>050</td>
<td>1050.12P</td>
<td>1050.12P</td>
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<td>5</td>
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<td>070</td>
<td>1070.12P</td>
<td>1070.12P</td>
<td>17</td>
<td>10</td>
<td>8</td>
</tr>
</tbody>
</table>

- A: Locked connections
- B: At very high speed and/or acceleration
- C: If space is limited for height (the H, measurement)
- D: Various installation options on the fixed end and/or the moving end

### Part No. structure

#### Single-part order
- Mounting bracket Moving end: 1025.3 PZ A1 (mass. + tiewrap plate)
- Mounting bracket Fixed end: 1025.4 PZ A1 (mass. + tiewrap plate)

#### Part No. structure (locking)
- Mounting bracket Moving end: 1025.1 PZ A1 (mass. + tiewrap plate)
- Mounting bracket Fixed end: 1025.2 PZ A1 (mass. + tiewrap plate)
Aluminum SuperTrough | Basic Version
Part No. 970.30.SL | 970.31.SL | Trough height: 77 mm

Installation set "Basic" with C-Profile
Bottom clamp optionally attached inwards or outwards

<table>
<thead>
<tr>
<th>Width Index [mm]</th>
<th>Part No. attached inwards</th>
<th>Part No. attached outwards</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.25</td>
<td>30</td>
<td>960.30.125</td>
</tr>
<tr>
<td>0.25</td>
<td>40</td>
<td>960.30.150</td>
</tr>
<tr>
<td>0.30</td>
<td>53</td>
<td>960.30.180</td>
</tr>
<tr>
<td>0.35</td>
<td>65</td>
<td>960.30.215</td>
</tr>
<tr>
<td>0.4</td>
<td>80</td>
<td>960.30.225</td>
</tr>
<tr>
<td>0.5</td>
<td>95</td>
<td>960.30.230</td>
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<tr>
<td>0.6</td>
<td>125</td>
<td>960.30.240</td>
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<td>0.7</td>
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<td>960.30.255</td>
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<tr>
<td>0.9</td>
<td>225</td>
<td></td>
</tr>
</tbody>
</table>

Components, trough "Basic":
- Trough side parts, aluminum, 2 m
- Glide bar, plastic, 2 m
- Glide strips, plastic, 2 m (without glide strips on request)

Components, installation set "Basic":
- Bottom clamp, aluminum C-profile, galvanized steel
- Screw M6 x 16
- Sliding nut M6
- Interface connector, plastic

Order example: Length of travel 30 m - Center mounted for Series 15.025.038.0 with \( B_{Bi} = 40 \)

Guide trough set without glide bar (set of 2 trough side parts, incl. glide strips)
Order text: 16 m guide trough without glide bar (8 x 2 m sections) Part No. 970.30.SL

Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips)
Order text: 16 m guide trough with glide bar (8 x 2 m sections) Part No. 970.31.SL

Installation set "Basic" complete (guide trough sets +1)
Order text: 17 installation sets Part No. 960.30.150

Module for the fixed end
Order text: 1 set Part No. 970.80

Aluminum SuperTrough "Basic" in detail ➤ from page 1190

Components:
- Trough set
- Installation set
- Glide bar
- C-profile
- \( B_{Bi} = \) Inner width e-chains
- \( B_{Ba} = \) Outer width e-chains
- \( B_{BRi} = \) Inner trough width
- \( B_{BRa} = \) Outer trough width
- \( H_{HRi} = \) Inner trough height
- \( H_{HRa} = \) Outer trough height
- \( n_{Mon} = \) Number of installation sets
- \( n_{Ri} = \) Number of trough sections + 1

Principle sketch: Number of installation sets to be installed = Number of trough sections + 1

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### Fast opening, enclosed zipper-band

**When to use Series R15:**
- If a very small e-tube with an inner height of 17 mm and smallest bending radii are required
- For inner widths up to 80 mm
- For unsupported lengths up to 1.20 m and fill weights up to 1.5 kg/m
- If chip protection is required
- If high stability and excellent service life is required
- Small pitch for smooth running
- If fast, zipper-like accessibility to cables is required

**When to use a different igus® Series:**
- If an e-chain® with zipper opening mechanism is required
  - Series 15 zipper e-chain®, page 260
- If snap-open accessibility along the inner radius is required
  - Series B15i E2 mini, page 380
- If snap-open links are not necessary
  - Series 10 E2 mini, page 356
- If torsion occurs
  - Series E14 easy chain®, page 180

**Unsupported e-chains** feature positive camber over short travels. This must be accounted for when specifying the clearance height \(H_F\). Please consult igus® GmbH Germany if space is particularly restricted. More information → Design, page 95
**e-tube** | **Series R15** | **zip-open along outer radius**

<table>
<thead>
<tr>
<th>e-tube zip-open</th>
<th>Bi</th>
<th>Ba</th>
<th>R</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>along outer radius</td>
<td>[mm]</td>
<td>[mm]</td>
<td>[mm]</td>
<td>[kg/m]</td>
</tr>
<tr>
<td>R15.015,R0</td>
<td>15</td>
<td>26</td>
<td>63</td>
<td>075</td>
</tr>
<tr>
<td>R15.025,R0</td>
<td>25</td>
<td>36</td>
<td>63</td>
<td>075</td>
</tr>
<tr>
<td>R15.038,R0</td>
<td>38</td>
<td>49</td>
<td>63</td>
<td>075</td>
</tr>
<tr>
<td>R15.050,R0</td>
<td>50</td>
<td>61</td>
<td>63</td>
<td>075</td>
</tr>
<tr>
<td>R15.063,R0</td>
<td>63</td>
<td>76</td>
<td>63</td>
<td>075</td>
</tr>
<tr>
<td>R15.080,R0</td>
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<td>94</td>
<td>63</td>
<td>075</td>
</tr>
<tr>
<td>R15.100,R0</td>
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<td>113</td>
<td>63</td>
<td>075</td>
</tr>
</tbody>
</table>

*Weight available upon request, please consult igus® for delivery time.

**Order key**

R15.063.063.0 e-tube

Standard color black
Bending radius R
Width index (depends on Bi)
Series / Type

**Configuration options and order keys, overview ► page 236**

**e-chain® links as single parts, overview ► page 235**

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release).

---

**Separators, full-width shelves** - In the standard configuration separators are assembled every 2nd e-chain link!

**Slotted separator R153**

Is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

**Full-width shelf 110.X**

This option makes sense in applications with many thin cables with similar diameters. For a consequent subdivision. Full-width shelves can be arranged at 3 different heights (in 5 mm increments).

**Full-width shelves**

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>025</td>
<td>110.25</td>
<td>111.25</td>
</tr>
<tr>
<td>038</td>
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<td>111.38</td>
</tr>
<tr>
<td>080</td>
<td>110.80</td>
<td>111.80</td>
</tr>
</tbody>
</table>

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**3D-CAD files, configurators, PDF ► www.igus.eu/eu/R15**

igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu
Possible installation conditions for assembled, pivoting mounting brackets. For the preassembled mode please add index A1...A4 (e.g. 105.34PZ A1).

Polymer pivoting, one-piece | Standard | Universal for e-tubes
Recommended for unsupported and gliding applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>015.</td>
<td>1015.34PZ</td>
<td>1015.34P</td>
<td>10</td>
<td>25.5</td>
<td>2</td>
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<td>48.5</td>
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<tr>
<td>063.</td>
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<td>080.</td>
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<td>85</td>
<td>112.0</td>
<td>10</td>
</tr>
</tbody>
</table>

*Width available upon request, please consult igus® for delivery time*

---

Possible installation conditions for assembled, locking mounting brackets. For the preassembled mode please add index A1...A4 (e.g. 105.12PZ A1).

Polymer locking, one-piece | Universal for e-tubes
Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>015.</td>
<td>1015.12PZ</td>
<td>1015.12P</td>
<td>10</td>
<td>25.5</td>
<td>2</td>
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<tr>
<td>025.</td>
<td>1025.12PZ</td>
<td>1025.12P</td>
<td>23</td>
<td>48.5</td>
<td>4</td>
</tr>
<tr>
<td>038.</td>
<td>1038.12PZ</td>
<td>1038.12P</td>
<td>35</td>
<td>60.5</td>
<td>5</td>
</tr>
<tr>
<td>050.</td>
<td>1050.12PZ</td>
<td>1050.12P</td>
<td>48</td>
<td>75.0</td>
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<td>063.</td>
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<td>92.0</td>
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<td>080.</td>
<td>106.12P</td>
<td>106.12P</td>
<td>85</td>
<td>112.0</td>
<td>10</td>
</tr>
</tbody>
</table>

*Width available upon request, please consult igus® for delivery time*

---

Part No. structure
105.34PZ A1

Part No. structure (locking)
105.12PZ A1

Part No. for assembly with tiewrap plates
105.34PZ A1

Part No. for assembly without tiewrap plates
105.12PZ A1

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### Installation set "Basic" with C-Profile

- Bottom clamp optionally attached inwards or outwards

<table>
<thead>
<tr>
<th>Width index (mm)</th>
<th>B_Ba</th>
<th>Part No.</th>
<th>B_Ha</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>425</td>
<td>40</td>
<td>960.30.120</td>
<td>21</td>
<td>960.30.120</td>
</tr>
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<td>395</td>
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<td>960.30.120</td>
<td>21</td>
<td>960.30.120</td>
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<tr>
<td>365</td>
<td>80</td>
<td>960.30.120</td>
<td>21</td>
<td>960.30.120</td>
</tr>
<tr>
<td>335</td>
<td>80</td>
<td>960.30.120</td>
<td>21</td>
<td>960.30.120</td>
</tr>
</tbody>
</table>

Length of the C-profile according to dimension B_Ba (see table)

- Components, trough "Basic":
  - Trough side parts, aluminum, 2 m
  - Glide bar, plastic, 2 m
  - Glide strips, plastic, 2 m (without glide strips on request)

- Components, installation set "Basic":
  - Bottom clamp, aluminum
  - C-profile, galvanized steel
  - Screw M6 x 16
  - Sliding nut M6
  - Interface connector, plastic

**Order example:** Length of travel 30 m - Center mounted for Series R15.080.063.0 with B_Ba = 98

- Guide trough set without glide bar (set of 2 trough side parts, incl. glide strips)
- Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips)
- Installation set "Basic" complete (guide trough sets + 1)

**Module for the fixed end**

Principle sketch: Number of installation sets to be installed = Number of trough sections + 1

**Aluminum SuperTrough “Basic” in detail**

- Trough set
- Installation set
- Glide bar
- C-profile
- B_Ba = Outer width of e-chains
- B_Ha = Inner trough width
- B_Hi = Inner trough height
- B_Bi = Inner trough width
- nMon = Number of installation sets
- nRi = Number of trough sections

---

**3D-CAD files, configurators, PDF**

[www.igus.eu/eu/R15](www.igus.eu/eu/R15)
**Fast opening, large inner height**

**When to use Series 17 E2 mini:**
- If an e-chain® with an inner height of 32 mm is required
- For inner widths up to 100 mm
- For unsupported lengths up to 1.0 m and fill weights up to 1.5 kg/m
- If a very small e-chain® with a large inner height is required
- Small pitch for smooth running
- If fast, zipper-like accessibility to cables is required

**When to use a different igus® Series:**
- If a fully enclosed e-tube with zipper opening mechanism is required
  ▶ Series R17 zipper e-tube, page 282
- If snap-open accessibility along the inner radius is required
  ▶ Series B17i E2 mini, page 388
- If maximum stability is required
  ▶ Series R4.32, page 646
- If torsion occurs
  ▶ Series E16/Z16 easy chain®, page 190

**Dimensions**

<table>
<thead>
<tr>
<th>Pitch</th>
<th>Links/m</th>
<th>Chain length</th>
</tr>
</thead>
<tbody>
<tr>
<td>30.5 mm/link</td>
<td>33</td>
<td>S/2 + K</td>
</tr>
</tbody>
</table>

The required clearance height: \( H_F = H + 25 \) mm (with 1.5 kg/m fill weight)
**zipper e-chains® Series 17 Product Range Standard**

**e-chain® Series 17 zip-open along outer radius**

<table>
<thead>
<tr>
<th>e-chain® zip-open along outer radius</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Bending radii</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.1 R0</td>
<td>15</td>
<td>25,5</td>
<td>063</td>
<td>075</td>
</tr>
<tr>
<td>17.2 R0</td>
<td>25</td>
<td>35,5</td>
<td>063</td>
<td>075</td>
</tr>
<tr>
<td>17.3 R0</td>
<td>35</td>
<td>48,5</td>
<td>063</td>
<td>075</td>
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<tr>
<td>17.4 R0</td>
<td>50</td>
<td>60,5</td>
<td>063</td>
<td>075</td>
</tr>
<tr>
<td>17.5 R0</td>
<td>63</td>
<td>76</td>
<td>063</td>
<td>075</td>
</tr>
<tr>
<td>17.6 R0</td>
<td>80</td>
<td>93</td>
<td>063</td>
<td>075</td>
</tr>
<tr>
<td>17.7 R0</td>
<td>100</td>
<td>113</td>
<td>063</td>
<td>075</td>
</tr>
</tbody>
</table>

Supplement Part No. with required radius (R) Example: **17.2.075.0**

**Order key**  **17.2.075.0** e-chain®

**Configuration options and order keys, overview page 235**

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)
Polymer locking, one-piece | Universal for e-chains®
Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 117.1.12PZ</td>
<td>117.1.12P</td>
<td>–</td>
<td>25.5</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>2. 117.2.12PZ</td>
<td>117.2.12P</td>
<td>12</td>
<td>35.5</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>3. 117.3.12PZ</td>
<td>117.3.12P</td>
<td>25</td>
<td>48.5</td>
<td>4</td>
<td></td>
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<tr>
<td>4. 117.4.12PZ</td>
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<td>60.5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>5. 117.5.12PZ</td>
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<td>76</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>6. 117.6.12PZ</td>
<td>117.6.12P</td>
<td>65</td>
<td>93</td>
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<td>7. 117.7.12PZ</td>
<td>117.7.12P</td>
<td>85</td>
<td>113</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

Part No. structure
117.2.12PZ A1
A... must be indicated on preassembled
- Strain relief tiewrap plates
- Full set locking = 12
- Mounting brackets for selected width index

Single-part order
Mounting bracket Moving end
117.2.1PZ A1 (preass. + tiewrap plate)
Mounting bracket Fixed end
117.2.2PZ A1 (preass. + tiewrap plate)

Possible installation conditions for assembled mounting brackets:
For the preassembled mode please add index A1... A4 e.g. 117.2.12PZ A1
**Fast opening, enclosed zipper-band**

**When to use Series R17:**
- If a very small e-tube with an inner height of 32 mm and smallest bending radii are required
- For inner widths up to 63 mm
- For unsupported lengths up to 1.20 m and fill weights up to 1.5 kg/m
- If chip protection is required
- If high stability and excellent service life is required
- Small pitch for smooth running
- If fast, zipper-like accessibility to cables is required

**When to use a different igus® Series:**
- If an e-chain® with zipper opening mechanism is required
  - Series 17 zipper e-chain®, page 276
- If snap-open accessibility along the inner radius is required
  - Series B17i E2 mini, page 388
- If maximum stability is required
  - Series R4.32, page 645
- If torsion occurs
  - Series E16/Z16 easy chain®, page 190
- For gliding applications
  - Series 2600/2700/2650/2680 E2/000, page 444

---

**Dimensions**

<table>
<thead>
<tr>
<th>R</th>
<th>063</th>
<th>075</th>
<th>100</th>
<th>125</th>
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<tbody>
<tr>
<td>H</td>
<td>165</td>
<td>189</td>
<td>239</td>
<td>289</td>
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<tr>
<td>D</td>
<td>128</td>
<td>140</td>
<td>165</td>
<td>190</td>
</tr>
<tr>
<td>K</td>
<td>260</td>
<td>300</td>
<td>380</td>
<td>455</td>
</tr>
</tbody>
</table>

The required clearance height: \( H = H + 30 \text{ mm} \) with 1.0 kg/m fill weight.

---

**Unsupported applications**

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height, \( H_F \). Please consult igus® if space is particularly restricted. Further information in **Design, page 95**

---

**Technical Data**

Speed, material, temperature and flammability class in **page 234**

**Pitch** = 30.5 mm/link

**Links/m** = 33 (1006.5 mm)

**Chain length** = \( \frac{S}{2} + K \)
zipper e-tubes Series R17 Product Range Standard

### Full-width shelves

<table>
<thead>
<tr>
<th>Width X (mm)</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>015</td>
<td>110.15</td>
<td>111.15</td>
</tr>
<tr>
<td>025</td>
<td>110.25</td>
<td>111.25</td>
</tr>
</tbody>
</table>

**Example:** E-tube Series R17

- Standard color black
- Bending radius R
- Width index (depends on Bi)
- Series / Type

**Zipper e-tubes Series R17**

- **Order key**
  - R17.015.063.0 e-tube

**Configuration options and order keys, overview**

- Slotted separator R171
  - Unassembled
  - Assembled

**Full-width shelf 110.X**

- **Due to its slot, it allows basic vertical/horizontal shelving arrangements.**

**Separators, full-width shelves**

- In the standard configuration separators are assembled every 2nd e-chain link!

**Product Range Standard e-tube Series R17**

- **Zipper e-tubes Series R17**
  - GMBH Germany
  - Phone +49 2203 9649-800 Fax -222
  - info@igus.de
  - www.igus.eu

**Configuration options and order keys, overview**

- Slotted separator for e-tubes unassembled R171 assembled R172

**Full-width shelf 110.X**

- This option makes sense in applications with many thin cables with similar diameters. For a consequent sub-division. Full-width shelves can be arranged at 5 different heights (in 5 mm increments).

**Available from stock. Delivery time in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

---

284 3D-CAD files, configurators, PDF ★ www.igus.eu/eu/R17

igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu 285
Polymer locking, one-piece | Universal for e-tubes

Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
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<tr>
<td>015.015.12PZ</td>
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<td>2</td>
<td></td>
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<tr>
<td>025.025.12PZ</td>
<td>117.025.12PZ</td>
<td>117.025.12PZ</td>
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<td>3</td>
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<tr>
<td>063.063.12PZ</td>
<td>117.063.12PZ</td>
<td>117.063.12PZ</td>
<td>73.7</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

- One-piece mounting bracket
- Available with or without strain relief tiewrap plates
- Corrosion-resistant
- Various installation options on the fixed end and/or the moving end
- Inner and outer attachment possible

Part No. structure

Moving end

117.015.12 PZ A1

- A... must be indicated on preassembled
- Strain relief with chainfix tiewrap plates
- Full set locking = 12

Mounting brackets for selected widths

Fixed end

Possible installation conditions for assembled mounting brackets:

For the preassembled mode please add index A1, A4 e.g. 117.015.12 PZ A1

Single-part order

Mounting bracket Moving end

117.015.1 PZ A1 (preass. + tiewrap plate)

Mounting bracket Fixed end

117.015.2 PZ A1 (preass. + tiewrap plate)
System E2 Allrounder
micro | mini | E2/000
e-chains® and e-tubes
System E2 micro and E2 mini | Smallest and small sizes

E2 micro - for smallest spaces
Perfect to use for short travels and unsupported applications
- e-chains® for limited space conditions
- One- and two-piece e-chains® available
- Smallest inner heights and bending radii
- Very lightweight, easy to assemble and cost-efficient
- Mounting brackets with or without strain relief option available
- Inner heights hi: 5 - 15 mm
► www.igus.eu/e2micro

E2 mini - small and medium sizes
Perfect to use for short travels and unsupported applications
- Small pitch for smooth running
- One- and two-piece e-chains® available
- Smallest inner heights and bending radii
- Very lightweight, easy to assemble and cost-efficient
- Mounting brackets with or without strain relief option available
- Inner heights hi: 17 - 41 mm
► www.igus.eu/e2mini

System E2/000 - The E2 Standard
Available as e-chain®, half and fully enclosed e-tube, combinable variations
- Open crossbar left or right quickly with screwdriver or the igus® e-chain® opener
- Lightning fast with thumb catch - secure fit without additional locking devices
- Excellent mechanical stability, long life due to design and material
- Very easy to assemble and cost-efficient due to the 2-piece design
- Suitable for long (gliding) travels and unsupported applications
- Extender crossbars for a large increase of the interior height and for the smooth guiding of hoses
- Many accessories are available
- Inner heights hi: 21 - 45 mm
► www.igus.eu/e2000

Next generation of small igus® e-chains®
- Lighter, more stable and easier to open
- Cannot be opened or snapped open in the inner or outer radius
- In 2 sizes available: 10 mm, 15 mm
- An e-chain® opener is included with every Series that can be opened, which significantly reduces installation time, especially for long lengths
- +25% more unsupported lengths compared to Series 08
- Many accessories
More information ► www.igus.eu/E21open
E2 micro
Smallest inner heights, smallest bending radii
Smallest inner heights and bending radii - E2 micro e-chains®

E2 micro are very small, one-piece or two-piece 807/809, lightweight e-chains® ideal for high dynamic applications. E2 micro e-chains® are very cost effective and available in thousands of variations. igus® also offers a host of accessories and fixation options. “Upgrades” to openable versions are available for many types. In these cases they are interchangeable and offer more services as repair kits or new installations.

Typical industries and applications
- Models (micro e-chains®)
- Automatic doors
- Vehicles
- Measuring machines
- Electric equipment
- Handling
- Pick and place robots
- General machinery

Cleanroom test upon request

E2 micro e-chains® are robust for standing applications

42 dB(A) tested in igus® lab, v = 1.0 m/s unsupported, Series 06.10.038.0

UL94-V2 classifications - for Series 03, 074, 094 (UL94-V0 upon request)

Contents, selection table and assembly instructions next page
E2 micro | Contents | Selection Table

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width</th>
<th>Outer height</th>
<th>Bending radius</th>
<th>Unsupported length max., [m]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>03</td>
<td>5.0</td>
<td>5 - 10</td>
<td>8.7 - 13.7</td>
<td>8.0</td>
<td>10 - 28</td>
<td>0.40</td>
<td>302</td>
</tr>
<tr>
<td>04</td>
<td>7.0</td>
<td>7 - 30</td>
<td>12.0 - 35.0</td>
<td>10.0</td>
<td>15 - 48</td>
<td>0.50</td>
<td>306</td>
</tr>
<tr>
<td>045</td>
<td>10.3</td>
<td>6 - 64</td>
<td>12.0 - 70.0</td>
<td>12.5</td>
<td>18 - 83</td>
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<tr>
<td>05</td>
<td>10.0</td>
<td>6 - 64</td>
<td>10.0 - 68.0</td>
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<td>0.55</td>
<td>314</td>
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<td>12.5 - 71.0</td>
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<td>18.2 - 58.2</td>
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<td>25 - 48</td>
<td>1.00</td>
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</tr>
</tbody>
</table>

E2 micro - One-piece e-chains
One-piece, non snap-open

<table>
<thead>
<tr>
<th>Configuration options and order keys, overview</th>
<th>page 300</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-chain® links as single parts, overview</td>
<td>page 299</td>
</tr>
<tr>
<td>Technical Data, overview</td>
<td>page 298</td>
</tr>
<tr>
<td>Assembly video available online at</td>
<td><a href="http://www.igus.eu/eu/video">www.igus.eu/eu/video</a></td>
</tr>
</tbody>
</table>

Twist and click

Twist and separate

Speciality: E2 micro e-chains® - for smallest bending radii with chainflex® cables

Speciality two-piece e-chains®: B07 and B09 snap-open along outer radius. Series 074 and 094 snap-open along inner radius

Available from stock. Delivery time in 24h or today!
*Delivery time means time until shipping of goods (after technical release)
**Technical Data - System E2 micro**

- **Gliming speed / acceleration (maximum)**: max. 3 [m/s]/ max. 10 [m/s²]
- **Speed / acceleration** FLG max.: max. 20 [m/s] / max. 200 [m/s²]
- **Speed / acceleration** FLB max.: max. 3 [m/s] / max. 6 [m/s²]
- **Material - permitted temperature °C**, igumid G: -40° up to +120° C
- **Material - permitted temperature °C**, igumid NB (only Series 03, 074, 094): -40° up to +80° C
- **Material lower part - permitted temperature °C**, igumid G (only Series 074, 094): -40° up to +80° C
- **Material crossbar - permitted temperature °C**, igumid NB (only Series B07, B09): -40° up to +80° C
- **Flammability class**: igumid G = VDE 0304 IIC UL94-HB / igumid NB = VDE 0304 IIC UL94-V2

**Installation methods overview, maximum travels - System E2 micro**

<table>
<thead>
<tr>
<th>e-chain® Series</th>
<th>Unsupported application</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
<th>Rotary application</th>
<th>Zip-sag application</th>
</tr>
</thead>
<tbody>
<tr>
<td>03</td>
<td>≤ 0,40 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>04</td>
<td>≤ 0,50 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>045</td>
<td>≤ 0,50 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>05</td>
<td>≤ 0,55 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
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<tr>
<td>06</td>
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<td>B07</td>
<td>≤ 0,55 m</td>
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<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
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<tr>
<td>074</td>
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<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>094</td>
<td>≤ 1,00 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>08</td>
<td>≤ 1,00 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
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<tr>
<td>B09</td>
<td>≤ 1,00 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
</tr>
</tbody>
</table>

**Part No. one- and two-piece e-chain® links as single parts - System E2 micro**

- **Two-piece, snap-open along outer radius**
  - **Crossbar**: supplement Part No. with required width index (Bi) Example: B07 090.Bi
  - **Lower parts**: supplement Part No. with required width index (Bi) + 00 and radius (R) Example: B07.090.00.Bi

- **One-piece design, snap-open along inner radius**
  - **e-chain® links as single parts**
  - **Crossbar with film-hinge**
  - **074** one-piece design snap-open
  - **094** one-piece design snap-open

- **One-piece design, non snap-open**
  - **03** one-piece design, non snap-open
  - **04** one-piece design, non snap-open
  - **045** one-piece design, non snap-open
  - **05** one-piece design, non snap-open
  - **06** one-piece design, non snap-open
  - **08** one-piece design, non snap-open

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

---

Available 3D-CAD files, configurators, PDF at [www.igus.eu/E2micro](http://www.igus.eu/E2micro)
## Configuration options and order key (based on Series 08)

<table>
<thead>
<tr>
<th>Standard</th>
<th>NC-Version - (no camber) without pretension</th>
<th>Reverse bending radius for circular movements</th>
<th>ATEX / ESD classified e-chains*</th>
<th>ESD classified e-tubes*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No.</td>
<td>Standard</td>
<td>Part No.</td>
<td>Part No.</td>
<td>Part No.</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>RBR</td>
<td>ESD</td>
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<td>08.50.R.0</td>
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<td>08.50.R.0/NC</td>
<td>08.50.R.0/ESD</td>
<td></td>
</tr>
</tbody>
</table>

**Delivery time**

- 24h or today!
- 2-5 work days
- 5-10 work days
- 10 work days

**Order key and color options**

**Order example for complete e-chain** Series 08 (1.0 m), color black, with mounting brackets and interior separation:

- **e-chain** (1.0 m) Please indicate e-chain length or number of links: 1.0 m or 50 links: 08.50.038.0
- + Mounting brackets: 1 set (+ tie-wrap plates) 080.50.12PZ
- + Interior separation: with 2 separators assembled every 2nd link: 2 x B09.2.1

**Order text:** 1.0 m 08.50.038.0 + 080.50.12PZ + 2 x B09.2.1

**Color options for e-chains** and e-tubes

- Black standard: 08.50.038.0
- Slate grey only ESD material: 08.50.R.0.NC
- Grey brown only HT material: 08.50.R.0.R
- Grey special color only e-chains*: 08.50.R.0.R1/R2
- Dusty grey special color only e-tubes*: 08.50.R.2

**Available from stock. Delivery time** in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

---

## Application

Series 03 - Limited installation space for the smallest, dirt-repellent igus® e-chain. Spray-painting robot shown here

**Next generation of small igus® e-chains**

- Lighter, more stable and easier to open
- In 2 designs and 2 sizes available: 10 mm, 15 mm
- An e-chain opener is included with every Series that can be opened, which significantly reduces installation time
- 25% more unsupported lengths compared to Series 08
- Many accessories

More information: [www.igus.eu/E2.1open](http://www.igus.eu/E2.1open)

New in this catalog

300 3D-CAD files, configurators, PDF | [www.igus.eu/eu/E2micro](http://www.igus.eu/eu/E2micro)
Smallest Spaces

When to use the Series 03 E2 micro:
- Smallest igus® e-chain® - Inner dimensions: 5 x 5 mm
- If a very small e-chain® with 5.0 mm inner height and smallest bending radii is required
- For inner widths up to 10 mm
- For unsupported lengths up to 0.40 m and fill weights up to 0.24 kg/m
- If a lightweight and cost-effective e-chain® is required
- If a one-piece, non snap-open e-chain® is required

When to use a different igus® Series:
- If snap-open links are required
  - Series 047 zipper, page 238
- If quick insertion of cables with preassembled connectors is required
  - Series E03 easy chain®, page 156

Unsupported applications

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height $H_F$. Please consult igus® if space is particularly restricted. More information ➤ Design, page 95

Unsupported length $FL_{u}$ / $FL_{b}$ [m]
Length of travel $S$ [m]

Example
- Fill weight $= 0.10$ [kg/m]
- Unsupported length $FL_{u} = 0.3$ m
- Length of travel $S = 0.6$ m

Pitch $= 10$ mm/link
Links/m $= 100$ (1000 mm)
Chain length $= \frac{S}{2} + K$

<table>
<thead>
<tr>
<th>R</th>
<th>010</th>
<th>012</th>
<th>015</th>
<th>018</th>
<th>028</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>28</td>
<td>32</td>
<td>38</td>
<td>44</td>
<td>64</td>
</tr>
<tr>
<td>D</td>
<td>29</td>
<td>31</td>
<td>34</td>
<td>37</td>
<td>47</td>
</tr>
<tr>
<td>K</td>
<td>55</td>
<td>60</td>
<td>70</td>
<td>80</td>
<td>110</td>
</tr>
</tbody>
</table>

The required clearance height: $H_F = H + 10$ mm (with 0.1 kg/m fill weight)
Series 03 | One-piece, non snap-open e-chain®

<table>
<thead>
<tr>
<th>Bi</th>
<th>Ba</th>
<th>R</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0</td>
<td>8.7</td>
<td></td>
<td>≈ 0.04</td>
</tr>
<tr>
<td>7.0</td>
<td>10.7</td>
<td></td>
<td>≈ 0.05</td>
</tr>
<tr>
<td>10.0</td>
<td>13.7</td>
<td></td>
<td>≈ 0.06</td>
</tr>
</tbody>
</table>

Supplement Part No. with required radius (R). Example: 03.05.028.0

Order key
03.05.028.0

Standard color black
Bending radius R
Width index (depends on Bi)
Series / Type

Polymer pivoting, one-piece | Universal for e-chains®
Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set</th>
<th>Dim. A [mm]</th>
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</thead>
<tbody>
<tr>
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<td>03.05.12Z</td>
<td>8.7</td>
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<td>.07</td>
<td>03.07.12Z</td>
<td>10.7</td>
</tr>
<tr>
<td>.10</td>
<td>03.10.12Z</td>
<td>13.7</td>
</tr>
</tbody>
</table>

Possible installation conditions: For the preassembled mode please add index A2 or A4 e.g. 03.05.12Z A2

Additional Features
Adapter plate for rapid installation: for all sizes of Part No. 03.10.QF
The adapter has broken edges so that it can be adapted to the respective chain width. It is not absolutely necessary when attaching the mounting brackets. The mounting brackets can also be screwed on without the adapter plate.

E2 micro | Series 03 | Mounting brackets

Moving end
Fixed end
Part No. 03.10.QF

Polymer pivoting, one-piece | Universal for e-chains®
Recommended for unsupported applications

Weight [kg/m]
non snap-open

Bending radii [mm]
Series / Type

E2 micro | Series 03 | Product Range | Standard

Configuration options and order keys, overview ► page 300
Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)
**Low Weight**

When to use the Series 04 E2 micro:
- Small igus® e-chain® - interior dimensions 7 x 7 mm
- If a small e-chain® with an inner height of 7.0 mm and small bending radii is required
- For inner widths up to 30 mm
- For unsupported lengths up to 0.50 m and fill weights up to 0.35 kg/m
- If a lightweight and cost-effective e-chain® is required
- If a one-piece, non snap-open e-chain® is required

When to use a different igus® Series:
- If snap-open links are required
  - Series 047 zipper, page 238
- If quick insertion of cables with preassembled connectors is required
  - Series E04 easy chain®, page 160

---

**Unsupported e-chains** feature positive camber over short travels. This must be accounted for when specifying the clearance height \( H_e \). Please consult igus® if space is particularly restricted. More information ➔ Design, page 95

---

**Dimensions**

- **Pitch** = 16.7 mm/link
- **Links/m** = 60 (1002 mm)
- **Chain length** = \( \frac{S}{2} + K \)

<table>
<thead>
<tr>
<th></th>
<th>015</th>
<th>018</th>
<th>028</th>
<th>038</th>
<th>048</th>
</tr>
</thead>
<tbody>
<tr>
<td>( R )</td>
<td>40</td>
<td>46</td>
<td>66</td>
<td>86</td>
<td>106</td>
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<tr>
<td>( H )</td>
<td>45</td>
<td>48</td>
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<td>68</td>
<td>78</td>
</tr>
<tr>
<td>( D )</td>
<td>85</td>
<td>90</td>
<td>125</td>
<td>155</td>
<td>185</td>
</tr>
<tr>
<td>( K )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The required clearance height: \( H_e = H + 5 \text{ mm} \) (with 0.1 kg/m fill weight)

---

**Original size 1:1**

- **Outer height** 10 mm

---

**10 mm**

---

**Available from stock. Delivery time in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

---

**3D-CAD files, configurators, PDF** ➔ [www.igus.eu/eu/04](http://www.igus.eu/eu/04)
Series 04 | One-piece, non snap-open e-chain®

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Bending Radii</th>
<th>Weight [kg/m]</th>
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<td>10</td>
<td>15</td>
<td>015</td>
<td>018</td>
</tr>
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<td>018</td>
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<td>04.20.R0</td>
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<td>25</td>
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<td>018</td>
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<td>04.30.R0</td>
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<td>35</td>
<td>015</td>
<td>018</td>
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</table>

Possible installation conditions: For the preassembled mode please add index A2 or A4 e.g. 040.10.12 PZ A2

Polymer pivoting, one-piece | Universal for e-chains®
Recommended for unsupported applications

<table>
<thead>
<tr>
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<td>040.12 - 35 - 20</td>
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</table>

Additional Features

- Quickfix - mounting bracket with clevis, available upon request
- Quickswap - the complete, detachable mounting unit. Part No. 040.07.05 available from stock

Polymer pivoting, one-piece:

- Available with or without strain relief tiewrap plates
- Corrosion-resistant
- Inner and outer attachment possible
- Various installation options on the fixed end and/or the moving end

igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu
**Small pitch, smooth running**

**When to use the Series 045 E2 micro:**
- If a small e-chain® with an inner height of 10.3 mm and small pitch is required
- For inner widths up to 64 mm
- For unsupported lengths up to 0.50 m and fill weights up to 0.25 kg/m
- Small pitch for smooth running
- For very lightweight applications - recommended for low inertia applications
- If a one-piece, non snap-open e-chain® is required

**When to use a different igus® Series:**
- If snap-open links are required
  - Series 047 zipper, page 238
- If quick insertion of cables with preassembled connectors is required
  - Series E06 easy chain®, page 168
- If extra torsional rigidity is required
  - Series 06 E2 micro, page 318

---

**Dimensions**

**Unsupported**

*Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height \( H_f \). Please consult igus® if space is particularly restricted. More information in Design, page 95.*
Series 045 | One-piece, non snap-open e-chain

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Bending radii [mm]</th>
<th>Weight [kg/m]</th>
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<td>028]</td>
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<td>045.10 - R0</td>
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<td>[018</td>
<td>028]</td>
</tr>
<tr>
<td>045.16 - R0</td>
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<td>22</td>
<td>[018</td>
<td>028]</td>
</tr>
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<td>045.20 - R0</td>
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<td>[018</td>
<td>028]</td>
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<td>045.30 - R0</td>
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<td>[018</td>
<td>028]</td>
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<tr>
<td>045.64 - R0</td>
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<td>70</td>
<td>[018</td>
<td>028]</td>
</tr>
</tbody>
</table>

*Radius available upon request, please consult igus® for delivery time.

Supplement Part No. with required radius (R). Example: 045.10.028.0

Order key
045. 10. 028. 0

Standard color black
Bending radius R
Width index (depends on Bi)
Series / Type

Available from stock. Delivery time* in 24h or today!

E2 micro | Series 045 | Polymer one-piece, one side pivoting | Universal for e-chains

Recommended for unsupported applications

<table>
<thead>
<tr>
<th></th>
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<td>56</td>
<td>70</td>
<td>50</td>
<td>6</td>
</tr>
</tbody>
</table>

Mounting bracket with strain relief tiewrap plate has reductions of ø 3 mm / ø 6 mm, 90°. Mounting bracket without strain relief tiewrap plate only has holes of 3 mm.

Polymer one-piece, one side pivoting | Universal for e-chains

- One-piece mounting bracket
- Available with or without strain relief tiewrap plates
- Corrosion-resistant
- Inner and outer attachment possible
- Various installation options on the fixed end and/or the moving end

Possible installation conditions:

For the preassembled mode please add index A2 or A4 e.g. 045.10.12PZ A2

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

Configuration options and order keys, overview page 299

Series 045 | One-piece, non snap-open e-chain

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Bending radii [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>045.16 - R0</td>
<td>16</td>
<td>22</td>
<td>[018</td>
</tr>
</tbody>
</table>

*Radius available upon request, please consult igus® for delivery time.

Supplement Part No. with required radius (R). Example: 046.16.028.0

Series 046 | Optional | With molded-in separation

<table>
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<tbody>
<tr>
<td>046.16 - R0</td>
<td>16</td>
<td>22</td>
<td>[018</td>
<td>028]</td>
<td>038</td>
<td>048</td>
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</tbody>
</table>

*Radius available upon request, please consult igus® for delivery time.

Supplement Part No. with required radius (R). Example: 046.16.028.0

E2 micro | Series 045 | Mounting brackets

More widths upon request, please consult igus® for delivery time.

Configuration options and order keys, overview page 300

Additional information:

- Single-part order
- Mounting bracket Moving end
- Mounting bracket Fixed end
- Mounting brackets for selected width index
- Full set = 12
- Mounting brackets with strain relief tiewrap plates
- Mounting brackets without strain relief tiewrap plates
- Standard color black
- Bending radius R
- Weight [kg/m]

Configuration options and order keys, overview page 299

Possible installation conditions:

For the preassembled mode please add index A2 or A4 e.g. 045.10.12PZ A2
**Low weight, high dynamic**

When to use the Series 05 E2 micro:
- If a small e-chain® with an inner height of 10 mm and small bending radii is required
- For inner widths up to 64 mm
- For unsupported lengths up to 0.55 m and fill weights up to 0.35 kg/m
- For very lightweight applications—recommended for low inertia applications
- If a one-piece, non snap-open e-chain® is required

When to use a different igus® Series:
- If snap-open links are required
  - Series 07 zipper, page 242
- If quick insertion of cables with preassembled connectors is required
  - Series E06 easy chain®, page 168
- If extra torsional rigidity is required
  - Series 06 E2 micro, page 318

**Supported and Unsupported Applications**

For applications with short travels, igus® investigations have shown that non-snap-open e-chains® have a significant positive effect on reliability and service life.

**Dimensions**

<table>
<thead>
<tr>
<th>Pitch</th>
<th>Links/m</th>
<th>Chain length</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 mm/link</td>
<td>50 (1000 mm)</td>
<td>$S/2 + K$</td>
</tr>
</tbody>
</table>

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
**Series 05 | One-piece, non snap-open e-chain®**

<table>
<thead>
<tr>
<th>non snap-open</th>
<th>Bi</th>
<th>Ba</th>
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<th>Weight</th>
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<tr>
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<td>018</td>
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</tbody>
</table>

Supplement Part No. with required radius (R). Example: 05.10.028.0

**Order key**

05. 10. 028. 0

---

**Polymer one-piece, one side pivoting | Universal for e-chains®**

Recommended for unsupported applications

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
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</tr>
<tr>
<td>.64</td>
<td>050.64.12</td>
<td>68.7</td>
<td></td>
</tr>
</tbody>
</table>

Possible installation conditions for assembled mounting brackets:

- One-piece mounting bracket
- Corrosion-resistant
- Inner and outer attachment possible
- Various installation options on the fixed and/or the moving end

**Part No. structure**

050.10.12 A1

- A1... must be indicated in preassembled configurations
- Full set = 12
- Mounting brackets for selected width index

**Single-part order**

Mounting bracket Moving end

050.10.12 A1 (preassembled)

Mounting bracket Fixed end

050.10.29 A1 (preassembled)

**E2 micro | Series 05 | Product Range | Standard**

**Next generation of small igus® e-chains®**

- Lighter, more stable and easier to open
- Available in 2 designs and 2 sizes: 10 mm, 15 mm
- An e-chain® opener is included with every Series that can be opened, which significantly reduces installation time
- -25% more unsupported lengths compared to Series 08
- Many accessories: More information: www.igus.eu/E21open
**Low weight, high dynamic**

When to use the Series 06 E2 micro:
- If a small e-chain® with an inner height of 10.5 mm and small bending radii is required
- For inner widths up to 64 mm
- For unsupported lengths up to 0.62 m and fill weights up to 0.48 kg/m
- If extra torsional rigidity is required
- If a one-piece, non-snap-open e-chain® is required

When to use a different igus® Series:
- If snap-open links are required: Series 07 zipper, page 242
- If quick insertion of cables with preassembled connectors is required: Series E06 easy chain®, page 168
- If very quiet operation is required: Series 045 E2 micro, page 310

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height \( HF \). Please consult igus® if space is particularly restricted. More information ➤ Design, page 95

**Dimensions**

Unsupported applications

- Pitch = 20 mm/link
- Links/m = 50 (1000 mm)
- Chain length = \( S/2 + K \)

The required clearance height: \( HF = H + 10 \text{ mm} \) (with 0.2 kg/m fill weight)

**Technical Data**

- Speed, material, temperature and flammability class ➤ page 298

**Available from stock. Delivery time in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

3D-CAD files, configurators, PDF ➤ www.igus.eu/eu/06
Series 06 | One-piece, non snap-open e-chain®

<table>
<thead>
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<th>非开式</th>
<th>Bi</th>
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<th>Weight</th>
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<td>40. 06.0</td>
<td>40</td>
<td>47</td>
<td>018</td>
<td>0.23</td>
</tr>
<tr>
<td>50. 06.0</td>
<td>50</td>
<td>57</td>
<td>018</td>
<td>0.26</td>
</tr>
<tr>
<td>64. 06.0</td>
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<td>71</td>
<td>018</td>
<td>0.30</td>
</tr>
</tbody>
</table>

Supplement Part No. with required radius (R). Example: 06.10.028.0

Order key: 06. 10. 028. 0

Standard color black  Bending radius R  Width index (depends on Bi)

Series / Type

Available from stock. Delivery time in 24h or today!

E-chain® links as single parts, overview page 299

Configuration options and order keys, overview page 300

Polymer locking, one-piece | Universal for e-chains®

Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>06.</td>
<td>060.06.10.PZ</td>
<td>060.06.12</td>
<td>–</td>
<td>12.5</td>
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</tr>
<tr>
<td>10.</td>
<td>060.10.10.PZ</td>
<td>060.10.12</td>
<td>–</td>
<td>16.5</td>
<td>1</td>
</tr>
<tr>
<td>16.</td>
<td>060.16.12.PZ</td>
<td>060.16.12</td>
<td>–</td>
<td>22.5</td>
<td>2</td>
</tr>
<tr>
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<td>27.0</td>
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</tr>
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</tr>
<tr>
<td>40.</td>
<td>060.40.12.PZ</td>
<td>060.40.12</td>
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</tr>
<tr>
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<td>060.64.12</td>
<td>56</td>
<td>71.0</td>
<td>6</td>
</tr>
</tbody>
</table>

Width Index 
P: Pressing and/or planting orientation
A: One-piece mounting bracket
B: Available without or with strain relief tiewrap plates
C: Corrosion-resistant
D: Inner and outer attachment possible
E: Various installation options on the fixed end and/or the moving end

Part No. structure

060.10.12.PZ A1

Possible installation conditions for assembled mounting brackets:

Quickfix - mounting bracket with dowel, available upon request
Quickfix - mounting bracket with dowel, available upon request

Moving end
Fixed end

Polymer locking, one-piece | Universal for e-chains®

Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
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</tr>
</thead>
<tbody>
<tr>
<td>06.</td>
<td>060.06.10.PZ</td>
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<td>12.5</td>
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<td>27.0</td>
<td>2</td>
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<tr>
<td>30.</td>
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<td>060.30.12</td>
<td>22</td>
<td>37.0</td>
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<td>40.</td>
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<td>060.64.12</td>
<td>56</td>
<td>71.0</td>
<td>6</td>
</tr>
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</table>

Order key: 06. 10. 028. 0

Supplement Part No. with required radius (R). Example: 06.16.018.0.51
Snap-open along outer radius

When to use the Series B07 E2 micro:
- If a small e-chain with an inner height of 10.3 mm and smallest bending radii is required
- For inner widths up to 40 mm
- For unsupported lengths up to 0.55 m and fill weights up to 0.4 kg/m
- Small pitch, smooth running
- If a cost-effective, snap-open e-chain is required
- If quick insertion of cables with preassembled connectors is required

When to use a different igus Series:
- If snap-open links are not necessary
- Series 06 E2 micro, page 318
- If a fully enclosed e-tube is required
- Series R07 zipper-e-tube, page 246

Unsupported applications
Unpressed e-chains feature positive camber over short travels. This must be accounted for when specifying the clearance height HF. Please consult igus if space is particularly restricted. More information ➤ Design, page 95

Dimensions

Pitch = 20 mm/link
Links/m = 50 (1000 mm)
Chain length = \((S/2 + K)\)

<table>
<thead>
<tr>
<th></th>
<th>018</th>
<th>028</th>
<th>038</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>51</td>
<td>71</td>
<td>91</td>
</tr>
<tr>
<td>D</td>
<td>56</td>
<td>66</td>
<td>76</td>
</tr>
<tr>
<td>K</td>
<td>100</td>
<td>130</td>
<td>160</td>
</tr>
</tbody>
</table>

The required clearance height: 

HF = H + 10 mm (with 0.2 kg/m fill weight)
E2 micro | Series B07 | Product Range | Standard

Series B07 | Two-piece link design, snap-open along outer radius

<table>
<thead>
<tr>
<th>Snap-open along outer radius</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Bending radii [mm]</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>B07. 16, R, 0</td>
<td>16</td>
<td>22.5</td>
<td>018, 028, 038</td>
<td>≈ 0.16</td>
</tr>
<tr>
<td>B07. 20, R, 0</td>
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<td>27</td>
<td>018, 028, 038</td>
<td>≈ 0.17</td>
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<tr>
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<td>30</td>
<td>37</td>
<td>018, 028, 038</td>
<td>≈ 0.20</td>
</tr>
<tr>
<td>B07. 40, R, 0</td>
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<td>47</td>
<td>018, 028, 038</td>
<td>≈ 0.23</td>
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</table>

Supplement Part No. with required radius (R). Example: B07.40.038.0

Order key
B07. 40. 038. 0

- Standard color black
- Bending radius R
- Width index (depends on Bi)
- Series / Type

Polymer locking, one-piece | Universal for e-chains®
Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set with tiestrap plates</th>
<th>Part No. full set without tiestrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
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<tbody>
<tr>
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<tr>
<td>20.</td>
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<td>27.0</td>
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<tr>
<td>30.</td>
<td>060.30.12PZ 060.30.12</td>
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<tr>
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<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Features

- Quickfix - mounting bracket with dowel, available upon request
- Quicksnap - the complete, detachable mounting unit. Part No. 060.10.QS, 060.16.QS, 060.20.QS, 060.40.QS available from stock
- Polymer locking, one-piece
- Universal for e-chains®
- Recommended for unsupported applications

E2 micro | Series B07 | Mounting brackets

Polymer locking, one-piece | Universal for e-chains®
Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Weight Index</th>
<th>Part No. full set with tiestrap plates</th>
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<tr>
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<td>47.0</td>
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<td></td>
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Polymer locking, one-piece | Universal for e-chains®
Recommended for unsupported applications

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<tr>
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<td>22.5</td>
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</tr>
<tr>
<td>20.</td>
<td>060.20.12PZ 060.20.12</td>
<td>27.0</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30.</td>
<td>060.30.12PZ 060.30.12</td>
<td>37.0</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40.</td>
<td>060.40.12PZ 060.40.12</td>
<td>47.0</td>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Polymer locking, one-piece | Universal for e-chains®
Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Weight Index</th>
<th>Part No. full set with tiestrap plates</th>
<th>Part No. full set without tiestrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.</td>
<td>060.16.12PZ 060.16.12</td>
<td>22.5</td>
<td>2</td>
<td></td>
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</tr>
<tr>
<td>20.</td>
<td>060.20.12PZ 060.20.12</td>
<td>27.0</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30.</td>
<td>060.30.12PZ 060.30.12</td>
<td>37.0</td>
<td>3</td>
<td></td>
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<tr>
<td>40.</td>
<td>060.40.12PZ 060.40.12</td>
<td>47.0</td>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Snap-open along inner radius

When to use the Series 074 E2 micro:
- If a small e-chain® with an inner height of 10,9 mm and small bending radii is required
- Inner width 10 mm
- For unsupported lengths up to 0,55 m and fill weights up to 0,4 kg/m
- Small pitch for smooth running
- If snap-open mechanism with film-hinge is required
- If quick insertion of cables with preassembled connectors is required

When to use a different igus® Series:
- If snap-open links are not necessary
  ➤ Series 06 E2 micro, page 318
- If a fully enclosed e-tube is required
  ➤ Series R07 zipper-e-tube, page 246

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height \( HF \). Please consult igus® if space is particularly restricted. More information ➤ Design, page 95

**Technical Data**

**Unsupported applications**

Speed, material, temperature and flammability class ➤ page 298

**Pitch** = 20 mm/link
**Links/m** = 50 (1000 mm)
**Chain length** = \( \frac{S}{2} + K \)

<table>
<thead>
<tr>
<th>R</th>
<th>018</th>
<th>028</th>
<th>038</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>51</td>
<td>71</td>
<td>91</td>
</tr>
<tr>
<td>D</td>
<td>56</td>
<td>66</td>
<td>76</td>
</tr>
<tr>
<td>K</td>
<td>100</td>
<td>130</td>
<td>160</td>
</tr>
</tbody>
</table>

The required clearance height: \( HF = H + 10 \) mm (with 0,2 kg/m fill weight)

*Available from stock. Delivery time* in 24h or today! (Delay time means time until shipping of goods after technical release)

**3D-CAD files, configurators, PDF ➤ www.igus.eu/eu/074**
### Series 074 | One-piece, snap-open along inner radius with film-hinge

<table>
<thead>
<tr>
<th>Snap-open along inner radius</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Bending radii</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>074. 10 .R,0</td>
<td>10</td>
<td>16,3</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>074. 16 .R,0*</td>
<td>16</td>
<td>22,3</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>074. 20 .R,0*</td>
<td>20</td>
<td>26,3</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>074. 30 .R,0*</td>
<td>30</td>
<td>36,3</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>074. 40 .R,0*</td>
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<td>46,3</td>
<td>018</td>
<td>028</td>
</tr>
</tbody>
</table>

*Width available upon request, please consult igus® for delivery time.

Supplement Part No. with required radius (R). Example: 074.10.018.0

#### Order key

| 074. 10.018.0 |

- Standard color black
- Bending radius R
- Width index depends on Bi Series / Type

#### e-chain® links as single parts, overview [page 299]

#### Configuration options and order keys, overview [page 300]

#### Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

---

### Polymer locking, one-piece | Universal for e-chains®

**Recommended for unsupported applications**

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
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<tr>
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<td>- 32 4</td>
<td></td>
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<td></td>
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</tbody>
</table>

#### Additional Features

- Quickfix - mounting bracket with dowel, available upon request
- Quicksnap - the complete, detachable mounting unit. Part No. 060.10.Q5, 060.16.05, 060.20.05, 060.40.05 available from stock

---

### Quickfix - mounting bracket with dowel

- Mounting bracket: Fixed end 060.10.1PZ A1
  - (mass. + tiewrap plate)
  - Full set = 12

- Mounting bracket: Moving end 060.10.1PZ A1
  - (mass. + tiewrap plate)
  - Single-part order

**igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu**

---

### E2 micro | Series 074 | Mounting brackets

![Diagram of mounting brackets](image-url)
Snap-open along inner radius

When to use the Series 094 E2 micro:
- If a small e-chain with an inner height of 14.3 mm and small bending radii is required
- Inner width 10 mm
- For unsupported lengths up to 1.0 m and fill weights up to 0.7 kg/m
- Small pitch for smooth running
- If snap-open mechanism with film-hinge is required
- If quick insertion of cables with preassembled connectors is required

When to use a different igus® Series:
- If snap-open links are not necessary
- Series 08 E2 micro, page 334
- If a fully enclosed e-tube is required
- Series R09 zipper-e-tube, page 256

Unsupported applications

Unsupported e-chains feature positive camber over short travels. This must be accounted for when specifying the clearance height HF. Please consult igus® if space is particularly restricted. More information → Design, page 95

Pitch = 20 mm/link
Links/m = 50 (1000 mm)
Chain length = \( \frac{S}{2} + K \)

The required clearance height: \( HF = H + 15 \) mm (with 0.3 kg/m fill weight)

<table>
<thead>
<tr>
<th>R</th>
<th>028</th>
<th>038</th>
<th>048</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>75</td>
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<td>115</td>
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<tr>
<td>D</td>
<td>68</td>
<td>78</td>
<td>88</td>
</tr>
<tr>
<td>K</td>
<td>130</td>
<td>160</td>
<td>195</td>
</tr>
</tbody>
</table>

Available from stock. Delivery time in 24h or today!
*Delivery time means time until shipping of goods (after technical release)

3D-CAD files, configurators, PDF ➤ www.igus.eu/eu/094
Series 094 | One-piece, snap-open along inner radius with film-hinge

<table>
<thead>
<tr>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R [mm]</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>094. 10</td>
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<td>0,23</td>
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<td>094. 30</td>
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<td>094. 40</td>
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<td>38,2</td>
<td>0,28</td>
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</tbody>
</table>

*Width available upon request, please consult igus® for delivery time

Supplement Part No. with required radius (R). Example: 094.10.028.0

Order key
094. 10. 028. 0

- Standard color black
- Bending radius R
- Width index (depends on Bi)

Series / Type

Polymer locking, one-piece | Universal for e-chains®
Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set with tie-wrap plates</th>
<th>Part No. full set without tie-wrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of Teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>080.10.10PZ</td>
<td>080.10.12</td>
<td>18,2</td>
<td>2</td>
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<td>30</td>
<td>080.30.30PZ</td>
<td>080.30.12</td>
<td>38,2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>40</td>
<td>080.40.40PZ</td>
<td>080.40.12</td>
<td>48,2</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Possible installation conditions for assembled mounting brackets:
For the preassembled mode please add index A1...A4 e.g. 080.10.12PZA1

Additional Features

- Quickfix - mounting bracket with dowel, available upon request
- Quicksnap - the complete, detachable mounting unit. Part No. 080.20.QS, 080.30.QS available from stock
- Polymer locking, one-piece, available with or without strain relief tie-wrap plates
- Universal for e-chains®
- One-piece mounting bracket
- Universal for e-chains®
- Corrosion-resistant
- Various installation options on the fixed end and/or the moving end
- Full set = 12 mounting brackets for selected width index
- Mounting brackets available from stock.
- Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
**Small pitch, high stability**

*When to use the Series 08 E2 micro:*
- If a small e-chain® with an inner height of 15 mm and smallest bending radii is required
- For inner widths up to 50 mm
- For unsupported lengths up to 1.0 m and fill weights up to 0.7 kg/m
- Small pitch, smooth running
- If extra torsional rigidity is required
- If a one-piece, non-snap-open e-chain® is required
- If an interior separation is required

*When to use a different igus® Series:*
- If snap-open links are required
  - Series 09 zipper, page 250
  - Series B09 E2 micro, page 340
- If quick insertion of cables with preassembled connectors is required
  - Series E08 easy chain®, page 176
- If a fully enclosed e-tube is required
  - Series R09 zipper-e-tube, page 256

The required clearance height:

\[ HF = H + 15 \text{ mm} \] (with 0.3 kg/m fill weight)

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height \( HF \). Please consult igus® if space is particularly restricted. More information ▶ Design, page 95
Series 08 | One-piece, non snap-open e-chain®

<table>
<thead>
<tr>
<th>non snap-open</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Bending radii [mm]</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>08.10 .R.0</td>
<td>10</td>
<td>18.2</td>
<td>025, 028, 038, 048</td>
<td>≈ 0.21</td>
</tr>
<tr>
<td>08.13 .R.0</td>
<td>13</td>
<td>21.2</td>
<td>025, 028, 038, 048</td>
<td>≈ 0.23</td>
</tr>
<tr>
<td>08.16 .R.0</td>
<td>16</td>
<td>24.2</td>
<td>025, 028, 038, 048</td>
<td>≈ 0.24</td>
</tr>
<tr>
<td>08.20 .R.0</td>
<td>20</td>
<td>28.2</td>
<td>025, 028, 038, 048</td>
<td>≈ 0.25</td>
</tr>
<tr>
<td>08.30 .R.0</td>
<td>30</td>
<td>38.2</td>
<td>025, 028, 038, 048</td>
<td>≈ 0.28</td>
</tr>
<tr>
<td>08.40 .R.0</td>
<td>40</td>
<td>48.2</td>
<td>025, 028, 038, 048</td>
<td>≈ 0.31</td>
</tr>
<tr>
<td>08.50 .R.0</td>
<td>50</td>
<td>58.2</td>
<td>025, 028, 038, 048</td>
<td>≈ 0.37</td>
</tr>
</tbody>
</table>

Supplement Part No. with required radius (R). Example: 08.50.038.0

Order key

08, 50, 038, 0

Standard color black
Bending radius R
Width index (depends on Bi)
Series / Type

E2 micro | Series 08 | Product Range | Standard

Series 08 | Interior separation

Separators, full-width shelves - in the standard configuration separators are assembled every 2nd e-chain' link!

**Note:** When utilizing these one-piece links, please assemble the interior separation before mounting the e-chain!

Slotted separator B09.2

Is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Full-width shelf 110.X

This option makes sense in applications with many thin cables with similar diameters. For a consequent subdivision.

**Full-width shelves**

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>010</td>
<td>110.10</td>
<td>111.10</td>
</tr>
<tr>
<td>013</td>
<td>110.13</td>
<td>111.13</td>
</tr>
<tr>
<td>016</td>
<td>110.16</td>
<td>111.16</td>
</tr>
<tr>
<td>020</td>
<td>110.20</td>
<td>111.20</td>
</tr>
<tr>
<td>030</td>
<td>110.20</td>
<td>111.20</td>
</tr>
<tr>
<td>040</td>
<td>110.40</td>
<td>111.40</td>
</tr>
<tr>
<td>050</td>
<td>110.50</td>
<td>111.50</td>
</tr>
</tbody>
</table>

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

E2 micro | Series 08 | Interior separation
Polymer locking, one-piece | Universal for e-chains®
Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.</td>
<td>080.10.12PZ</td>
<td>080.10.12</td>
<td>–</td>
<td>18.2</td>
<td>1</td>
</tr>
<tr>
<td>13.</td>
<td>080.13.12PZ</td>
<td>080.13.12</td>
<td>–</td>
<td>21.2</td>
<td>–</td>
</tr>
<tr>
<td>16.</td>
<td>080.16.12PZ</td>
<td>080.16.12</td>
<td>–</td>
<td>24.2</td>
<td>2</td>
</tr>
<tr>
<td>20.</td>
<td>080.20.12PZ</td>
<td>080.20.12</td>
<td>–</td>
<td>28.2</td>
<td>2</td>
</tr>
<tr>
<td>30.</td>
<td>080.30.12PZ</td>
<td>080.30.12</td>
<td>22</td>
<td>38.2</td>
<td>3</td>
</tr>
<tr>
<td>40.</td>
<td>080.40.12PZ</td>
<td>080.40.12</td>
<td>32</td>
<td>48.2</td>
<td>4</td>
</tr>
<tr>
<td>50.</td>
<td>080.50.12PZ</td>
<td>080.50.12</td>
<td>42</td>
<td>58.2</td>
<td>5</td>
</tr>
</tbody>
</table>

*Available upon request, please consult igus® for delivery time

- One-piece mounting bracket
- Available with or without strain relief tiewrap plates
- Corrosion-resistant
- Inner and outer attachment possible
- Various installation options on the fixed end and/or the moving end

New in this catalog

Next generation of small igus® e-chains®
Lighter, more stable and easier to open • In 2 designs and 2 sizes available: 10 mm, 15 mm • An e-chain® opener is included with every Series that can be opened, which significantly reduces installation time • +25% more unsupported lengths compared to Series 08 • Many accessories More information [www.igus.eu/E2.1open](http://www.igus.eu/E2.1open)

Additional Features

- Quickfix - mounting bracket with dowel, available upon request
- QuickSnap - the complete, detachable mounting unit, Part No. 080.20.QS, 080.30.QS available from stock

Order example

080.50.12PZ A1

A1.. must be indicated on preassembled configurations

WH... integrated strain relief tiewrap plates

Full set = 12

Mounting brackets for selected width index

Single-part order

Mounting bracket Moving end

080.50.1PZ A1 (preass. + tiewrap plate)

Mounting bracket Fixed end

080.50.2PZ A1 (preass. + tiewrap plate)
**E2 micro | Series B09 | Introduction**

**Snap-open along outer radius**

When to use the Series B09 E2 micro:
- If a small e-chain with an inner height of 14,3 mm and small bending radii is required
- For inner widths up to 40 mm
- For unsupported lengths up to 1,0 m and fill weights up to 0,7 kg/m
- Small pitch, smooth running
- If a cost-effective, snap-open e-chain is required
- If quick insertion of cables with preassembled connectors is required
- If an interior separation is required

When to use a different igus® Series:
- If snap-open links are not necessary
- Series 08 E2 micro, page 334
- If a fully enclosed e-tube is required
- Series R09 zipper-e-tube, page 256

**Unsupported e-chains** feature positive camber over short travels. This must be accounted for when specifying the clearance height \( H_F \). Please consult igus® if space is particularly restricted. More information → Design, page 95

**Dimensions**

- Pitch = 20 mm/link
- Links/m = 50 (1000 mm)
- Chain length = \( \frac{s}{2} + K \)

<table>
<thead>
<tr>
<th>R</th>
<th>028</th>
<th>038</th>
<th>048</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>75</td>
<td>95</td>
<td>115</td>
</tr>
<tr>
<td>D</td>
<td>68</td>
<td>78</td>
<td>88</td>
</tr>
<tr>
<td>K</td>
<td>130</td>
<td>160</td>
<td>195</td>
</tr>
</tbody>
</table>

The required clearance height: \( H_F = H + 15 \text{ mm} \) (with 0,3 kg/m fill weight)

**Available from stock. Delivery time in 24h or today!**

“Delivery time means time until shipping of goods (after technical release)
### Series B09 | Two-piece link design, snap-open along outer radius

<table>
<thead>
<tr>
<th>Outer radius</th>
<th>Bi</th>
<th>Ba</th>
<th>R</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>B09.30 .R,0</td>
<td>30</td>
<td>38.2</td>
<td></td>
<td>0.28</td>
</tr>
<tr>
<td>B09.40 .R,0</td>
<td>40</td>
<td>48.2</td>
<td></td>
<td>0.31</td>
</tr>
</tbody>
</table>

Supplement Part No. with required radius (R). Example: B09.40.038.0

### Order key

**B09. 40. 038. 0**

- Standard color black
- Bending radius R
- Width index (depends on Bi)

### e-chain® links as single parts, overview ▶ page 299

### Configuration options and order keys, overview ▶ page 300

### Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
**Polymer locking, one-piece | Universal for e-chains®**

**Recommended for unsupported applications**

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>080.16.12PZ</td>
<td>080.16.12</td>
<td>15</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>20</td>
<td>080.20.12PZ</td>
<td>080.20.12</td>
<td>15</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>30</td>
<td>080.30.12PZ</td>
<td>080.30.12</td>
<td>22</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>40</td>
<td>080.40.12PZ</td>
<td>080.40.12</td>
<td>32</td>
<td>8</td>
<td>4</td>
</tr>
</tbody>
</table>

Possible installation conditions for assembled mounting brackets:
For the preassembled mode please add index A1 – A4 e.g. 080.40.12PZ A1

### Additional Features

- **Quickfix** - the complete, detachable mounting unit. Part No. 080.30.Q5, 080.30.QS available from stock
- **Quickfix** - mounting bracket with dowel, available upon request

**Single-part order**

- **Mounting bracket Moving end**
  - 080.40.1PZ A1 (preassembled + tiewrap plate)
- **Mounting bracket Fixed end**
  - 080.40.2PZ A1 (preassembled + tiewrap plate)
E2 mini
Small and medium sizes
Small and medium sizes - E2 mini

E2 mini are small one-piece or two-piece e-chains®, recommended for high dynamic applications. igus® also offers a host of accessories and fixation options. “Upgrades” to openable versions are available for many types; they are interchangeable and can also serve as replacements.

Typical industries and applications
- Construction machinery
- Handleings
- Furniture
- Packaging machines
- Textile machines
- Vehicle construction
- Woodworking machines
- Glass machines
- Automation
- General machinery

Cleanroom Class 1 (ISO class 3)
for Series 10, tested by the Dryden Engineering Company, California

Special equipment: Electrically conductive ESD/ATEX version upon request

UL94-V2 classifications - for Series 14 and F17 (UL94-V0 upon request)
**E2 mini | Contents | Selection Table**

<table>
<thead>
<tr>
<th>E2 mini - One-piece e-chains®</th>
<th>One-piece, non snap-open</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>15 - 100</td>
</tr>
<tr>
<td>11.031</td>
<td>20 - 113</td>
</tr>
<tr>
<td>11.080</td>
<td>28</td>
</tr>
<tr>
<td>11.1/11.2</td>
<td>41</td>
</tr>
<tr>
<td>41</td>
<td>20 - 25</td>
</tr>
<tr>
<td>41</td>
<td>26.5 - 35.5</td>
</tr>
<tr>
<td>41</td>
<td>26</td>
</tr>
<tr>
<td>41</td>
<td>26 - 61</td>
</tr>
<tr>
<td>41</td>
<td>26 - 125</td>
</tr>
<tr>
<td>41</td>
<td>048</td>
</tr>
<tr>
<td>41</td>
<td>028 - 125</td>
</tr>
<tr>
<td>41</td>
<td>028 - 180</td>
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<td>028 - 180</td>
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<tr>
<td>41</td>
<td>028 - 180</td>
</tr>
<tr>
<td>41</td>
<td>028 - 180</td>
</tr>
</tbody>
</table>

**E2 mini - Two-piece e-chains®**

<table>
<thead>
<tr>
<th>E2 mini - Two-piece e-chains®</th>
<th>Snap-open along inner radius with film-hinge</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>20 - 50</td>
</tr>
<tr>
<td>17</td>
<td>26 - 61</td>
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<tr>
<td>17</td>
<td>26 - 125</td>
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<tr>
<td>17</td>
<td>048</td>
</tr>
<tr>
<td>17</td>
<td>028 - 125</td>
</tr>
<tr>
<td>17</td>
<td>15 - 100</td>
</tr>
<tr>
<td>17</td>
<td>26.0 - 113</td>
</tr>
<tr>
<td>17</td>
<td>038 - 180</td>
</tr>
<tr>
<td>17</td>
<td>26.0 - 113</td>
</tr>
<tr>
<td>17</td>
<td>26.0 - 113</td>
</tr>
<tr>
<td>17</td>
<td>26 - 125</td>
</tr>
<tr>
<td>17</td>
<td>048</td>
</tr>
<tr>
<td>17</td>
<td>028 - 125</td>
</tr>
<tr>
<td>17</td>
<td>15 - 100</td>
</tr>
<tr>
<td>17</td>
<td>26.0 - 113</td>
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<tr>
<td>17</td>
<td>038 - 180</td>
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<tr>
<td>17</td>
<td>26.0 - 113</td>
</tr>
<tr>
<td>17</td>
<td>26 - 125</td>
</tr>
<tr>
<td>17</td>
<td>048</td>
</tr>
</tbody>
</table>

**E2 mini - Two-piece e-chains®**

<table>
<thead>
<tr>
<th>E2 mini - Two-piece e-chains®</th>
<th>Snap-open along outer radius</th>
</tr>
</thead>
<tbody>
<tr>
<td>B15</td>
<td>15 - 100</td>
</tr>
<tr>
<td>B17</td>
<td>26.0 - 113</td>
</tr>
<tr>
<td>B17</td>
<td>26 - 125</td>
</tr>
<tr>
<td>B17</td>
<td>26.0 - 113</td>
</tr>
<tr>
<td>B17</td>
<td>26 - 125</td>
</tr>
<tr>
<td>B17</td>
<td>048</td>
</tr>
<tr>
<td>B17</td>
<td>028 - 125</td>
</tr>
</tbody>
</table>

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

**Assembly video available online at [www.igus.eu/eu/video](http://www.igus.eu/eu/video)**

**Technical Data, overview page 352**

**e-chain® links as single parts, overview page 353**

**Configuration options and order keys, overview page 354**
E2 mini | Technical Data | Overview

**Technical Data - System E2 mini**

- Gilding speed / acceleration (maximum) \( \leq 3 \text{[m/s]} / \leq 10 \text{[m/s]²} \)
- Speed / acceleration FLG \( \leq 20 \text{[m/s]} / \leq 200 \text{[m/s]²} \)
- Speed / acceleration FLB \( \leq 3 \text{[m/s]} / \leq 6 \text{[m/s]²} \)
- Material - permitted temperature °C, igumid G -40° up to +120° C
- Material - permitted temperature °C, igumid NB (only Series 14) -40° up to +80° C
- Material lower part - permitted temperature °C, igumid G (only Series 10, B15/B15i, B17/B17i) -40° up to +120° C
- Material crossbar - permitted temperature °C, igumid NB (only Series B15/B15i, B17/B17i) -40° up to +80° C
- Flammability class: igumid G = VDE 0304 IIC UL94-HB / igumid NB = VDE 0304 IIC UL94-V2

**Installation methods overview, maximum travels - System E2 mini**

<table>
<thead>
<tr>
<th>e-chain® Series</th>
<th>Unsupported application</th>
<th>Vertical swinging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
<th>Rotary application</th>
<th>Zig-zag application</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>( \leq 1,20 \text{m} )</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>11.031</td>
<td>( \leq 1,35 \text{m} )</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>-</td>
<td>upon request</td>
</tr>
<tr>
<td>11.080</td>
<td>( \leq 1,50 \text{m} )</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>-</td>
<td>upon request</td>
</tr>
<tr>
<td>11.1/11.2</td>
<td>( \leq 1,35 \text{m} )</td>
<td>upon request</td>
<td>upon request</td>
<td>-</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>14</td>
<td>( \leq 0,65 \text{m} )</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
<td></td>
</tr>
<tr>
<td>B15 / B15i</td>
<td>( \leq 1,20 \text{m} )</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
<td></td>
</tr>
<tr>
<td>B17 / B17i</td>
<td>( \leq 1,00 \text{m} )</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
<td></td>
</tr>
<tr>
<td>F17</td>
<td>( \leq 1,20 \text{m} )</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
<td></td>
</tr>
</tbody>
</table>

**Part No. one- and two-piece e-chain® links as single parts - System E2 mini**

- **Two-piece design, snap-open along inner radius**
  - B15i: 170.Bi
  - B17i: 170.Bi

- **Two-piece design, snap-open along outer radius**
  - B15: 170.Bi
  - B17: 170.Bi

**One-piece design, snap-open along inner radius**

- 14: One-piece design, snap-open
  - F17: One-piece design, snap-open

**One-piece design, non snap-open**

- 10: One-piece design, non snap-open
- 11.031: One-piece design, non snap-open
- 11.1/11.2: One-piece design, non snap-open
- 11.080: One-piece design, non snap-open
- 11.1/11.2: One-piece design, non snap-open

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)
**E2 mini | Configuration options and order key** (based on Series B15)

| Standard | NC-Version - (no camber) without pretension | Reverse bending radius for circular movements | Unsupported lengths +25% possible | ATEX / ESD classified e-chains*
|-----------|---------------------------------------------|---------------------------------------------|----------------------------------|---------------------
| Part No. Standard | Part No. NC-Material | Part No. RBR | Part No. JXXL-Material* | Part No. ESD-Material |
| B15.025.R.0 | B15.025.R.0.NC | B15.025.R1/R2.0 | B15.025.R.0.XXL | B15.025.R.0.ESD |

**Delivery time*** 24h or today!

*Delivery time means time until shipping of goods (after technical release)

**Order example | Order key and color options**

Order example for complete e-chain® Series B15 (1,0 m), color black, with mounting brackets and interior separation:

e-chain® (1,0 m) | Please indicate e-chain® length or number of links: 1,0 m or 33 links | B15.025.038.0

+ Mounting brackets | 1 set (+tiewrap plates) | 1025.34PZ

+ Interior separation | with 2 separators assembled every 2nd link | 2 x 154

Order text: 1,0 m B15.025.038.0 + 1025.34PZ + 2 x 154

**Order key**

| B15.025.038.0 | Standard color black | Bending radius R | Width index (depends on Bi) | Series / Type |

**Color options for e-chains® and e-tubes**

<table>
<thead>
<tr>
<th>Color</th>
<th>Order index</th>
<th>Color</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>Standard, from stock</td>
<td>White</td>
<td>special color</td>
</tr>
<tr>
<td>Slate grey</td>
<td>only ESD material</td>
<td>Grey white</td>
<td>special color</td>
</tr>
<tr>
<td>Grey brown</td>
<td>only HT material</td>
<td>Orange</td>
<td>special color</td>
</tr>
<tr>
<td>Grey</td>
<td>special color only e-chains®</td>
<td>Yellow</td>
<td>special color</td>
</tr>
<tr>
<td>Dusty grey</td>
<td>special color only e-tubes</td>
<td>Light grey</td>
<td>special color</td>
</tr>
<tr>
<td>Black e-chains® available from stock!</td>
<td>Delivery time* for special colors: from 5 work days</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Cost-effective cable guidance with E2 mini**

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
**Stable and cost-effective**

When to use the Series 10 E2 mini:
- If an e-chain® with an inner height of 18 mm and small bending radii is required
- For inner widths up to 100 mm
- For unsupported lengths up to 1,2 m and fill weights up to 1,5 kg/m
- If a small but very stable e-chain® is required
- If a one-piece, non snap-open e-chain® is required
- If an interior separation is required

When to use a different igus® Series:
- If extremely quick opening of the links is necessary
  - **Series 15 zipper**, page 260
- If quick insertion of cables with preassembled connectors is required
  - **Series E14 easy chain®**, page 180

Unsupervised e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height HF. Please consult igus® if space is particularly restricted. More information | Design, page 95

---

**Dimensions**

<table>
<thead>
<tr>
<th>R</th>
<th>028</th>
<th>038</th>
<th>048</th>
<th>075</th>
<th>110</th>
<th>125</th>
<th>145</th>
<th>180</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>79</td>
<td>99</td>
<td>119</td>
<td>173</td>
<td>223</td>
<td>243</td>
<td>273</td>
<td>313</td>
</tr>
<tr>
<td>D</td>
<td>85</td>
<td>95</td>
<td>105</td>
<td>132</td>
<td>157</td>
<td>167</td>
<td>182</td>
<td>202</td>
</tr>
<tr>
<td>K</td>
<td>150</td>
<td>185</td>
<td>215</td>
<td>300</td>
<td>380</td>
<td>410</td>
<td>455</td>
<td>520</td>
</tr>
</tbody>
</table>

The required clearance height: \( HF = H + 20 \text{ mm} \) (with 0.5 kg/m fill weight)

Before using this Series on long travels please consult igus®.

---

**Unsupervised applications**

- Lightweight and stable
- Large pin for high stability
- Dirt-repellent exterior
- Double stop dog for long unsupported travels
- Mounting bar with strain relief option
- One-piece design, non snap-open

---

**Technical Data**

- Speed, material, temperature and flammability class | page 352

---

**Supported Applications**

- One-piece design, non snap-open
- Large pin for high stability
- Dirt-repellent exterior
- Double stop dog for long unsupported travels
- Mounting bar with strain relief option
- One-piece design, non snap-open

---

**Available from stock. Delivery time in 24h or today!**

*Delivery time means time until dispatching of goods (after technical release)*

---

**3D-CAD files, configurators, PDF** | www.igus.eu/eu/10
Series 10 | One-piece, non snap-open e-chain

<table>
<thead>
<tr>
<th>non snap-open</th>
<th>Bi</th>
<th>Ba</th>
<th>R</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.015.R.0</td>
<td>15</td>
<td>26</td>
<td></td>
<td>0.35</td>
</tr>
<tr>
<td>10.025.R.0</td>
<td>25</td>
<td>36</td>
<td></td>
<td>0.40</td>
</tr>
<tr>
<td>10.038.R.0</td>
<td>48</td>
<td>49</td>
<td></td>
<td>0.46</td>
</tr>
<tr>
<td>10.050.R.0</td>
<td>60</td>
<td>61</td>
<td></td>
<td>0.52</td>
</tr>
<tr>
<td>10.5.R.0</td>
<td>63</td>
<td>76</td>
<td></td>
<td>0.63</td>
</tr>
<tr>
<td>10.6.R.0</td>
<td>80</td>
<td>94</td>
<td></td>
<td>0.70</td>
</tr>
<tr>
<td>10.7 .R.0</td>
<td>100</td>
<td>113</td>
<td></td>
<td>0.76</td>
</tr>
</tbody>
</table>

Order key

10.025.038.0

Supplement Part No. with required radius (R). Example: 10.025.038.0

Before using this Series on long travel please consult igus®.

Series 10 | Optional | With molded-in vertical separation

<table>
<thead>
<tr>
<th>non snap-open</th>
<th>Bi</th>
<th>Ba</th>
<th>R</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.038.R.05</td>
<td>38</td>
<td>49</td>
<td>075</td>
<td>0.79</td>
</tr>
<tr>
<td>10.050.R.05</td>
<td>50</td>
<td>61</td>
<td>075</td>
<td>0.85</td>
</tr>
</tbody>
</table>

Supplement Part No. with required radius (R). Example: 10.038.075.0 or 10.050.075.0

Separators for simple vertical subdivision on e-chains®. Separators can be arranged anywhere in the e-chain® cross section. Interior separation for Series 10.015.R.0 not possible!

Separator 101

In the standard configuration separators are assembled every 2nd e-chain link!

Note: When utilizing these one-piece links, please assemble the interior separation before mounting the e-chain!

Configuration options and order keys, overview ► page 354

Available from stock. Delivery time® in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
Polymer pivoting, one-piece | Standard
Recommended for unsupported and gliding applications

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>015.</td>
<td>1015.34PZ</td>
<td>1015.34P</td>
<td>25.5</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>025.</td>
<td>1025.34PZ</td>
<td>1025.34P</td>
<td>35.5</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>038.</td>
<td>1038.34PZ</td>
<td>1038.34P</td>
<td>48.5</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>050.</td>
<td>1050.34PZ</td>
<td>1050.34P</td>
<td>60.5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>105. 34P</td>
<td>105. 34P</td>
<td>75</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>106. 34P</td>
<td>106. 34P</td>
<td>92</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>107. 34P</td>
<td>107. 34P</td>
<td>112</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

Part No. structure (pivoting)
1025. 34PZ A1

Polymer locking, one-piece | Standard
Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>015.</td>
<td>1015.12PZ</td>
<td>1015.12P</td>
<td>25.5</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>025.</td>
<td>1025.12PZ</td>
<td>1025.12P</td>
<td>35.5</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>038.</td>
<td>1038.12PZ</td>
<td>1038.12P</td>
<td>48.5</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>050.</td>
<td>1050.12PZ</td>
<td>1050.12P</td>
<td>60.5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>105. 12P</td>
<td>105. 12P</td>
<td>75</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>106. 12P</td>
<td>106. 12P</td>
<td>92</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>107. 12P</td>
<td>107. 12P</td>
<td>112</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

Part No. structure (locking)
1025. 12PZ A1
Components, trough "Basic":
- Trough side parts, aluminum, 2 m
- Glide bar, plastic, 2 m
- Glide strips, plastic, 2 m (without glide strips on request)

Components, installation set "Basic":
- Bottom clamp, aluminum
- C-profile, galvanized steel
- Table Screw M6 x 16
- Sliding nut M6
- Interface connector, plastic

Order example: Length of travel 30 m - Center mounted for Series 10.5
Guide trough set without glide bar
(Order text: 16 m guide trough without glide bar (8 x 2 m sections)) Part No. 970.30.SL

Guide trough set with glide bar
(Order text: 16 m guide trough with glide bar (8 x 2 m sections)) Part No. 970.31.SL

Installation set "Basic" complete (guide trough sets + 1)
(Order text: 17 installation sets) Part No. 960.30.125

Module for the fixed end
(Order text: 1 set) Part No. 970.80

Principle sketch: Number of installation sets to be installed = Number of trough sections + 1
**Large inner height**

When to use the Series 11.031 E2 mini:

- If an e-chain® with an inner height of 23 mm and small bending radii is required
- For inner widths up to 31 mm
- For unsupported lengths up to 1.3 m and fill weights up to 1.5 kg/m
- If a small e-chain® with extra torsional rigidity is required
- If a one-piece, non snap-open e-chain® is required

When to use a different igus® Series:

- If extremely quick opening of the links is necessary
  - similar width/height from Series zipper
- If quick insertion of cables with preassembled connectors is required
  - similar width/height from Series easy chain®

**Technical Data**

<table>
<thead>
<tr>
<th>Moving end</th>
<th>Fixed end</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fill weight [kg/m]</td>
<td>0.75</td>
</tr>
<tr>
<td>Unsupported length FLG</td>
<td>0.9 m</td>
</tr>
<tr>
<td>Length of travel</td>
<td>1.8 m</td>
</tr>
</tbody>
</table>

**Unsupported applications**

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height HF. Please consult igus® if space is particularly restricted. More information on Design, page 95.

**Dimensions**

- Pitch = 30.5 mm/link
- Links/m = 33 (1.006,5 mm)
- Chain length = S/2 + K

**Symbols**

- S = Length of travel
- R = Bending radius
- H = Nominal clearance height
- HF = Required clearance height
- D = Overlength e-chain®, radius in final position

The required clearance height: HF = H + 20 mm (with 0.5 kg/m fill weight)
Series 11.031 | One-piece, non snap-open e-chain

<table>
<thead>
<tr>
<th>Bi</th>
<th>Ba</th>
<th>R</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>41.2</td>
<td>045</td>
<td>070</td>
</tr>
</tbody>
</table>

Supplement Part No. with required radius (R). Example: 11.031.045.0

Order key
11.031.045.0

Polymer pivoting, one-piece | Universal for e-chains
Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>031</td>
<td>11.031.12PZ</td>
<td>11.031.12P</td>
<td>16</td>
<td>42</td>
<td>3</td>
</tr>
</tbody>
</table>

Possible installation conditions: For the preassembled mode please add index A2 or A4 e.g. 11.031.12PZA2

Available from stock. Delivery time in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
Large inner height

When to use the Series 11.080 E2 mini:

- If an e-chain® with an inner height of 28 mm and small bending radii is required
- For unsupported lengths up to 1.5 m and fill weights up to 1.5 kg/m
- If a one-piece, non snap-open e-chain® is required

When to use a different igus® Series:

- If extremely quick opening of the links is necessary
  - similar width/height from Series zipper
- If quick insertion of cables with preassembled connectors is required
  - similar width/height from Series easy chain®

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height HF. Please consult igus® if space is particularly restricted. More information ➤ Design, page 95

The required clearance height:

\[ HF = H + 20 \text{ mm} \] (with 0.5 kg/m fill weight)

E2 mini | Series 11.080 | Dimensions | Unsupported

Example Fill weight = 0.75 [kg/m] Unsupported length FLG = 1.0 m Length of travel = 2.0 m

Unsupported length FLG / FLB [m]

Length of travel S [m]

Pitch = 30.5 mm/link Links/m = 33 (1.0065 mm)

Chain length = \( \frac{S}{2} + K \)

The required clearance height: \( HF = H + 20 \text{ mm} \) (with 0.5 kg/m fill weight)

Available from stock. Delivery time® in 24h or today!

"Delivery time means time until shipping of goods (after technical release)"

3D-CAD files, configurators, PDF ➤ www.igus.eu/eu/11.080

E2 mini | Series 11.080 | Introduction

Mounting bracket with strain relief option

Double stop dog for long unsupported travels

One-piece design, non snap-open

Dirt-repellent exterior

Stable design

Molded-in vertical separation

Large pin for high stability

Series 11.080 features a molded-in vertical separation. More information ➤ page 370

Pitch = 30.5 mm/link Links/m = 33 (1.0065 mm)

Chain length = \( \frac{S}{2} + K \)
Series 11.080 | non snap-open e-chain* with molded-in vertical separation

<table>
<thead>
<tr>
<th>non snap-open</th>
<th>Bi</th>
<th>Ba</th>
<th>R</th>
<th>Dim. A</th>
<th>Dim. B</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.080.R.0</td>
<td>80</td>
<td>93</td>
<td>0</td>
<td>46</td>
<td>32</td>
<td>0.73</td>
</tr>
</tbody>
</table>

Supplement Part No. with required radius (R). Example: 11.080.038.0

Order key
11.080.038.0

Standard color black
Bending radius R
Width index (depends on Bi)
Series / Type

Polymer pivoting, one-piece | Universal for e-chains* For unsupported applications

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A</th>
<th>Dim. B</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11.080.12PZ</td>
<td>11.080.12P</td>
<td>65</td>
<td>93</td>
<td>8</td>
</tr>
</tbody>
</table>

Possible installation conditions for assembled mounting brackets: For the preassembled mode please add index A2 e.g. 11.080.12PZA2

Single-part order

Mounting bracket Moving end 11.080.12PZA2 (preass. + tiewrap plate)
Mounting bracket Fixed end 11.080.12PZA2 (preass. + tiewrap plate)

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release).

E2 mini | Series 11.080 | Product Range | Standard

E2 mini | Series 11.080 | Mounting brackets pivoting
**Very large inner height, small outer width**

*When to use the Series 11.1-11.2 E2 mini:*
- If an e-chain® with an inner height of 41 mm and small bending radii is required
- For inner widths up to 25 mm
- For unsupported lengths up to 1,35 m and fill weights up to 1,5 kg/m
- If space is restricted
- If many cables are arranged vertically adjacent
- If a one-piece, non snap-open e-chain® is required

*When to use a different igus® Series:*
- If extremely quick opening of the links is necessary
  - similar width/height from Series zipper
- If quick insertion of cables with preassembled connectors is required
  - similar width/height from Series easy chain®

---

**Introduction**

E2 mini | Series 11.1-11.2

---

**Dimensions | Unsupported**

---

**Technical Data**

Speed, material, temperature and flammability class | page 352

---

**Example**

<table>
<thead>
<tr>
<th>Fill weight (kg/m)</th>
<th>Unsupported length FLB = 0,9 m</th>
<th>Length of travel = 1,8 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>0,75</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)
Series 11.1-11.2 | One-piece, non snap-open e-chain®

<table>
<thead>
<tr>
<th>non snap-open</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R [mm]</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.1.R.0</td>
<td>15</td>
<td>25,5</td>
<td>040</td>
<td>063 075 100</td>
</tr>
<tr>
<td>11.2.R.0</td>
<td>25</td>
<td>35,5</td>
<td>040</td>
<td>063 075 100</td>
</tr>
</tbody>
</table>

Supplement Part No. with required radius (R). Example: 11.1.040.0

Order key 11.1.040.0

- Standard color black
- Bending radius R
- Width index (depends on Bi)
- Series / Type

Possible installation conditions for assembled mounting brackets: For the preassembled mode please add index A4. Example: 101.12PZ A4

Polymer locking, one-piece | Universal for e-chains® Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>101.12PZ</td>
<td>101.12P</td>
<td>-</td>
<td>26</td>
<td>2</td>
</tr>
<tr>
<td>2.</td>
<td>102.12PZ</td>
<td>102.12P</td>
<td>10</td>
<td>36</td>
<td>3</td>
</tr>
</tbody>
</table>

E2 mini | Series 11.1-11.2 | Mounting brackets locking

Moving end
10...1P(Z)

Fixed end
10...2P(Z)

Configuration options and order keys, overview ➤ page 354

Available from stock. Delivery time* in 24h or today!

*Delivery time means the time until shipping of goods (after technical release)
Snap-open along inner radius

When to use the Series 14 E2 mini:
- If an e-chain® with an inner height of 20 mm and small bending radii is required
- For inner widths up to 50 mm
- For unsupported lengths up to 0.65 m and fill weights up to 0.5 kg/m
- If snap-open mechanism with film-hinge is required

When to use a different igus® Series:
- For gliding applications
  - Series 15 zipper, page 260
- For long unsupported travels
  - Series 15 zipper, page 260

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height HF. Please consult igus® if space is particularly restricted. More information ➤ Design, page 95

**Example**

- Fill weight = 0.25 [kg/m]
- Unsupported length FLu = 0.6 m
- Length of travel S = 1.2 m

The required clearance height: HF = H + 20 mm (with 0.5 kg/m fill weight)
**Series 14 | One-piece, snap-open along inner radius with film-hinge**

<table>
<thead>
<tr>
<th>Snap-open along inner radius</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Bending radii [mm]</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1.R.0</td>
<td>15</td>
<td>26</td>
<td>028</td>
<td>038</td>
</tr>
<tr>
<td>14.2.R.0</td>
<td>25</td>
<td>36</td>
<td>028</td>
<td>038</td>
</tr>
<tr>
<td>14.3.R.0</td>
<td>38</td>
<td>49</td>
<td>028</td>
<td>038</td>
</tr>
<tr>
<td>14.4.R.0</td>
<td>50</td>
<td>61</td>
<td>028</td>
<td>038</td>
</tr>
</tbody>
</table>

Supplement Part No. with required radius (R). Example: 14.2.038.0

**Order key**

| 14.2.038.0 |
| Standard color black |
| Bending radius R |
| Width index (depends on Bi) |
| Series / Type |

**Polymer locking, one-piece | Universal for e-chains®**

**Recommended for unsupported applications**

Possible installation conditions for assembled mounting brackets:
For the preassembled mode please add index A1...A4 e.g. 114.2.12PZ A1

- One-piece mounting bracket
- Available with or without strain relief tiewrap plates
- Corrosion-resistant
- Various installation options on the fixed end and/or the moving end
- Inner and outer attachment possible

<table>
<thead>
<tr>
<th>Series / Type</th>
<th>Width index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2 mini Series 14</td>
<td>14.1.12PZ</td>
<td>114.1.12P</td>
<td>114.1.12P</td>
<td>26</td>
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<td>2</td>
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<tr>
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<td>114.2.12P</td>
<td>114.2.12P</td>
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<td>36</td>
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<tr>
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<td>61</td>
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</tr>
</tbody>
</table>

Material mounting bracket - igumid G, permitted temp. -40° up to +120° C, VDE 0304 IIC UL94-HB

**Polymer locking, one-piece**

- One-piece mounting bracket
- Universal for e-chains®
- Recommended for unsupported applications
- One-piece, snap-open along inner radius with film-hinge

**Additional Features**

- Quickfix - mounting bracket with dowel, available upon request
- Quick snap - the complete, detachable mounting unit, available upon request

**Configuration options and order keys, overview ▶ page 354**

**Available from stock. Delivery time® in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

**Configuration options and order keys, overview ▶ page 354**

**Available from stock. Delivery time® in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*
Snap-open along inner and outer radius

When to use the Series B15i-B15 E2 mini:
- If an e-chain® with an inner height of 17 mm and small bending radii is required
- For inner widths up to 100 mm
- For unsupported lengths up to 1.2 m and fill weights up to 1.5 kg/m
  - If a small but very stable e-chain® is required
  - If a two-piece, snap-open e-chain® is required
  - If an interior separation is required

When to use a different igus® Series:
- If snap-open links are not necessary
  - Series 10 E2 mini, page 356
- If torsion occurs
  - Series E14 easy chain®, page 180

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

3D-CAD files, configurators, PDF → www.igus.eu/eu/B15
Separators, full-width shelves - in the standard configuration separators are assembled every 2nd e-chain link!

**Slotted separator 153**

- **Series**: E2 mini
- **Product Range**: Series B15i·B15
- **Interior separation**

**Order key**

**B15.025.038.0**

**Supplement Part No. with required radius (R). Example:** B15.025.038.0

**Available from stock. Delivery time** in 24h or today!

- Delivery time means time until shipping of goods (after technical release)
**E2 mini | Series B15i-B15 | Mounting brackets **

**pivoting**

For tight installation conditions

**Polymer pivoting, one-piece | Standard**

Recommended for unsupported and gliding applications

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
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<tbody>
<tr>
<td>015</td>
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<td>107. 34PZ</td>
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</tr>
</tbody>
</table>

**Part No. structure**

1025. 34P A1

A... must be indicated on preassembled versions

Strain relief with detachable tiewrap plates

Full set pivoting = 34

Mounting brackets for selected width index

**Single-part order**

Mounting bracket Moving end

1025. 3 PZ A1 (max. + tiewrap plate)

Mounting bracket Fixed end

1025. 4 PZ A1 (max. + tiewrap plate)

**E2 mini | Series B15i-B15 | Mounting brackets **

**locking**

For very high speed and acceleration

**Polymer locking, one-piece**

Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
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<td>107. 12P</td>
<td>85</td>
<td>112</td>
<td>10</td>
</tr>
</tbody>
</table>

**Part No. structure (locking)**

1025. 12 PZ A1

A... must be indicated on preassembled versions

Strain relief with detachable tiewrap plates

Full set locking = 12

Mounting brackets for selected width index

**Single-part order**

Mounting bracket Moving end

1025. 1 PZ A1 (max. + tiewrap plate)

Mounting bracket Fixed end

1025. 2 PZ A1 (max. + tiewrap plate)
Aluminum SuperTrough | Basic Version
Part No. 970.30.SL | 970.31.SL | Trough height: 77 mm

Installation set "Basic" with C-Profile
Bottom clamp optionally attached inwards or outwards

<table>
<thead>
<tr>
<th>Width Index (mm)</th>
<th>Part No.</th>
<th>Part No. attached inwards</th>
<th>Part No. attached outwards</th>
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<tbody>
<tr>
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<td>960.30.125</td>
<td>960.30.125</td>
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<tr>
<td>300</td>
<td>960.30.125</td>
<td>960.30.125</td>
<td></td>
</tr>
</tbody>
</table>

Components, installation set "Basic":
- Bottom clamp, aluminum
- C-profile, galvanized steel table
- Screw M6 x 16
- Interface connector, plastic

Components, trough "Basic":
- Trough side parts, aluminum, 2 m
- Glide bar, plastic, 2 m
- Glide strips, plastic, 2 m (without glide strips on request)

Guide trough set:
- without glide bar (set of 2 trough side parts, incl. glide strips)
- with glide bar (set of 2 trough side parts, incl. glide strips)

Installation set "Basic" complete (guide trough sets + 1)

Order example: Length of travel 30 m - Center mounted for Series B15.025.038 with BRi = 40

Guide trough set (without glide bar):
- Part No. 970.30.SL
- Order text: 16 m guide trough without glide bar (8 x 2 m sections)

Guide trough set (with glide bar):
- Part No. 970.31.SL
- Order text: 16 m guide trough with glide bar (8 x 2 m sections)

Installation set "Basic" complete (guide trough sets + 1)
- Part No. 960.30.150
- Order text: 17 installation sets

Module for the fixed end
- Part No. 970.80
- Order text: 1 set

Length of the C-profile according to dimension BRi (see table)

Order example: Length of travel 30 m - Center mounted for Series B15.025.038 with BRi = 40

Guide trough set:
- without glide bar (set of 2 trough side parts, incl. glide strips)
- with glide bar (set of 2 trough side parts, incl. glide strips)

Installation set "Basic" complete (guide trough sets + 1)
- Part No. 960.30.150
- Order text: 17 installation sets

Module for the fixed end
- Part No. 970.80
- Order text: 1 set

Principle sketch: Number of installation sets to be installed = Number of trough sections + 1

Aluminum SuperTrough "Basic" in detail from page 1190

Five E2 mini e-chains®, 3 side by side, 2 sets nested - the bending radii are exactly adjusted to one another
Snap-open along inner and outer radius

When to use the Series B17i·B17 E2 mini:
- If an e-chain® with an inner height of 32 mm is required
- For inner widths up to 100 mm
- For unsupported lengths up to 1,0 m and fill weights up to 1,5 kg/m
- If a small e-chain® with a large inner height is required
- If a two-piece, snap-open e-chain® is required
- If quick insertion of cables with preassembled connectors is required
- If an interior separation is required

When to use a different igus® Series:
- If quick opening of the links is required
  ▶ Series 17 zipper, page 276

The required clearance height:
HF = H + 25 mm (with 1.5 kg/m fill weight)

When specifying the clearance height HF, please consult igus® if space is particularly restricted. More information ◀ Design, page 95

E2 mini | Series B17i·B17 | Introduction

Mounting bracket with strain relief option

Small e-chain® with large inner height

B17 and B17i can be combined

B17 snap-open along outer radius

Dirt-repellent exterior

Small pitch for smooth running

Series B17i snap-open along inner radius

Two-piece link design

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)

3D-CAD files, configurators, PDF ▶ www.igus.eu/eu/B17

igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu
Series B17i snap-open along inner radius | Series B17 along outer radius | Standard

<table>
<thead>
<tr>
<th>Bi (mm)</th>
<th>Ba (mm)</th>
<th>R (mm)</th>
<th>Bending radii</th>
<th>B17i (kg/m)</th>
<th>B17 (kg/m)</th>
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</thead>
<tbody>
<tr>
<td>B17.1, R.0</td>
<td></td>
<td></td>
<td></td>
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<td>25,5</td>
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<td>B17.2, R.0</td>
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<td>45,5</td>
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<td>B17.4, R.0</td>
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<td>55,5</td>
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<td>B17.5, R.0</td>
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<td>65,5</td>
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<tr>
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<td>75,5</td>
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<td>B17.7, R.0</td>
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<td></td>
<td></td>
<td>75</td>
<td>85,5</td>
</tr>
</tbody>
</table>

**Width available upon request, please consult igus® for delivery time.** *Radius available upon request, please consult igus® for delivery time.

1) Radius only for Series B17. For Series B17i available upon request, please consult igus® for delivery time.

Supplement Part No. with required radius (R). Example: B17.3.048.0

---

**Order key**

B17.3 048 0

- Standard color black
- Bending radius R
- Width index (depends on Bi)

---

**Configuration options and order keys, overview** ➤ page 353

**Available from stock. Delivery time® in 24h or today!**

*Delivery time means time until shipping of goods after technical release*

---

**e-chain® links as single parts, overview** ➤ page 353

**Series / Type**

---

**E2 mini | Series B17i-B17 | Interior separation**

Separators, full-width shelves - In the standard configuration separators are assembled every 2nd e-chain® link!

**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 175BL, left** (B17.1 up to B17.4) Side plate (left) for use with full-width shelf 110.X and slotted separator 171B.

**Side plate 175BR, right** (B17.1 up to B17.4) Side plate (right) for use with full-width shelf 110.X and slotted separator 171B.

**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 177** (B17.5 up to B17.7) Side plate for use with full-width shelf 110.X and slotted separator 173B.

**Full-width shelf 110.X** (for all widths) this option makes sense in applications with many thin cables with similar diameters. For a consequent subdivision, full-width shelves can be arranged at 5 different heights (in 5 mm increments).

---

**Configuration options and order keys, overview** ➤ page 353

**Available from stock. Delivery time® in 24h or today!**

*Delivery time means time until shipping of goods after technical release*
E2 mini | Series B17i-B17 | Mounting brackets

Polymer locking, one-piece | Universal for e-chains®
Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
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<tbody>
<tr>
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<td>113</td>
<td>10</td>
</tr>
</tbody>
</table>

- One-piece mounting bracket
- Available with or without strain relief tiewrap plates
- Corrosion-resistant
- Various installation options on the fixed end and/or the moving end
- Inner and outer attachment possible

Part No. structure

A... must be indicated on preassembled configurations
Strain relief with chainfix tiewrap plates
Full set locking = 12
Mounting brackets for selected width index

Single-part order
Mounting bracket Moving end
117.2.12PZ A1 (preass. + tiewrap plate)
Mounting bracket Fixed end
117.2.12PZ A1 (preass. + tiewrap plate)

Short travels and high accelerations with Series E2 mini
**Large inner height, small outer width**

When to use the Series F17 E2 mini:
- If an e-chain® with an inner height of 32 mm and small bending radii is required
- For unsupported lengths up to 1,20 m and fill weights up to 1,5 kg/m²
- If a small e-chain® with a large inner height and small bending radii is required
- If snap-open mechanism with film-hinge is required
- If an interior separation is required

When to use a different igus® Series:
- If quick opening of the links is required
  - Series 17 zipper, page 276
- If extremely quick, zipper-like access to cables is required
  - Series R17 zipper, page 282
- If cable installation without opening lids must be possible
  - Series 11.080 E2 mini, page 368
- For gliding applications
  - Series 2600/2700/2650/2680 E2/000, page 444

**Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height HF. Please consult igus® if space is particularly restricted. More information ▶ Design, page 95**

---

**Dimensions**

<table>
<thead>
<tr>
<th>Pitch</th>
<th>Links/m</th>
<th>Chain length</th>
</tr>
</thead>
<tbody>
<tr>
<td>30,5 mm/link</td>
<td>33 (1006,5 mm)</td>
<td>S/2 + K</td>
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<table>
<thead>
<tr>
<th>R</th>
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<th>075</th>
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<td>215</td>
<td>260</td>
<td>300</td>
<td>380</td>
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The required clearance height: \( H_F = H + 30 \) mm (with 0,5 kg/m² fill weight)

*Delivery time means time until shipping of goods (after technical release)

*Radius available upon request, please consult igus® for delivery time

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**Technical Data**

Speed, material, temperature and flammability class ▶ page 352

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**E2 mini | Series F17 | Introduction**

**E2 mini | Series F17 | Dimensions | Unsupported**

---

**E2 mini | Series F17 | Dimensions | Unsupported**

---

**E2 mini | Series F17 | Dimensions | Unsupported**

---
#### Full-width shelves

- **Width X (mm)**
  - Unassembled: 110.X
  - Assembled: 111.X

#### Slotted separator R171
- This separator is used when vertical and horizontal separation is required. Its slot allows basic vertical/horizontal shelving arrangements.

#### Full-width shelf 110.X
- This option makes sense in applications with many thin cables with similar diameters. For a consequent subdivision, full-width shelves can be arranged at 5 different heights (in 5 mm increments).

---

**Order key**

**F17. 015. 048. 0**

**Available from stock. Delivery time in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*
### Polymer locking, one-piece | Universal for e-chains®

**Recommended for unsupported applications**

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>015</td>
<td>117.015.12PZ</td>
<td>117.015.12P</td>
<td>–</td>
<td>27.7</td>
<td>2</td>
</tr>
</tbody>
</table>

Material mounting bracket: Igumid® G, permitted temp. -40° up to +120° C, VDE 0304 IC UL94-HB

- One-piece mounting bracket
- Available with or without strain relief tiewrap plates
- Corrosion-resistant
- Various installation options on the fixed end and/or the moving end
- Inner and outer attachment possible

#### Order example

**117.015.12PZ A1**

- Moving end
- Fixed end

- Mounting brackets for selected width index

- Single-part order
- Mounting bracket: Moving end
- Part No.: **117.015.12PZ A1** (e.g. + tiewrap plate)

- Mounting bracket: Fixed end
- Part No.: **117.015.2PZ A1** (e.g. + tiewrap plate)
E2/000
Allrounder: e-chains® & e-tubes, medium sizes
Allrounder with a wide range of applications - System E2/000

The E2/000 Series is igus® fourth generation in this popular size range. All past experiences went into this Millenium Series: easy and versatile assembly combined with ruggedness - high stability paired with quieter motion - long cable life and many fixation 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 machines
- Plastic machines
- Long travel applications in many industries
- Semicon
- Theatre, entertainment and amusement parks
- Vehicles
- General machinery

Electricaly conductive ESD/ATEX version with PTB-certification upon request

46 dB(A) tested in igus® lab, v = 1,0 m/s unsupported, e.g. Series 2600.05.075.0

UL94-V0 classifications upon request

IPA Qualification Certificate - Report IG 1303-640-1:
ISO Class 2, according to DIN EN ISO 14644-1 for System E2/000, Series 1500.050.038.0
at v = 0,5 / 1,0 / 2,0

IPA Qualification Certificate - Report IG 0308-295:
ISO Class 3, according to DIN EN ISO 14644-1 for System E2/000, Series 2500.05.055.0
at v = 2,0 m/s

Contents, selection table and assembly instructions next page

Hammed E2/000 e-chain® - turnkey solution delivered with cables and sheet metal parts directly to the machine

E2/000 features

- Innovative 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
E2/000 | Cables last up to 4 times longer

75% less wear... Increase the service life of cables even further
A new design of interior separators for E2/000 allround e-chain® range. Separators optimally adapted to cable geometry increase the service life of the cables by a factor of 4. A better interior separation can be executed with fewer elements:

Vertical separation - Vertical separators
- Abrasion-optimized, cable-friendly design, long service life
- Mounting-optimized - a simpler and faster assembly
- Non-positive, secure fit
- Easy-to-use interior separation range for all applications

Horizontal separation - Full-width shelves
- Locks at both ends
- Separators can be moved horizontally as needed
- Side plates not required
- Even partial horizontal subdivision is possible

Open E2/000 e-chains® in a flash with the igus® e-chain® opener
The opening of the links of E2/000 e-chains® at extremely high speed saves significant installation time. Open a long piece of e-chain® in one go. It’s the ideal tool when doing your own mounting or assembly lines in order to minimize the processing time significantly. Opening of long e-chain® units in one go and drastically reduce assembly time from 33 to 2 sec. (tested Series 2700.07)

More information ➤ www.igus.eu/E2opener

E2/000 | e-chain® opener | Drastically reduce assembly time

Reduce installation time to open the e-chain® from 33 sec to 2 sec (*tested 1 m, Series 2700.07)

Compatible mounting tools for each e-chain® size. The ideal tool for your own mounting or assembly lines to minimize the processing time significantly.

Compatible mounting tools for each e-chain® size. The ideal tool for your own mounting or assembly lines to minimize the processing time significantly.

E2/000 | e-chain® opener | Drastically reduce assembly time

Reduce installation time to open the e-chain® from 33 sec to 2 sec (*tested 1 m, Series 2700.07)

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Compatible mounting tools for each e-chain® size. The ideal tool for your own mounting or assembly lines to minimize the processing time significantly. 
### E2/000 e-chains®

**Standard for System E2**
Snap-open along outer radius from both sides. For long travels

<table>
<thead>
<tr>
<th>Inner height [mm]</th>
<th>Inner width [mm]</th>
<th>Outer width [mm]</th>
<th>Outer height [mm]</th>
<th>Bending radius [mm]</th>
<th>Unsupported length max. [m]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500</td>
<td>21</td>
<td>15 - 125</td>
<td>28.5 - 138.5</td>
<td>28</td>
<td>35 - 180</td>
<td>1.75</td>
</tr>
<tr>
<td>2500</td>
<td>25</td>
<td>25 - 125</td>
<td>41 - 141</td>
<td>35</td>
<td>55 - 250</td>
<td>2.25</td>
</tr>
<tr>
<td>2700</td>
<td>35</td>
<td>50 - 175</td>
<td>66 - 194</td>
<td>50</td>
<td>63 - 250</td>
<td>2.75</td>
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<tr>
<td>3500</td>
<td>45</td>
<td>50 - 250</td>
<td>70 - 270</td>
<td>64</td>
<td>75 - 300</td>
<td>3.00</td>
</tr>
<tr>
<td>25</td>
<td>24</td>
<td>38 - 103</td>
<td>54 - 119</td>
<td>35</td>
<td>55 - 250</td>
<td>1.80</td>
</tr>
</tbody>
</table>

**Half e-tubes**
Snap-open along inner radius from both sides. For long travels please consult igus®

<table>
<thead>
<tr>
<th>Inner height [mm]</th>
<th>Inner width [mm]</th>
<th>Outer width [mm]</th>
<th>Outer height [mm]</th>
<th>Bending radius [mm]</th>
<th>Unsupported length max. [m]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1400</td>
<td>21</td>
<td>15 - 125</td>
<td>28.5 - 138.5</td>
<td>28</td>
<td>35 - 180</td>
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<td>25 - 125</td>
<td>41 - 141</td>
<td>35</td>
<td>55 - 250</td>
<td>2.25</td>
</tr>
<tr>
<td>2600</td>
<td>35</td>
<td>50 - 175</td>
<td>66 - 194</td>
<td>50</td>
<td>63 - 250</td>
<td>2.75</td>
</tr>
<tr>
<td>3400</td>
<td>45</td>
<td>50 - 250</td>
<td>70 - 270</td>
<td>64</td>
<td>75 - 300</td>
<td>3.00</td>
</tr>
</tbody>
</table>

**Full e-tubes**
Snap-open along inner radius from both sides. For long travels please consult igus®

<table>
<thead>
<tr>
<th>Inner height [mm]</th>
<th>Inner width [mm]</th>
<th>Outer width [mm]</th>
<th>Outer height [mm]</th>
<th>Bending radius [mm]</th>
<th>Unsupported length max. [m]</th>
<th>Page</th>
</tr>
</thead>
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<td>15 - 125</td>
<td>28.5 - 138.5</td>
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<td>75 - 180</td>
<td>1.75</td>
</tr>
<tr>
<td>2450</td>
<td>25</td>
<td>25 - 125</td>
<td>41 - 141</td>
<td>35</td>
<td>75 - 250</td>
<td>2.25</td>
</tr>
<tr>
<td>2650</td>
<td>35</td>
<td>50 - 175</td>
<td>66 - 194</td>
<td>50</td>
<td>100 - 250</td>
<td>2.75</td>
</tr>
<tr>
<td>3450</td>
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<td>50 - 250</td>
<td>70 - 270</td>
<td>64</td>
<td>125 - 300</td>
<td>3.00</td>
</tr>
</tbody>
</table>

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**Technical Data, overview** page 408
**e-chain® links as single parts, overview** page 409
**Configuration options and order keys, overview** page 410

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*Delivery time means time until shipping of goods (after technical release)*

---

**Contents Selection Table**

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**Assembly video available online at** www.igus.eu/eu/E2000assembly

---

**Open E2/000 e-chains® in a flash with the e-chain® opener** page 405
E2/000 | Technical Data | Overview

Technical Data - System E2/000

| Speed / acceleration FLG, max. | max. 10 [m/s] / max. 50 [m/s] |
| Speed / acceleration FLB, max. | max. 20 [m/s] / max. 200 [m/s] |
| FLG = with straight upper run, FLB = with permitted sag |

Material - permitted temperature °C, igumid G: 40° up to +120° C
Flammability class, igumid G: VDE 0303/04 IIC UL94-HB

Installation methods overview, maximum travels - System E2/000

<table>
<thead>
<tr>
<th>e-chain® / e-tube Series</th>
<th>Unsupported length lower run 2)</th>
<th>Unsupported application</th>
<th>&quot;Gliding&quot; application</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side-mounted unsupported</th>
<th>Rotary application</th>
<th>Zig-zag application</th>
<th>Unsupported length lower run 2)</th>
<th>FLG</th>
<th>FLB</th>
</tr>
</thead>
<tbody>
<tr>
<td>1400/1500/1450/1480</td>
<td>≤ 1,75 m</td>
<td>≤ 75 m</td>
<td>≤ 20 m</td>
<td>≤ 2,0 m</td>
<td>≤ 0,7 m</td>
<td>with rework</td>
<td>upon request</td>
<td>upon request</td>
<td>1,75 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2400/2500/2450/2480</td>
<td>≤ 2,25 m</td>
<td>≤ 100 m</td>
<td>≤ 40 m</td>
<td>≤ 3,0 m</td>
<td>≤ 1,0 m</td>
<td>with rework</td>
<td>upon request</td>
<td>upon request</td>
<td>2,25 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2600/2700/2650/2680</td>
<td>≤ 2,70 m</td>
<td>≤ 120 m</td>
<td>≤ 50 m</td>
<td>≤ 3,0 m</td>
<td>≤ 1,0 m</td>
<td>with rework</td>
<td>upon request</td>
<td>upon request</td>
<td>2,70 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3400/3500/3450/3480</td>
<td>≤ 3,00 m</td>
<td>≤ 150 m</td>
<td>≤ 80 m</td>
<td>≤ 3,0 m</td>
<td>≤ 1,0 m</td>
<td>with rework</td>
<td>upon request</td>
<td>upon request</td>
<td>3,00 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>255</td>
<td>≤ 1,80 m</td>
<td>≤ 100 m</td>
<td>≤ 40 m</td>
<td>≤ 3,0 m</td>
<td>≤ 1,0 m</td>
<td>with rework</td>
<td>upon request</td>
<td>upon request</td>
<td>1,80 m</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1) Note: Before using series snap open along the inner radius for gliding applications, please consult igus®

E2/000 | e-chain® links as single parts | Overview

Part No. two-piece e-chain® links as single parts - System E2/000

<table>
<thead>
<tr>
<th>e-chain® snap-open along outer radius</th>
<th>Half e-tube snap-open along inner radius</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-chain® snap-open along inner radius</td>
<td>Full e-tube snap-open along inner radius</td>
</tr>
</tbody>
</table>

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)

** Lower parts - supplement Part No. with required width index (Bi) and radius (R). Example: 2500.100.100
### Configuration options and order key

**Delivery time** means time until shipping of goods (after technical release)

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

**Standard**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Low noise dampening with pads</th>
<th>NC-Version - (no camber) without pretension</th>
<th>Reverse bending radius for circular movements</th>
</tr>
</thead>
<tbody>
<tr>
<td>2400.03.R.O</td>
<td>S2400.03.R.O</td>
<td>2400.03.R.O.NC</td>
<td>2400.03.R1.R2.O</td>
</tr>
<tr>
<td>2500.03.R.O</td>
<td>S2500.03.R.O</td>
<td>2500.03.R.O.NC</td>
<td>2500.03.R1.R2.O</td>
</tr>
<tr>
<td>2450.03.R.O</td>
<td>S2450.03.R.O</td>
<td>2450.03.R.O.NC</td>
<td>2450.03.R1.R2.O</td>
</tr>
<tr>
<td>2480.03.R.O</td>
<td>S2480.03.R.O</td>
<td>2480.03.R.O.NC</td>
<td>2480.03.R1.R2.O</td>
</tr>
</tbody>
</table>

**Delivery time**

- 24h or today!
- 3-5 work days
- 2-5 work days
- Several widths from stock

**Order example | Order key and color options**

#### Order example for complete e-chain® (1,0 m), color black, with mounting brackets and interior separation

- e-chain® (1,0 m)
  - Please indicate e-chain® length or number of links: 1,0 m or 22 links
  - Part No.: 2500.03.100.0

- + Mounting brackets
  - 1 set (with tiestrap plates)
  - Part No.: 2030.34PZB+

- + Interior separation
  - with 2 separators assembled every 2nd link
  - Part No.: 2030.34PZB++

- Order test: 1,0 m 2500.03.100.0 + 2030.34PZB+++ 2 x Part No. 211

#### Color options for e-chains® and e-tubes

<table>
<thead>
<tr>
<th>Color</th>
<th>Order index</th>
</tr>
</thead>
</table>

- Black: Standard, from stock
- Slate grey: only HT-Material
- Grey: standard color only for e-chains
- Dusty grey: special color only for e-tubes

**Order key**

- 2500.03.100.0

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
**Small radii, high stability**

When to use Series 1400-1450-1480-1500:
- If a medium-sized, stable system with an inner height of 21 mm is required (e-chains® half and full e-tubes)
- If inner widths up to 125 mm are required
- For unsupported lengths up to 1.75 m and fill weights up to 2.0 kg/m
- For long travels up to 75 m
- If an optimized system for quick opening of crossbars from left or right is required

When to use a different igus® Series:
- If more stability is required ➤ System E4.1, Series E4.21, page 626
- For simple applications and easy filling ➤ easy chain®, Series E14, page 180
- If e-tubes with smaller bending radii are required ➤ e-tubes E2, Series R117, page 502

**Unsupported applications**

Long travels up to 75 m. More information ➤ page 424

**Available from stock. Delivery time in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

**3D-CAD files, configurators, PDF ➤ www.igus.eu/eu/E2000**

---

**Technical Data**

Speed, material, temperature and flammability class ➤ page 408

<table>
<thead>
<tr>
<th>R</th>
<th>035°</th>
<th>038°</th>
<th>048°</th>
<th>075°</th>
<th>100</th>
<th>125</th>
<th>145</th>
<th>180</th>
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</thead>
<tbody>
<tr>
<td>H</td>
<td>98</td>
<td>104</td>
<td>124</td>
<td>178</td>
<td>228</td>
<td>278</td>
<td>318</td>
<td>388</td>
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<tr>
<td>D</td>
<td>99</td>
<td>102</td>
<td>112</td>
<td>139</td>
<td>164</td>
<td>189</td>
<td>209</td>
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<td>K</td>
<td>180</td>
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<td>220</td>
<td>305</td>
<td>385</td>
<td>460</td>
<td>525</td>
<td>635</td>
</tr>
</tbody>
</table>

The required clearance height: \( H_F = H + 25 \text{ mm} \) (with 0.5 kg/m fill weight)

*Radius for Series 1450/1480 available upon request, please consult igus® for delivery time. Note: Before using Series 1400/1450/1480 on long travels, please consult igus®!*

**Dimensions**

Example
- Fill weight = 1.5 [kg/m]
- Unsupported length \( F_{L_{un}} = 1.3 \text{ m} \)
- Length of travel = 2.6 m
### e-chains® | Series 1400 snap-open along inner radius

#### e-chains® | Series 1500 snap-open along outer radius | Standard

<table>
<thead>
<tr>
<th>Series / Type</th>
<th>Width index</th>
<th>Bi (mm)</th>
<th>Ba (mm)</th>
<th>R (mm)</th>
<th>Bending radii</th>
<th>1400 [kg/m³]</th>
<th>1500 [kg/m³]</th>
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</thead>
<tbody>
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<td>038</td>
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<td>035</td>
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<td>035</td>
<td>038</td>
<td>048</td>
<td>075</td>
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<td>63,5</td>
<td>035</td>
<td>038</td>
<td>048</td>
<td>075</td>
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<td>81,5</td>
<td>035</td>
<td>038</td>
<td>048</td>
<td>075</td>
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<td>035</td>
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<td>035</td>
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<td>075</td>
<td>100</td>
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</table>

**Note:** Before using Series 1400/1450/1480 on long travels (gliding), please consult igus®

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### Half e-tubes | Series 1450 snap-open along inner radius, closed along outer radius

#### Full e-tubes | Series 1480 snap-open along inner radius, fully enclosed

<table>
<thead>
<tr>
<th>Series / Type</th>
<th>Width index</th>
<th>Bi (mm)</th>
<th>Ba (mm)</th>
<th>R (mm)</th>
<th>Bending radii</th>
<th>1450 [kg/m³]</th>
<th>1480 [kg/m³]</th>
</tr>
</thead>
<tbody>
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<td>075</td>
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<td>138,5</td>
<td>035</td>
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<td>075</td>
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</tr>
</tbody>
</table>

**Note:** Before using Series 1400/1450/1480 on long travels (gliding), please consult igus®

---

**Order key**

- **e-chain**
  - 1400.038.100.0
  - 1500.038.100.0

- **Half e-tube**
  - 1450.038.100.0
  - 1480.038.100.0

**e-chain links as single parts, overview** ➤ page 409

**Configuration options and order keys, overview** ➤ page 410

**Available from stock. Delivery time* in 24h or today!**

---

<table>
<thead>
<tr>
<th>3D-CAD files, configurators, PDF</th>
<th><a href="http://www.igus.eu/eu/E2000">www.igus.eu/eu/E2000</a></th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="mailto:info@igus.de">info@igus.de</a></td>
<td>Phone +49 2203 9649-800</td>
</tr>
<tr>
<td></td>
<td>Fax -222</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:info@igus.de">info@igus.de</a></td>
</tr>
</tbody>
</table>
Noise dampening | Noise reduction – 5 dB(A)

e-chains

Half e-tubes snap-open along inner radius

Full e-tubes snap-open along inner radius

R Bending radii

Bi

<table>
<thead>
<tr>
<th>e-chains</th>
<th>Half e-tubes</th>
<th>Full e-tubes</th>
<th>R</th>
<th>Bi</th>
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<td>S1480.015</td>
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<td>R0</td>
<td>035</td>
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<tr>
<td>S1400.050</td>
<td>S1450.050</td>
<td>S1480.050</td>
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<td>035</td>
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<tr>
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<td>S1450.063</td>
<td>S1480.063</td>
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<td>S1400.080</td>
<td>S1450.080</td>
<td>S1480.080</td>
<td>R0</td>
<td>035</td>
</tr>
</tbody>
</table>

Width available upon request, please consult igus®. For radii 035, 038, 048 the e-tube is not fully enclosed. Please consult igus®.

Supplement Part No. with required radius. Example: S1400.038.100.0

Note: Before using Series 1400/1450/1480 on long travels (gliding), please consult igus®.

Configuration options and order keys, overview – page 410

Available from stock. Delivery time® in 24h or today!

“Delivery time means time until shipping of goods (after technical release)

ESD/ATEX permanently conductive e-chains® – 1500 several widths with delivery from stock

Inner widths Bi 15 - 80; radii R 038 - 145. Full ESD product range – www.igus.eu/ESD

Magnetically detectable plastic e-chains®

For the food- and tobaccoindustry | New in this catalog

- The material igurol DT is detected to the finest fragment all common metal detection systems and can therefore be selected automatically.
- Particles as small as 1.0 mm can be recognized for fragments passing at speeds of 20 m/min

More information – www.igus.eu/eu/detectable-chain

In the standard configuration separators are assembled every 2nd e-chain® link

Note: Only suitable for e-chain® Series 1400/1500. Interior separation for e-tubes see next page

Standard – for all applications

Separator with wide base for maximum locking strength and safe standing in e-chains.

For even faster installation

Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (tight grip).

For many thin cables

Separator with a narrow base for a large number of thin cables side by side. Saves space in e-chains.

For side-mounted applications

Asymmetrical separator, for defined distance. No additional spacers necessary.

Horizontal separation

Full-width 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 [mm] | un assembled | assembled |
| X-4 | Width X [mm] | un assembled | assembled |
| X-4 | Width X [mm] | un assembled | assembled |
| X-4 | Width X [mm] | un assembled | assembled |
Optional: Support tray tool kit.
For support of the lower run.
Simple one-piece support trays according to your requirements and specification. Available upon request.
The complete range with order options > from page 1258

E2/000 Series 1400 in aircraft refuelling truck; telescopic crane with six sections

Full-width shelves

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
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</thead>
<tbody>
<tr>
<td>015</td>
<td>110.15</td>
<td>111.15</td>
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<td>111.20</td>
</tr>
<tr>
<td>025</td>
<td>110.25</td>
<td>111.25</td>
</tr>
</tbody>
</table>

Slotted separator 14001 (e-chains' only)
is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Slotted separator 14501 (e-tubes only)
is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Full-width shelf 110.X (e-chains'/e-tubes)  
this option makes sense in applications with many thin cables with similar diameters. For a consequent subdivision, full-width shelves can be arranged at 3 different heights (in 5.75 mm increments).

Strain relief separator 21.1.Z (e-chains' only)
Can be integrated into the mounting bracket and can be placed there at any point. It combines strain relief and interior separation.
For tight installation conditions

**Polymer pivoting, one-piece**
**Standard - Universal for e-chains® and e-tubes**
Recommended for unsupported and gliding applications

<table>
<thead>
<tr>
<th>For width index</th>
<th>Part No. full set with tiewrap plate</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
</tr>
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<tbody>
<tr>
<td>.015</td>
<td>14015.3PZ</td>
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</tr>
<tr>
<td>.020</td>
<td>14020.3PZ</td>
<td>33.5</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>.025</td>
<td>14025.3PZ</td>
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<td>.125</td>
<td>14125.3PZ</td>
<td>138.5</td>
<td>13</td>
<td>13</td>
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</table>

Part No. structure (pivoting):

14038.3PZ A1

Possible installation conditions for assembled mounting brackets.
For the preassembled mode please add index A1..A4 e.g. 14038.3PZ A1

---

For very high speed and acceleration

**Polymer locking, one-piece**
**Universal for e-chains® and e-tubes**
Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>For width index</th>
<th>Part No. full set with tiewrap plate</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
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</table>

Part No. structure (locking):

14038.12PZ A1

Possible installation conditions for assembled mounting brackets.
For the preassembled mode please add index A1..A4 e.g. 14038.12PZ A1

---

**Strain relief**
e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148

---

3D-CAD files, configurators, PDF: www.igus.eu/eu/E2000
### Mounting brackets pivoting

**Polymer pivoting | Universal for e-chains® and e-tubes**

Recommended for unsupported and gliding applications

<table>
<thead>
<tr>
<th>For width index</th>
<th>Part No. full set with tiewrap plate</th>
<th>Part No. full set without tiewrap plate</th>
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<th>Dim. B [mm]</th>
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</table>

*Tiewrap plate (consists of 2x2050.ZB) does not snap on but needs to be bolted down separately

**Note:** Mounting brackets not to assemble at the gable end

- For tight installation conditions
- Strain relief with detachable tiewrap plates
- Variable traverse angle for flexible assembly
- Corrosion resistant
- Various installation options on the moved end and/or the moving end

Part No. structure (pivoting)

15000.038.34PZA1

A1...A4 ➤ e.g. 15000.038.34PZ2A1

*Possible installation conditions for assembled, pivoting mounting brackets. For the preassembled mode please add index A1...A4 ➤ e.g. 15000.038.34PZ2A1

**Strain relief** e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options ➤ from page 1148

### Steel locking | For e-chains® and e-tubes

Recommended for unsupported, vertical hanging and standing applications

<table>
<thead>
<tr>
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<th></th>
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<td>149</td>
<td>152</td>
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</tbody>
</table>

Part no. structure 14000.12E

Optical stainless steel

Full set, 4 parts
2 with pin / 2 with bore

Mounting bracket

**Steel locking**

- Locked connections
- One part (2-piece) for all e-chain® widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible
- Stainless steel version available

**Material:** stainless steel 1.4301 / AISI 304

*Pivoting with no stop (360°). Screw-on area of the mounting brackets can be on the interior or exterior.

**Strain relief** e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options ➤ from page 1148

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422 3D-CAD files, configurators, PDF ➤ www.igus.eu/eu/E2000

423
**Gilding applications** | For long travels from 10 m to max. 75 m

Solution for long travel applications - In this case the e-chain upper run will be introduced in a guide trough on the lower run. We recommend to realize the engineering of such a plant by our technicians. **Please note:** For using Series 1400/1450/1480 for long travels (gilding), please consult igus® first. For long travels, igus® specifies Series 1500 that snaps open along the outer radius. In case of travels between 4 and 10 m we recommend a longer unsupported length. More information [Design](#) from page 106.

**Equation:**

\[
\text{nMon} = \text{nRi} + 1
\]

\[
\times 2000 \text{ mm}
\]

---

**Pitch =** 33.3 mm/Link \( \cdot \) **Links/m** = 30 (1000 mm) \( \cdot \) **Chain length** = \( S/2 + K_2 \)

<table>
<thead>
<tr>
<th>( R )</th>
<th>0.035&quot;</th>
<th>0.038&quot;</th>
<th>0.040&quot;</th>
<th>0.075&quot;</th>
<th>0.100&quot;</th>
<th>0.125&quot;</th>
<th>0.145&quot;</th>
<th>0.180&quot;</th>
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</thead>
<tbody>
<tr>
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<td>100</td>
</tr>
<tr>
<td>( D_2 )</td>
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<td>102</td>
<td>112</td>
<td>139</td>
<td>340</td>
<td>495</td>
<td>540</td>
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<tr>
<td>( K_2 )</td>
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<td>305</td>
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<td>800</td>
<td>940</td>
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<td>179</td>
<td>305</td>
<td>434</td>
<td>445</td>
</tr>
</tbody>
</table>

*Radius for Series 1400/1450/1480 available upon request, please consult igus® for delivery time. **Note:** Before using Series 1400/1450/1480 on long travels, please consult igus®!

---

**Aluminum SuperTrough | Basic Version**

Part No. 970.30.SL | 970.32.SL | Trough height: 77 mm

**Installation set “Basic” with C-Profile**

Bottom clamp optionally attached inwards or outwards

**Table:**

- Components, trough “Basic”:
  - Trough side parts, aluminum, 2 m
  - Glide bar, plastic, 2 m
  - Glide strips, plastic, 2 m (without glide strips on request)
- Components, installation set “Basic”:
  - Bottom clamp, aluminum
  - C-profile, galvanized steel
  - Screw M6 x 16
  - Sliding nut M6
  - Interface connector, plastic

**Order example:** Length of travel 30 m - Center mounted for Series 1500.050

Guide trough set without glide bar (set of 2 trough side parts, incl. glide strips)

Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips)

**Order text:**

- 16 m guide trough without glide bar (8 x 2 m sections) **Part No.** 970.30.SL
- 16 m guide trough with glide bar (8 x 2 m sections) **Part No.** 970.32.SL
- Installation set “Basic” complete (guide trough sets + 1)

**Module for the fixed end**

**Order text:**

- 1 set **Part No.** 970.80

---

**Pitch = 33.3 mm/Link** \( \cdot \) **Links/m = 30 (1000 mm)** \( \cdot \) **Chain length** = \( S/2 + K_2 \)

**Order example:** Length of travel 30 m - Center mounted for Series 1500.050

Guide trough set without glide bar (set of 2 trough side parts, incl. glide strips)

Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips)

**Order text:**

- 16 m guide trough without glide bar (8 x 2 m sections) **Part No.** 970.30.SL
- 16 m guide trough with glide bar (8 x 2 m sections) **Part No.** 970.32.SL
- Installation set “Basic” complete (guide trough sets + 1)

**Module for the fixed end**

**Order text:**

- 1 set **Part No.** 970.80

---

**Special solutions for long travel applications** [Design](#) from page 106

**E-chains®** for long travels: E4/4HD, P4, autoglide, rol e-chain [Design](#) from page 1264


**igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu**
**Allrounder, high stability**

When to use Series 2400-2450-2480-2500:

- If a medium-sized, stable system with an inner height of 25 mm is required (e-chains®, half and full e-tubes)
- If inner widths up to 125 mm are required
- For unsupported lengths up to 2,25 m and fill weights up to 4,8 kg/m
- For long travels up to 100 m
- If an optimized system for quick opening of crossbars from left or right is required

Example: Fill weight = 1,5 [kg/m]

Unsupported length FLG = 1,7 m

Length of travel = 3,3 m

The required clearance height:

\[ H_F = H + 25 \text{ mm} \]  

(with 1,5 kg/m fill weight)

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height \( H_F \). Please consult igus® if space is particularly restricted. More information in Design, page 95

When to use a different igus® Series:

- If more stability is required
  - System E4.1, Series E4.28, page 634
  - For simple applications and easy filling
  - easy chain®, Series E200, page 184
- If e-tubes with smaller bending radii are required
  - e-tubes E2, Series R48, page 540

### Dimensions

**Unsupported**

<table>
<thead>
<tr>
<th>FLG</th>
<th>FLB</th>
<th>H</th>
<th>HF</th>
<th>S/M</th>
</tr>
</thead>
<tbody>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Open E2/000 e-chains® in a flash with the e-chain® opener** page 405

### Technical Data

- Speed, material, temperature and flammability class page 408
- Pitch = 46 mm/link
- Links/m = 22 (1012 mm)
- Chain length = \( \frac{S}{2} + K \)

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

---

**Cleanroom ISO Class 3:** Suitable for cleanroom applications

- Many mounting options with or without strain relief
- Opening system from left or right
- System with 4 variations
- Large pin for high stability
- Double stop dog for long unsupported travels
- Lateral glide surfaces

---

igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu
e-chains® | Series 2400 snap-open along inner radius

<table>
<thead>
<tr>
<th>Width index</th>
<th>Series / Type</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Bending radii</th>
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<tbody>
<tr>
<td>2400.02.R0</td>
<td>2500.02.R0</td>
<td>25</td>
<td>41</td>
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<td>2500.07.R0</td>
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<td>1.01 1.01</td>
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<td>2400.09.R0</td>
<td>2500.09.R0</td>
<td>89</td>
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<td>2500.12.R0</td>
<td>125</td>
<td>141</td>
<td>1.22 1.22</td>
</tr>
</tbody>
</table>

Available from stock. Delivery time* in 24h or today!

Note: Before using Series 2400/2450/2480 on long travels (gliding), please consult igus®!

Order key
2400.03.100.0 e-chain®
2500.03.100.0 e-chain®

Supplement Part No. with required radius. Example: 2500.03.100.0

Half e-tubes | Series 2450 snap-open along inner radius, closed along outer radius

<table>
<thead>
<tr>
<th>Width index</th>
<th>Series / Type</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Bending radii</th>
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*Radius available upon request, please consult igus® for delivery time.

For radii <250 the e-tube is not fully enclosed. Please consult igus®

Supplement Part No. with required radius. Example: 2450.03.100.0

Note: Before using Series 2400/2450/2480 on long travels (gliding), please consult igus®!

Order key
2450.03.100.0 Half e-tube
2480.03.100.0 Full e-tube

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

e-chains® | Series 2500 snap-open along outer radius | Standard

Configuration options and order keys, overview ► page 410

Available from stock.

Configuration options and order keys, overview ► page 410

Available from stock.

*Delivery time means time until shipping of goods (after technical release)
Noise dampening | Noise reduction – 5 dB(A)

<table>
<thead>
<tr>
<th>e-chains</th>
<th>Half e-tubes</th>
<th>Full e-tubes</th>
<th>R</th>
<th>Bending radii</th>
<th>Bi</th>
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<tr>
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<td>S2450.02</td>
<td>S2480.02</td>
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<td>075</td>
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<td>S2480.03</td>
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<td>055*</td>
<td>075</td>
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<td>2400.04</td>
<td>S2450.04</td>
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<td>075</td>
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<td>2400.05</td>
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<td>075</td>
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<td>075</td>
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<td>2400.08</td>
<td>S2450.08</td>
<td>S2480.08</td>
<td>R,0</td>
<td>055*</td>
<td>075</td>
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</table>

*Radii for series 2400/2480 available upon request, please consult igus® for delivery times.
For radii 055 the e-tube is not fully enclosed. Please consult igus®.

Supplement Part No. with required radius. Example: S2400.03.100.0

**Note**: Before using Series 2400/2450/2480 on long travels (gliding), please consult igus®!

Configuration options and order keys, overview ➤ page 410

Available from stock. Delivery time® in 24h or today!

Delivery time means time until shipping of goods (after technical release).

ESD/ATEX permanently conductive e-chains® - 2500 several widths with delivery from stock:

| Inner widths | Bi | 25 - 125, radii | R | 055* - 175. Full ESD product range ➤ www.igus.eu/ESD |

Maganetically detectable plastic e-chains®

For the food- and tobaccoindustry | New in this catalog

The material igumid DT is detected to the tiniest fragment all common metal detection systems and can therefore be selected automatically. Inter, as small as 1.0 mm can be recognized for fragments passing at speeds of 20 m/min.

More information ➤ www.igus.eu/eu/detectable-chain

Lockable full-width shelves - for the standard interior separation

<table>
<thead>
<tr>
<th>Width X (mm)</th>
<th>Unassembled</th>
<th>Width X (mm)</th>
<th>Unassembled</th>
<th>Width X (mm)</th>
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<td>070</td>
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<td>2300.050</td>
<td>2310.050</td>
<td>077</td>
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<tr>
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<td>2300.057</td>
<td>2310.057</td>
<td>080</td>
<td>2300.080</td>
<td>2310.080</td>
</tr>
</tbody>
</table>

For many thin cables

Separator with a narrow base for a large number of thin cables side by side. Saves space in e-chains®.

For side-mounted applications

Asymmetrical separator, for defined distance. No additional spacers necessary.

Horizontal separation

Full-width 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.

... - 5 dB(A) depends on environmental conditions, similar to figure
Separators, spacers, full-width shelves - In the standard configuration separators are assembled every 2nd e-chain link.

**Slotted separator 202 (e-chains’ only)**
- is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

**Slotted separator 24501 (e-tubes only)**
- is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

**Separator, wide base 201.28 (e-chains’ only)**
- If a wide space between the separators has to be kept or separators have to be fixed in their position.
  - For side-mounted applications

**Side plate 203 (e-chains’ only)**
- Side plate for use with full-width shelf 220.X and slotted separator 202.

**Spacer 205.09 (e-chains’ only)**
- Separators can be fixed in position. Only mountable onto the fixed crossbar. (For side-mounted applications)

**Full-width shelf 220.X (e-chains’ and e-tubes)**
- This option makes sense in applications with many thin cables with similar diameters. For a consequent subdivision. Full-width shelves can be arranged at 3 different heights (in 5 mm increments).

---

**Shelves**

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
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</thead>
<tbody>
<tr>
<td>025</td>
<td>220.25</td>
<td>221.25</td>
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<tr>
<td>038</td>
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<td>221.90</td>
</tr>
<tr>
<td>103</td>
<td>220.103</td>
<td>221.103</td>
</tr>
</tbody>
</table>

---

**Middle plate 2020 (e-chains’ only)**
- To achieve a modular shelving by shelf 2200.X arranged at 3 different heights (in 5 mm increments)

**Slotted separator 2040 (e-chains’ only)**
- For a very fine subdivision.
  - No snap-in option for shelves, freely movable.

**Side plate 2030 (e-chains’ only)**
- Side plate for use with middle plate 2020, slotted separator 2040 and shelf 2200.X.

**Shelf 2200 (e-chains’ only)**
- For applications involving many cables with different diameters, shelves can be arranged at alternate heights. They can be arranged at 3 different heights (in 5 mm increments).

---

**Additional elements for interior separation**

**Strain relief separator 2020.Z (e-chains’ only)**
- Can be integrated into the mounting bracket and can be placed there at any point. It combines strain relief and interior separation.

**Strain relief separator 2020.ZR (e-tubes only)**
- Can be integrated into the mounting bracket and can be placed there at any point. It combines strain relief and interior separation.
Polymer pivoting | Standard - Universal for e-chains® and e-tubes

Recommended for unsupported and gliding applications

<table>
<thead>
<tr>
<th>For width</th>
<th>Part No. full set with tiewrap plate</th>
<th>Part No. full set without tiewrap plate</th>
<th>Dim. A</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>.02</td>
<td>2020.34PZB+ 2020.34PZBK1+</td>
<td>2020.34PZ+</td>
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<td>3</td>
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<tr>
<td>.03</td>
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<td>2030.34PZ+</td>
<td>25</td>
<td>4</td>
</tr>
<tr>
<td>.05</td>
<td>2050.34PZB+ 2050.34PZBK1+</td>
<td>2050.34PZ+</td>
<td>44</td>
<td>6</td>
</tr>
<tr>
<td>.07</td>
<td>2070.34PZB+ 2070.34PZBK1+</td>
<td>2070.34PZ+</td>
<td>64</td>
<td>8</td>
</tr>
<tr>
<td>.09</td>
<td>2090.34PZB+ 2090.34PZBK1+</td>
<td>2090.34PZ+</td>
<td>77</td>
<td>9</td>
</tr>
<tr>
<td>.10</td>
<td>2100.34PZB+ 2100.34PZBK1+</td>
<td>2100.34PZ+</td>
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<td>10</td>
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<td>2125.34PZ+</td>
<td>112</td>
<td>12</td>
</tr>
</tbody>
</table>

Part No. structure (pivoting)

Moving end: 2...3PZ(B)+  
Fixed end: 2...4PZ(B)+

Possible installation conditions for assembled, pivoting mounting brackets. For the preassembled mode please add index A1...A4 e.g. 2020.34PZB+ A1

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148

Polymer locking | Universal for e-chains® and e-tubes

Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>For width</th>
<th>Part No. full set with tiewrap plate</th>
<th>Part No. full set without tiewrap plate</th>
<th>Dim. A</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
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<td>2020.12PZ+</td>
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<td>3</td>
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<tr>
<td>.03</td>
<td>2030.12PZB+ 2030.12PZBK1+</td>
<td>2030.12PZ+</td>
<td>25</td>
<td>4</td>
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<tr>
<td>.05</td>
<td>2050.12PZB+ 2050.12PZBK1+</td>
<td>2050.12PZ+</td>
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<td>112</td>
<td>12</td>
</tr>
</tbody>
</table>

Part No. structure (locking)

Moving end: 2...1PZ(B)+  
Fixed end: 2...2PZ(B)+

Possible installation conditions for assembled, locking mounting brackets. For the preassembled mode please add index A1...A4 e.g. 2020.12PZB+ A1

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148
### KMA Pivoting | All-sides attachment - Universal for e-chains® (Series 2400-2500)

**Recommended for unsupported and gliding applications**

<table>
<thead>
<tr>
<th>For width index</th>
<th>Part No. full set with tiewrap plate</th>
<th>Part No. full set without tiewrap plate</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
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<td>144</td>
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</tbody>
</table>

**Part No. structure (pivoting) - e-chain®**

- Bolted connection outside of chain cross-section possible
- For tight installation conditions
- Universally mountable with attachment capability on all sides
- Pluggable strain relief tiewrap plate, adjustable to 3 heights
- Option: threaded sockets upon request (KMA = Polymer Metal Mounting Bracket)

**Single-part order**

Mounting bracket: Moving end 24001.02.12ZB (preassembled + tiewrap plate)
Mounting bracket: Fixed end 24001.02.22ZB (preassembled + tiewrap plate)

### KMA Locking | All-sides attachment - Universal for e-chains® (Series 2400-2500)

**Recommended for vertical hanging and standing applications**

<table>
<thead>
<tr>
<th>For width index</th>
<th>Part No. full set with tiewrap plate</th>
<th>Part No. full set without tiewrap plate</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
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<td>24101.12.12</td>
<td>136</td>
<td>144</td>
<td>12</td>
</tr>
</tbody>
</table>

**Part No. structure (locking) - e-chain®**

- Bolted connection outside of chain cross-section possible
- At very high speed and/or acceleration
- Universally mountable
- Pluggable strain relief tiewrap plate, adjustable to 3 heights
- Option: threaded sockets upon request (KMA = Polymer Metal Mounting Bracket)

**Single-part order**

Mounting bracket: Moving end 24101.02.12ZB (preassembled + tiewrap plate)
Mounting bracket: Fixed end 24101.02.22ZB (preassembled + tiewrap plate)

---

**Strain relief**

- e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock.
- The complete chainfix range with order options from page 1148

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436  3D-CAD files, configurators, PDF  ▶  www.igus.eu/eu/E2000
### KMA pivoting | All-sides attachment - Universal for e-chains* (Series 2450-2480)

Recommended for unsupported and gliding applications

<table>
<thead>
<tr>
<th>For width index</th>
<th>Part No.</th>
<th>Part No. structure (pivoting) - e-tube</th>
<th>Dim. A [mm]</th>
<th>Dim. B Number of teeth</th>
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<td>24501</td>
<td>24501.12.12ZB</td>
<td>136</td>
<td>144</td>
</tr>
</tbody>
</table>

### KMA locking | All-sides attachment - Universal for e-chains* (Series 2450-2480)

Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>For width index</th>
<th>Part No. structure (locking) - e-tube</th>
<th>Dim. A [mm]</th>
<th>Dim. B Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>.02</td>
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<tr>
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<td>24511.05.12ZB</td>
<td>68</td>
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<td>24511</td>
<td>24511.07.12ZB</td>
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<tr>
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<td>24511</td>
<td>24511.09.12ZB</td>
<td>100</td>
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<tr>
<td>.12</td>
<td>24511</td>
<td>24511.12.12ZB</td>
<td>136</td>
</tr>
</tbody>
</table>

---

*KMA = Polymer Metal Mounting Bracket

**Strain relief**
- e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options is available from page 1148.

**Part No.**
- Must be indicated on preassembled configurations.

---

**For very high speed and acceleration, all-sides attachment**

**Locked**

**For tight installation conditions, all-sides attachment**

**Pivoting**

---

**Moving end**

**Fixed end**

---

**Strain relief**
- e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options is available from page 1148.

igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu
Steel pivoting | For e-chains® and e-tubes

Recommended for unsupported, vertical hanging and standing applications

<table>
<thead>
<tr>
<th>For width index</th>
<th>Part No.</th>
<th>Part No.</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
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<tbody>
<tr>
<td>.02.</td>
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<td>2000.32.E</td>
<td>-</td>
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<td>2000.32</td>
<td>2000.32.E</td>
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<td>73</td>
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<td>2000.32.E</td>
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<td>92</td>
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<tr>
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<td>2000.32</td>
<td>2000.32.E</td>
<td>64</td>
<td>124</td>
</tr>
</tbody>
</table>

Part no. structure

- 2000.32.E
  - Optional stainless steel
  - Full set: 4 parts
  - 2 with blind holes / 2 with screw holes
  - Mounting bracket

Single-part order

- 2000.3 (2 parts left / right)
- 2000.2 (2 parts left / right)

Note: By ordering steel mounting brackets in combination with an e-chain® / e-tube, they will be delivered assembled!

Possible installation conditions - further installation angles → installation sketch

Strain relief e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chairfix range with order options → from page 1148

Extender crossbars Series 2400·2500/2500 - Enormous increase of the interior for the smooth guiding of larger hoses

- Suitable for hoses with an outer diameter of max. 36 mm
- Optionally operable along the inner or outer radius, swivelling
- Modular interior separation Part No. 25/41.1 (not for Series 2450)
- Cable-friendly design of extender crossbar and interior separation
- High holding force of the extender crossbar

Extender crossbars for e-chains® snap-open along inner radius

<table>
<thead>
<tr>
<th>Part No.</th>
<th>B1 [mm]</th>
<th>Ba [mm]</th>
<th>R Bending radii</th>
</tr>
</thead>
<tbody>
<tr>
<td>2400.05D36.R0</td>
<td>57</td>
<td>73</td>
<td>600° 075 100 125 150 175 200 225 250</td>
</tr>
<tr>
<td>2400.10D36.R0</td>
<td>103</td>
<td>119</td>
<td>600° 075 100 125 150 175 200 225 250</td>
</tr>
</tbody>
</table>

Part No. 2500.05D36.100.0

Supplement Part No. with required radius. Example: 2500.05D36.100.0

Series 2400·2500 | Interior separation for extender crossbars (not for Series 2450)

Standard separator, wide base

For maximum locking strength and safe standing. In standard configuration separators are assembled every 2nd link!

- Standard separator, wide base unassembled 25/41.1 assembled 25/41.1.1
- Full-width shelf, lockable unassembled 2300.X assembled 2310.X

Note: Only suitable for e-chain®/e-tube Series 2400/2500!
Gilding applications | For long travels from 10 m to max. 100 m

Solution for long travel applications - In this case the e-chain upper run will be introduced in a guide trough on the lower run. We recommend to realize the engineering of such a plant by our technicians. Please note: For using Series 2400/2450/2480 for long travels (gilding), please consult igus® first. For long travels, igus® specifies Series 2500 that snaps open along the outer radius. In case of travels between 4 and 10 m we recommend a longer unsupported length. More information Design, from page 106

Pitch = 46 mm/link · Links/m = 22 (1.012 mm) · Chain length = S2 + K2

R = 055° 075 100 125 150 175 200 225 250

H2 = 110 150 100 100 100 100 100 100 100

D2 = 25 142 162 380 440 590 755 950 1040 1130

K2 = 265 330 644 736 1012 1242 1610 1794

More solutions | For long travel applications

autoglide 2400.BiR - self-guiding, no guide troughs - Travel lengths ≤ 50 m

max 1.5 m/s

Self-guiding e-chainsystems - no need for guide troughs

glidelok slimline F - Safe vertical guidance for e-chains - Travels up to 50 m height

max 7 m/s

For hanging applications e.g. high speed rack feeders up to 7 m/s and 10 m/s. No swinging of the e-chain, high reliability through lever mechanism and guiding rails. Energy and data and all kinds of media in one single system.

Components, trough “Basic”:

- Trough side parts, aluminium, 2 m
- Glide bar, plastic, 2 m
- Glide strips, plastic, 2 m (without glide strips on request)
- Optional: Silencer profile, rubber

Components, installation set “Basic”:

- Bottom clamp, aluminium
- C-profile, galvanized steel
- Screw M6 x 16
- Sliding nut M6
- Interface connector, plastic

Order example: Length of travel 30 m - Center mounted for Series 2500.05

Guide trough set without glide bar (set of 2 trough side parts, incl. glide strips)

Part No. 971.30.SL

Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips)

Part No. 971.31.SL

Installation set “Basic” complete (guide trough sets + 1)

Part No. 960.30.125

Module for the fixed end

Part No. 971.80

Option: For an additional noise dampening with silencer profile, please add Index A - Example: Part No. 971.30.5.LA

Principle sketch: Number of installation sets to be installed = Number of trough sections + 1

Aluminum SuperTrough “Basic” in detail and the “Heavy-Duty” version for heavy machinery from page 1194

Special solutions for long travel applications from page 1264
Optimal height, high stability

When to use Series 2600-2650-2680-2700:
- If a medium-sized, stable system with an inner height of 35 mm is required (e-chains®, half and full e-tubes)
- If inner widths up to 175 mm are required
- For unsupported lengths up to 2,70 m and fill weights up to 8,0 kg/m
- For long travels up to 120 m
- If an optimized system for quick opening of crossbars from left or right is required

When to use a different igus® Series:
- If more stability is required
  - System E4.1, Series E4.32, page 646
- For simple applications and easy filling
  - easychain®, Series E26, page 194
- If e-tubes with smaller bending radii are required
  - e-tubes E2, Series R58, page 550

Lateral glide surfaces

Open E2/000 e-chains® in a flash with the e-chain® opener ▶ page 405

### Dimensions

<table>
<thead>
<tr>
<th>FLG</th>
<th>FLB</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.0</td>
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<tr>
<td>10</td>
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<td>1.0</td>
<td>2.0</td>
</tr>
<tr>
<td>3.0</td>
<td>1.5</td>
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</table>

<table>
<thead>
<tr>
<th>FL</th>
<th>S (FLG)</th>
<th>S (FLB)</th>
<th>Length of travel S</th>
<th>Unsupported length FLG / FLB</th>
<th>Fill weight (kg/m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLG</td>
<td>FLB</td>
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<tr>
<td>2.2</td>
<td>4.4</td>
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<table>
<thead>
<tr>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fill weight = 1.5 [kg/m]</td>
</tr>
<tr>
<td>Unsupported length FLG = 2.2 m</td>
</tr>
<tr>
<td>Length of travel S = 4.4 m</td>
</tr>
</tbody>
</table>

### Technical Data

- **Pitch** = 56 mm/link
- **Links/m** = 18 (1008 mm)
- **Chain length** = \( \frac{S}{2} + K \)

<table>
<thead>
<tr>
<th>R</th>
<th>063*</th>
<th>075*</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>175</th>
<th>200</th>
<th>250</th>
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<tbody>
<tr>
<td>H</td>
<td>176</td>
<td>200</td>
<td>250</td>
<td>300</td>
<td>350</td>
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<td>500</td>
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<tr>
<td>D</td>
<td>172</td>
<td>184</td>
<td>209</td>
<td>234</td>
<td>259</td>
<td>284</td>
<td>309</td>
<td>359</td>
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<tr>
<td>K</td>
<td>310</td>
<td>350</td>
<td>430</td>
<td>505</td>
<td>585</td>
<td>665</td>
<td>745</td>
<td>900</td>
</tr>
</tbody>
</table>

The required clearance height: \( H_F = H + 35 \) mm (with 2.0 kg/m fill weight)

*Radius for Series 2610/2680 available upon request, please consult igus® for delivery time. **Before using Series 2600/2650/2680 on long travels, please consult igus®!**
e-chains® | Series 2600 snap-open along inner radius

Half e-tubes | Series 2650 snap-open along inner radius, closed along outer radius

Full e-tubes | Series 2680 snap-open along inner radius, fully enclosed

Order key
2600. 05. 100. 0  e-chain
2700. 05. 100. 0  e-chain

Order key
2650. 05. 100. 0  Half e-tube
2680. 05. 100. 0  Full e-tube

For ra 0.06, 0.075 the e-tube is not fully enclosed. Please consult igus®.

Supplement Part No with required radius. Example: 2700.05.100.0

Order keys and delivery time
Before using Series 2600/2650/2680 on long travels (gliding), please consult igus®.

configurations, PDF www.igus.eu/eu/E2000

Configuration options and order keys overview | page 410

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
Noise dampening | Noise reduction – 5 dB(A)

---

**e-chains** snap-open along inner radius

<table>
<thead>
<tr>
<th>e-chain</th>
<th>Half e-tubes</th>
<th>Full e-tubes</th>
<th>( R ) Bending radii</th>
<th>( B_i )</th>
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<td>S2600.05</td>
<td>0.063</td>
<td>0.75</td>
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<td>S2600.06</td>
<td>S2600.06</td>
<td>S2600.06</td>
<td>0.063</td>
<td>0.75</td>
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<tr>
<td>S2600.07</td>
<td>S2600.07</td>
<td>S2600.07</td>
<td>0.063</td>
<td>0.75</td>
</tr>
<tr>
<td>S2600.09</td>
<td>S2600.09</td>
<td>S2600.09</td>
<td>0.063</td>
<td>0.75</td>
</tr>
<tr>
<td>S2600.10</td>
<td>S2600.10</td>
<td>S2600.10</td>
<td>0.063</td>
<td>0.75</td>
</tr>
<tr>
<td>S2600.12</td>
<td>S2600.12</td>
<td>S2600.12</td>
<td>0.063</td>
<td>0.75</td>
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<td>S2600.15</td>
<td>S2600.15</td>
<td>0.063</td>
<td>0.75</td>
</tr>
<tr>
<td>S2600.17</td>
<td>S2600.17</td>
<td>S2600.17</td>
<td>0.063</td>
<td>0.75</td>
</tr>
</tbody>
</table>

*Radius Series 2600/2600 available upon request, please consult igus® for delivery time.

For radii 063, 075 the e-tube is not fully enclosed. Please consult igus® for delivery time.

**Note:** Before using Series 2600/2650/2680 on long travels (gliding), please consult igus®!

Configuration options and order keys, overview ► page 410

Available from stock. **Delivery time** in 24h or today!

**Delivery time** means time until shipping of goods (after technical release).

**ESD/ATEX permanently conductive e-chains®** - 2700 several widths with delivery from stock:

**Inner widths Bi 50 - 125, R 063 - 150.** Full ESD product range ► [www.igus.eu/ESD](http://www.igus.eu/ESD)

---

Magnetically detectable plastic e-chains®

For the food- and tobaccoindustry | New in this catalog

- 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 1.0 mm can be recognized for fragments passing at speeds of 20 m/min.

More information ► [www.igus.eu/eu/detectable-chain](http://www.igus.eu/eu/detectable-chain)
Can be integrated into the mounting bracket and can be placed there at any point. It combines strain relief and interior separation.

Strain relief separator 262.Z (e-chains®)
For very fine subdivision. No retrofitting into an existing separation system without dismantling the interior separators first.

Shelf 2200.X (e-chains® only)
For applications involving many cables with different diameters, shelves can be arranged at alternate heights. They can be arranged at 5 different heights (in 5 mm increments).

Separators, spacers, full-width shelves - In the standard configuration separators are assembled every 2nd e-chain link!

Slotted separator 268 (e-chains® only)
Is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Slotted separator 26501 (e-tubes only)
Is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Separator 260 (e-chains® only)
For a simple vertical subdivision on e-chains®.

Separator, wide base 260.24 (e-chains® only)
If a wide space between the separators has to be kept or separators have to be fixed in their position. *(For side-mounted applications)*

Spacer 205.09 (e-chains® only)
Separators can be fixed in position. Only mountable onto the fixed crossbar. *(For side-mounted applications)*

Full-width shelf 220.X (e-chains® and e-tubes)
This option makes sense in applications with many thin cables with similar diameters. For a consequent subdivision. Full-width shelves can be arranged at 5 different heights (in 5 mm increments).

Shelves

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>050</td>
<td>220.50</td>
<td>221.50</td>
</tr>
<tr>
<td>065</td>
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<td>221.65</td>
</tr>
<tr>
<td>075</td>
<td>220.75</td>
<td>221.75</td>
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<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>090</td>
<td>220.90</td>
<td>221.90</td>
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<tr>
<td>100</td>
<td>220.100</td>
<td>221.100</td>
</tr>
<tr>
<td>125</td>
<td>220.125</td>
<td>221.125</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>150</td>
<td>220.150</td>
<td>221.150</td>
</tr>
<tr>
<td>175</td>
<td>220.175</td>
<td>221.175</td>
</tr>
</tbody>
</table>

Middle plate 262 (e-chains® only)
To achieve a modular shelving by shelf 2200.X arranged at 5 different heights (in 5 mm increments)

Slotted separator 266 (e-chains® only)
For a very fine subdivision. No retrofitting into an existing separation system without dismantling the interior separators first.

Open slotted separator 276 (e-chains® and e-tubes)
Quick assembly - retrofitting into an existing interior separation system without dismantling.

Side plate 264 (e-chains® only)
Works like middle plate. Allows modular shelving close to the side links.

Shelf 2200.X (e-chains® and e-tubes)
For applications involving many cables with different diameters, shelves can be arranged at alternate heights. They can be arranged at 5 different heights (in 5 mm increments).

Additional elements for interior separation
Strain relief separator 262.Z (e-chains® only)
Can be integrated into the mounting bracket and can be placed there at any point. It combines strain relief and interior separation.
**Polymer pivoting | Standard - Universal for e-chains® and e-tubes**

Recommended for unsupported and gliding applications

<table>
<thead>
<tr>
<th>For width index</th>
<th>Part No. full set with tiewrap plate</th>
<th>Full set with tiewrap plate + 10 cable tiewraps</th>
<th>Part No. full set without tiewrap plate</th>
<th>Dim. A [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>.05</td>
<td>2605.34PZB</td>
<td>2605.34PZB1</td>
<td>2605.34PZB1</td>
<td>30</td>
<td>5</td>
</tr>
<tr>
<td>.06</td>
<td>2606.34PZB</td>
<td>2606.34PZB1</td>
<td>2606.34PZB1</td>
<td>45</td>
<td>5</td>
</tr>
<tr>
<td>.07</td>
<td>2607.34PZB</td>
<td>2607.34PZB1</td>
<td>2607.34PZB1</td>
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<td>2609.34PZB1</td>
<td>2609.34PZB1</td>
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<td>2610.34PZB1</td>
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<td>2617.34PZB1</td>
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<td>155</td>
<td>17</td>
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</tbody>
</table>

**Part No. structure (pivoting)**

2605.34PZB A1

- Standard
- For tight installation conditions
- Strain relief with detachable chainfix tiewrap plates
- Corrosion resistant
- Variable traverse angle
- Various installation options on the fixed end and/or the moving end

**Single-part order**

Mounting bracket Moving end
2605.3 PZB A1 (preassembled + tiewrap plate)

Mounting bracket Fixed end
2605.4 PZB A1 (preassembled + tiewrap plate)

---

**Polymer locking | Universal for e-chains® and e-tubes**

Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>For width index</th>
<th>Part No. full set with tiewrap plate</th>
<th>Full set with tiewrap plate + 10 cable tiewraps</th>
<th>Part No. full set without tiewrap plate</th>
<th>Dim. A [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>.05</td>
<td>2605.12PZB</td>
<td>2605.12PZB1</td>
<td>2605.12PZB1</td>
<td>30</td>
<td>5</td>
</tr>
<tr>
<td>.06</td>
<td>2606.12PZB</td>
<td>2606.12PZB1</td>
<td>2606.12PZB1</td>
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<td>2609.12PZB1</td>
<td>2609.12PZB1</td>
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</table>

**Part No. structure (locking)**

2605.12PZB A1

- Locked connections
- At very high speed and/or acceleration
- If space is limited for height (the H measurement)
- Various installation options on the fixed end and/or the moving end

**Single-part order**

Mounting bracket Moving end
2605.1 PZB A1 (preassembled + tiewrap plate)

Mounting bracket Fixed end
2605.2 PZB A1 (preassembled + tiewrap plate)

---

**Strain relief**

e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options ▶ from page 1148
KMA pivoting | All-sides attachment - Universal for e-chains® (Series 2600-2700)
Recommended for unsupported and gliding applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with C-profile</th>
<th>Part No. full set without C-profile</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
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</table>

KMA pivoting to one side: Moving end 26101...1 / Fixed end 26101...2

- Bolted connection outside of chain cross-section possible
- For tight installation conditions
- Universally mountable with attachment capability on all sides
- C-profile option
- Option: threaded sockets upon request (KMA = Polymer Metal Mounting Bracket)

Part No. structure (pivoting) - e-chain
26001.05.12.C

Single-part order
Mounting bracket Moving end 26001.05.12.C (assembled + C-profile)
Mounting bracket Fixed end 26001.05.12.C

KMA locking | All-sides attachment - Universal for e-chains® (Series 2600-2700)
Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with C-profile</th>
<th>Part No. full set without C-profile</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
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<tbody>
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<td>26101.17.12</td>
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<td>194</td>
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</table>

These attachment types are triggered automatically in the choice of the KMA mounting bracket. For the preassembled mode please add index A e.g. 26001.05.12.C A

Part No. structure (locking) - e-chain
26101.05.12.C

Single-part order
Mounting bracket Moving end 26101.05.12.C A (assembled + C-profile)
Mounting bracket Fixed end 26101.05.12.C A

Strain relief e.g. clamps, tie-down plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options ➔ from page 1148

igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu
KMA pivoting | All-sides attachment - Universal for e-chains® (Series 2650-2680)
Recommended for unsupported and gliding applications

For width index Part No. Full set with C-profile Part No. Full set without C-profile Dim. A [mm] Dim. B [mm]
0.05 => 26500...1 26500...05.12.C 26500...05.12 58 69
0.06 => 26500...2 26500...06.12.C 26500...06.12 73 84
0.07 => 26500...3 26500...07.12.C 26500...07.12 83 94
0.09 => 26500...4 26500...09.12.C 26500...09.12 98 109
0.10 => 26500...5 26500...10.12.C 26500...10.12 108 119
0.12 => 26500...6 26500...12.12.C 26500...12.12 133 144
0.15 => 26500...7 26500...15.12.C 26500...15.12 158 169
0.17 => 26500...8 26500...17.12.C 26500...17.12 183 194

KMA pivoting Part No. 26500... for half e-tube Series 2650
KMA pivoting Part No. 26800... for full e-tube Series 2680

KMA locking | All-sides attachment - Universal for e-chains® (Series 2650-2680)
Recommended for vertical hanging and standing applications

For width index Part No. Full set with C-profile Part No. Full set without C-profile Dim. A [mm] Dim. B [mm]
0.05 => 26510...1 26810...05.12.C 26510...05.12 58 69
0.06 => 26510...2 26810...06.12.C 26510...06.12 73 84
0.07 => 26510...3 26810...07.12.C 26510...07.12 83 94
0.09 => 26510...4 26810...09.12.C 26510...09.12 98 109
0.10 => 26510...5 26810...10.12.C 26510...10.12 108 119
0.12 => 26510...6 26810...12.12.C 26510...12.12 133 144
0.15 => 26510...7 26810...15.12.C 26510...15.12 158 169
0.17 => 26510...8 26810...17.12.C 26510...17.12 183 194

KMA locking Part No. 26510... for half e-tube Series 2650
KMA locking Part No. 26810... for full e-tube Series 2680

Strain relief e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148

igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu
Steel mounting brackets **locking**

**Steel locking | For e-chains and e-tubes**
Recommended for unsupported, vertical hanging and standing applications

For e-chains˚

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<td>137</td>
<td>183</td>
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</table>

*Part no. structure 260.12.E:
- Locking connections
- One part (2-piece) for all e-chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible
- Stainless steel version available

**Steel mounting brackets for e-chains˚ and e-tubes**

<table>
<thead>
<tr>
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<td>166</td>
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</table>

*Order example 2700.15D58.100.0

- Suitable for hoses with an outer diameter of max. 58 mm
- Optionally openable along the inner or outer radius, swivelling
- Modular interior separation Part No. 35/62.1
- Cable-friendly design of extender crossbar and interior separation
- High holding force of the extender crossbar

**Series 2600-2700-2650 | Interior separation for extender crossbars**

- Extender crossbars Series 2600-2700-2650 - Enormo increase of the interior for the smooth guiding of larger hoses
- Extender crossbars Series 2600-2700-2650 - Suitable for hoses with an outer diameter of max. 58 mm
- Optionally openable along the inner or outer radius, swivelling
- Locking connections
- One part (2-piece) for all e-chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible
- Stainless steel version available

**Part no. structure**

- Mounting bracket: Full set / 4 parts / 2 with pin / 2 with bore
- Mounting bracket: Full set

**Standard separator, wide base**

- Standard separator, wide base
  - Unassembled: 35/62.1
  - Assembled: 35/62.1
- Standard separator, wide base: 3200.X
  - Unassembled: 3210.X
  - Assembled: 3210.X

**Horizontal separation**

- Full-width shelf, lockable
  - Unassembled: 3200.X
  - Assembled: 3210.X

**More options and accessories**

- Steel locking
- Locking connections
- One part (2-piece) for all e-chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible
- Stainless steel version available

**Strain relief**

- e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148
**Gliding applications** | **For long travels from 10 m to max. 120 m**

Solution for long travel applications: In this case the e-chain® upper run will be introduced in a guide trough on the lower run. We recommend to realize the engineering of such a plant by our technicians. **Please note:** For using Series 2600/2650/2680 for long travels (gliding), please consult igus® first. For long travels, igus® specifies Series 2700 that snaps open along the outer radius. In case of travels between 5 and 10 m we recommend a longer unsupported length. More information on Design, from page 106.

---

**Pitch** = 56 mm/link  
**Links/m** = 18 (1,008 mm)  
**Chain length** = \( S \) = \( S/2 + K_2 \)

---

**More solutions** | **For long travel applications**

-autoglide 2700.BLAG.R - self-guiding, no guide troughs  
- Travel lengths \( \leq 50 \) m  
- \( \nu_{\text{max}} \) = 1.5 m/s  
-Self-guiding e-chainsystems® - no need for guide troughs

-guide lok slimline F - Safe vertical guidance for e-chains® - Travels up to 50 m height  
- \( \nu_{\text{max}} \) = 7 m/s

For hanging applications e.g. high-speed rack feeders up to 7 m/s and 10 m/s. No swinging of the e-chain®, high reliability through lever mechanism and guiding rails. Energy and data and all kinds of media in one single system.

---

**Aluminum SuperTrough** | **Basic Version**

Part No. 972.30 | 972.32  
Trough height: 117 mm

---

**Installation set “Basic”**

Bottom clamp optionally attached inwards or outwards

---

**Components, trough “Basic”**

- Trough side parts, aluminum, 2 m  
- Glide bar, plastic, 2 m  
- Glide strips, plastic, 2 m (without glide strips on request)  
- Optional: Silencer profile, rubber

**Components, installation set “Basic”**

- Bottom clamp, aluminum  
- C-profile, galvanized steel table  
- Screw M6 x 16  
- Sliding nut M6  
- Interface connector, plastic

---

**Order example:** Length of travel 30 m  
C-Mounted for Series 2700.05.100.0 with \( B_{Bi} \) = 70

Guide trough set without glide bar  
(2 set of trough side parts, incl. glide strips)

**Order test:** 16 m guide trough without glide bar  
Part No. 972.30.5L

Guide trough set with glide bar  
(set of 2 trough side parts, incl. glide strips)

**Order test:** 16 m guide trough with glide bar  
Part No. 972.32.5L

Installation set “Basic” complete (guide trough sets + 1)

**Order test:** 17 installation sets  
Part No. 960.30.175

Module for the fixed end  
Part No. 972.81

Option: For an additional noise damping  
with silencer profile, please add Index A - Example:  
Part No. 972.30.5L A

---

**Principle sketch:** Number of installation sets to be installed = Number of trough sections + 1

---

**Aluminum SuperTrough “Basic” in detail and the**  
**“Heavy-Duty” version for heavy machinery**
**Large inner height, high stability**

When to use Series 3400-3450-3480-3500:
- If a medium-sized, stable system with an inner height of 21 mm is required (e-chains®, half and full e-tubes)
- If inner widths up to 250 mm are required
- For unsupported lengths up to 3.0 m and fill weights up to 13 kg/m
- For long travels up to 150 m
- If an optimized system for quick opening of crossbars from left or right is required

When to use a different igus® Series:
- If more stability is required
  - System E4.1, Series E4.42, page 662
- For simple applications and easy filling
  - easy chain®, Series E300, page 200

Open E2/000 e-chains® in a flash with the e-chain® opener ▶ page 405

**Technical Data**

- Pitch = 67 mm/link
- Links/m = 15 (1005 mm)
- Chain length = \( \frac{S}{2} + K \)

The required clearance height: \( H_F = H + 40 \) mm (with 2.5 kg/m fill weight)

*Radius for Series 3400/3480 available upon request, please consult igus® for delivery time. Note: Before using Series 3400/3450/3480 on long travels, please consult igus®!

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

**3D-CAD files, configurators, PDF** ▶ www.igus.eu/eu/E2000
### e-chains® | Series 3400 snap-open along inner radius

<table>
<thead>
<tr>
<th>e-chains®</th>
<th>Series 3500 snap-open along outer radius</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bi</td>
<td>Ba</td>
<td>R</td>
</tr>
<tr>
<td>(mm)</td>
<td>(mm)</td>
<td>(mm)</td>
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**Series / Type**

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</table>

**Bending radii**

- Standard color black
- Width index depends on Bi
- Series / Type

**Example:**

- Series 3400 Bi 50 with Ba 70 is available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

---

### Half e-tubes | Series 3450 snap-open along inner radius, closed along outer radius

<table>
<thead>
<tr>
<th>Full e-tubes</th>
<th>Series 3480 snap-open along inner radius, fully enclosed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bi</td>
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<tr>
<td>3450.250.0</td>
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</table>

**Supplement Part No. with required radius. Example: 3500.075.200.0**

*Radius available upon request, please consult igus® for delivery time

**For radii 75, 100 the e-tube is not fully enclosed. Please consult igus®**

---

### Order key

- **3400.075.200.0** e-chain®
- **3500.075.200.0** e-chain®

**E2/000 Standard**

**Product Range**

- **3400·3500**
- **3450·3480**
- **3400·3500 E2/000**

**Configuration options and order keys, overview**

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

---

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3400-3450-3480-3500 | Product Range | Options

Noise dampening | Noise reduction = 5 dB(A)

<table>
<thead>
<tr>
<th>e-tubes</th>
<th>Half e-tubes snap-open along inner radius</th>
<th>Full e-tubes snap-open along inner radius</th>
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<th>Bi</th>
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<td>R</td>
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*Radius Series 3450/3480 available upon request, please consult igus® for delivery time.

For radii 075, 100 the e-tube is not fully enclosed. Please consult igus®.

Supplement Part No. with required radius. Example: 3400.075.200.0

Note: Before using Series 3400/3450/3480 on long travels (gliding), please consult igus®.

Configuration options and order keys, overview ▶ page 410

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

Magnetically detectable plastic e-chains®

For the food- and tobaccoindustry | New in this catalog

<table>
<thead>
<tr>
<th>Width X mm</th>
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<th>unassembled</th>
<th>Width X mm</th>
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<td>3210.200</td>
<td>200</td>
<td>3200.200</td>
<td>3210.200</td>
</tr>
</tbody>
</table>

In the standard configuration separators are assembled every 2nd e-chain link.

Suitable for e-chains® and e-tubes Series 3400-3450-3480-3500! Optional interior separation ▶ next page

Standard - for all applications

Separator with a wide base for maximum locking strength and safe standing in e-chains®.

For even faster installation

Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (light grip).

For many thin cables

Separator with a narrow base for a large number of thin cables side by side. Saves space in e-chains®.

For side-mounted applications

Asymmetrical separator, for defined distance. No additional spacers necessary.

Horizontal separation

Full width shelf locks safely into separators on both ends, fixed width possible. To be used as full width shelf for a consequent subdivision or as shelf for a pattern system in 3 levels.
### Interior Separation Options

**Previous Interior Separation - for e-chains® and e-tubes**

**Separators, spacers, full-width shelves - In the standard configuration separators are assembled every 2nd e-chain link**

**Slotted separator 302 (e-chains® only)**
- Is used when vertical and horizontal separation is required. Due to its slit, it allows basic vertical/horizontal shelving arrangements.

**Slotted separator 34501 (e-tubes only)**
- Is used when vertical and horizontal separation is required. Due to its slit, it allows basic vertical/horizontal shelving arrangements.

**Separator 301 (e-chains® only)**
- For a simple vertical subdivision on e-chains®.

**Separator, wide base 302.24 (e-chains® only)**
- If a wide space between the separators has to be kept or separators have to be fixed in their position.

**Spacer 305.XX (e-chains® only)**
- Separators can be fixed in position. Only mountable onto the fixed crossbar. XX = width of spacer, available 8, 12 mm.

**Full-width shelf 320.X (e-chains® and e-tubes)**
- This option makes sense in applications with many thin cables with similar diameters. For a consequent subdivision, full-width shelves can be arranged at 3 different heights (in 12 mm increments).

**Shelves**

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>uninstalled</th>
<th>assembled</th>
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<tr>
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<tr>
<td>125</td>
<td>320.125</td>
<td>321.125</td>
</tr>
</tbody>
</table>

**Strain relief separator 301.LZ (e-chains® only)**
- Can be integrated into the mounting bracket and can be placed there at any point. It combines strain relief and interior separation.

**Shelf 2200.X (e-chains® and e-tubes)**
- For applications involving many cables with different diameters, shelves can be arranged at alternate heights. They can be arranged at 7 different heights (in 5 mm increments).

**Side plate 303 (e-chains® only)**
- Works like middle plate. Allows modular shelving close to the side links.

**Middle plate 304 (e-chains® only)**
- To achieve a modular shelving by shelf 2200.X arranged at 7 different heights (in 5 mm increments).

**Open slotted separator 307 (e-chains® and e-tubes)**
- Quick assembly - retrofitting into an existing interior separation system without dismantling.

**Shelf 320.24X (e-chains® and e-tubes)**
- In the standard configuration separators are assembled every 2nd e-chain link.

**Optional**

- In the standard configuration separators are assembled every 2nd e-chain link.
### Mounting brackets **pivoting**

**For tight installation conditions**

**Polymer pivoting | Standard - Universal for e-chains® and e-tubes**

Recommended for unsupported and gliding applications

<table>
<thead>
<tr>
<th>For width index</th>
<th>Part No. full set with tie wrap plate</th>
<th>Full set with tie wrap plate + 10 cable tiewraps</th>
<th>Part No. full set without tie wrap plate</th>
<th>Dim. A [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>.050</td>
<td>3050.34PZB1 3050.34PZB1K3</td>
<td>3050.34PZB1K3 3050.34PZB1K3B</td>
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<td>228</td>
<td>25</td>
</tr>
</tbody>
</table>

**Part No. structure (pivoting)**

- **3075.34PZB A1**

**Single-part order**

- **Mounting bracket**
  - Moving end: 3075.3 PZB3 (preassembled + tiewrap plate)
  - Fixed end: 3075.4 PZB3 (preassembled + tiewrap plate)

**Possible installation conditions for assembled, pivoting mounting brackets.**

- Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148

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### Mounting brackets **locking**

**For very high speed and acceleration**

**Polymer locking | Universal for e-chains® and e-tubes**

Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>For width index</th>
<th>Part No. full set with tie wrap plate</th>
<th>Full set with tie wrap plate + 10 cable tiewraps</th>
<th>Part No. full set without tie wrap plate</th>
<th>Dim. A [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>.050</td>
<td>3050.12PZB 3050.12PZB1K3</td>
<td>3050.12PZB1K3 3050.12PZB1K3B</td>
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<td>5</td>
</tr>
<tr>
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</tbody>
</table>

**Part No. structure (locking)**

- **3075.12PZB A1**

**Single-part order**

- **Mounting bracket**
  - Moving end: 3075.1 PZB (preassembled + tie wrap plate)
  - Fixed end: 3075.2 PZB (preassembled + tie wrap plate)

**Possible installation conditions for assembled, locking mounting brackets.**

- Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148

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igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu
**KMA pivoting** | **All-sides attachment - Universal for e-chains® (Series 3400-3500)**

Recommended for unsupported and gliding applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with C-profile</th>
<th>Part No. full set without C-profile</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
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<td>263</td>
<td>274</td>
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</table>

KMA pivoting to one side: Moving end 34001...1 / Fixed end 34001...2

- Bolted connection outside of chain cross-section possible
- For tight installation conditions
- Universally mountable with attachment capability on all sides
- C-profile option
- Option: threaded sockets upon request (KMA = Polymer Metal Mounting Bracket)

**Part No. structure (pivoting) - e-chain®**

34001.075.12.C

A...must be indicated on preassembled configurations

Full set with integrated C-profile Width Index

KMA pivoting

**Single-part order**

Mounting bracket Moving end 34001.075.12.C (preassembled + C-profile)

Mounting bracket Fixed end 34001.075.2.C (preassembled + C-profile)

**Strain relief**

e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148

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**KMA locking** | **All-sides attachment - Universal for e-chains® (Series 3400-3500)**

Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with C-profile</th>
<th>Part No. full set without C-profile</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
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</thead>
<tbody>
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<td>34101.250.12.C</td>
<td>34101.250.12</td>
<td>263</td>
<td>274</td>
</tr>
</tbody>
</table>

- Bolted connection outside of chain cross-section possible
- At very high speed and/or acceleration
- Universally mountable
- C-profile option
- Option: threaded sockets upon request (KMA = Polymer Metal Mounting Bracket)

**Part No. structure (locking) - e-chain®**

34101.075.12.C

A...must be indicated on preassembled configurations

Full set with integrated C-profile Width Index

KMA locking

**Single-part order**

Mounting bracket Moving end 34101.075.12.C (preassembled + C-profile)

Mounting bracket Fixed end 34101.075.2.C (preassembled + C-profile)

---

**Strain relief**

e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148
KMA pivoting | All-sides attachment - Universal for e-chains® (Series 3450-3480)
Recommended for unsupported and gliding applications

For width index Part No. full set with C-profile Part No. full set without C-profile Dim. A [mm] Dim. B [mm]
--- --- --- --- ---
.050 3450 | 3480 .050.12.C 3480 | 3480 .050.12 63 74
.075 3450 | 3480 .075.12.C 3480 | 3480 .075.12 88 99
.100 3450 | 3480 .100.12.C 3480 | 3480 .100.12 113 124
.115 3450 | 3480 .115.12.C 3480 | 3480 .115.12 128 139
.125 3450 | 3480 .125.12.C 3480 | 3480 .125.12 138 149
.150 3450 | 3480 .150.12.C 3480 | 3480 .150.12 163 174
.175 3450 | 3480 .175.12.C 3480 | 3480 .175.12 188 199
.200 3450 | 3480 .200.12.C 3480 | 3480 .200.12 213 224
.225 3450 | 3480 .225.12.C 3480 | 3480 .225.12 238 249
.250 3450 | 3480 .250.12.C 3480 | 3480 .250.12 263 274

**KMA pivoting Part No. 3450... for half e-tube Series 3450**
**KMA pivoting Part No. 3480... for full e-tube Series 3480**

- Bolted connection outside of chain cross-section possible
- For tight installation conditions
- Universally mountable with attachment capability on all sides
- C-profile option
- Option threaded sockets upon request

- Preassembled + C-profile
- Option: threaded sockets upon request

Part No. structure (pivoting) - e-tube 34500.075.12.C

**Single-part order**
Mounting bracket Moving end 34500.075.1. A (preassembled + C-profile)
Mounting bracket Fixed end 34500.075.2.C (preassembled + C-profile)

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options ▶ from page 1148

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KMA locking | All-sides attachment - Universal for e-chains® (Series 3450-3480)
Recommended for vertical hanging and standing applications

For width index Part No. full set with C-profile Part No. full set without C-profile Dim. A [mm] Dim. B [mm]
--- --- --- --- ---
.050 34810 | 34810 .050.12.C 34810 | 34810 .050.12 63 74
.075 34810 | 34810 .075.12.C 34810 | 34810 .075.12 88 99
.100 34810 | 34810 .100.12.C 34810 | 34810 .100.12 113 124
.115 34810 | 34810 .115.12.C 34810 | 34810 .115.12 128 139
.125 34810 | 34810 .125.12.C 34810 | 34810 .125.12 138 149
.150 34810 | 34810 .150.12.C 34810 | 34810 .150.12 163 174
.175 34810 | 34810 .175.12.C 34810 | 34810 .175.12 188 199
.225 34810 | 34810 .225.12.C 34810 | 34810 .225.12 238 249
.250 34810 | 34810 .250.12.C 34810 | 34810 .250.12 263 274

**KMA locking Part No. 34510... for half e-tube Series 3450**
**KMA locking Part No. 34810... for full e-tube Series 3480**

- Bolted connection outside of chain cross-section possible
- At very high speed and/or acceleration
- Universally mountable
- C-profile option
- Option threaded sockets upon request

- Preassembled + C-profile
- Option: threaded sockets upon request

Part No. structure (locking) - e-tube 34810.075.12.C

**Single-part order**
Mounting bracket Moving end 34810.075.1.C (preassembled + C-profile)
Mounting bracket Fixed end 34810.075.2.C (preassembled + C-profile)

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options ▶ from page 1148
### Steel pivoting | For e-chairs’ and e-tubes

**Recommended for unsupported, vertical hanging and standing applications**

<table>
<thead>
<tr>
<th>For width index</th>
<th>Part No. full set</th>
<th>Part No. stainless steel</th>
<th>Dim. A</th>
<th>Dim. B</th>
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<tbody>
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<td>3000.12</td>
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<td>228</td>
<td>294</td>
</tr>
</tbody>
</table>

**Note:** By ordering steel mounting brackets in combination with an e-chair’ / e-tube, they will be delivered assembled!

#### Strain relief
- e.g. clamps, tie-strap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options can be found at page 1148.

---

### Extender crossbars Series 3400-3500-3450 - Enormous increase of the interior for the smooth guiding of larger hoses

- Suitable for hoses with an outer diameter of max. 80 mm
- Optionally operable along the inner or outer radius, swivelling
- Modular interior separation Part No. 45/85.1
- Cable-friendly design of extender crossbar and interior separation
- High holding force of the extender crossbar

#### Part No.
- 3400.100D80.R0
- 3500.100D80.R0
- 3450.100D80.R0

#### Bend radii
- K 100 mm, R 200 mm

#### Supplement Part No. with required radius. Example: 3500.100D80.200.0

---

### Steel pivoting

- Pivoting connections
- One part (2-piece) for all e-chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible
- Stainless steel version available

**Note:** Material: stainless steel 1.4301 / AISI 304

---

### Horizontal separation

- Full-width shelf, lockable
- Unassembled 3200.X
  - Assembled 3210.X

---

### Optional: Support tray tool kit.

**For support of the lower run.**

Simple one-piece support trays according to your requirements and specification.

Order example: support tray with bracket, length 1.0 m, color black: Part No. 59.021.10.1000.0. The complete range with order options can be found at page 1258.
Gilding applications | Long travels from 10 m to max. 150 m

Solution for long travels applications - In this case the e-chain upper run will be introduced in a guide trough on the lower run. We recommend to realize the engineering of such a plant by our technicians. Please note: For using Series 3400/3450/3480 for long travels (gilding), please consult igus first. For long travels, igus specifies Series 3500 that snaps open along the outer radius. In case of travels between 6 and 10 m we recommend a longer unsupported length. More information & Design, from page 106

Pitch = 67 mm/link · Links/m = 15 (1,005 mm) · Chain length = \( \frac{S}{2} + K_2 \)

- R 075° 100° 125° 150° 200° 250° 300°
  - H_3 150 200 186 186 186 186
  - D_2 208 233 475 570 780 1010 1150
  - K_2 370 450 804 1005 1340 1675 1943
  - \( \Delta CL \) - 233 303 463 643 733

*Radius for Series 3450/3480 available upon request, please consult igus® for delivery time. Note: Before using Series 3400/3450/3480 on long travels, please consult igus®*

More solutions | Long travels applications

- Autoglide 3500.BLAG.R - self-guiding, no guide troughs - Travel lengths \( \leq 50 \) m \( v_{max} \) 1.5 m/s
- Self-guiding e-chain systems - no need for guide troughs
- Guidelok slimline F – Safe vertical guidance for e-chains® - Travels up to 50 m height \( v_{max} \) 7 m/s

For hanging applications e.g. high-speed rack feeders up to 7 m/s and 10 m/s. No swinging of the e-chain®, high reliability through lever mechanism and guiding rails. Energy and data and all kinds of media in one single system.

For using Series 3400/3450/3480

- Module for the fixed end
- Option: For an additional noise damping with silencer profile, please add Index A - Example: Part No. 973.30.SLA
- Setting of travel 30 m - Center mounted for Series 3500.075.200.0 with \( B_{ha} = 99 \)
- Guide trough set without glide bar (set of 2 trough side parts, incl. glide strips)
- Order test: 16 m guide trough without glide bar (B ≤ 2 m sections) Part No. 973.30.SL
- Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips)
- Order test: 16 m guide trough with glide bar (B ≤ 2 m sections) Part No. 973.31.SL
- Installation set “Basic” complete (guide trough sets + 1)
- Order test: 17 installation sets Part No. 960.40.175
- For hanging applications e.g. high-speed rack feeders up to 7 m/s and 10 m/s
- High-speed rack feeders up to 7 m/s and 10 m/s
- No swinging of the e-chain®, high reliability through lever mechanism and guiding rails. Energy and data and all kinds of media in one single system.

For hanging applications e.g. high-speed rack feeders up to 7 m/s and 10 m/s. No swinging of the e-chain®, high reliability through lever mechanism and guiding rails. Energy and data and all kinds of media in one single system.
**Small pitch, smooth running**

*When to use Series 255:*
- If a medium-sized, stable e-chain® with a small pitch for very quiet operation and an inner height of 24 mm is required
- If inner widths up to 103 mm are required
- For unsupported lengths up to 1.8 m and fill weights up to 2.0 kg/m
- For long travels up to 100 m
- If snap-open capability of crossbars from both sides is required

*When to use a different igus® Series:*
- If more stability is required
  - System E4.1, Series E4.21, page 626
- For simple applications and easy filling
  - easy chain®, Series E200, page 184
- If snap-open capability of links from both sides is required
  - System E4.1, Series E4.21, page 626

---

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

**3D-CAD files, configurators, PDF**  [www.igus.eu/eu/255](http://www.igus.eu/eu/255)
Series 255 | Snap-open along outer radius

<table>
<thead>
<tr>
<th>e-chain</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R [mm]</th>
<th>Bending radii</th>
<th>255 [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>255. 03 .R,0</td>
<td>38</td>
<td>54</td>
<td>055</td>
<td>075</td>
<td>100</td>
</tr>
<tr>
<td>255. 07 .R,0</td>
<td>57</td>
<td>73</td>
<td>055</td>
<td>075</td>
<td>100</td>
</tr>
<tr>
<td>255. 10 .R,0</td>
<td>103</td>
<td>119</td>
<td>055</td>
<td>075</td>
<td>100</td>
</tr>
</tbody>
</table>

Supplement Part No. with required radius. Example: 255.10.200.0

Order key
255. 10. 200. 0

Dimensioning

Standard color black
Bending radius R
Width index (depends on Bi)
Series / Type

e-chain’ links as single parts, overview ▶ page 409

Configuration options and order keys, overview ▶ page 410

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)

E2 medium | Series 255 | Interior separation | Options

Separators, full-width shelves, shelves - in the standard configuration separators are assembled every 2nd e-chain link

Standard slotted separator 2551 and slotted separator 2553
Vertical subdivision on e-chains. Due to its slot, it allows basic vertical/horizontal shelving arrangements (determining which type of separator to use depends on any potential retrofit requirements).

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 arranged at 3 different heights (in 5 mm increments).

Shelf 2200.X
For applications involving many cables with different diameters, shelves can be arranged at alternate heights. They can be arranged at 3 different heights (in 5 mm increments).

Full-width shelves

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>038</td>
<td>220.38</td>
<td>221.38</td>
</tr>
<tr>
<td>057</td>
<td>220.57</td>
<td>221.57</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>077</td>
<td>220.77</td>
<td>221.77</td>
</tr>
<tr>
<td>103</td>
<td>220.103</td>
<td>221.103</td>
</tr>
</tbody>
</table>

Shelves

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>018</td>
<td>2200.18</td>
<td>2210.18</td>
</tr>
<tr>
<td>023</td>
<td>2200.23</td>
<td>2210.23</td>
</tr>
<tr>
<td>028</td>
<td>2200.28</td>
<td>2210.28</td>
</tr>
<tr>
<td>033</td>
<td>2200.33</td>
<td>2210.33</td>
</tr>
<tr>
<td>038</td>
<td>2200.38</td>
<td>2210.38</td>
</tr>
<tr>
<td>043</td>
<td>2200.43</td>
<td>2210.43</td>
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<tr>
<td>048</td>
<td>2200.48</td>
<td>2210.48</td>
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<tr>
<td>058</td>
<td>2200.58</td>
<td>2210.58</td>
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<tr>
<td>068</td>
<td>2200.68</td>
<td>2210.68</td>
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<tr>
<td>073</td>
<td>2200.73</td>
<td>2210.73</td>
</tr>
<tr>
<td>088</td>
<td>2200.88</td>
<td>2210.88</td>
</tr>
<tr>
<td>099</td>
<td>2200.99</td>
<td>2210.99</td>
</tr>
</tbody>
</table>
Polymer Placing - Universal for e-chains
Recommended for unsupported and gliding applications

Polymer Locking - Universal for e-chains
Recommended for vertical hanging and standing applications

Possible installation conditions for assembled, pivoting mounting brackets.
For the preassembled mode please add index A1...
A4 e.g. 2100.34PZ1B

Possible installation conditions for assembled, locking mounting brackets.
For the preassembled mode please add index A1...
A4 e.g. 2100.12PZ1B

Polymer Placing - Standard
Polymer Locking - Standard

Mounting brackets pivoting
Mounting brackets locking

Zahnezahl

For width index
Dim. A [mm]

Part No.
Full set with tiewrap plate
Part No.
Full set without tiewrap plate

Full set with tiewrap plate
+ 10 cable tiewraps

Possible strain relief options:
- e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock.
- The complete strain relief range is available at page 1148.
Gilding applications | For long travels from 10 m to max. 100 m

Solution for long travel applications - In this case the chain will be enclosed in a guide trough so that the run is not interrupted. We recommend to realize the engineering of such a plant by our technicians. In case of travels between 4 and 10 m we recommend a longer unsupported length. More information & Design, from page 106.

Components, trough "Basic": 1) Trough side parts, aluminium, 2 m 2) Glide bar, plastic, 2 m 3) Glide strips, plastic, 2 m (without glide strips on request) 4) Optional: Silencer profile, rubber. Components, installation set "Basic": 1) Bottom clamp, aluminium 2) Components, installation set "Heavy-Duty": 1) Insert for the installation set "Heavy-Duty": 971.50.XXX instead of 960.30.XXX on the right column "attached outwards".

More solutions | For long travel applications

ibx flizz® - Enclosed plastic trough - Length of travel ≤ 200 m

High speeds and accelerations. Applicable for moving and stationary control.

guidlok slimline F - Safe vertical guidance for e-chains® - Travels up to 50 m height

For hanging applications e.g. high speed rack feeders up to 7 m/s and 10 m/s. No swinging of the e-chain®, high reliability through lever mechanism and guiding rails. Energy and data and all kinds of media in one single system.

Components, installation set "Basic":

Part No.
971.30
971.31
971.80
Part No.
960.30

Option: For an additional noise dampening with silencer profile, please add Index A - Example: Part No. 971.80.A

971.31.SL
Part No.
971.30.SL
(8 x 2 m sections)
16 m guide trough with glide bar

971.30.SL
Part No.
971.30.SL
(8 x 2 m sections)
16 m guide trough without glide bar

Order example: Length of travel 30 m -
Center mounted for Series 255.10.200.0 with B2 = 123

Guide trough set without glide bar (set of 2 trough side parts, incl. glide strips)

Order text: 16 m guide trough without glide bar (B 2 x 2 m sections) Part No.
971.30.SL

Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips)

Order text: 16 m guide trough with glide bar (B 2 x 2 m sections) Part No.
971.31.SL

Installation set "Basic" complete (guide trough sets + 1)

Order text: 17 installation sets Part No.
960.30.175

High speeds and accelerations. Applicable for moving and stationary control.

Principle sketch: Number of installation sets to be installed = Number of trough sections + 1.

Aluminum SuperTrough "Basic" in detail and the "Heavy-Duty" version for heavy machinery - from page 1194

For hanging applications e.g. high-speed rack feeders up to 7 m/s and 10 m/s.

More solutions

3D-CAD files, configurators, PDF: www.igus.eu/eu/255
igus®
e-tubes
protection against dirt and debris
Hot Chips up to 850°C

E-tubes that repel hot chips, up to 850°C. Some applications, depending on amount and size of the chips, can burn or melt the surface. That is no longer the case with the igus® igumid HT material.

More information: [www.igus.eu/eu/HT](http://www.igus.eu/eu/HT)

Delivery time*: 7-10 work days.

*Delivery time means time until shipping of goods (after technical release)
E2 R100

e-tubes

cost-effective, protection against dirt and debris
E2 Series R100 - cost-effective, protection against dirt and debris

E2 Series R100 - cost-effective, for applications with low and medium speeds. e-tubes R100 work in hot chip areas, in areas of dirt and dust generated by woodworking, steelmills, pulp and paper, textile, agriculture, coal-fired plants and many other hostile environments.

- Very good protection against chips (including hot chips)
- Robust and tight
- Space-efficient with optimized ratio of inner dimension to outer dimension
- Modular interior separation
- Universal KMA mounting brackets with attachment options on all sides

Typical industries and applications
- Tooling machines
- Woodworking machines
- All kind of industries and machines with chip, dirt and dust

E-tubes with igumid HT-Material for hot chips up to 850°C available upon request

Electrically conductive
ESD/ATEX versions upon request

UL94-V0 classification upon request

IF product design award
2000 Series R117/R118

Hot Chips up to 850°C

e-tubes that repel hot chips, up to 850°C. Some applications, depending on amount and size of the chips, can burn or melt the surface. That is no longer the case with the igus® igumid HT material.

More information ▶ www.igus.eu/eu/HT
**E2 e-tubes R100**

### Contents

- System RX - Extremely chip repellent e-tubes
  - Problem solver for energy supply systems in areas with chips - available in 4 sizes. Chips and dirt can significantly reduce the service life of cables and hoses. With System RX igus® presents an extremely dense but nonetheless uniquely shaped polymer e-tube. System RX® from page 574

- Assembly video available online at [www.igus.eu/eu/E2R100_assembly](http://www.igus.eu/eu/E2R100_assembly)

### Technical Data, overview page 498
- e-chain® links as single parts, overview page 499
- Configuration options and order keys, overview page 500

### Selection Table

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height Inner width</th>
<th>Outer width Outer height</th>
<th>Bending radius</th>
<th>Unsupported</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>hi [mm]</td>
<td>Bi [mm]</td>
<td>Ba [mm]</td>
<td>ha [mm]</td>
<td>R [mm]</td>
</tr>
<tr>
<td>R117</td>
<td>21</td>
<td>20 - 100</td>
<td>32 - 112</td>
<td>28</td>
<td>63 - 180</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R157</td>
<td>40</td>
<td>40 - 200</td>
<td>56 - 216</td>
<td>50</td>
<td>100 - 250</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R167</td>
<td>50</td>
<td>50 - 250</td>
<td>68 - 268</td>
<td>64</td>
<td>100 - 300</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Assembly Instructions

1. Joining is accomplished by simply joining the e-chain® links and clicking the pins in place.
2. Pivot lid, press down and snap in place. Then insert last lid.
3. Separate by levering open the lid with a screwdriver. Bend e-tube to remove lid.
4. Separate by levering open the side plates, then rotate the e-chain® links and separate.

---

*System RX® extreemly chip repellent e-tube*

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)*

- System RX® from page 574
### Technical Data - R100

- **Gilding speed / acceleration (maximum)** upon request\(^1\)
  - Speed / acceleration FL\_G max. \( \leq 10 \text{[m/s]} / \leq 100 \text{[m/s}^2]\)
  - Speed / acceleration FL\_G max. \( \leq 3 \text{[m/s]} / \leq 6 \text{[m/s}^2]\)

- **Material - permitted temperature \(^\circ\text{C}\)**, igumid G
  - \(-40^\circ\text{C}\) up to \(+120^\circ\text{C}\)

- **Flammability class, igumid G**
  - VDE 0304 IIC UL94-HB

**Installation methods overview, maximum travels - R100**

<table>
<thead>
<tr>
<th>e-tube Series</th>
<th>Unsupported application</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
</tr>
</thead>
<tbody>
<tr>
<td>R117 / R118</td>
<td>( \leq 1.20 \text{m} )</td>
<td>( \leq 20 \text{m} )</td>
<td>( \leq 2.0 \text{m} )</td>
<td>( \leq 0.7 \text{m} )</td>
</tr>
<tr>
<td>R157 / R158</td>
<td>( \leq 2.25 \text{m} )</td>
<td>( \leq 40 \text{m} )</td>
<td>( \leq 3.0 \text{m} )</td>
<td>( \leq 1.0 \text{m} )</td>
</tr>
<tr>
<td>R167 / R168</td>
<td>( \leq 2.50 \text{m} )</td>
<td>( \leq 50 \text{m} )</td>
<td>( \leq 3.0 \text{m} )</td>
<td>( \leq 1.0 \text{m} )</td>
</tr>
</tbody>
</table>

\(^1\) In special cases, gilding applications are also possible, please consult igus\(^\circ\text{GmbH}\).

---

### Part No. 2-piece e-chain links as single parts - R100

- **e-tube - snap-open on both sides of the outer radius**
  - **Part No.** R118 1185.Bi 118.B100.R
  - **Part No.** R158 1585.Bi 158.B100.R
  - **Part No.** R168 1685.Bi 168.B100.R

- **e-tube - snap-open on both sides of the inner radius**
  - **Part No.** R117 1175.Bi 117.B100.R
  - **Part No.** R157 1575.Bi 157.B100.R
  - **Part No.** R167 1675.Bi 167.B100.R

*\(^*\) Lid / bottom - supplement Part No. with required width index (Bi), example: 1685.100

** Lower parts - supplement Part No. with required width index (Bi) and required radius (R), example: 168.1000.100

---

**Available from stock. Delivery time in 24h or today!**

\(^*\) Delivery time means time until shipping of goods (after technical release)
### E2 e-tubes R100 | Order keys and Options (based on Series R168)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Standard color black</th>
<th>NC-Version - (no camber)</th>
<th>Part No.</th>
<th>ESD / ATEX classified e-tubes</th>
</tr>
</thead>
<tbody>
<tr>
<td>168.100.R.0</td>
<td>Black, standard</td>
<td>without pretension</td>
<td>168.100.R.0.NC</td>
<td>ESD</td>
</tr>
<tr>
<td>168.100.R.0.HT</td>
<td>Slate grey, only HT material</td>
<td></td>
<td>168.100.R.0.ESD</td>
<td>ATEX classified e-tubes</td>
</tr>
</tbody>
</table>

**Delivery time**
- 24h or today!
- 2-5 work days
- 7-10 work days
- 10 work days

*Delivery time means time until shipping of goods (after technical release)*

### Order example | Order key and color options

**Order example for complete e-tube Series R168 (1,0 m), color black, with mounting brackets and interior separation:**

<table>
<thead>
<tr>
<th>e-tube (1,0 m)</th>
<th>Please indicate e-tube length or number of links: 1,0 m or 17 links</th>
<th>168.100.100.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ Mounting brackets</td>
<td>1 set</td>
<td>1680.100.14</td>
</tr>
<tr>
<td>+ Interior separation</td>
<td>with 2 separators assembled every 2nd link</td>
<td>2 x 1686.01</td>
</tr>
</tbody>
</table>

**Order text:** 1,0 m 168.100.100.0 + 1680.100.14 + 2 x 1686.01

### Color options for e-chains® and e-tubes

<table>
<thead>
<tr>
<th>Color</th>
<th>Order index</th>
<th>Color</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>0</td>
<td>White</td>
<td>1</td>
</tr>
<tr>
<td>Slate grey</td>
<td>2</td>
<td>Orange</td>
<td>1.15</td>
</tr>
<tr>
<td>Dusty grey</td>
<td>special color only e-tubes</td>
<td>Light grey</td>
<td>special color</td>
</tr>
</tbody>
</table>

*Available from stock. Delivery time* in 24h or today!

![igus® e-tube Series R100 in a medical application](image)

### Hot Chips up to 850°C

e-tubes that repel hot chips, up to 850°C. Some applications, depending on amount and size of the chips, can burn or melt the surface. That is no longer the case with the igus® igumid HT material.

More information [www.igus.eu/eu/HT](http://www.igus.eu/eu/HT)
**Chip protection, cost-effective**

*When to use Series R117 · R118:*

- If a chip repellent e-tube with an inner height of 21 mm is required
- If inner widths up to 100 mm are required
- For unsupported lengths up to 1.2 m and fill weights up to 1.5 kg/m
- If a cost-effective e-tube with snap-open accessibility along inner or outer radius is required
- If flush mounting capability is required
- For small bending radii

*When to use a different igus® Series:*

- If very smooth travel due to small pitch is required
  > e-tubes Type R, Series R48, page 540
- If no chip protection is required
  > E2/000 Series 1400/1500, page 412

---

**Dimensions**

<table>
<thead>
<tr>
<th>Pitch (mm/link)</th>
<th>Links/m (1000.6 mm)</th>
<th>Chain length = ( S/2 + K )</th>
</tr>
</thead>
<tbody>
<tr>
<td>30.5</td>
<td>33</td>
<td>( S/2 + K )</td>
</tr>
</tbody>
</table>

The required clearance height: \( H_F = H + 25 \) mm (with 1.0 kg/m fill weight)
Series R117 | Hinged, snap-open on both sides of the inner radius
Series R118 | Hinged, snap-open on both sides of the outer radius

<table>
<thead>
<tr>
<th>e-tubes</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Bending radii [mm]</th>
<th>Weight [kg/m]</th>
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<tbody>
<tr>
<td>117.020.R.0</td>
<td>118.020.R.0</td>
<td>20</td>
<td>32</td>
<td>063</td>
</tr>
<tr>
<td>117.025.R.0</td>
<td>118.025.R.0</td>
<td>25</td>
<td>37</td>
<td>063</td>
</tr>
<tr>
<td>117.038.R.0</td>
<td>118.038.R.0</td>
<td>38</td>
<td>50</td>
<td>063</td>
</tr>
<tr>
<td>117.048.R.0</td>
<td>118.048.R.0</td>
<td>48</td>
<td>60</td>
<td>063</td>
</tr>
<tr>
<td>117.063.R.0</td>
<td>118.063.R.0</td>
<td>63</td>
<td>75</td>
<td>063</td>
</tr>
<tr>
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<td>063</td>
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<tr>
<td>117.100.R.0</td>
<td>118.100.R.0</td>
<td>100</td>
<td>112</td>
<td>063</td>
</tr>
</tbody>
</table>

*Width available upon request, please consult igus® for delivery time.

Supplement Part No. with required radius (R), example: 118.080.100.0

In the standard configuration separators are assembled every 2nd e-tube link.

Vertical Separator 1185.01
Vertical Separators are used if a vertical subdivision of the e-tube interior is required - by standard Vertical Separators are assembled every 2nd e-tube link.

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

e-chain® links as single parts, overview ➤ page 499

Configuration options and order keys, overview ➤ page 500
For tight installation conditions, all-sides attachment

### KMA one side pivoting | All-sides attachment | Standard - universal for e-tubes

#### Recommended for unsupported applications

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
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<tr>
<td>100</td>
<td>11800.100.14</td>
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<td>116</td>
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</tbody>
</table>

*Note: KMA = Polymer Metal Mounting Bracket*

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.

---

**Polymer one side pivoting | For e-tubes**

#### Recommended for unsupported applications

**Locked connection to e-tube**

- Pivoting on moving end
- Minimized outer width
- Short travels
- Attachment option for strain relief tiewrap plate. Strain relief on moving end and/or fixed end possible!

### Possible installation conditions for assembled mounting brackets

For the preassembled mode please add index A...

- e.g. 11800.080.14 A

---

**Strain relief, e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock.** The complete chainfix range with order options is from page 1148
**Chip protection, cost-effective**

When to use Series R157 · R158:
- If a chip repellent e-tube with an inner height of 40 mm is required
- If inner widths up to 200 mm are required
- For unsupported lengths up to 2,25 m and fill weights up to 8,0 kg/m
- If a cost-effective e-tube with snap-open accessibility along inner or outer radius is required
- If flush mounting capability is required
- For small bending radii

When to use a different igus® Series:
- For extremely chip repellent e-tubes
  - System RX, Series RX32, page 582
- If snap-open accessibility along both sides is required
  - System E4.1, Series R4.32, page 646
- If very smooth travel due to small pitch is required
  - e-tubes Type R, Series R58, page 550

**Unsupported applications**
Unsuppported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height HF. Please consult igus® if space is particularly restricted. More information ➤ Design, page 95

**Universal**:
KMA-mounting bracket with all-sides attachment

**Chip protection**:
Smooth, chip-repellent exterior

**Space-efficient**:
Optimized ratio of inner to outer dimension

**Quick assembly**:
Snap-open accessibility along inner or outer radius

**Dirt repellent**:
Covered pin/bore connection

**Long lifetime**:
Lateral gliding surfaces

**Long service life**:
Double stop dog for strong unsupported length

**Available from stock. Delivery time* in 24h or today!**
*Delivery time means time until shipping of goods (after technical release)

3D-CAD files, configurators, PDF ➤ www.igus.eu/eu/R158

**Dimensions**

<table>
<thead>
<tr>
<th>R</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>175</th>
<th>200</th>
<th>250</th>
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<tr>
<td>H</td>
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<td>300</td>
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<td>D</td>
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<td>K</td>
<td>410</td>
<td>485</td>
<td>565</td>
<td>645</td>
<td>725</td>
<td>880</td>
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</table>

The required clearance height: HF = H + 40 mm (with 1.0 kg/m fill weight)
Series R157 | Hinged, snap-open on both sides of the inner radius
Series R158 | Hinged, snap-open on both sides of the outer radius

<table>
<thead>
<tr>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R [mm]</th>
<th>Weight [kg/m]</th>
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</thead>
<tbody>
<tr>
<td>157.040, R</td>
<td>158.040, R</td>
<td>40 56</td>
<td>100</td>
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<td>157.050, R</td>
<td>158.050, R</td>
<td>50 66</td>
<td>100</td>
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<td>157.075, R</td>
<td>158.075, R</td>
<td>75 91</td>
<td>100</td>
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<tr>
<td>157.088, R</td>
<td>158.088, R</td>
<td>88 104</td>
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<td>157.090, R</td>
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<td>157.100, R</td>
<td>158.100, R</td>
<td>100 116</td>
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<tr>
<td>157.125, R</td>
<td>158.125, R</td>
<td>125 141</td>
<td>100</td>
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<td>157.135, R</td>
<td>158.135, R</td>
<td>135 150</td>
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<td>157.150, R</td>
<td>158.150, R</td>
<td>150 166</td>
<td>100</td>
</tr>
<tr>
<td>157.175, R</td>
<td>158.175, R</td>
<td>175 191</td>
<td>100</td>
</tr>
<tr>
<td>157.200, R</td>
<td>158.200, R</td>
<td>200 216</td>
<td>100</td>
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</table>

1) Lid removable only, not hinged
2) Same dimensions as 157.088 - less recent design, no hinged option

Order key
157.100.100.0
158.100.100.0

Supplement Part No. with required radius (R), example: 158.100.100.0

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

Configuration options and order keys, overview page 500

More information www.igus.eu/eu/HT

Hot Chips up to 850°C
e-tubes that repel hot chips, up to 850°C. Some applications, depending on amount and size of the chips, can burn or melt the surface. That is no longer the case with the igus® igumid HT material.

Next generation of chip-proof igus® e-tubes. System RX for extreme dirt and chip exposure, shown here in direct contact with aluminum chips. IP40 tested. RX e-tubes from page 574

3D-CAD files, configurators, PDF, applications www.igus.eu/eu/R157 · www.igus.eu/eu/R158
### E2 e-tubes R100 | R157-R158 | Interior separation

**Option 1: Vertical separators**
- Separator for e-tubes
  - unassembled 1585.01
  - assembled 1586.01

**Option 2: Full-width shelves**
- Asymmetrical separator 1585.01.A
  - For side-mounted applications. Asymmetrical separator, for defined distance. No additional spacers necessary.

**Option 3: Shelves**
- Middle plate 1585.03
  - To achieve a modular shelving the shelf 2200.X can be arranged at 5 different heights (in 5 mm increments).

#### Vertical Separator 1585.01
- For a vertical subdivision.
- Offers safe stability due to its wide base design, also when used with thick cables or hoses.

#### Asymmetrical separator 1585.01.A
- For side-mounted applications. Asymmetrical separator, for defined distance. No additional spacers necessary.

#### 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 220.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 5 mm increments).

#### Shelves

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>075</td>
<td>220.75</td>
<td>221.75</td>
</tr>
</tbody>
</table>

#### Middle plate 1585.03
- To achieve a modular shelving the shelf 2200.X can be arranged at 5 different heights (in 5 mm increments).

#### 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 5 mm increments).

### Additional elements for interior separation
- Strain relief separator 1585.01.Z
  - Can be integrated into the mounting bracket and can be placed there at any point. It combines strain relief and interior separation.
### KMA, extended pivoting | All-sides attachment | Standard - universal for e-tubes

**Recommended for unsupported applications**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
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<tr>
<td>0.200</td>
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<td>210</td>
<td>221</td>
</tr>
</tbody>
</table>

**Part no. structure, pivoting**

15800.100.12 A

- Single-part order: Mounting bracket Moving end 15800.100.1 A (unassembled)
- Mounting bracket Fixed end 15800.100.2 A (unassembled)

### KMA, extended locking | All-sides attachment - universal for e-tubes

**Recommended for vertical hanging and standing applications**

<table>
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<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
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<tr>
<td>0.100</td>
<td>15800.100.34</td>
<td>110</td>
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<tr>
<td>0.125</td>
<td>15800.125.34</td>
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<tr>
<td>0.200</td>
<td>15800.200.34</td>
<td>210</td>
<td>221</td>
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</tbody>
</table>

**Part no. structure, locking**

15800.100.34 A

- Single-part order: Mounting bracket Moving end 15800.100.3 A (preassembled)
- Mounting bracket Fixed end 15800.100.4 A (preassembled)

### Strain relief

E.g., clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148
KMA mounting brackets, abbreviated, pivoting

Abbreviated type, all-sides attachment

Recommended for unsupported applications

For width index | Part No. | Dim. A [mm] | Dim. B [mm]
--- | --- | --- | ---
0.040 | 1580.040.12 | 50 | 61
0.050 | 1580.050.12 | 60 | 71
0.075 | 1580.075.12 | 85 | 96
0.088 | 1580.088.12 | 98 | 109
0.090 | 1580.090.12 | 98 | 109
0.100 | 1580.100.12 | 110 | 121
0.125 | 1580.125.12 | 135 | 146
0.135 | 1580.135.12 | 145 | 156
0.150 | 1580.150.12 | 160 | 171
0.175 | 1580.175.12 | 185 | 196
0.200 | 1580.200.12 | 210 | 221

Part no. structure, pivoting

1580.100.12 A

A must be indicated on preassembled configurations

Full set = 12

Index

Width index

Mounting bracket for selected width index

Single-part order:

Mounting bracket Moving end 1580.100.1 A (unassambled)

Mounting bracket Fixed end 1580.100.2 A (unassambled)

KMA abbreviated, pivoting | All-sides attachment | Standard - universal for e-tubes

Recommended for vertical hanging and standing applications

For width index | Part No. | Dim. A [mm] | Dim. B [mm]
--- | --- | --- | ---
0.040 | 1585.040.12 | 50 | 61
0.050 | 1585.050.12 | 60 | 71
0.075 | 1585.075.12 | 85 | 96
0.088 | 1585.088.12 | 98 | 109
0.090 | 1585.090.12 | 98 | 109
0.100 | 1585.100.12 | 110 | 121
0.125 | 1585.125.12 | 135 | 146
0.135 | 1585.135.12 | 145 | 156
0.150 | 1585.150.12 | 160 | 171
0.175 | 1585.175.12 | 185 | 196
0.200 | 1585.200.12 | 210 | 221

Part no. structure, locking

1585.100.12 A

A must be indicated on preassembled configurations

Full set = 34

Index

Width index

Mounting bracket for selected width index

Single-part order:

Mounting bracket Moving end 1585.100.1 A (unassambled)

Mounting bracket Fixed end 1585.100.2 A (unassambled)

KMA abbreviated, locking | All-sides attachment - universal for e-tubes

Recommended for vertical hanging and standing applications

Strain relief, e.g., clamps, tie-wrap plates, nuts, and plug-in clips are available from stock. The complete chainfix range with order options from page 1148.

igus’ GmbH Germany | Phone +49 2203 9649-900 Fax -222 | info@igus.de | www.igus.eu
Flange steel mounting brackets

<table>
<thead>
<tr>
<th>For width index</th>
<th>Hole pattern</th>
<th>Part No. full set</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
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<td>.075</td>
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<td>75</td>
<td>91</td>
<td>30</td>
<td>57</td>
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</tbody>
</table>

Mounting only with hexagon socket DIN 912 M6 and washer DIN 125, 6.3 mm

Metallic flange brackets with common hole patterns, easily be replaced by their modern successors, without having to alter the hole pattern. Flush mounting possibilities at both ends of the e-tube for flange mounting brackets made of steel.

Strain relief, e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148.

Bolted connection outside the e-chain's cross-section possible
Flush mounting possibilities
Galvanized steel
One-piece
Robust
**Chip protection, cost-effective**

When to use Series R167 - R168:
- If a chip repellent e-tube with an inner height of 50 mm is required
- If inner widths up to 250 mm are required
- For unsupported lengths up to 2.5 m and fill weights up to 10 kg/m
- If a cost-effective e-tube with snap-open accessibility along inner or outer radius is required
- If flush mounting capability is required

When to use a different igus® Series:
- For extremely chip repellent e-tubes
  - System RX, Series RX40, page 588
- If snap-open accessibility along both sides is required
  - System E4.1, Series R4.42, page 662
- If very smooth travel due to small pitch is required
  - e-tubes Type R, Series R68, page 562

**Technical Data**

<table>
<thead>
<tr>
<th>Pitch</th>
<th>58.8 mm/link</th>
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<tr>
<td>Links/m</td>
<td>17 (999.6 mm)</td>
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<tr>
<td>Chain length</td>
<td>(\frac{R}{2} + K)</td>
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<table>
<thead>
<tr>
<th>R</th>
<th>100</th>
<th>125</th>
<th>150</th>
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<td>670</td>
<td>750</td>
<td>825</td>
<td>905</td>
<td>1065</td>
</tr>
</tbody>
</table>

The required clearance height: \(H_F = H + 40\) mm (with 2.0 kg/m fill weight)

**Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height \(H_F\). Please consult igus® if space is particularly restricted. More information ➔ Design, page 95**
E2 e-tubes R100 | Product Range

Series R167 | Hinged, snap-open on both sides of the inner radius
Series R168 | Hinged, snap-open on both sides of the outer radius

<table>
<thead>
<tr>
<th>e-tubes snap-open along inner radius</th>
<th>e-tubes snap-open along outer radius</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
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<th>Bending radii</th>
<th>Weight [kg/m]</th>
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<td>125</td>
<td>150</td>
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</tbody>
</table>

*With available upon request, please consult igus® for delivery time.

**Width available upon request, please consult igus® for delivery time.

Available from stock. Delivery time* in 24h or today!

E2 e-tubes R100, suited for use in the chip area, even for chips up to 500°C (brief exposure)

Hot Chips up to 850°C
e-tubes that repel hot chips, up to 850°C. Some applications, depending on amount and size of the chips, can burn or melt the surface. That is no longer the case with the igus® igumid HT material.

More information ➤ www.igus.eu/eu/HT
In the standard configuration separators are assembled every 2nd e-tube link.

**Vertical Separator 1685.01**
For a vertical subdivision. Offers safe stability due to its wide base design, also when used with thick cables or hoses.

**Slotted separator 1685.02**
is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

**Full-width shelf 320.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 12 mm increments).

---

**Middle plate 1685.03**
To achieve a modular shelving the shelf 2200.X can be arranged at 7 different heights (in 5 mm increments).

**Side plate 1685.04**
Side plate for use with shelf 2200.X and middle plate 1685.03.

**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 5 mm increments).

**Shelves**

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>un assembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>018</td>
<td>2200.18</td>
<td>2210.18</td>
</tr>
<tr>
<td>023</td>
<td>2200.23</td>
<td>2210.23</td>
</tr>
<tr>
<td>028</td>
<td>2200.28</td>
<td>2210.28</td>
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<tr>
<td>033</td>
<td>2200.33</td>
<td>2210.33</td>
</tr>
<tr>
<td>038</td>
<td>2200.38</td>
<td>2210.38</td>
</tr>
</tbody>
</table>

**Width X [mm] | un assembled | assembled |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>008</td>
<td>2200.88</td>
<td>2210.88</td>
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<tr>
<td>009</td>
<td>2200.99</td>
<td>2210.99</td>
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<tr>
<td>012</td>
<td>2200.124</td>
<td>2210.124</td>
</tr>
<tr>
<td>019</td>
<td>2200.149</td>
<td>2210.149</td>
</tr>
</tbody>
</table>

**Additional elements for interior separation**

**Strain relief separator 1685.01.Z**
Can be integrated into the mounting bracket and can be placed there at any point. It combines strain relief and interior separation.
**KMA, extended pivoting | All-sides attachment | Standard - universal for e-tubes**

Recommended for unsupported applications

<table>
<thead>
<tr>
<th>For width index</th>
<th>Part No. full set</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>.050</td>
<td>1680.050.12</td>
<td>62</td>
<td>74</td>
</tr>
<tr>
<td>.075</td>
<td>1680.075.12</td>
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<tr>
<td>.100</td>
<td>1680.100.12</td>
<td>112</td>
<td>124</td>
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<tr>
<td>.115</td>
<td>1680.115.12</td>
<td>127</td>
<td>139</td>
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<td>.125</td>
<td>1680.125.12</td>
<td>137</td>
<td>149</td>
</tr>
<tr>
<td>.150</td>
<td>1680.150.12</td>
<td>162</td>
<td>174</td>
</tr>
<tr>
<td>.175</td>
<td>1680.175.12</td>
<td>187</td>
<td>199</td>
</tr>
<tr>
<td>.200</td>
<td>1680.200.12</td>
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<tr>
<td>.250</td>
<td>1680.250.12</td>
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<td>274</td>
</tr>
</tbody>
</table>

**Part no. structure, pivoting**

### Single-part order:
- Mounting bracket Moving end 1680.100.12 A
- Mounting bracket Fixed end 1680.100.2 A

**Strain relief**

- e.g. clamps, tie wrap plates, nuggets and plug-in clips are available from stock. The complete chairlift range with order options 1 from page 11/48

**For width index | Part No. full set | Dim. A [mm] | Dim. B [mm]**

### Extended type, all-sides attachment

**KMA mounting brackets locking**

Recommended for vertical hanging and standing applications

- KMA fixed end locking

Part no. structure, locking 1680.100.14 A

---

**Image:**

- Frontal view of KMA
- Moving end and Fixed end with dimensions

---

**Table:**

<table>
<thead>
<tr>
<th>For width index</th>
<th>Part No. full set</th>
<th>Dim. A [mm]</th>
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<tr>
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<td>249</td>
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<tr>
<td>.250</td>
<td>1680.250.14</td>
<td>262</td>
<td>274</td>
</tr>
</tbody>
</table>

**Part no. structure, locking**

- Mounting bracket Moving end 1680.100.14 A
- Mounting bracket Fixed end 1680.100.2 A

**Strain relief**

- e.g. clamps, tie wrap plates, nuggets and plug-in clips are available from stock. The complete chairlift range with order options 1 from page 11/48

---

**Image:**

- Frontal view of KMA
- Moving end and Fixed end with dimensions

---

**Table:**

<table>
<thead>
<tr>
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<tr>
<td>.250</td>
<td>1680.250.12</td>
<td>262</td>
<td>274</td>
</tr>
</tbody>
</table>

---

**Image:**

- Frontal view of KMA
- Moving end and Fixed end with dimensions

---

**Table:**

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<thead>
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<td>.250</td>
<td>1680.250.14</td>
<td>262</td>
<td>274</td>
</tr>
</tbody>
</table>
Flange steel mounting brackets

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
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<td>68.01</td>
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<td>75</td>
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<td>193</td>
<td>100</td>
<td>158</td>
</tr>
</tbody>
</table>

Mounting only with hexagon socket DIN 912 M6 and washer DIN 125, 6.3 mm

Cost-effective snap-open solution for reliable chip protection - igus® R100 e-tubes in a machine tool

Metallic flange brackets with common hole patterns, easily be replaced by their modern successors, without having to alter the hole pattern. Flush mounting possibilities at both ends of the e-tube for flange mounting brackets made of steel.

Strain relief, e.g., clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148.
E2 R

e-tubes

chip protection,
high speeds,
smooth running
Chip protection - higher speeds and smooth running - E2 Series R

E2 Series R - small pitch for higher speeds and smooth motion. igus® e-tubes work in hot chip areas, in areas of dirt and dust generated by woodworking, steelmills, pulp and paper, textile, agriculture, coal plant and many other hostile environments.

- Very good protection against chips (including hot chips)
- Robust and tight
- Space-efficient with optimized ratio of inner dimension to outer dimension
- Modular interior separation
- Universal KMA mounting brackets with attachment options on all sides

Typical industries and applications
- Tooling machines
- Woodworking machines
- All kind of industries and machines with chip, dirt and dust

E2 e-tubes in chip-area of a tooling machine. Resistant against hot metal chips up to 850°C

U-shaped supported e-tube for high lateral acceleration

Standing application - R68 e-tube - Note: the first links are supported

Hot Chips up to 850°C

E-tubes that repel hot chips, up to 850°C. Some applications, depending on amount and size of the chips, can burn or melt the surface. That is no longer the case with the igus® igumid HT material.

More information [www.igus.eu/eu/HT]
**E2 e-tubes R**

**Contents**

**Selection Table**

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width</th>
<th>Outer height</th>
<th>Bending radius</th>
<th>Unsupported</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>R48</td>
<td>25</td>
<td>25 - 130</td>
<td>36 - 141</td>
<td>36</td>
<td>60 - 250</td>
<td>1,50</td>
<td>540</td>
</tr>
<tr>
<td>R58</td>
<td>35</td>
<td>50 - 200</td>
<td>66 - 216</td>
<td>50</td>
<td>75 - 250</td>
<td>2,30</td>
<td>550</td>
</tr>
<tr>
<td>R68</td>
<td>45</td>
<td>50 - 250</td>
<td>68 - 268</td>
<td>64</td>
<td>100 - 300</td>
<td>2,50</td>
<td>562</td>
</tr>
</tbody>
</table>

**E2 e-tubes R** - Removable lids along outer radius

---

**System RX - Extremely chip repellent e-tubes**

Problem solver for energy supply systems in areas with chips - available in 4 sizes. Chips and dirt can significantly reduce the service life of cables and hoses. With System RX igus® presents an extremely dense but nonetheless uniquely shaped polymer e-tube. System RX® from page 574

---

**Assembly Instructions**

1. **Joining is accomplished by simply joining the e-chain® links and clicking the pins in place.**

2. **Insert lid, press down and click to close.**

3. **Separate by levering open lid with screwdriver. Then remove lid.**

4. **Separate by levering open the side plates, then rotate the e-chain® links and separate.**

---

**Technical Data, overview** page 536

**e-chain® links as single parts, overview** page 537

**Configuration options and order keys, overview** page 538

---

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
**Technical Data**

- **Gleitende Application**
  - FLG = with straight upper run
  - FLB = with permitted sag

1) For gliding applications, please consult igus®.

**Installation methods overview, maximum travels**

<table>
<thead>
<tr>
<th>e-tube Series</th>
<th>Unsupported application</th>
<th>Gleitende Application 1</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
<th>Zig-zag application</th>
<th>Unsupp. length of lower run</th>
</tr>
</thead>
<tbody>
<tr>
<td>R48</td>
<td>≤ 1,30 m</td>
<td>≤ 50 m</td>
<td>≤ 50 m</td>
<td>≤ 4,0 m</td>
<td>≤ 1,5 m</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>R58</td>
<td>≤ 2,30 m</td>
<td>≤ 75 m</td>
<td>≤ 50 m</td>
<td>≤ 4,0 m</td>
<td>≤ 2,0 m</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>R68</td>
<td>≤ 2,50 m</td>
<td>≤ 100 m</td>
<td>≤ 60 m</td>
<td>≤ 4,0 m</td>
<td>≤ 2,0 m</td>
<td>upon request</td>
<td>upon request</td>
</tr>
</tbody>
</table>

1) For gliding applications, please consult igus®.

**Part No. 2-piece e-chain® links as single parts**

- **e-tube - removable lids along outer radius**
  - Lid
  - Lower part

**Material - permitted temperature °C, igumid G**

- FLG = -40° up to +120° C

**Flammability class, igumid G**

- VDE 0304 IIC UL94-HB

**E2 e-tubes R**

- **Part No. 2-piece e-chain® links as single parts**
  - **Series**
  - **Lid**
  - **Lower parts**

<table>
<thead>
<tr>
<th>Series</th>
<th>Part No.</th>
<th>Lid</th>
<th>Lower parts</th>
</tr>
</thead>
<tbody>
<tr>
<td>R48</td>
<td>485.Bi</td>
<td>48.Bi0.R</td>
<td></td>
</tr>
<tr>
<td>R58</td>
<td>585.Bii</td>
<td>58.Bi0.R</td>
<td></td>
</tr>
<tr>
<td>R68</td>
<td>685.Bi</td>
<td>68.Bi0.R</td>
<td></td>
</tr>
</tbody>
</table>

* Delivery time means time until shipping of goods (after technical release)
### E2 e-tubes R | Order keys and Options (based on Series R68)

<table>
<thead>
<tr>
<th>Standard</th>
<th>NC-Version - (no camber) without pretension</th>
<th>No burning-in of hot chips up to 850°C (1562°F)</th>
<th>ESD / ATEX classified e-tubes II 2 GD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No.</td>
<td>Part No.</td>
<td>Part No.</td>
<td>Part No.</td>
</tr>
<tr>
<td>Standard</td>
<td>NC-Version</td>
<td>igumid HT-Material</td>
<td>ESD-Material</td>
</tr>
<tr>
<td>68.100.R.0</td>
<td>68.100.R.0.NC</td>
<td>68.100.R.0.HT</td>
<td>68.100.R.0.ESD</td>
</tr>
</tbody>
</table>

**Delivery time**

- **24h or today!**
- **2-5 work days**
- **7-10 work days**
- **10 work days**

*Delivery means time until shipping of goods (after technical release)*

### Order example | Order key and color options

**Order example for complete e-tube Series R68 (1,0 m), color black, with mounting brackets and interior separation:**

<table>
<thead>
<tr>
<th>e-tube (1,0 m)</th>
<th>Please indicate e-tube length or number of links: 1,0 m or 28 links</th>
<th>68.100.100.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ Mounting brackets</td>
<td>1 set</td>
<td>680.100.12</td>
</tr>
<tr>
<td>+ Interior separation</td>
<td>2 separators assembled every 2nd link</td>
<td>2 x 34511</td>
</tr>
</tbody>
</table>

**Order text:**

1,0 m 68.100.100.0 + 680.100.12 + 2 x 34511

### Color options for e-chains® and e-tubes

<table>
<thead>
<tr>
<th>Color</th>
<th>Order index</th>
<th>Color</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>.0</td>
<td>White</td>
<td>.1</td>
</tr>
<tr>
<td>Slate grey</td>
<td>only ESD material</td>
<td>ESD</td>
<td>Grey white</td>
</tr>
<tr>
<td>Grey brown</td>
<td>only HT material</td>
<td>HT</td>
<td>Orange</td>
</tr>
<tr>
<td>Grey</td>
<td>.3</td>
<td>Yellow</td>
<td>.4</td>
</tr>
<tr>
<td>Dusty grey</td>
<td>special color only e-chains</td>
<td>.31</td>
<td>Light grey</td>
</tr>
</tbody>
</table>

**Black e-chains® available from stock!**

Delivery time* for special colors: from 5 work days

### Order key

**Order key**

68.100.100.0

- Standard color black
- Bending radius R
- Width index (depends on Bi)
- Series / Type

### Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)*

---

Series R68 works in an apple-sorting machine: humidity and dirt.
**Small pitch, smooth running**

When to use Series R48:
- If a stable e-tube with small pitch for smooth running and an inner height of 25 mm is required
- If inner widths up to 130 mm are required
- For unsupported lengths up to 1.5 m and fill weights up to 1.0 kg/m
- If chip-repellent features are required

When to use a different igus® Series:
- If a particularly cost-effective solution is the main factor
- If no chip protection is required

**Unsupported applications**

- Travels up to 50 m
- More information ▶ page 548

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

**3D-CAD files, configurators, PDF ▶ www.igus.eu/eu/R48**

---

**Dimensions**

**Unsupported**

**Example**

<table>
<thead>
<tr>
<th>Fill weight [kg/m]</th>
<th>Unsupported length FLg = 1.25 m</th>
<th>Length of travel S = 2.5 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>0.5</td>
<td>2.5</td>
</tr>
<tr>
<td>1.0</td>
<td>1.0</td>
<td>3.0</td>
</tr>
<tr>
<td>1.5</td>
<td>1.5</td>
<td>3.5</td>
</tr>
<tr>
<td>2.0</td>
<td>2.0</td>
<td>4.0</td>
</tr>
</tbody>
</table>

**FLG** = with straight upper run
**FLB** = with permitted sag
**S** = Length of travel
**R** = Bending radius
**H** = Nominal clearance height
**HF** = Required clearance height
**D** = Overlength e-chain, radius in final position
**K** = R + “safety”

**Pitch** = 30.3 mm/link
**Links/m** = 33 (999.9 mm)
**Chain length** = \( \frac{S}{2} + K \)

**Technical Data**

**Universal:** all-sides attachment

**Chip protection:** Smooth, chip-repellent exterior

**Long service life:** Large pins for high stability

**Quick assembly:** Snap-open accessibility along inner or outer radius

**Quiet:** Small pitch for low-noise, smooth operation

**Long service life:** Lateral glide surfaces

---

**Universal: all-sides attachment**

**Chip protection:** Smooth, chip-repellent exterior

**Long service life:** Large pins for high stability

**Quick assembly:** Snap-open accessibility along inner or outer radius

**Quiet:** Small pitch for low-noise, smooth operation

**Long service life:** Lateral glide surfaces
**Series R48 | Removable lids along outer radius**

<table>
<thead>
<tr>
<th>e-tubes</th>
<th>Bi</th>
<th>Ba</th>
<th>R</th>
<th>Weight (kg/m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>removable lids</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td></td>
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<tr>
<td>along outer radius</td>
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<td>48.025.R.0</td>
<td>25</td>
<td>36</td>
<td>060</td>
<td>075</td>
</tr>
<tr>
<td>48.050.R.0</td>
<td>50</td>
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<tr>
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<td>86</td>
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<td>075</td>
</tr>
<tr>
<td>48.100.R.0</td>
<td>100</td>
<td>111</td>
<td>060</td>
<td>075</td>
</tr>
<tr>
<td>48.130.R.0</td>
<td>130</td>
<td>141</td>
<td>060</td>
<td>075</td>
</tr>
</tbody>
</table>

*Order key* 48.100.100.0  

**E2 e-tubes R | R48 | Product Range**

**In the standard configuration separators are assembled every 2<sup>nd</sup> e-tube link.**

**Vertical Separator 481**  
Vertical Separators are used if a vertical subdivision of the e-tube interior is required – by standard Vertical Separators are assembled every 2<sup>nd</sup> e-tube link.

**Additional elements for interior separation**  
*Strain relief separator for e-tubes*  
Can be integrated into the mounting bracket and can be placed there at any point. It combines strain relief and interior separation.

**E2 e-tubes R | R48 | Interior separation**

**Aluminum SuperTrough**  
- Very simple, modular assembly  
- Side-mounted glide strips for wear protection in high-speed  
- Corrosion resistant, seawater resistant aluminum profile  
- 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 c-profile  

The complete range with order options ➤ from page 1184

**Configuration options and order keys, overview ➤ page 538**

**Available from stock. Delivery time* in 24h or today!**  
*Delivery time means time until shipping of goods (after technical release)*

**e-chain® links as single parts, overview ➤ page 537**

**Available from stock. Delivery time* in 24h or today!**

**Configuration options and order keys, overview ➤ page 538**

**Hot Chips up to 850°C**  
e-tubes that repel hot chips, up to 850°C. Some applications, depending on amount and size of the chips, can burn or melt the surface. That is no longer the case with the igus® igumid HT material.

More information ➤ www.igus.eu/eu/HT
### KMA, pivoting | All-sides attachment | Standard | For e-tubes

Recommended for unsupported applications

<table>
<thead>
<tr>
<th>For width index</th>
<th>Part No. full set</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>.025</td>
<td>480.025.12</td>
<td>45</td>
<td>55</td>
</tr>
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<td>.050</td>
<td>480.050.12</td>
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<td>80</td>
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<tr>
<td>.075</td>
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</tr>
<tr>
<td>.130</td>
<td>480.130.12</td>
<td>150</td>
<td>160</td>
</tr>
</tbody>
</table>

(KMA = Polymer Metal Mounting Bracket)

The following parts are required for attachment of the mounting brackets:

- Socket head cap bolt M5 DIN 912-8.8 Length depends on the thickness of the attachment base
- Washer 5,3 DIN 125-ST
- Hexagon nut M5 DIN 934-8

#### Single-part order:

- Mounting bracket: **Moving end** 480.100.12 (preassembled)
- Mounting bracket: **Fixed end** 480.100.2 (preassembled)

#### Part no. structure, pivoting

- Moving end **480.1**
- Fixed end **480.2**
- Frontal view of KMA

\[25°\]

### KMA, locking | All-sides attachment | For e-tubes

Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>For width index</th>
<th>Part No. full set</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>.025</td>
<td>485.025.12</td>
<td>45</td>
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</tr>
<tr>
<td>.050</td>
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<tr>
<td>.130</td>
<td>485.130.12</td>
<td>150</td>
<td>160</td>
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</tbody>
</table>

(KMA = Polymer Metal Mounting Bracket)

The following parts are required for attachment of the mounting brackets:

- Socket head cap bolt M5 DIN 912-8.8 Length depends on the thickness of the attachment base
- Washer 5,3 DIN 125-ST
- Hexagon nut M5 DIN 934-8

#### Part no. structure, locking

- Moving end **485.1**
- Fixed end **485.2**

#### Part no. structure, pivoting

- Moving end **485.1**
- Fixed end **485.2**

### Strain relief

e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148

544 3D-CAD files, configurators, PDF, applications | www.igus.eu/eu/R48

igus GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu 545
Strain relief, e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148.
**Gilding applications** | For long travels from 5 m to max. 50 m

Solution for long travel applications - In this case the e-chain upper run will be introduced in a guide trough on the lower run. We recommend to realize the engineering of such a plant by our technicians. In case of travels between 2.0 m and 5.0 m we recommend a longer unsupported length. More information ➤ Design, from page 106. For gilding applications, please consult igus®.

---

**Pitch** = 30.3 mm/Link · **Links/m** = 33 (999.9 mm) · **Chain length** = $S/2 + K_2$

<table>
<thead>
<tr>
<th>R</th>
<th>060</th>
<th>075</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>175</th>
<th>200</th>
<th>250</th>
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</thead>
<tbody>
<tr>
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<td>156</td>
<td>186</td>
<td>176</td>
<td>176</td>
<td>176</td>
<td>176</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>$D_2$</td>
<td>110</td>
<td>125</td>
<td>330</td>
<td>450</td>
<td>610</td>
<td>730</td>
<td>690</td>
<td>*</td>
</tr>
<tr>
<td>$K_2$</td>
<td>250</td>
<td>300</td>
<td>545</td>
<td>758</td>
<td>970</td>
<td>1151</td>
<td>1182</td>
<td>*</td>
</tr>
<tr>
<td>$\Delta CL$</td>
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<td>*</td>
<td>170</td>
<td>270</td>
<td>380</td>
<td>470</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

*Values upon request.

---

**Components, trough “Basic”**
- Trough side parts, aluminium, 2 m
- Glide bar, plastic, 2 m
- Glide strips, plastic, 2 m (without glide strips on request)
- Optional: Silencer profile, rubber

**Components, Installation set “Basic”**
- Bottom clamp, aluminium C-profile, galvanized steel
- Table Screw M6 x 16
- Sliding nut M6
- Interface connector, plastic

---

Order example: Length of travel 30 m - Center mounted for Series 48.100.100.0 with $B_{Ri} = 115$

Guide trough set without glide bar (set of 2 trough side parts, incl. glide strips)

Order text: 16 guide trough without glide bar (8 x 2 m sections)
Part No. 971.30.SL

Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips)

Order text: 16 guide trough with glide bar (8 x 2 m sections)
Part No. 971.31.SL

Installation set “Basic” complete (guide trough sets + 1)

Order text: 17 installation sets
Part No. 960.30.175

Option: For an additional noise dampening with silencer profile, please add Index A - Example: Part No. 971.30.SLA

---

**Principle sketch**
Number of installation sets to be installed = Number of trough sections + 1

---

**Aluminum SuperTrough | Basic Version**
Part No. 971.30.SL | 971.31.SL | Trough height: 87 mm

---

**Moving end**
- Guide trough with glide bar
- Guide trough without glide bar
- Total length of guide trough

---

**Pitch** = 30.3 mm/Link · **Links/m** = 33 (999.9 mm) · **Chain length** = $S/2 + K_2$

**Components, trough “Basic”**
- Trough side parts, aluminium, 2 m
- Glide bar, plastic, 2 m
- Glide strips, plastic, 2 m (without glide strips on request)
- Optional: Silencer profile, rubber

**Components, Installation set “Basic”**
- Bottom clamp, aluminium C-profile, galvanized steel
- Table Screw M6 x 16
- Sliding nut M6
- Interface connector, plastic

---

Order example: Length of travel 30 m - Center mounted for Series 48.100.100.0 with $B_{Ri} = 115$

Guide trough set without glide bar (set of 2 trough side parts, incl. glide strips)

Order text: 16 guide trough without glide bar (8 x 2 m sections)
Part No. 971.30.SL

Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips)

Order text: 16 guide trough with glide bar (8 x 2 m sections)
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**Principle sketch**
Number of installation sets to be installed = Number of trough sections + 1

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**Aluminum SuperTrough | Basic Version**
Part No. 971.30.SL | 971.31.SL | Trough height: 87 mm

---

**Moving end**
- Guide trough with glide bar
- Guide trough without glide bar
- Total length of guide trough

---

**Pitch** = 30.3 mm/Link · **Links/m** = 33 (999.9 mm) · **Chain length** = $S/2 + K_2$
### Small pitch, smooth running

**When to use Series R58:**
- If a stable e-tube with small pitch for smooth running and an inner height of 35 mm is required
- If inner widths up to 200 mm are required
- For unsupported lengths up to 2,3 m and fill weights up to 8,0 kg/m
- If chip-repellent features are required

**When to use a different igus® Series:**
- If a particularly cost-effective solution is the main factor
- e-tubes Series R157/R158, page 508
- If no chip protection is required
- E2/000 Series 2600/2700, page 444

### Dimensions

#### Unsupported

- **Pitch** = 33,3 mm/link
- **Links/m** = 30 (999 mm)
- **Chain length** = \( \frac{S}{2} + K \)

#### Table

<table>
<thead>
<tr>
<th>R</th>
<th>75</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>200</th>
<th>250</th>
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<tbody>
<tr>
<td>H</td>
<td>200</td>
<td>250</td>
<td>300</td>
<td>350</td>
<td>450</td>
<td>550</td>
</tr>
<tr>
<td>D</td>
<td>150</td>
<td>175</td>
<td>200</td>
<td>225</td>
<td>275</td>
<td>325</td>
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<tr>
<td>K</td>
<td>305</td>
<td>385</td>
<td>460</td>
<td>540</td>
<td>695</td>
<td>855</td>
</tr>
</tbody>
</table>

The required clearance height: \( H_f = H + 35 \) mm (with 0,5 kg/m fill weight)

### Unsupported applications

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height \( H_f \). Please consult igus® if space is particularly restricted. More information → Design, page 95

### Gliding applications

Travels up to 75 m.
More information → page 559

### Technical Data

- Speed, material, temperature and flammability class → page 536
- Universal: all-sides attachment
- Chip protection: Smooth, chip-repellent exterior
- Long service life: Large pins for high stability
- Quick assembly: Snap-open accessibility along inner or outer radius
- Quiet: Small pitch for low-noise, smooth operation
- Long service life: Lateral glide surfaces

### 3D-CAD files, configurators, PDF → www.igus.eu/eu/R58

igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu
Series R58 | Removable lids along outer radius

<table>
<thead>
<tr>
<th>e-tubes R58</th>
<th>Removable lids along outer radius</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Bending radii [mm]</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>58.050.R0</td>
<td></td>
<td>50</td>
<td>56</td>
<td>075 100 125 150 200 250</td>
<td>≈ 1.50</td>
</tr>
<tr>
<td>58.075.R0</td>
<td></td>
<td>75</td>
<td>91</td>
<td>075 100 125 150 200 250</td>
<td>≈ 1.77</td>
</tr>
<tr>
<td>58.100.R0</td>
<td></td>
<td>100</td>
<td>116</td>
<td>075 100 125 150 200 250</td>
<td>≈ 2.04</td>
</tr>
<tr>
<td>58.125.R0</td>
<td></td>
<td>125</td>
<td>141</td>
<td>075 100 125 150 200 250</td>
<td>≈ 2.31</td>
</tr>
<tr>
<td>58.150.R0</td>
<td></td>
<td>150</td>
<td>166</td>
<td>075 100 125 150 200 250</td>
<td>≈ 2.61</td>
</tr>
<tr>
<td>58.175.R0</td>
<td></td>
<td>175</td>
<td>191</td>
<td>075 100 125 150 200 250</td>
<td>≈ 2.88</td>
</tr>
<tr>
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<td></td>
<td>200</td>
<td>216</td>
<td>075 100 125 150 200 250</td>
<td>≈ 3.15</td>
</tr>
</tbody>
</table>

Supplement Part No. with required radius (R), example: 58.100.100.0

Order key

| 58.100.100.0 |

3-axis robot for loading and unloading functions with closed E2 e-tube R48 and easy to fill igus® 3D e-chain® triflex® R (TRE).

Accelerations of up to 10m/s². Speed of up to 1.1 m/s

E2 e-tubes R | Application

Hot Chips up to 850°C

e-tubes that repel hot chips, up to 850°C. Some applications, depending on amount and size of the chips, can burn or melt the surface. That is no longer the case with the igus® igumid HT material.

More information ► www.igus.eu/eu/HT
Option 1: Vertical separators
Option 2: Full-width shelves

In the standard configuration separators are assembled every 2nd e-tube link.

Vertical Separator 581
For a vertical subdivision. Offers safe stability due to its wide base design, also when used with thick cables or hoses.

Slotted separator 587
Is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Full-width shelf 220.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 5 mm increments).

Middle plate 585
To achieve a modular shelving the shelf 2200.X can be arranged at 5 different heights (in 5 mm increments).

Shelves

<table>
<thead>
<tr>
<th>Width X [mm] un assembled</th>
<th>assembled</th>
<th>Width X [mm] un assembled</th>
<th>assembled</th>
<th>Width X [mm] un assembled</th>
<th>assembled</th>
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<td>2200.73</td>
<td>2210.73</td>
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</tbody>
</table>
**E2 e-tubes R | R58 | KMA mounting brackets**

**For tight installation conditions, all-sides attachment**

- **KMA, pivoting**
  - All-sides attachment
  - Standard
  - For e-tubes

**Recommended for unsupported applications**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>.050</td>
<td>580.050.12</td>
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<td>74</td>
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<tr>
<td>.075</td>
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<tr>
<td>.200</td>
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<td>212</td>
<td>224</td>
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</tbody>
</table>

*Quickflange* upon request

The following parts are required for attachment of the mounting brackets:

- Socket head cap bolt M5 DIN 912-8.8 Length depends on the thickness of the attachment base
- Washer 5.3 DIN 125-ST Hexagon nut M5 DIN 934-8
- Full set with assembled Quickflange, please add index QF
- e.g. Part No. 580.100.12/QF. Unassembled Quickflange: Part No. 16800/QF

**Part no. structure, pivoting**

580. 100. 12 A

**Single-part order:**
- Mounting bracket Moving end 580. 100. 1 A ( unassembled)
- Mounting bracket Fixed end 580. 100. 2 A ( unassembled)

**Strain relief,** e.g. clamps, tie-strap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148

---

**E2 e-tubes R | R58 | KMA mounting brackets**

**For high speed and acceleration, all-sides attachment**

- **KMA, locking**
  - All-sides attachment
  - For e-tubes

**Recommended vertical hanging and standing applications**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>.050</td>
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<td>.075</td>
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<td>199</td>
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<tr>
<td>.200</td>
<td>580.200.34</td>
<td>212</td>
<td>224</td>
</tr>
</tbody>
</table>

*Quickflange* upon request

The following parts are required for attachment of the mounting brackets:

- Socket head cap bolt M5 DIN 912-8.8 Length depends on the thickness of the attachment base
- Washer 5.3 DIN 125-ST Hexagon nut M5 DIN 934-8
- Full set with assembled Quickflange, please add index QF
- e.g. Part No. 580.100.34/QF. Unassembled Quickflange: Part No. 16800/QF

**Part no. structure, locking**

580. 100. 34 A

**Single-part order:**
- Mounting bracket Moving end 580. 100. 3 A ( unassembled)
- Mounting bracket Fixed end 580. 100. 4 A ( unassembled)

**Strain relief,** e.g. clamps, tie-strap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148
E2 e-tubes R | R58 | Dimensions | Long travels

**Solution for long travel applications** - In this case the e-chain upper run will be introduced in a guide trough on the lower run. We recommend to realize the engineering of such a plant by our technicians. In case of travels between 3.0 m and 5.0 m we recommend a longer unsupported length. More information Design, from page 106. For gliding applications, please consult igus®.

**Gliding applications**

For long travels from 5 m to max. 75 m

```
Moving end
Fixed end

K2 = Further add-on (if the moving end is set lower)
R = Bending radius

Pitch = 30.3 mm/link · Links/m = 33 (999.9 mm) · Chain length = \( \frac{S}{2} + K_2 \)
```

<table>
<thead>
<tr>
<th>R</th>
<th>075</th>
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<th>125</th>
<th>150</th>
<th>200</th>
<th>250</th>
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<tbody>
<tr>
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<td>150</td>
<td>166</td>
<td>166</td>
<td>150</td>
<td>166</td>
</tr>
<tr>
<td>( D_2 )</td>
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<td>310</td>
<td>380</td>
<td>480</td>
<td>800</td>
<td>1050</td>
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<td>( K_2 )</td>
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</tbody>
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*Value upon request.

**Flange steel mounting brackets**, pivoting | For e-tubes

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**Moving end**

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</table>

- Bolted connection outside the e-chain’s cross-section possible
- Flush mounting possibilities
- Galvanized steel
- One-piece
- Robust

**Strain relief**, e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148.
**Aluminum SuperTrough Basic Version**

Part No. 972.30.SL | 972.32.SL | Trough height: 117 mm

---

**Principle sketch: Number of installation sets to be installed = Number of trough sections + 1**

---

**Components, trough “Basic”:**
- Trough side parts, aluminum, 2 m
- Glide bar, plastic, 2 m
- Glide strips, plastic, 2 m (without glide strips on request)
- Optional: Silencer profile, rubber

**Components, installation set “Basic”:**
- Bottom clamp, aluminum C-profile, galvanized steel
- Table: Screw M6 x 16
- Interface connector, plastic

---

**Order example:**
Length of travel 30 m - Center mounted for Series 58.100.100.0 with \( B_{ri} = 120 \)

---

**Guide trough set without glide bar (set of 2 trough side parts, incl. glide strips)**
- Order text: 16 m guide trough without glide bar (8 x 2 m sections)  Part No. 972.30.SL
- Part No. 972.32.SL

**Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips)**
- Order text: 16 m guide trough with glide bar (8 x 2 m sections)  Part No. 972.30.SL
- Part No. 972.32.SL

**Installation set “Basic” complete (guide trough sets + 1)**
- Order text: 17 installation sets  Part No. 960.30.175

---

**Module for the fixed end**
- Order text: 1 set  Part No. 972.81

**Option:** For an additional noise dampening with silencer profile, please add Index A - Example: Part No. 972.30.5LA

---

**for width index**
- \( B_{ri} = \) Outer width e-chains
- \( B_{ra} = \) Inner width e-chains
- \( B_{hi} = \) Outer width height
- \( B_{ha} = \) Inner width height
- \( H_{ri} = \) Outer trough height
- \( H_{ra} = \) Inner trough height
- \( n_{ri} = \) Number of installation sets
- \( n_{ra} = \) Number of trough sets

---

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**Small pitch, smooth running**

When to use Series R68:
- If a stable e-tube with small pitch for smooth running and an inner height of 45 mm is required
- If inner widths up to 250 mm are required
- For unsupported lengths up to 2.5 m and fill weights up to 10 kg/m
- If chip-repellent features are required

When to use a different igus® Series:
- For extremely chip-repellent e-tubes
  - System RX, Series RX32, page 582
- If a particularly cost-effective solution is the main factor
  - e-tubes Series R167/R168, page 520
- If no chip protection is required
  - E2/000 Series 3400/3500, page 462

**Unsupported applications**
Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height HF. Please consult igus® if space is particularly restricted. More information ► Design, page 95

**Glistening applications**
Travels up to 100 m. More information ► page 571

**Technical Data**
Speed, material, temperature and flammability class ► page 536

Pitch = 36 mm/link
Links/m = 28 (1008 mm)
Chain length = \( \frac{S}{2} + K \)

<table>
<thead>
<tr>
<th>R</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>175</th>
<th>200</th>
<th>225</th>
<th>250</th>
<th>300</th>
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<tbody>
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<td>264</td>
<td>314</td>
<td>364</td>
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<td>564</td>
<td>614</td>
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<td>D</td>
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<td>625</td>
<td>705</td>
<td>780</td>
<td>860</td>
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The required clearance height: \( H_F = H + 40 \text{ mm} \) (with 2.5 kg/m fill weight)
Series R68 | Removable lids along outer radius

<table>
<thead>
<tr>
<th>e-tubes removable lids along outer radius</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Bending radii [mm]</th>
<th>Weight [kg/m]</th>
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<td>268</td>
<td>100</td>
<td>125</td>
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</tbody>
</table>

Supplement Part No. with required radius (R), example: 68.100.100.0

Order key

68.100.100.0

e-chain® links as single parts, overview page 537

Configuration options and order keys, overview page 538

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

Series / Type

<table>
<thead>
<tr>
<th>Dimensioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>42</td>
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</table>

Hot Chips up to 850°C

e-tubes that repel hot chips, up to 850°C. Some applications, depending on amount and size of the chips, can burn or melt the surface. That is no longer the case with the igus® ignium HT material.

Aluminum SuperTrough

- Very simple, modular assembly
- Side- mounted glide strips for wear protection in high speed
- Corrosion resistant, seawater resistant aluminum profile
- 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 c-profile

More information www.igus.eu/eu/HT

The complete range with order options from page 1184

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### E2 e-tubes R100 | R68 | Interior separation

#### Option 1: Vertical separators

Option 1: Vertical separators

- **Vertical Separator 301**
  - For a vertical subdivision.
  - Offers safe stability due to its wide base design, also when used with thick cables or hoses.
  - Not suitable for bending radius R100!

#### Option 2: Full-width shelves

Option 2: Full-width shelves

- **Vertical Separator 34511**
  - If you select bending radius R 100, please use Vertical Separator 34511 for a vertical subdivision.

#### Option 3: Shelves

Option 3: Shelves

- **Slotted separator 302**
  - Is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

- **Slotted separator 302.24**
  - For a wide space between the separators has to be kept or separators have to be fixed in their position, e.g. for side-mounted applications.

- **Full-width shelf 320.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 12 mm increments).

#### Width X [mm]

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
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</thead>
<tbody>
<tr>
<td>050</td>
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<tr>
<td>250</td>
<td>320.250</td>
<td>321.250</td>
</tr>
</tbody>
</table>

#### Side plate 303

- Side plate for use with shelf 2200.X and middle plate 304.

#### Middle plate 304

- To achieve a modular shelving the shelf 2200.X can be arranged at 7 different heights (in 5 mm increments).

#### 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 5 mm increments).

#### Shelves

<table>
<thead>
<tr>
<th>Width X [mm]</th>
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<th>assembled</th>
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</thead>
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**KMA, pivoting | All-sides attachment | Standard - universal for e-tubes**

Recommended for unsupported applications

<table>
<thead>
<tr>
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<th>Part No.</th>
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<th>Dim. B [mm]</th>
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<td>.115</td>
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<tr>
<td>.250</td>
<td>680.250.12</td>
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<td>274</td>
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</table>

For single part order:
- Mounting bracket: Moving end 680.100.01 A (preassembled)
- Mounting bracket: Fixed end 680.100.02 A (preassembled)

**KMA, locking | All-sides attachment - universal for e-tubes**

Recommended for vertical hanging and standing applications

<table>
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<th>Dim. B [mm]</th>
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<td>.250</td>
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<td>274</td>
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</table>

For single part order:
- Mounting bracket: Moving end 680.100.34 A (preassembled)
- Mounting bracket: Fixed end 680.100.4 A (preassembled)

Strain relief, e.g., clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148.

**E2 e-tubes R | R68 | KMA mounting brackets**

**pivoting**

For tight installation conditions, all-sides attachment

**locking**

For high speed and acceleration, all-sides attachment

Mounting bracket for selected width index

Full set = 12

A...must be indicated on preassembled configurations

Width index

Part no. structure, pivoting 680.100.12 A

Socket head cap bolt M5 DIN 912-8.8

Washer 5,3 DIN 125-ST

Hexagon nut M5 DIN 934-8

Full set with assembled Quickflange, please add index QF

- e.g., Part No. 680.100.12.QF. Unassembled Quickflange: Part No. 16800.QF

**KMA, pivoting**

The following parts are required for attachment of the mounting brackets:

- Socket head cap bolt M5 DIN 912-8.8
- Washer 5,3 DIN 125-ST
- Hexagon nut M5 DIN 934-8

Full set with assembled Quickflange, please add index QF

- e.g., Part No. 680.100.12.QF. Unassembled Quickflange: Part No. 16800.QF

These attachment types are set automatically in the choice of the KMA mounting bracket.

For the preassembled mode, please add index A.

- e.g. 680.100.12 A

Strain relief, e.g., clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148.
**Flange steel mounting brackets, pivoting** | For e-tubes

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<td>216</td>
<td>204</td>
<td>183.4</td>
<td>138</td>
<td>100</td>
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</table>

- Bolted connection outside the e-chain’s cross-section possible
- Flush mounting possibilities
- Galvanized steel
- One-piece
- Robust

Metallic flange brackets with common hole patterns, easily be replaced by their modern successors, without having to alter the hole pattern. Flush mounting possibilities at both ends of the e-tube for flange mounting brackets made of steel.

**Strain relief**, e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options ► from page 1148

---

**Gilding applications** | For long travels from 6 m to max. 100 m

Solution for long travel applications - In this case the e-chain™ upper run will be introduced in a guide trough on the lower run. We recommend to realize the engineering of such a plant by our technicians. In case of travels between 4.0 m and 6.0 m we recommend a longer unsupported length. More information ► Design, from page 106.

For gliding applications, please consult igus®.

**Pitch** = 36 mm/Link · **Links/m** = 28 (1008 mm) · **Chain length** = S/2 + K2

<table>
<thead>
<tr>
<th>Width (S)</th>
<th>100</th>
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<th>150</th>
<th>175</th>
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<td>1800</td>
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</table>

**ACL** = Offset fixed point

---

**Metallic flange brackets with common hole patterns**

- Easily replaceable by their modern successors, without having to alter the hole pattern. Flush mounting possibilities at both ends of the e-tube for flange mounting brackets made of steel.

**Flush mounting possibilities** at both ends of the e-tube for flange mounting brackets made of steel.

**Strain relief**, e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options ► from page 1148
Aluminum SuperTrough | Basic Version
Part No. 973.30.SL | 973.31.SL | Trough height: 144 mm

Installation set "Basic" with C-Profile
Bottom clamp optionally attached inwards or outwards

<table>
<thead>
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<th>Width Index</th>
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<th>Part No.</th>
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<tr>
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<td>B_a</td>
<td>B_i</td>
</tr>
<tr>
<td>0.09</td>
<td>72</td>
<td>upon request</td>
</tr>
<tr>
<td>0.095</td>
<td>97</td>
<td>97</td>
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<tr>
<td>0.375</td>
<td>375</td>
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</tr>
<tr>
<td>0.400</td>
<td>400</td>
<td>960.40.400</td>
</tr>
</tbody>
</table>

Length of the C-profile according to dimension B_a (see table)

Components, trough "Basic": 1. Trough side parts, aluminum, 2 m 2. Glide bar, plastic, 2 m 3. Glide strips, plastic, 2 m (without glide strips on request)

Order example: Length of travel 30 m - Center mounted for Series 68.100.100.0 with B_i = 122

Guide trough set without glide bar (set of 2 trough side parts, incl. glide strips)
Order text: 16 m guide trough without glide bar (8 x 2 m sections) Part No. 973.30.SL

Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips)
Order text: 16 m guide trough with glide bar (8 x 2 m sections) Part No. 973.31.SL

Installation set "Basic" complete (guide trough sets + 1)
Order text: 17 installation sets Part No. 960.40.175

Module for the fixed end
Order text: 1 set Part No. 973.80

Option: For an additional noise dampening with silencer profile, please add Index A - Example: Part No. 973.30.SLA

Principle sketch: Number of installation sets to be installed = Number of trough sections + 1
igus®
System RX
extremely chip repellent e-tubes, removable lids along outer radius
Extremely chip repellent e-tubes - System RX

Problem solver for energy supply systems in areas with chips - available in 4 sizes

Chips and dirt can significantly reduce the service life of cables and hoses. With System RX igus® presents an extremely dense but nonetheless uniquely shaped polymer e-tube that can easily be opened along the outer radius.

- Removable lids along outer radius
- Round contour prevents chip accumulation
- Injection-molded "sealing lip" all around
- No holes, cracks or undercuts
- Degree of protection tested (IP40) by TÜV NORD CERT GmbH - Series RX40
- Interior separation and Support Tray tool kit available
- Covered pin/bore connection and stop dogs
- "RBR"-Version with reverse bending radius available

Typical industries and applications

- Tooling machines
- All applications with direct chip appearance
- Applications with dirt and dust
- General machinery

RX e-tubes - IP tested
www.igus.eu/eu/RX_tested

- UL94-V0 classifications upon request
- Electrically conductive ESD/ATEX version upon request
- Optional available with HT-Material for hot chips up to 850°C

With the extreme tight igus® RX e-tube and the harnessed chainflex®-cables, the lifetime of this woodworking machine could be considerably increased. Because of dust and dirt, most after one month previously installed cables failed.

Chip testing by the igus® lab demonstrates the superior chip-proofing capability of igus® RX tubes...

Test: Drowning - Various tube styles were drowned under water. For the RX e-tube, it takes more than 30 sec. to fill up with water

Test: Chip intrusion - Various tube styles were charged with a defined quantity of chips. Only 2.7 g of chips were found inside the RX e-tube after 251,900 cycles

Copyright © igus® Europe 1995-2011

www.igus.eu
### RX e-tubes | Contents | Selection Table

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width</th>
<th>Outer height</th>
<th>Bending radius</th>
<th>Unsupported length max.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>RX32</td>
<td>26 / 42</td>
<td>80</td>
<td>98.4</td>
<td>56</td>
<td>80 - 150</td>
<td>1.7</td>
<td>582</td>
</tr>
<tr>
<td>RX40</td>
<td>32 / 52</td>
<td>100</td>
<td>123</td>
<td>70</td>
<td>100 - 300</td>
<td>1.8</td>
<td>588</td>
</tr>
<tr>
<td>RX48</td>
<td>35 / 62</td>
<td>120</td>
<td>147.6</td>
<td>84</td>
<td>120 - 150</td>
<td>2.1</td>
<td>594</td>
</tr>
<tr>
<td>RX56</td>
<td>41 / 73</td>
<td>140</td>
<td>172.2</td>
<td>98</td>
<td>140</td>
<td>2.3</td>
<td>600</td>
</tr>
</tbody>
</table>

**System RX - Extremely chip repellent e-tubes**

Removable lids along outer radius

---

### RX e-tubes | Assembly Instructions

**1**

Open the excentric locking mechanism...

**2**

...by simply turning with a screwdriver

**3**

...then take away the lids along the outer radius - ready!

---

**Technical Data, overview** page 580

**e-chain® links as single parts, overview** page 580

**Configuration options and order keys, overview** page 581

---

*Delivery time means time until shipping of goods (after technical release)
RX e-tubes | Technical Data | e-chain® links as single parts

**Technical Data - RX e-tubes**

- **Speed / acceleration FLG max.**
  - max. 10 [m/s] / max. 100 [m/s²]
- **Speed / acceleration FLB max.**
  - max. 3 [m/s] / max. 6 [m/s²]
- **Material - permitted temperature °C, igumid G**
  - 40° up to +120° C
- **Flammability class, igumid G**
  - VDE 0304 IC UL94-HB

**FLG = with straight upper run**

**FLB = with permitted sag**

**Installation methods overview, maximum travels - RX e-tubes**

<table>
<thead>
<tr>
<th>e-tube Series</th>
<th>Unsupported application</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
<th>Rotary application</th>
<th>Zip-zag application</th>
</tr>
</thead>
<tbody>
<tr>
<td>RX32</td>
<td>≤ 1,20 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
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<tr>
<td>RX40</td>
<td>≤ 1,50 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>RX48</td>
<td>≤ 1,80 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>RX56</td>
<td>≤ 2,00 m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
</tbody>
</table>

**Order example | Order key and color options**

- **Order example for complete e-tube Series RX56 (1.0 m), color black, with mounting brackets and interior separation:**
  - e-tube (1.0 m) Please indicate e-tube length or number of links: 1.0 m or 18 links **RX56.140.140.0**
  - + Mounting brackets 1 set (+ tie-wrap plates) **RX56L.140.12**
  - + Interior separation with 1 separator (central positioning) assembled every 2nd link **RX56.140.12 + 1 x RX56.1.1 + 2 x RX56.2.1**

**Order key**

- **RX56.140.140.0**
- **RX56L.140.12**
- **RX56.140.12 + 1 x RX56.1.1 + 2 x RX56.2.1**

**Color options for e-chains® and e-tubes**

- **Standard color black**
  - **Order index**
- **Bending radius R**
  - **Order index**
- **Width index (depends on Series / Type)**
  - **Order index**

**Available from stock. Delivery time* in 24h or today!**

- **Delivery time means time until shipping of goods (after technical release)**
**Introduction**

**Extremely chip repellent**

When to use the Series RX32:
- If a small, chip protected e-tube without undercuts, projecting edges or gaps with an inner height of 42 mm is required
- Inner width 80 mm
- For unsupported lengths up to 1.7 m and fill weights up to 4.0 kg/m
- If easy access from the outside is required

When to use a different igus® Series:
- For chip protection in gliding applications
  - E4.1 Series R4.42, page 662
- If a particularly cost-effective solution is the main factor
  - e-tube Series R157/R158, page 508

**Safe:** Covered pin/bore connection and stop dogs

**Easy opening:** With embedded eccentric locking mechanism

**Quick assembly:** Removable lids along outer radius

**Flush attachment:** Mounting bracket with strain relief option

**Smooth:** Without undercuts, projecting edges or gaps

**Dirt repellent:** Round contour prevents chip accumulation

**Keep order:** Interior separation available

**Available from stock. Delivery time in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

**3D-CAD files, configurators, PDF** | www.igus.eu/eu/RX32
**Series RX32 | Removable lids along outer radius**

Removable lids along outer radius

<table>
<thead>
<tr>
<th>Bi (mm)</th>
<th>Ba (mm)</th>
<th>R (mm)</th>
<th>RX32 (kg/m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>98.4</td>
<td>080</td>
<td>100</td>
</tr>
</tbody>
</table>

*Radius available upon request, please consult igus® for delivery time.
Supplement Part No. with required radius (R). Example: RX32.080.080.0

**Order key**

RX32.080.080.0

Standard color black
Bending radius R
Width index (depends on Bi)
Series / Type

**e-chain® links as single parts, overview** page 580

**Configuration options and order keys, overview** page 581

Available from stock. **Delivery time in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

---

**Hot Chips up to 850°C**

RX e-tubes that repel hot chips, up to 850°C. Some applications, depending on amount and size of the chips, can burn or melt the surface. That is no longer the case with the igus® igumid HT material.

More information [www.igus.eu/eu/HT](http://www.igus.eu/eu/HT)

---

**Optional: Support tray tool kit**

For support of the lower run

- Open trough design for safe guidance of the RX e-tube
- Chips can fall through
- Available in different lengths

More information [www.igus.eu/eu/RX](http://www.igus.eu/eu/RX)
Despite the restricted installation space, the RX e-tube is used in this compact turning machine with reverse bending radius (RBR).
**Extremely chip repellent**

When to use the Series RX40:
- If a chip protected e-tube without undercuts, projecting edges or gaps with an inner height of 52 mm is required
- Inner width 100 mm
- For unsupported lengths up to 1.8 m and fill weights up to 6.0 kg/m
- If easy access from the outside is required

When to use a different igus® Series:
- If a particularly cost-effective solution is the main factor
- e-tube Series R167/R168, page 520
- For chip protection in gliding applications
- E4.1 Series R4.56, page 678

**Safe:** Covered pin/bore connection and stop dogs

**Easy opening:** With embedded eccentric locking mechanism

**Flush attachment:** Mounting bracket with strain relief option

**Smooth:** Without undercuts, projecting edges or gaps

**Dirt repellent:** Round contour prevents chip accumulation

**Keep order:** Interior separation available

**Quick assembly:** Removable lids along outer radius

**Example**

Fill weight = 2.0 [kg/m]

 Unsupported length FLg = 1.6 m

 Length of travel = 3.2 m

**Unsupported applications**

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height HF. Please consult igus® if space is particularly restricted. More information ► Design, page 95

**Dimensions**

<table>
<thead>
<tr>
<th>Pitch</th>
<th>= 40 mm/link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Links/m</td>
<td>= 25 (1000 mm)</td>
</tr>
<tr>
<td>Chain length</td>
<td>= ( \frac{S}{2} + K )</td>
</tr>
</tbody>
</table>

**Technical Data**

- Speed, material, temperature and flammability class ► page 580

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu
Hot Chips up to 850°C

RX e-tubes that repel hot chips, up to 850°C. Some applications, depending on amount and size of the chips, can burn or melt the surface. That is no longer the case with the igus® igumid HT material.

More information www.igus.eu/eu/HT
Flange mounting brackets for RX40 | Polymer locking, 2-piece

<table>
<thead>
<tr>
<th>e-tube Series</th>
<th>Part No. full set with tie-wrap plates</th>
<th>Part No. full set without tie-wrap plates</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>RX40</td>
<td>RX401.100.12ZB</td>
<td>RX401.100.12</td>
<td>10</td>
</tr>
</tbody>
</table>

- Universally mountable with flange attachment capability
- Mounting brackets (optional with strain relief)
- Perfect fastening with flange mounting brackets
- Easy openable
- Optional M5 insert nuts

Part No. structure
- RX401.100.12 ZB with integrated strain relief tie-wrap plates
- Full set locking = 12
- Mounting bracket for selected width index

Single-part order
- Mounting bracket Moving end RX401.100.1 ZB (+ tie-wrap plate)
- Mounting bracket Fixed end RX401.100.2 ZB (+ tie-wrap plate)

The almost one hundred percent tight RX e-tube is used in a CNC precision turning and milling center.
**Extremely chip repellent**

**When to use the Series RX48:**
- If a chip protected e-tube without undercuts, projecting edges or gaps with an inner height of 62 mm is required.
- Inner width 120 mm
- For unsupported lengths up to 2,1 m and fill weights up to 9,0 kg/m
- If easy access from the outside is required.

**When to use a different igus® Series:**
- For chip protection in gliding applications
  - E4/light Series R18840, page 784

**Technical Data**

- **Pitch** = 48 mm/link
- **Links/m** = 21 (1008 mm)
- **Chain length** = \( \frac{S}{2} + K \)

<table>
<thead>
<tr>
<th>R</th>
<th>120</th>
<th>150</th>
<th>175*</th>
<th>200*</th>
<th>225*</th>
<th>250*</th>
<th>275*</th>
<th>300*</th>
<th>325*</th>
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</thead>
<tbody>
<tr>
<td>H</td>
<td>324</td>
<td>384</td>
<td>434</td>
<td>484</td>
<td>534</td>
<td>584</td>
<td>634</td>
<td>684</td>
<td>734</td>
</tr>
<tr>
<td>D</td>
<td>234</td>
<td>264</td>
<td>289</td>
<td>314</td>
<td>339</td>
<td>364</td>
<td>389</td>
<td>414</td>
<td>439</td>
</tr>
<tr>
<td>K</td>
<td>475</td>
<td>570</td>
<td>650</td>
<td>725</td>
<td>805</td>
<td>885</td>
<td>960</td>
<td>1040</td>
<td>1120</td>
</tr>
</tbody>
</table>

The required clearance height: \( H_F = H + 50 \text{ mm} \) (with 0,5 kg/m fill weight)

*Radius available upon request, please consult igus® for delivery time.

**Unsupported e-chains** feature positive camber over short travels. This must be accounted for when specifying the clearance height \( H_F \). Please consult igus® if space is particularly restricted. More information ➤ Design, page 95
**RX e-tubes | Series RX48 | Product Range | Standard**

### Series RX48 | Removable lids along outer radius

<table>
<thead>
<tr>
<th>Removable lids along outer radius</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R [mm]</th>
<th>RX48 [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>RX48.120.R.0</td>
<td>120</td>
<td>147,6</td>
<td>120</td>
<td>27</td>
</tr>
</tbody>
</table>

*Radius available upon request, please consult igus® for delivery time.

**Order key RX48.120.120.0**

*Delivery time means time until shipping of goods (after technical release).

### Vertical separation - slotted separators:

- **RX48.1** (central positioning)
- **RX48.2** (lateral positioning)

Vertical separation of the large filling space by cable-friendly, polymer separators. Due to their slots, basic vertical/horizontal shelving arrangements are possible. In the standard configuration separators are assembled every 2nd e-chain® link!

#### Horizontal separation

Full-width 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.

**Slotted separator (central positioning)**

- unassembled RX48.1
- assembled RX48.1.1

**Slotted separator (lateral positioning)**

- unassembled RX48.2
- assembled RX48.2.1

**Full-width shelf, lockable**

- unassembled 520.X
- assembled 521.X

### e-chain® links as single parts, overview ➤ page 580

**Configuration options and order keys, overview ➤ page 581**

**Available from stock. Delivery time* in 24h or today!**

**Optional: Support tray tool kit**

For support of the lower run
- Open trough design for safe guidance of the RX e-tube
- Chips can fall through
- Available in different lengths

*Delivery time means time until shipping of goods (after technical release).

---

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**Hot Chips up to 850°C**

RX e-tubes that repel hot chips, up to 850°C. Some applications, depending on amount and size of the chips, can burn or melt the surface. That is no longer the case with the igus® igumid HT material.

More information ➤ www.igus.eu/eu/HT

---

**3D-CAD files, configurators, PDF ➤ www.igus.eu/eu/RX48**
Supply of the main spindle in a tooling machine with igus® RX e-tube. The rounded contour of the energy supply repels all kinds of chips.

Flange mounting brackets for RX48 | Polymer locking, 2-piece

- Universally mountable with flange attachment capability
- Mounting brackets (optional with strain relief)
- Perfect fastening with flange mounting brackets
- Easy openable
- Optional M6 insert nuts

Part No. structure
RX48.1.120.12

- Full set locking = 12
- Mounting bracket for selected width index

2-piece mounting bracket with flange attachment
Flush attachment - here shown with strain relief.
Tiewrap plates upon request. Please consult igus®!

Tight strain relief block according to your specifications. Please consult igus®!
**Extremely chip repellent**

**When to use the Series RX56:**
- If a chip protected e-tube without undercuts, projecting edges or gaps with an inner height of 73 mm is required
- Inner width 140 mm
- For unsupported lengths up to 2.3 m and fill weights up to 11 kg/m
- If easy access from the outside is required

**When to use a different igus® Series:**
- For chip protection in gliding applications
  - System E4/light, Series 19050, page 816

---

**Example**

*Fill weight* = 4.0 [kg/m]

Unsupported length FL = 1.5 m
Length of travel = 3.0 m

The required clearance height: HF = H + 50 mm (with 0.5 kg/m fill weight)

*Radius available upon request, please consult igus® for delivery times*
Series RX56 | Removable lids along outer radius

<table>
<thead>
<tr>
<th>Removable lids along outer radius</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R [mm]</th>
<th>Bending radii RX56 [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>RX56.140.R.0</td>
<td>140</td>
<td>172.2</td>
<td>140</td>
<td>175* 200* 225* 250* 275* 300* 325* 350* ≈ 3.83</td>
</tr>
</tbody>
</table>

*Radius available upon request, please consult igus® for delivery time

Supplement Part No. with required radius (R). Example: RX56.140.140.0

Order key RX56. 140. 140. 0

- Standard color black
- Bending radius R
- Width index (depends on Bi)
- Series / Type

Available from stock. Delivery time in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

RX e-tubes | Series RX56 | Interior separation

RX e-tubes that repel hot chips, up to 850°C. Some applications, depending on amount and size of the chips, can burn or melt the surface. This is no longer the case with the igus® igumid HT material.

More information www.igus.eu/eu/HT

Optional: Support tray tool kit

- For support of the lower run
- Open trough design for safe guidance of the RX e-tube
- Chips can fall through
- Available in different lengths

More information www.igus.eu/eu/RX
Flange mounting brackets for RX56 | Polymer locking, 2-piece

- Universal mountable with flange attachment capability
- Mounting brackets (optional with strain relief)
- Perfect fastening with flange mounting brackets
- Easy openable
- Optional M6 insert nuts

Part No. structure
RX56.140.12

Full set locking = 12
Mounting bracket for selected width index

Single-part order
Mounting bracket Moving end
RX56.140.1
Mounting bracket Fixed end
RX56.140.2

RX e-tubes, no undercuts and awkward edges. Chips cannot be embedded on the concealed pin/hole mounting brackets and stop dogs. Here, RX e-tube in long-term comparison.

2-piece mounting bracket with flange attachment
Flush attachment - here shown with strain relief.
Tie-wrap plates upon request.
Please consult igus®!

Lateral view of igus® RX48 e-tube with flange mounting brackets and optional strain relief (upon request)
System E4

E4.1 | E4.1light | E4/light
Universal modular kit, e-chains®,
e-tubes for all applications
Legacy products are available over the long-term
For new designs, we recommend the equivalent, technically improved, and identical e-chain® series. The entire product range is available over the long-term. The entire product range can be found on-line using the corresponding quicklink, along with all relevant data for ordering and configuring. Or in the separate igus® classics catalogue www.igus.eu/eu/classics

System E4 | Universal modular kit for all applications
Standard for almost all applications - System E4.1
Long travels, large unsupported lengths, simple installation and quiet operation
- Optimum lateral stability and high push/pull force on long travels due to the undercut design
- Ideal for side-mounted applications
- Large unsupported lengths due to stable, double stop dog
- Noise-damping pads as additional noise-reducing option
- Outer and inner links for fast assembly
➤ www.igus.eu/eu/E4.1

Light and stable - System E4/light
Low weight, stable and cost-effective. Smaller outer links for reduction of weight and costs
- For short travels and vertical hanging/standing applications
- With undercut for high stability
- Optimized ratio of interior and exterior dimension
➤ www.igus.eu/eu/E4/light

E4/00 and E4/4 are still available!
System E4/00 - The predecessor of the E4.1 system for low-noise operation and simple installation. E4/00 continues to be available on the long term. Please select the igus® E4.1 system for new designs ➤ www.igus.eu/eu/E4-00
System E4/4 - The predecessor of the E4.1 system for long travels and side-mounted applications. E4/4 continues to be available on the long term. Please select the igus® E4.1 system for new designs ➤ www.igus.eu/eu/E4-4

High dynamics and cost effective - E4.1 light New in this catalog
The E4.1 light series incorporates the advantages of both E2/000 and E4.1 series
- Less weight, enhanced dynamics possible
- Optimized interior-exterior dimensions ratio due to narrow outer links
- Inner diameter completely accessible for easy filling
- Crossbars are swivelable on both sides and openable in inner- and outer radius
- Cost-effective
- Short assembly time
➤ www.igus.eu/eu/E4.1L

Light and stable - System E4/light
Low weight, stable and cost-effective. Smaller outer links for reduction of weight and costs
- For short travels and vertical hanging/standing applications
- With undercut for high stability
- Optimized ratio of interior and exterior dimension
➤ www.igus.eu/eu/E4/light

E4/00 and E4/4 are still available!
System E4/00 - The predecessor of the E4.1 system for low-noise operation and simple installation. E4/00 continues to be available on the long term. Please select the igus® E4.1 system for new designs ➤ www.igus.eu/eu/E4-00
System E4/4 - The predecessor of the E4.1 system for long travels and side-mounted applications. E4/4 continues to be available on the long term. Please select the igus® E4.1 system for new designs ➤ www.igus.eu/eu/E4-4

Legacy products are available over the long-term
For new designs, we recommend the equivalent, technically improved, and identical e-chain® series. The entire product range is available over the long-term. The entire product range can be found on-line using the corresponding quicklink, along with all relevant data for ordering and configuring. Or in the separate igus® classics catalogue ➤ www.igus.eu/eu/classics
System E4 | Broad system of modular accessories

New generation interior separation - Standard for new designs

- Standard separator, wide base
- Separator for QuickLock crossbar
- Separator, narrow base
- Asymmetrical separator
- Notch separator for notch crossbar
- Full-width shelf, lockable

Previous interior separation - still available

- Separator, wide base
- Separator, slotted
- Middle plate for e-chains®
- Side plate for e-chains®
- Spacer for e-chains®
- Clip-on shelf

Mounting brackets

- KMA with attachment capability on all sides
- Mounting brackets with strain relief
- Mounting brackets with C-profile option
- KMA mounting brackets pivoting
- KMA mounting brackets locking
- Mounting bracket made of steel

chainfix strain relief elements

- Strain relief for easy fit into C-profile
- Integration with KMA mounting brackets
- Clip-on tiewrap plates for opening crossbars
- Tiewrap plates with clip-on connection for the C-profile
- Chainfix clip - Modular snap-on for the C-profile
- Chainfix Nugget

Guide troughs

- Aluminum "Super Trough" Basic
- Aluminum "Super Trough" Heavy Duty
- Fixed end module, aluminum "Super Trough"
- Steel guide troughs
- Fixed end module, steel guide trough
- For support of the lower run - Support Trays tool kit

Additional features | use product link on each page for details

- QuickLock crossbar
- Extension links - for extremely wide e-chains®
- Hinged crossbars
- Hinged crossbars for bucket applications
- Snapclip
- Autoglide crossbars

System E4 | Many accessories

Application Profile

<table>
<thead>
<tr>
<th>E4 System</th>
<th>E4.1</th>
<th>E4.1 light</th>
<th>E4/light</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High tensile forces</td>
<td>++</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>High shearing forces</td>
<td>++</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Long unsupported length through special stop dogs, undercut</td>
<td>++</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Unsupported length, straight</td>
<td>++</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Unsupported length, with sag</td>
<td>++</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Unsupported, side-mounted</td>
<td>++</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Gliding, side-mounted</td>
<td>++</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>High speeds</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>High accelerations</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Ratio of inner dimension to outer dimension (space required)</td>
<td>+</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Low fill weight required</td>
<td>+</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Zig-zag applications</td>
<td>+</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Rotary motions</td>
<td>++</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hanging and standing installation</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Installation space</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Environment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rolling noise generation</td>
<td>++</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Gliding noise generation</td>
<td>++</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>High, constant humidity and temperature</td>
<td>++</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Dirt resistance</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Chip protection</td>
<td>++</td>
<td>–</td>
<td>+</td>
</tr>
<tr>
<td>Insensitivity to vibration and shock</td>
<td>++</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Closed exterior and stop dogs</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>ESD, ATEX (Special version in conductive material)</td>
<td>++</td>
<td>+</td>
<td>++</td>
</tr>
<tr>
<td>Cleanroom</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Service life</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unsupported, straight</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Unsupported, with sag</td>
<td>++</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Gliding</td>
<td>++</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Increase service life of cable</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Installation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opening/closing</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Separating/joining</td>
<td>++</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

Magnetically detectable plastic e-chains® For the food- and tobaccoindustry

- 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 1.0 mm can be recognized for fragments passing at speeds of 20 m/min

More information www.igus.eu/eu/detectable-chain

Comprehensive information for all e-chains® can be found at the relevant web link.
The Standard of the E4 program!

*igus® e-chains®* and *e-tubes* for almost all applications
ONE e-chain® series for almost all applications - System E4.1

The E4.1 system combines all the advantages of its three predecessors. E4.1 profits from 25 years of igus® experience in 4-piece e-chains® and is the best igus® e-chain® in the product range. The E4.1 series is more stable with the same or smaller dimensions than their predecessors. Almost all accessory components and mounting dimensions are identical. With the E4.1, the service life of your application can be still increased with lower costs.

- Undercut design for ideal lateral stability, high shear force on long travels and for large unsupported lengths.
- Well suited for side-mounted applications
- Noise dampening pads
- Outer and inner links for quick assembly, with or without pretension
- Dirt repellent, with smooth, wear-resistant surface and side wear pads

Typical industries and applications
- Crane
- Indoor crane
- Composting plants
- Sewage plants
- Machine tools
- General mechanical engineering
- Materials handling technology
- Refrigeration engineering
- Construction machinery
- Wood working
- Any type of machines
- Robotics and handling systems

IPA Qualification Certificate - Report IG 1303-640-1:
ISO Class 2, according to DIN EN ISO 14644-1 for System E4.1, Series E4.32.10.063.0.CR
at v = 0,5 / 1,0 / 2,0

41 dB(A) tested at igus® lab, v = 1,8 m/s unsupported, Series E4.21.060.038.0

- ESD classification: Electrically conductive
- ESD/ATEX version upon request
- E-tubes available as special design with HT material for 850°C (1562° F) hot chips

<table>
<thead>
<tr>
<th>Application</th>
<th>Design feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large unsupported length</td>
<td>Special stop dogs, undercut</td>
</tr>
<tr>
<td>Low-noise, unsupported gliding</td>
<td>Integrated &quot;brake&quot;, smooth gliding surfaces - rubber dampers optional</td>
</tr>
<tr>
<td>Hanging and standing installation</td>
<td>Torsional stability through undercut, &quot;no camber&quot; option by flipping the outer link</td>
</tr>
<tr>
<td>Long travels</td>
<td>High push/pull forces through undercut design and stop dogs, large and smooth gliding surfaces</td>
</tr>
<tr>
<td>Side-mounted, unsupported</td>
<td>Undercut increases unsupported length by about 30% mounted on the side</td>
</tr>
<tr>
<td>Fast-assembly</td>
<td>&quot;Inner link/outer link&quot; design</td>
</tr>
<tr>
<td>Rotary motion</td>
<td>Through simple flipping of links or easy modification, gliding surfaces on the side</td>
</tr>
<tr>
<td>Increase service life of cable</td>
<td>Smooth, wide solid polymer support for cables, many quick-mounting shelving options</td>
</tr>
<tr>
<td>Increase service life of e-chains®</td>
<td>Large pins, optimized material, high stability</td>
</tr>
<tr>
<td>ESD, ATEX</td>
<td>Undercut for secure contact surfaces in motion (special version in conductive material)</td>
</tr>
<tr>
<td>Operation under dirt, chips, humidity</td>
<td>Undercut design prevents e-chain® breakage, dirt resistant design</td>
</tr>
</tbody>
</table>

E4.1 e-chains®: You can “do away” with expensive additional components

- Up to 133% more tensile strenght
- 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
- Best of class - Utmost stability** compared to other polymer e-chains®

* Compared to the igus® E4/00 system series
** Test at igus® laboratory: Sag tested with defined weight and length over 96h
E4.1 | Utilized advantages of the approved E4 Series

Utilized advantages of the approved E4 Series

The design principle of the undercut combined with the inner/outer-link solution - Series E4.1 - All applications with one e-chain*

- Smooth, low noise operation
- Cable-friendly inner surfaces
- Smooth and wear-resistant gliding surface - no additional gliding shoe
- Lateral wear pads for a long service life (electronically mounted applications)
- Perfect ESD suitability due to "tongue and groove" design
- Stable crossbars with double locking
- Types with or without pretension due to flipping outer links

Still more unsupported length
with the igus® XXL plastic*

- Up to 25% more unsupported length
- The new igus® XXL material for igus® E4.1 e-chains offers you the potential to implement 7 m of travel without troughs and supports, or to implement higher fill weights with constant unsupported length.
  - Larger unsupported lengths
  - Higher fill weights
  - Eliminates guide troughs and supports
  - Less space requirement

*optional upon request

E4.1 Utilized advantages of the approved E4 Series

For detailed information on this igus® product: www.igus.eu/eu/E4.1

For detailed information: www.igus.eu/eu/XXL-Material
Cables last up to 4 times longer

The new separators can increase cycle life of cables by a factor of 4 - their rounded base ensures a smooth junction to the crossbar and avoids edges, which could increase cable wear. A strong force closure fit for e-chains and e-tubes. Tests in the igus lab have shown the lowest cable wear in e-chains with the new plastic separators.

Longer life with Polymer Crossbars

Tests in the igus lab have shown, that minimized cable wear is achieved in e-chains with plastic crossbars which are designed cable friendly with rounded contours. All igus e-chains/e-tubes are equipped with plastic crossbars. Where it makes sense, other material can be considered, subject to prior test runs. The locking strength of igus crossbars is also convincing. Crossbars from different materials underwent a pull-out strength test in the igus lab. The locking strength is evident. Also, plastic crossbars are elastic yet very torsion resistant and do not plastically deform, like i.e. aluminum crossbars.

Retention force comparison polymer/aluminum-crossbars - longest service life!

Maximum holding force of the crossbars

Cable wear tests at igus lab

Wear on plastic separators:
Wear could be reduced to nearly half with the new separators

 retention force comparison polymer/aluminum-crossbars - longest service life!
## Selection Table

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height (hi)</th>
<th>Inner width (Bi)</th>
<th>Outer width (Ba)</th>
<th>Outer height (ha)</th>
<th>Bending radius (R)</th>
<th>Unsupported length max. (mm)</th>
<th>page</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.21</td>
<td>21</td>
<td>30 - 140</td>
<td>44 - 154</td>
<td>28</td>
<td>38 - 200</td>
<td>2,50</td>
<td>626</td>
</tr>
<tr>
<td>E4.28</td>
<td>28</td>
<td>40 - 300</td>
<td>60 - 320</td>
<td>42</td>
<td>55 - 250</td>
<td>2,50</td>
<td>634</td>
</tr>
<tr>
<td>E4.32</td>
<td>32</td>
<td>50 - 400</td>
<td>73 - 423</td>
<td>54</td>
<td>63 - 300</td>
<td>3,30</td>
<td>646</td>
</tr>
<tr>
<td>E4.42</td>
<td>42</td>
<td>50 - 400</td>
<td>76 - 426</td>
<td>64</td>
<td>75 - 350</td>
<td>4,00</td>
<td>662</td>
</tr>
<tr>
<td>E4.56</td>
<td>56</td>
<td>50 - 600</td>
<td>84 - 634</td>
<td>84</td>
<td>135 - 500</td>
<td>5,00</td>
<td>678</td>
</tr>
<tr>
<td>E4.80</td>
<td>80</td>
<td>50 - 600</td>
<td>100 - 650</td>
<td>108</td>
<td>150 - 1000</td>
<td>6,20</td>
<td>694</td>
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<tr>
<td>E4.112</td>
<td>New* 112</td>
<td>50 - 600</td>
<td>102 - 652</td>
<td>140</td>
<td>200 - 1000</td>
<td>6,50</td>
<td>710</td>
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<tr>
<td>E4.80</td>
<td>200</td>
<td>200 - 600</td>
<td>260 - 660</td>
<td>236</td>
<td>325 - 1000</td>
<td>8,00</td>
<td>724</td>
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<tr>
<td>E4.350</td>
<td>204</td>
<td>100 - 563</td>
<td>160 - 623</td>
<td>236</td>
<td>325 - 1000</td>
<td>8,00</td>
<td>732</td>
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<tr>
<td>E4.350</td>
<td>350</td>
<td>400 - 800</td>
<td>540 - 940</td>
<td>450</td>
<td>500 - 1000</td>
<td>6,20</td>
<td>740</td>
</tr>
</tbody>
</table>

### Crossbars every link

**Recommendation:** Lateral acceleration > 0.5 m/s
- High fill weights and rigid hydraulic hoses
- Humidity: > 85%, temperature: > 50°C (122° F)

### Crossbars every 2nd link

**Standard:** Suitable for nearly all applications
- Lower price

### e-tubes

**Recommendation:** Excellent cable protection
- Lids along the entire inner radius are completely removable

## Assembly Instruction

1. Line up two inner side links, side by side...
2. ...attach an outer side link between
3. Assemble crossbars - push down and snap in by using a screwdriver
4. Assemble e-tube lids/bottoms - attach to the connector at an angle - snap in

### The E4 e-chain® opener reduces assembly time

- e-chain® opener tools for convenient opening and closing of E4 series igus® e-chains®
- Especially for e-chains® with many crossbars the assembly is much easier
- Especially in areas difficult to access mounting is simplified big savings in assembly time.

---

**New** in this catalog

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*Delivery time means time until shipping of goods (after technical release)*

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Assembly video available online at [www.igus.eu/E4_assembly](http://www.igus.eu/E4_assembly)
# Technical data - E4.1

**Gilding speed / acceleration (maximum)**
- FLG: max. 10 [m/s] / max. 50 [m/s²]
- FLB: max. 3 [m/s] / max. 6 [m/s²]

**Speed / acceleration**
- FLG: max. 20 [m/s] / max. 200 [m/s²]
- FLB: max. 5 [m/s] / max. 60 [m/s²]

**Material - permitted temperature °C**, igumid G
- -40° up to +120° C

**Flammability class**, igumid G
- VDE 0304 IIC UL94-HB

![FLG, FLB](image)

---

## Installation methods overview, maximum travels - E4.1

<table>
<thead>
<tr>
<th>Series</th>
<th>Crossbar® e-chain®</th>
<th>Lid® e-tube</th>
<th>Bottom® e-tube</th>
<th>Outer side link</th>
<th>Inner side link</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E4.21</strong></td>
<td>2105.Bi</td>
<td>-</td>
<td>-</td>
<td>210.01</td>
<td>210.02.R</td>
</tr>
<tr>
<td><strong>E4.32/R4.32</strong></td>
<td>385.Bi</td>
<td>775.Bi</td>
<td>776.Bi</td>
<td>E4.32.01</td>
<td>E4.32.02.R</td>
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<tr>
<td><strong>E4.56/R4.56</strong></td>
<td>450.Bi</td>
<td>885.Bi</td>
<td>886.Bi</td>
<td>E4.56.01</td>
<td>E4.56.02.R</td>
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<tr>
<td><strong>800</strong></td>
<td>850.Bi</td>
<td>-</td>
<td>-</td>
<td>800.01</td>
<td>800.02.R</td>
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<tr>
<td><strong>840</strong></td>
<td>450.Bi</td>
<td>-</td>
<td>-</td>
<td>800.01</td>
<td>800.02.R</td>
</tr>
</tbody>
</table>

*New in this catalog
1) Crossbar / lid / bottom - supplement Part No. with required width index (Bi), example: 450.150
2) Outer side link - suitable for all radii
3) Inner side link - supplement Part No. with required width index (Bi) and required radius (R), example: E4.56.02.100

---

**Part No. 4-piece e-chain® links as single parts - E4.1**

<table>
<thead>
<tr>
<th>Series</th>
<th>Crossbar® e-chain®</th>
<th>Lid® e-tube</th>
<th>Bottom® e-tube</th>
<th>Outer side link</th>
<th>Inner side link</th>
</tr>
</thead>
</table>

*Delivery time means time until shipping of goods (after technical release)

---

**Technical data**

- Overview

**e-chain® links as single parts**

- Overview

<table>
<thead>
<tr>
<th>Series</th>
<th>Crossbar® e-chain®</th>
<th>Lid® e-tube</th>
<th>Bottom® e-tube</th>
<th>Outer side link</th>
<th>Inner side link</th>
</tr>
</thead>
</table>

*New in this catalog
1) Crossbar / lid / bottom - supplement Part No. with required width index (Bi), example: 450.150
2) Outer side link - suitable for all radii
3) Inner side link - supplement Part No. with required width index (Bi) and required radius (R), example: E4.56.02.100

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**About igus® GmbH Germany**

- Phone +49 2203 9649-800
- Fax -222
- info@igus.de
- www.igus.eu
Stable due to undercut design, small inner height

When to use Series E4.21:
- If a robust e-chain® with an inner height of 21 mm is required
- If inner widths up to 140 mm are required
- For unsupported lengths up to 2,5 m and fill weights up to 4,0 kg/m
- For long travels up to 120 m
- Also suitable for side-mounted, vertical standing or hanging applications
- If many options and accessories are desired
- If a crossbar with locking function is required

When to use a different igus® Series:
- If an extremely low-noise and low-vibration e-chain® is required
  ▶ Series E3.22, page 912
- If the e-chain® shall be used in cleanroom applications
  ▶ Series E3.22, page 912
- If snap-open capability from one side (e-chains® / e-tubes) is desired for economic reasons
  ▶ Series 1400/1450/1480/1500, page 412
  ▶ Series R117/R118, page 502

Dimensions

| Pitch | = 30,5 mm/link |
| Links/m | = 33 (1007 mm) |
| Chain length | = \( \frac{S}{2} + K \) |

<table>
<thead>
<tr>
<th>R (mm)</th>
<th>038</th>
<th>048</th>
<th>063</th>
<th>075</th>
<th>100</th>
<th>150</th>
<th>200</th>
</tr>
</thead>
<tbody>
<tr>
<td>H (mm)</td>
<td>104</td>
<td>124</td>
<td>154</td>
<td>178</td>
<td>228</td>
<td>328</td>
<td>428</td>
</tr>
<tr>
<td>D (mm)</td>
<td>20</td>
<td>108</td>
<td>123</td>
<td>135</td>
<td>160</td>
<td>210</td>
<td>260</td>
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<tr>
<td>K (mm)</td>
<td>185</td>
<td>215</td>
<td>260</td>
<td>300</td>
<td>380</td>
<td>535</td>
<td>690</td>
</tr>
</tbody>
</table>

The required clearance height: \( H_F = H + 30 \text{ mm} \) (with 1,5 kg/m fill weight)
**E4.21 | Series E4.21 | Product range | Standard**

**e-chains® | Series E4.21 with crossbars every link**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi (mm)</th>
<th>Ba (mm)</th>
<th>E4.21 [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.21.030.0</td>
<td>30</td>
<td>44</td>
<td>≈ 0.60</td>
</tr>
<tr>
<td>E4.21.040.0</td>
<td>40</td>
<td>54</td>
<td>≈ 0.64</td>
</tr>
<tr>
<td>E4.21.050.0</td>
<td>50</td>
<td>64</td>
<td>≈ 0.67</td>
</tr>
<tr>
<td>E4.21.060.0</td>
<td>60</td>
<td>74</td>
<td>≈ 0.71</td>
</tr>
<tr>
<td>E4.21.070.0</td>
<td>70</td>
<td>84</td>
<td>≈ 0.74</td>
</tr>
<tr>
<td>E4.21.080.0</td>
<td>80</td>
<td>94</td>
<td>≈ 0.78</td>
</tr>
</tbody>
</table>

Available bending radii R (mm) 038 | 048 | 063 | 075 | 100 | 150 | 200

Supplement Part No. with required radius (R). Example: **E4.21.120.100.0**

**Order key**

**E4.21.120.100.0**

- Standard color black
- Bending radius R
- Width index (depends on Bi)
- Inner height
- Series / Type

**Dimensioning**

- Ba (mm)
- Bi (mm)
- 18 max.
- 21
- 28

**Options**

- **Noise dampening | ≈ 40 dB(A)**
- **NC-Version | Without pretension**

**With pads**

<table>
<thead>
<tr>
<th>Bi (mm)</th>
<th>E4.21 [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.21.030.0</td>
<td>≈ 0.82</td>
</tr>
<tr>
<td>E4.21.040.0</td>
<td>≈ 0.85</td>
</tr>
<tr>
<td>E4.21.050.0</td>
<td>≈ 0.89</td>
</tr>
<tr>
<td>E4.21.060.0</td>
<td>≈ 0.92</td>
</tr>
<tr>
<td>E4.21.070.0</td>
<td>≈ 0.99</td>
</tr>
</tbody>
</table>

Available bending radii R (mm) 038 | 048 | 063 | 075 | 100 | 150 | 200

Supplement Part No. with required radius (R). Example: **E4.21.120.100.0** or **E4.21.120.100.0.NC**

**Configuration options and order keys, overview ▶ page 624**

- Noise dampening - Delivery time* 3-5 work days. NC-Version - Delivery time* in 24h or today!
  *Delivery time means time until shipping of goods (after technical release)

- Full and half e-tubes with an inner height of 21 mm: E2/000 Series 1450/1480 ▶ from page 412

- ESD/ATEX permanently conductive e-chains® - E4.21 several widths with delivery from stock: Inner widths Bi 30 - 70 mm, radii R 048 - 100 mm. Full ESD product range ▶ www.igus.eu/ESD

**igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu**

**628 3D-CAD files, configurators, PDF, applications ▶ www.igus.eu/eu/E4.21**
Standard separator T2102
is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Notch separator T2101
can be locked in 2 mm increments due to gaps on the crossbars of e-chains®. The separator cannot slide sideways during the operation.

Strain relief separator 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.

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 5 mm increments).

**Note:** Please observe a lateral spacing of 1 mm to the side links.

In the standard configuration separators are assembled every 2nd e-chain® link!
### Gliding applications

For long travels from 10 m to max. 120 m

Solution for long travel applications - In this case the e-chain® upper run will be introduced in a guide trough on the lower run. For travels more than 100 m we recommend to realize the engineering of such a plant by our technicians. In case of travels between 4 and 10 m we recommend a longer unsupported length. More information ➤ Design, from page 106

#### Pitch = 30.5 mm/link · Links/m = 33 (1.007 mm) · Chain length = \( \frac{S}{2} + K_2 \)

- **R** 038 048 063 075 100 150 200
- **H_2** 76 96 126 152 135 135 135
- **D_2** 085 095 110 120 490 530 665
- **K_2** 185 215 260 300 782 920 1104
- **ACL** - - - - 270 370 470

**Guide trough with glide bar**

**Guide trough without glide bar**

**Total length of guide trough**

#### Dimensions

**Guide trough set without glide bar**

- **Set of 2 trough side parts, incl. glide strips**

**Guide trough set with glide bar**

- **Set of 2 trough side parts, incl. glide strips**

#### Components, guide trough - "Basic" - Trough side parts, aluminum, 2 m; Glide bar, plastic, 2 m; Glide strips, plastic, 2 m (without glide strips on request)

**Components, installation set - "Basic" - Bottom clamp, aluminum; C-profile, galvanized steel; Screw M6 x 16; Sliding nut M6; Interface connector, plastic**

**Order example: Length of travel 30 m - Center mounted for Series E4.21.060.100.0 with B_{Hi} = 68**

**Guide trough set without glide bar**

- **Part No.** 970.30.SL

**Guide trough set with glide bar**

- **Part No.** 970.32.SL

**Installation set "Basic" complete (guide trough sets + 1)**

- **Part No.** 960.30.125

**Order example: 16 m guide trough without glide bar (8 x 2 m sections)**

**Order example: 16 m guide trough with glide bar (8 x 2 m sections)**

**Order example: 17 installation sets**

**Part No.** 960.30.125

### Solution for long travel applications

- In this case the e-chain® upper run will be introduced in a guide trough on the lower run.

### E-chains® for long travels: E4/4HD, P4, autoglide, rol e-chain®

- Special solutions for long travel applications ➤ from page 1264

### Aluminum SuperTrough® | Basic Version

- **Part No.** 970.30.SL | 970.32.SL | **Trough height:** 77 mm

### Guide trough set

- **Bottom clamp optionally attached inwards or outwards**

### Components

- **C-profile**
- **Installations set**
- **Glide bar**
- **Inner trough width**
- **Outer trough width**
- **Inner trough height**
- **Outer trough height**
- **Number of installation sets**
- **Number of trough sections**

### Design

- **From page 1292**

### Contact Information

- **igus® GmbH Germany** | **Phone** +49 2203 9649-800 | **Fax** -222 | **info@igus.de** | **www.igus.eu**
Series E4.28

**Introduction**

Stable due to undercut design, small inner height

When to use Series E4.28:

- If a robust e-chain/e-tube with an inner height of 28 mm is required
- If inner widths up to 300 mm are required
- For unsupported lengths up to 2.5 m and fill weights up to 10 kg/m
- For long travels up to 200 m
- Also suitable for side-mounted, vertical standing or hanging applications
- If many options and accessories are desired

When to use a different igus® Series:

- If an extremely low-noise and low-vibration e-chain® is required
  - Series E6.29, page 928
  - Series R6.29, page 928
- If the e-chain® shall be used in cleanroom applications (ISO Class 1 - for E6.29.060.150.0.CR with special material “cleanroom”)
  - Series E6.29, page 928
- If a less stable e-chain® can be used for economical reasons
  - Series 2400/2450/2480/2500, page 426

**Dimensions**

- Length of travel \( S \) [m]
- Unsupported length \( FLG \) / \( FLB \) [m]
- Fill weight \([kg/m]\)
- Unsupported length \( FL = 1.75 \) m
- Length of travel \( S = 3.5 \) m

**Unsupported**

Girling surfaces, long travels

Very high capacity due to the undercut design

NC without pretension

Low noise operation due to integrated “brake”

Straight run due to the inner/outer link principle

The required clearance height: 

\[ HF = H + 40 \text{ mm} \] (with 1.0 kg/m fill weight)

The required clearance height: 

H*: 100 - 200 mm

E4.1 Series E4.28

Dimensions

Unsupported

**Examples**

- Example 1: Fill weight = 4.0 [kg/m]
- Example 2: Unsupported length \( FLG = 1.75 \) m
- Example 3: Length of travel \( S = 3.5 \) m

**Technical Data**

- Pitch = 46 mm/link
- Links/m = 22 (1012 mm)
- Chain length = \( \frac{S}{2} + K \)

<table>
<thead>
<tr>
<th>R</th>
<th>055</th>
<th>063</th>
<th>075</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>175</th>
<th>200</th>
<th>250</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>152</td>
<td>168</td>
<td>192</td>
<td>242</td>
<td>292</td>
<td>342</td>
<td>392</td>
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<td>D</td>
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<td>190</td>
<td>215</td>
<td>240</td>
<td>265</td>
<td>290</td>
<td>340</td>
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<tr>
<td>K</td>
<td>265</td>
<td>290</td>
<td>330</td>
<td>410</td>
<td>485</td>
<td>565</td>
<td>645</td>
<td>725</td>
<td>880</td>
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</tbody>
</table>

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

3D-CAD files, configurators, PDF ➤ www.igus.eu/eu/E4.28
**e-chains® | Series E4.28 with crossbars every link**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>E4.28</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.28. 050. R0</td>
<td>50</td>
<td>70</td>
<td>1.11</td>
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<tr>
<td>E4.28. 075. R0</td>
<td>75</td>
<td>95</td>
<td>1.23</td>
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<tr>
<td>E4.28. 087. R0</td>
<td>87</td>
<td>107</td>
<td>1.28</td>
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<tr>
<td>E4.28. 100. R0</td>
<td>100</td>
<td>120</td>
<td>1.07</td>
</tr>
<tr>
<td>E4.28. 125. R0</td>
<td>125</td>
<td>145</td>
<td>1.37</td>
</tr>
</tbody>
</table>

Available bending radii R [mm]: 055, 063, 075, 100, 125, 150, 175, 200, 250

Supplement Part No. with required radius (R). Example: E4.28.100.100.0

**e-tubes | Series R4.28 - fully enclosed**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>R4.28</th>
</tr>
</thead>
<tbody>
<tr>
<td>R4.28. 050. R0</td>
<td>50</td>
<td>70</td>
<td>2.20</td>
</tr>
<tr>
<td>R4.28. 075. R0</td>
<td>75</td>
<td>95</td>
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<td>R4.28. 150. R0</td>
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</tr>
<tr>
<td>R4.28. 175. R0</td>
<td>175</td>
<td>195</td>
<td>3.26</td>
</tr>
</tbody>
</table>

Available bending radii R [mm]: 075, 100, 125, 150, 175, 200, 250

Supplement Part No. with required radius (R). Example: R4.28.100.100.0

**Order key for all types**

- **E4.28. 100. 100. 0** e-chain® (crossbars every link)
- **R4.28. 100. 100. 0** Fully enclosed e-tube

**Dimensioning**

- Standard color black
- Bending radius R
- Width index (depends on Ba)
- Inner height
- Series / Type

**Configuration options and order keys, overview | page 624**

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)
### Noise dampening

- **≤45 dB(A)**

<table>
<thead>
<tr>
<th>With pads</th>
<th>Bi (mm)</th>
<th>NC-Version</th>
<th>With pads</th>
<th>Bi (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4 40</td>
<td>28.040</td>
<td>R 0</td>
<td>E4 40</td>
<td>28.040</td>
</tr>
<tr>
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<td>28.040</td>
<td>R 0</td>
<td>E4R 40</td>
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<td>E4 62</td>
<td>28.062</td>
<td>R 0</td>
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</tr>
<tr>
<td>E4 75</td>
<td>28.075</td>
<td>R 0</td>
<td>E4 75</td>
<td>28.075</td>
</tr>
<tr>
<td>E4R 75</td>
<td>28.075</td>
<td>R 0</td>
<td>E4R 75</td>
<td>28.075</td>
</tr>
<tr>
<td>E4 100</td>
<td>28.070</td>
<td>R 0</td>
<td>E4 100</td>
<td>28.070</td>
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<td>E4R 100</td>
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<td>R 0</td>
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<tr>
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<td>R 0</td>
<td>E4 125</td>
<td>28.075</td>
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<td>28.075</td>
<td>R 0</td>
<td>E4R 125</td>
<td>28.075</td>
</tr>
</tbody>
</table>

*Radius not available for e-tubes

### Configuration options and order keys

- **Noise dampening** - Delivery time: 3-5 work days. NC-Version - Delivery time: in 24h or today!

- Delivery means time until shipping of goods (after technical release)

- **ESD/ATEX permanently conductive e-chains** - E4.28 several widths with delivery from stock

- Inner widths Bi 40-125 mm, radii R 0.055-0.125 mm

Full ESD product range [www.igus.eu/ESD](http://www.igus.eu/ESD)
Standard - for all applications
Separator with wide base for maximum locking strength and safe standing in e-chains®.

For even faster installation
Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip).

Spacer 205.09
Separators can be fixed in position by spacers. The available interior height is reduced by 2 mm per spacer (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).

Horizontal separation
Full-width shelf locates 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.

Additional elements for interior separation
Strain relief separator 28.Z (e-chains® only)
Can be integrated into the mounting bracket and can be placed there at any point. It combines strain relief and interior separation.

Interior separation with single-part order.
Delivery time in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
**E4.1 | Series E4.28 | KMA mounting brackets**

**Pivoting**

For tight installation conditions, all-sides attachment

**KMA Pivoting | All-sides attachment**

Recommended for unsupported and gliding applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set pivoting</th>
<th>Bi [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>040</td>
<td>E4.280 – 040 12 40</td>
<td>150</td>
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<td>050</td>
<td>E4.280, R4.280, 050 12 50</td>
<td>175</td>
</tr>
<tr>
<td>062</td>
<td>E4.280 – 062 12 62</td>
<td>200</td>
</tr>
<tr>
<td>070</td>
<td>E4.280 – 070 12 70</td>
<td>225</td>
</tr>
<tr>
<td>075</td>
<td>E4.280, R4.280, 075 12 75</td>
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<td>087</td>
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<tr>
<td>100</td>
<td>E4.280, R4.280, 100 12 100</td>
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<tr>
<td>125</td>
<td>E4.280, R4.280, 125 12 125</td>
<td>300</td>
</tr>
</tbody>
</table>

Notes: The E4.1 System may end with either an inner or an outer side link. Keep in mind that an outer side link always forms the first e-chain link at the moving end.

The Part Nos. depend on an even or odd numbers of links. Please insert: Index (for odd) or (for even)!

**Strain relief, e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options ▶ from page 114/8**

---

**E4.1 | Series E4.28 | KMA mounting brackets**

**Locking**

For very high speed and acceleration, all-sides attachment

**KMA Locking | All-sides attachment**

Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set locking</th>
<th>Bi [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>040</td>
<td>E4.281 – 040 12 40</td>
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</tr>
<tr>
<td>050</td>
<td>E4.281, R4.281, 050 12 50</td>
<td>175</td>
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<tr>
<td>062</td>
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<td>E4.281 – 070 12 70</td>
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<tr>
<td>125</td>
<td>E4.281, R4.281, 125 12 125</td>
<td>300</td>
</tr>
</tbody>
</table>

Notes: The E4.1 System may end with either an inner or an outer side link. Keep in mind that an outer side link always forms the first e-chain link at the moving end.

The Part Nos. depend on an even or odd numbers of links. Please insert: Index (for odd) or (for even)!

**Strain relief, e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options ▶ from page 114/8**
Aluminum SuperTrough | Basic Version
Part No. 972.02.30.SL | 972.02.31.SL | Trough height: 117 mm

**Pitch** = 46 mm/link  •  **Links/m** = 22 (1012 mm)  •  **Chain length** = \( \frac{S}{2} + K_2 \)

<table>
<thead>
<tr>
<th>R</th>
<th>055°</th>
<th>063°</th>
<th>075</th>
<th>100</th>
<th>125</th>
<th>175</th>
<th>200</th>
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<tr>
<td>D_{Ba}</td>
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<td>350</td>
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<td>665</td>
<td>730</td>
<td>935</td>
</tr>
<tr>
<td>K_2</td>
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<td>330</td>
<td>598</td>
<td>920</td>
<td>1104</td>
<td>1242</td>
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<tr>
<td>S/2</td>
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<td>270</td>
<td>300</td>
<td>400</td>
<td>450</td>
<td>600</td>
</tr>
</tbody>
</table>

*Fitting not available for e-tubes

**Insert for the installation set “Heavy-Duty”: 972.50.xxx instead of 972.30.xxx on the right column “attached outwards”

**Dimensions**

- **E4.1** Series E4.28 | Dimensions | Long travels

Gilding applications | For long travels from 10 m to max. 200 m
Solution for long travel applications - In this case the e-chain’ upper run will be introduced in a guide trough on the lower run. For travels more than 100 m we recommend to realize the engineering of such a plant by our technicians. In case of travels between 5 and 10 m we recommend a longer unsupported length. More information → Design, from page 106

** Principle sketch: Number of installation sets to be installed = Number of trough sections + 1

- **Components, trough “Basic”:**
  - Trough side parts, aluminum, 2 m
  - Glide bar, plastic, 2 m
  - Glide strips, plastic, 2 m (without glide strips on request)
  - Optional: Silencer profile, rubber
- **Components, installation set “Basic”:**
  - Bottom clamp, aluminum
  - C-profile, galvanized steel (see table)
  - Screw M6 x 16
  - Sliding nut M6
  - Interface connector, plastic

**Order example:** Length of travel 30 m - Center mounted for Series E4.28.070.250.0 with \( B_{Ba} = 94 \)

Guide trough set without glide bar (set of 2 trough side parts, incl. glide strips)

**Order test:** 16 m guide trough without glide bar (8 x 2 m sections)

**Module for the fixed end**

**Option:** For an additional noise dampening with silencer profile, please add Index A - Example: Part No. 972.02.30.SLA

**Aluminum SuperTrough “Basic” in detail and the “Heavy-Duty” version for heavy machinery → from page 1196

- **Module for the fixed end:**
  - Mounting height (if the moving end is set lower)
  - Further add-on (if the moving end is set lower)
  - Offset fixed point
  - Length of travel
  - Half length of travel

3D-CAD files, configurators, PDF, applications → www.igus.eu/eu/E4.28

igus\(^{\text{®}}\) GmbH Germany  |  Phone +49 2203 9649-800  |  Fax -222  |  info@igus.de  |  www.igus.eu
E4.1 | Series E4.32 | Introduction

+ Stable due to undercut design, medium inner height

When to use Series E4.32:
- If a robust e-chain/e-tube with an inner height of 32 mm is required
- If inner widths up to 400 mm are required
- For unsupported lengths up to 3,25 m and fill weights up to 15 kg/m
- For long travels up to 200 m
- Also suitable for side-mounted, vertical standing or hanging applications
- If many options and accessories are desired

When to use a different igus® Series:
- If an extremely low-noise and low-vibration e-chain® is required (≤ 46 dB(A))
  > Series E6.35, page 938
- If the e-chain® shall be used in cleanroom applications
  > Series E6.35, page 938
- If a less stable e-chain® can be used for economical reasons
  > Series 2600/2650/2680/2700, page 444
- If a larger inner height at same outer dimensions is necessary
  > Series E4.38L, page 754

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)

3D-CAD files, configurators, PDF | www.igus.eu/eu/E4.32

E4.1 | Series E4.32 | Dimensions | Unsupported

Example

<table>
<thead>
<tr>
<th>Fill weight [kg/m]</th>
<th>Unsupported length FLG = 2,4 m</th>
<th>Length of travel S = 4,8 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>17</td>
<td>20</td>
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<tr>
<td>20</td>
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<tr>
<td>30</td>
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<td>50</td>
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<tr>
<td>60</td>
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<td>95</td>
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<tr>
<td>100</td>
<td>102</td>
<td>105</td>
</tr>
</tbody>
</table>

The required clearance height: HF = H + 40 mm (with 2.0 kg/m fill weight)

*Radius not available for e-tubes

 Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height HF. Please consult igus® if space is particularly restricted. More information > Design, page 95

Gilding applications
Travels up to 200 m
More information > page 660

Technical Data

<table>
<thead>
<tr>
<th>Pitch = 56 mm/link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Links/m = 18 (1008 mm)</td>
</tr>
<tr>
<td>Chain length = π/2 + K</td>
</tr>
</tbody>
</table>

R | 063° | 075° | 100° | 125 | 150 | 175 | 200 | 220 | 250 | 300 |
---|------|------|------|-----|-----|-----|-----|-----|-----|-----|
H | 180  | 204  | 254  | 304 | 354 | 404 | 454 | 494 | 554 | 654 |
D | 174  | 186  | 211  | 236 | 261 | 286 | 311 | 331 | 361 | 411 |
K | 310  | 350  | 430  | 505 | 585 | 665 | 745 | 805 | 900 | 1055 |

igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu
### Series E4.32 | Product range | Standard

#### e-chains® Series E4.32 crossbars every 2nd link

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>E4.32 H4.32 Bi</th>
<th>E4.32 H4.32 Ba</th>
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</thead>
<tbody>
<tr>
<td>E4.32, H4.32, 05. R0</td>
<td>50</td>
<td>66</td>
<td>1,317</td>
<td>1,425</td>
</tr>
<tr>
<td>E4.32, H4.32, 06. R0</td>
<td>50</td>
<td>66</td>
<td>1,317</td>
<td>1,425</td>
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</tr>
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<tr>
<td>E4.32, H4.32, 10. R0</td>
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<td>1,425</td>
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<td>66</td>
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<td>1,425</td>
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<tr>
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</table>

#### e-chains® Series H4.32 crossbars every link

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<tr>
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<td>1,425</td>
</tr>
<tr>
<td>E4.32, H4.32, 06. R0</td>
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<td>66</td>
<td>1,317</td>
<td>1,425</td>
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<tr>
<td>E4.32, H4.32, 07. R0</td>
<td>50</td>
<td>66</td>
<td>1,317</td>
<td>1,425</td>
</tr>
<tr>
<td>E4.32, H4.32, 08. R0</td>
<td>50</td>
<td>66</td>
<td>1,317</td>
<td>1,425</td>
</tr>
<tr>
<td>E4.32, H4.32, 09. R0</td>
<td>50</td>
<td>66</td>
<td>1,317</td>
<td>1,425</td>
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<tr>
<td>E4.32, H4.32, 10. R0</td>
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<td>66</td>
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</tr>
<tr>
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<td>66</td>
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<td>1,425</td>
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#### e-tubes Series R4.32 - fully enclosed

<table>
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<td>1,317</td>
</tr>
<tr>
<td>E4.32, H4.32, 06. R0</td>
<td>50</td>
<td>66</td>
<td>1,317</td>
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<tr>
<td>E4.32, H4.32, 08. R0</td>
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<td>66</td>
<td>1,317</td>
</tr>
<tr>
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<tr>
<td>E4.32, H4.32, 12. R0</td>
<td>50</td>
<td>66</td>
<td>1,317</td>
</tr>
</tbody>
</table>

#### Dimensioning

![Dimensioning Diagram]

- **Standard color black**
- **Bending radius R**
- **Width Index (depends on Bi)**
- **Inner height**
- **Series / Type**

#### Configuration options and order keys, overview → page 624

- **e-chain® links as single parts, overview → page 623**

- **Available from stock. Delivery time® in 24h or today!**

- **Available bending radii R [mm]:**
  - 063 | 075 | 100 | 125 | 150 | 175 | 200 | 220 | 250 | 300

- **Order key for all types**

  - **E4.32, 30.300.0** e-chain® (crossbars every link)
  - **H4.32, 30.300.0** e-chain® (crossbars every 2nd link)
  - **R4.32, 30.300.0** Fully enclosed e-tube
**QuickLock crossbars | Quick opening - up to 25% faster assembly**

<table>
<thead>
<tr>
<th>QuickLock crossbar for every link</th>
<th>Inner radius [mm]</th>
<th>Outer radius [mm]</th>
<th>Both radii [mm]</th>
<th>Bi</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.32, H4.32, R4.32</td>
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<td>10 QZ, R</td>
<td>10 QZ, R</td>
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<td>11 QZ, R</td>
<td>11 QZ, R</td>
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<td>12 QZ, R</td>
<td>12 QZ, R</td>
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<td>137 QZ, R</td>
<td>137 QZ, R</td>
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<tr>
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<td>15 QZ, R</td>
<td>15 QZ, R</td>
<td>150</td>
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<tr>
<td>E4.32, H4.32, R4.32</td>
<td>162 QZ, R</td>
<td>162 QZ, R</td>
<td>162 QZ, R</td>
<td>162</td>
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<tr>
<td>E4.32, H4.32, R4.32</td>
<td>17 QZ, R</td>
<td>17 QZ, R</td>
<td>17 QZ, R</td>
<td>168</td>
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<tr>
<td>E4.32, H4.32, R4.32</td>
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<td>18 QZ, R</td>
<td>18 QZ, R</td>
<td>175</td>
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<tr>
<td>E4.32, H4.32, R4.32</td>
<td>187 QZ, R</td>
<td>187 QZ, R</td>
<td>187 QZ, R</td>
<td>187</td>
</tr>
<tr>
<td>E4.32, H4.32, R4.32</td>
<td>20 QZ, R</td>
<td>20 QZ, R</td>
<td>20 QZ, R</td>
<td>200</td>
</tr>
<tr>
<td>E4.32, H4.32, R4.32</td>
<td>212 QZ, R</td>
<td>212 QZ, R</td>
<td>212 QZ, R</td>
<td>212</td>
</tr>
<tr>
<td>E4.32, H4.32, R4.32</td>
<td>23 QZ, R</td>
<td>23 QZ, R</td>
<td>23 QZ, R</td>
<td>225</td>
</tr>
<tr>
<td>E4.32, H4.32, R4.32</td>
<td>237 QZ, R</td>
<td>237 QZ, R</td>
<td>237 QZ, R</td>
<td>237</td>
</tr>
<tr>
<td>E4.32, H4.32, R4.32</td>
<td>25 QZ, R</td>
<td>25 QZ, R</td>
<td>25 QZ, R</td>
<td>250</td>
</tr>
<tr>
<td>E4.32, H4.32, R4.32</td>
<td>262 QZ, R</td>
<td>262 QZ, R</td>
<td>262 QZ, R</td>
<td>262</td>
</tr>
</tbody>
</table>

Available bending radii [mm]: 63, 75, 100, 125, 150, 200, 220, 250, 300

Supplement Part No. with required radius (R). Example: E4.32.300QZ.300.0

**Configuration options and order keys, overview » page 624**

- QuickLock crossbars - Delivery time* 3-5 work days.

*Delivery time means time until shipping of goods (after technical release)

---

**Configuration options and order keys, overview » page 624**

- Noise dampening - Delivery time* 3-5 work days.
- NC-Version - Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
**E4.1 | Series E4.32 | Interior separation | Standard**

New generation interior separation - for e-chains' and e-tubes

---

**Note e-tube:** Please observe a lateral spacing of 30 mm to the side links!

In the standard configuration separators are assembled every 2nd e-chain link.

---

**Standard separator, wide base**

- Unassembled: 32.1
- Assembled: 32.1.1

**Standard - for all applications**

Separator with a wide base for maximum locking strength and safe standing in e-chains' and e-tubes.

**For many thin cables**

Separator with a narrow base for a large number of thin cables side by side. Saves space in e-chains' and e-tubes. Also available for QuickLock crossbars.

**For side-mounted applications**

Asymmetrical separator, for defined distance. No additional spacers necessary for e-chains' and e-tubes.

---

**Separator for QuickLock crossbar**

- Unassembled: 32.2
- Assembled: 32.2.1

**Notch separator for notch crossbar**

With scaling on the notch crossbars. For exact positioning in e-chains' and e-tubes. Recommended for side-mounted applications.

**Horizontal separation**

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.

---

**Lockable full-width shelves - for the standard interior separation**

<table>
<thead>
<tr>
<th>Width X (mm)</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>320.0</td>
<td>320.0, 320.10</td>
<td>320.125, 321.025</td>
</tr>
<tr>
<td>320.075</td>
<td>320.075, 321.075</td>
<td>320.150, 321.150</td>
</tr>
<tr>
<td>320.1</td>
<td>320.1, 321.1</td>
<td>320.175, 321.175</td>
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<tr>
<td>320.115</td>
<td>320.115, 321.115</td>
<td>320.200, 321.200</td>
</tr>
</tbody>
</table>

---

*Delivery time means time until shipping of goods (after technical release)
Middle plate 288
Middle plates form the basic pattern of a shelf system. Shelves 386.X (table below) can be arranged at 3 different heights (in 7 mm increments).

Side plate 286
Works like middle plate. Allows modular shelving close to the side links.

Open, slotted separator 297 (unilateral open)
Fast assembly - can be retrofitted into an existing interior separation system without a need for dismantling the interior separators. During an installation of open slotted separators, the top and bottom notches cannot be occupied by shelves.

Slotted separator 291
For very fine subdivisions. However, they cannot be retrofitted into an existing separation system without dismantling the interior separators first.

Shelf 386.X
For horizontal separation. Shelves of various widths can be arranged at 3 different heights (in 7 mm increments), not in combination with 3804, 383.

Note e-tube: Please observe a lateral spacing of 30 mm to the side links!
In the standard configuration separators are assembled every 2nd e-chain link!
### KMA pivoting | All-sides attachment

**Recommended for unsupported and gliding applications**

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set</th>
<th>Bi [mm]</th>
<th>Width index</th>
<th>Part No. full set</th>
<th>Bi [mm]</th>
</tr>
</thead>
<tbody>
<tr>
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<td>R4.320.05</td>
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<td>05, E4.320</td>
<td>R4.320</td>
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<td>06, E4.320</td>
<td>R4.320.06</td>
<td>12.0</td>
<td>06, E4.320</td>
<td>R4.320</td>
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<td>07, E4.320</td>
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<td>083, E4.323</td>
<td>830</td>
<td>12.0</td>
<td>083, E4.320</td>
<td>R4.320.08</td>
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<td>12.0</td>
</tr>
</tbody>
</table>

#### Part No. structure (pivoting)

- **E4.320.30** C-profile option
- **E4.320.30** Full set
- **E4.320.30** even
- **E4.320.30** Width index

#### Single-part order

- Mounting bracket: **E4.320.30** C (even number of links)
- Mounting bracket: **E4.320.30** Fixed end

---

### KMA locking | All-sides attachment

**Recommended for vertical hanging and standing applications**

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set</th>
<th>Bi [mm]</th>
<th>Width index</th>
<th>Part No. full set</th>
<th>Bi [mm]</th>
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<tbody>
<tr>
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<td>R4.321.05</td>
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<tr>
<td>087, E4.321</td>
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<td>087, E4.321</td>
<td>R4.321.08</td>
<td>12.0</td>
</tr>
</tbody>
</table>

#### Part No. structure (locking)

- **E4.321.30** C-profile option
- **E4.321.30** Full set
- **E4.321.30** even
- **E4.321.30** Width index

#### Single-part order

- Mounting bracket: **E4.321.30** C (even number of links)
- Mounting bracket: **E4.321.30** Fixed end

---

**Strain relief**, e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options ▶ from page 1148
Extension links | for extremely wide e-chains up to 3.0 m

- The extension link design allows virtually limitless side-by-side attachment
- High fill weights necessitate extremely wide e-chains (up to 3000 mm)
- The unsupported length \( L_u \), max., can be increased when additional loads are required
- Suitable for unsupported and gliding applications in a guide trough
- Attachment with KMA or steel mounting brackets

Order example - 3 chambers

\[
E4.32.Bi1 / Bi2 / Bi3.R0 = E4.32.10 / 20 / 10.200.0
\]

Extension link - single-part order

\[
284.R (please indicate radius)
\]

Hinged crossbars

- Typically e-chain crossbars are completely removable. For cases where the snap-open crossbars have to remain at the open link of the e-chain, a hinged design has been developed
- Please consult igus® for design assistance

Hinged crossbar: Part No. 385.02
Snap-open crossbar (shortened) Bi-37.5 mm Part No. 385.03
(smallest inner width Bi = 87.5)

Support tray tool kit
For support of the lower run. Simple one-piece support trays according to your requirements and specification ➤ from page 1258

Strain relief system
Clamps, tiewrap plates, nuggets and plug-in clips. The complete chainfix range with many order options ➤ from page 1148

E4.1 Series E4.32 e-chain® accessories
Giuling applications | For long travels from 10 m to max. 200 m

Solution for long travel applications - In this case the e-chain upper run will be introduced in a guide trough on the lower run. For travels more than 100 m we recommend to realize the engineering of such a plant by our technicians. In case of travels between 10 and 200 m we recommend a longer unsupported length. More information: Design, from page 106

Pitch = 56 mm/link · Links/m = 18 (1008 mm) · Chain length = \( \frac{S}{2} + K_2 \)

System P4.32 - profile-rol e-chain, low-noise Travels up to 600 m \( v_{\text{max}} = 10 \text{ m/s} \)
Safe, maintenance-free for outdoor cranes or conveyor systems. Low-noise operation, high service life

rol e-chain 2828R - Rolling instead of gliding Travels up to 400 m \( v_{\text{max}} = 6 \text{ m/s} \)
Major reduction in drive power to less than 25 % for moving the e-chain

e-chains for long travels: E4/4HD, P4, autoglide, rol e-chain | from page 1264
Special solutions for long travel applications | from page 1348

Components, trough "Basic": 1) Trough side parts, aluminium, 2 m 2) Glide bar, plastic, 2 m 3) Glide strips, plastic, 2 m (without glide strips on request) Option: Optional: Silencer profile, rubber Option: Components, installation set "Basic": 1) Bottom clamp, aluminium 2) C-profile, galvanized steel table 3) Screw M6 x 16 4) Sliding nut M6 5) Interface connector, plastic

Order example: Length of travel 30 m - Center mounted for Series E4.32 30.300.0 with \( B_{\text{ba}} = 327 \)

Guide trough set without glide bar (set of 2 trough side parts, incl. glide strips) Option: For an additional noise dampening Solution for long travel applications - In this case the e-chain upper run will be introduced in a guide trough on the lower run. For travels more than 100 m we recommend to realize the engineering of such a plant by our technicians. In case of travels between 10 and 200 m we recommend a longer unsupported length. More information: Design, from page 106

More solutions | For long travel applications

System P4.32 - profile-rol e-chain, low-noise Travels up to 600 m \( v_{\text{max}} = 10 \text{ m/s} \)
Safe, maintenance-free for outdoor cranes or conveyor systems. Low-noise operation, high service life

Autoglide E4.32.BUR.040.G - Self-guiding, no guide troughs Travels ≤ 50 m \( v_{\text{max}} = 1.5 \text{ m/s} \)
Self-guiding e-chain systems - No guide troughs required

Insert for the installation set "Heavy-Duty": 972.50.XXX instead of 960.30.XXX on the right column "attached outwards"
**Stable due to undercut design, medium inner height**

**When to use Series E4.42:**
- If a robust e-chain/e-tube with an inner height of 42 mm is required
- If inner widths up to 400 mm are required
- For unsupported lengths up to 4.0 m and fill weights up to 37 kg/m
- For long travels up to 300 m
- Also suitable for side-mounted, vertical standing or hanging applications
- If many options and accessories are desired

**When to use a different igus® Series:**
- If an extremely low-noise and low-vibration e-chain® is required (≤46 dB(A))
  - Series E6.40, page 946
- If the e-chain® shall be used in cleanroom applications
  - Series E6.40, page 946
- If a less stable e-chain® can be used for economical reasons
  - Series 3400/3450/3500/3480, page 462
- If a larger inner height at same outer dimensions is necessary
  - Series E4.48L, page 764

**3D-CAD files, configurators, PDF** [www.igus.eu/eu/E4.42]
**E4.1 | Series E4.42 | Product range | Standard**

**e-chains® | Series E4.42 crossbars every 2nd link | Series H4.42 crossbars every 2nd link**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>E4.42 [kg/m]</th>
<th>H4.42 [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.42, H4.42, 05. R0</td>
<td>50</td>
<td>76</td>
<td>1,923</td>
<td>1,804</td>
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<td>E4.42, H4.42, 06. R0</td>
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<td>94</td>
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<td>114</td>
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<td>194</td>
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<td>201</td>
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<td>214</td>
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</table>

Available bending radii R [mm] 075 | 100 | 115 | 125 | 150 | 160 | 175 | 200 | 250 | 300 | 350

**e-tubes | Series R4.42 - fully enclosed**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R4.42 [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>R4.42, 05. R0</td>
<td>50</td>
<td>76</td>
<td>2,150</td>
</tr>
<tr>
<td>R4.42, 07. R0</td>
<td>75</td>
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</tr>
<tr>
<td>R4.42, 087. R0</td>
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<td>2,410</td>
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<td>R4.42, 10. R0</td>
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<td>126</td>
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<tr>
<td>R4.42, 11. R0</td>
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<td>R4.42, 12. R0</td>
<td>125</td>
<td>151</td>
<td>2,790</td>
</tr>
</tbody>
</table>

Available bending radii R [mm] 125 | 150 | 160 | 175 | 200 | 250 | 300 | 350

**Order key for all types**

**Dimensioning**

**e-chain® links as single parts, overview ➤ page 623**

**Configuration options and order keys, overview ➤ page 624**

**Available from stock. Delivery time® in 24h or today!**

*Delivery time means time until shipping of goods after technical release*
### QuickLock crossbars | Quick opening - up to 25% faster assembly

<table>
<thead>
<tr>
<th>Part No.</th>
<th>QuickLock crossbar for every link</th>
<th>QuickLock crossbar for every 2nd link</th>
<th>Bi [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.42, H4.42</td>
<td>10 QZ, R, 0</td>
<td>28 QZ, R, 0</td>
<td>28 QZ, R, 0</td>
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<td>29 QZ, R, 0</td>
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<td>30 QZ, R, 0</td>
<td>30 QZ, R, 0</td>
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<td>E4.42, H4.42</td>
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<td>31 QZ, R, 0</td>
<td>31 QZ, R, 0</td>
</tr>
<tr>
<td>E4.42, H4.42</td>
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<td>32 QZ, R, 0</td>
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<tr>
<td>E4.42, H4.42</td>
<td>15 QZ, R, 0</td>
<td>33 QZ, R, 0</td>
<td>33 QZ, R, 0</td>
</tr>
<tr>
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<td>34 QZ, R, 0</td>
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<td>21 QZ, R, 0</td>
<td>39 QZ, R, 0</td>
<td>39 QZ, R, 0</td>
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</tbody>
</table>

**Available bending radii:**
- E4.42: 75, 100, 125, 150, 175, 200, 250, 300, 350
- H4.42: 75, 100, 125, 150, 175, 200, 250, 300, 350

**Configurations and order keys, overview → page 624**

*Delivery time means time until shipping of goods (after technical release)*

---

### Configuration options and order keys, overview → page 624

**Options**

- Noise dampening: ≤50 dB(A)
- NC-Version: Without pretension

**With pads**

<table>
<thead>
<tr>
<th>E4</th>
<th>H4</th>
<th>R4</th>
<th>Bi [mm]</th>
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<tbody>
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<td>0.7</td>
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<tr>
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<td>H4</td>
<td>R4</td>
<td>0.8</td>
</tr>
<tr>
<td>E4</td>
<td>H4</td>
<td>R4</td>
<td>0.9</td>
</tr>
<tr>
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</tr>
<tr>
<td>E4</td>
<td>H4</td>
<td>R4</td>
<td>1.4</td>
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**NC-Version**

<table>
<thead>
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<th>Bi</th>
<th>NC-Version</th>
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</thead>
<tbody>
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</tr>
<tr>
<td>1.2</td>
<td>E4</td>
</tr>
<tr>
<td>1.3</td>
<td>E4</td>
</tr>
</tbody>
</table>

---

**Configuration options and order keys, overview → page 624**

**Noise dampening - Delivery time* ≤ 3-5 work days. NC-Version - Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

**ESD/ATEX permanently conductive e-chains**

- E4.42 several widths with delivery from stock:
  - Inner widths 50 - 200 mm, radii 0.075 - 0.250 mm. Full ESD product range → www.igus.eu/ESD
New generation interior separation - for e-chains® and e-tubes

Standard - for all applications
Separator with a wide base for maximum locking strength and safe standing in e-chains® and e-tubes.

For many thin cables
Separator with a narrow base for a large number of thin cables side by side. Saves space in e-chains® and e-tubes. Also available for QuickLock crossbars.

For side-mounted applications
Asymmetrical separator, for defined distance. No additional spacers necessary for e-chains® and e-tubes.

Lockable full-width shelves - for the standard interior separation

<table>
<thead>
<tr>
<th>Width X (mm)</th>
<th>unassembled</th>
<th>assembled</th>
<th>Width X (mm)</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>050</td>
<td>3200.050</td>
<td>3210.050</td>
<td>3200.125</td>
<td>3210.125</td>
<td>3200.225</td>
</tr>
<tr>
<td>075</td>
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<td>3210.075</td>
<td>3200.150</td>
<td>3210.150</td>
<td>3200.250</td>
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<tr>
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<td>3200.100</td>
<td>3210.100</td>
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<td>3200.290</td>
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<td>3210.115</td>
<td>3200.200</td>
<td>3210.200</td>
<td></td>
</tr>
</tbody>
</table>

Note e-tube: Please observe a lateral spacing of 30 mm to the side links!
In the standard configuration separators are assembled every 2nd e-chain® link!
Middle plate 388
Middle plates form the basic pattern of a shelf system. Shelves 386.X (table below) can be arranged at 5 different heights (in 7 mm increments).

Side plate 386
Works like middle plate. Allows modular shelving close to the side links.

Open, slotted separator 397 (unilateral open)
Fast assembly - can be retrofitted into an existing interior separation system without a need for dismantling the interior separators. During an installation of open slotted separators, the top and bottom notches cannot be occupied by shelves.

Slotted separator 391
For very fine subdivisions. However, they cannot be retrofitted into an existing separation system without dismantling the interior separators first.

Shelf 386.X
For horizontal separation. Shelves of various widths can be arranged at 5 different heights (in 7 mm increments). - see table beneath (not in combination with 3804, 383).

Note e-tube:
Please observe a lateral spacing of 30 mm to the side links!

Shelves - interior separation options

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>018</td>
<td>386.18</td>
<td>387.18</td>
</tr>
<tr>
<td>023</td>
<td>386.23</td>
<td>387.23</td>
</tr>
<tr>
<td>025</td>
<td>386.25</td>
<td>387.25</td>
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<tr>
<td>028</td>
<td>386.28</td>
<td>387.28</td>
</tr>
<tr>
<td>033</td>
<td>386.33</td>
<td>387.33</td>
</tr>
<tr>
<td>043</td>
<td>386.43</td>
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<tr>
<td>208</td>
<td>386.208</td>
<td>387.208</td>
</tr>
</tbody>
</table>

Option | Additional elements for interior separation

- Slotted separator 391
- Locking separator 3904 (e-chains® only)
- Locking separator 3903 (e-tubes only)
- Split separator T423 (e-chains® only)

Note e-tube:
Please observe a lateral spacing of 30 mm to the side links!

In the standard configuration separators are assembled every 2nd e-chain link!
KMA pivoting | All-sides attachment

Recommended for unsupported and gliding applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set (pivoting)</th>
<th>Bi (mm)</th>
<th>Width index</th>
<th>Part No. full set (pivoting)</th>
<th>Bi (mm)</th>
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<tr>
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<td>12,5</td>
<td>50</td>
<td>212. E4.420 -</td>
<td>12,5</td>
<td>212</td>
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<td>06. E4.420 -</td>
<td>06</td>
<td>68</td>
<td>23. E4.420 -</td>
<td>06</td>
<td>23</td>
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<td>07. E4.420, R4.420.07</td>
<td>12,5</td>
<td>75</td>
<td>237. E4.420 -</td>
<td>12,5</td>
<td>237</td>
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<tr>
<td>08. E4.420, R4.420.08</td>
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<td>25. E4.420 -</td>
<td>12,5</td>
<td>25</td>
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<td>09. E4.420 -</td>
<td>09</td>
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<td>262. E4.420 -</td>
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</table>

Part No. structure (pivoting)

<table>
<thead>
<tr>
<th>Width</th>
<th>Part No. structure (pivoting)</th>
<th>Bi (mm)</th>
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</thead>
<tbody>
<tr>
<td>12.C</td>
<td>E4.420.30</td>
<td>Bi (mm)</td>
</tr>
</tbody>
</table>

Single-part order:
Mounting bracket Fixed end

E4.420.30.1.C (even number of links)

Strain relief, e.g., clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148.
Extension links | for extremely wide e-chains® up to 3,0 m

- The extension link design allows virtually limitless side-by-side attachment
- High fill weights necessitate extremely wide e-chains® (up to 3000 mm)
- The unsupported length L_{FLG}\text{max} can be increased when additional loads are required
- Suitable for unsupported and gliding applications in a guide trough
- Attachment with KMA or steel mounting brackets

Hinged crossbars

- Typically e-chain® crossbars are completely removable. For cases where the snap-open crossbars have to remain at the open link of the e-chain®, a hinged design has been developed
- Please consult igus® for design assistance
- Hinged crossbar: Part No. 385.02
  Snap-open crossbar (shortened) Bi-37,5 mm Part No. 385.03
  (smallest inner width Bi = 87,5)

Order example - 3 chambers

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Max Ø</th>
<th>Form</th>
<th>Installation on side link</th>
<th>Combination with snap-open crossbars</th>
</tr>
</thead>
<tbody>
<tr>
<td>385.02</td>
<td>385.03</td>
<td>14</td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>

Supplement Index "Z" with required option number 1, 2, 3 or 4

Support tray tool kit

For support of the lower run. Simple one-piece support trays according to your requirements and specification from page 1258

Strain relief system

Clamps, tiewrap plates, nuggets and plug-in clips. The complete chainfix range with many order options from page 1148

Part No. | Max Ø | Form | Installation on side link | Combination with snap-open crossbars |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>385.15.RHD115</td>
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<td>round</td>
<td>no</td>
<td>yes</td>
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<td>385.18.RD115</td>
<td>105</td>
<td>round</td>
<td>yes</td>
<td>no</td>
</tr>
</tbody>
</table>

Order examples - extender crossbars

1. Combination with snap-open crossbars
   RHD115 for outer radius "E" incl. e-chain:
   E4.42.10/15RHD115/115/10.R.0
   RHD115 for inner radius "Z" incl. e-chain:
   E4.42.10/15RHD115/115/10.R.0

2. Installation on side link
   RD115 for outer radius "E" incl. e-chain:
   E4.42.18.RD115/115.R.0
   RD115 for inner radius "Z" incl. e-chain:
   E4.42.18.RD115/115.R.0

Round extender crossbar: 1. combined with snap-open crossbars
or 2. attached directly on the side link (View from the fixed point)
Aluminum SuperTrough | Basic Version
Part No. 973.30.SL | 973.31.SL | Trough height: 144 mm

<table>
<thead>
<tr>
<th>Pitch = 67 mm/link</th>
<th>Links/m = 15 (1005 mm)</th>
<th>Chain length = ( \frac{S}{2} + K_2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( R ) 075° 100° 115° 125</td>
<td>150 160 175 200</td>
<td>250 300 350</td>
</tr>
<tr>
<td>( H_2 )</td>
<td>150 200</td>
<td>230 186 186 186 186 186 186 186</td>
</tr>
<tr>
<td>( D_2 )</td>
<td>174 199 425 475 570 623 670 780 1030 1150 1500 1943 2412</td>
<td></td>
</tr>
<tr>
<td>( K_2 )</td>
<td>370 450 737 804 938 1072 1340 1675 1943 2412</td>
<td></td>
</tr>
<tr>
<td>( \Delta C_L )</td>
<td>- 200 230 300 380 460 660 730 1030</td>
<td></td>
</tr>
</tbody>
</table>

*Radius not available for e-tubes

More solutions | For long travel applications

System P4.42 - profile-el-e-chain, low-noise Task travels up to 800 m \( v_{max} 10 \text{ m/s} \)
Safe, maintenance-free for outdoor cranes or conveyors. Low-noise operation, high service life

rol-e-chain 3383R - Rolling instead of gliding Tasks travels up to 600 m \( v_{max} 6 \text{ m/s} \)
Major reduction in drive power to less than 25% for moving the e-chain

autoglide E4.42, BUR.0.04 - Self-guiding, no guide troughs Tasks travels \( \leq 50 \text{ m} \) \( v_{max} 1,5 \text{ m/s} \)
Self-guiding e-chain systems – No guide troughs required

Components, trough Basic - Trough side parts, aluminum, 2 m Glide bar, plastic, 2 m Glide strips, plastic. 2 m without glide strips on request. Optional: Silencer profile, rubber
Components, installation set Basic Bottom clamp, aluminum C-profile, galvanized steel table Screw M8 x 20 Sliding nut M8 Interface connector, plastic

Order example: Length of travel 30 m - Center mounted for Series E4.42, 20.300.0 with \( B_{ha} = 230 \)

Guide trough set without glide bar (set of 2 trough side parts, incl. glide strips) Part No. 973.30.SL
Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips) Part No. 973.31.SL

Installation set Basic complete gluide trough sets + 1) Part No. 973.30.SLA

Module for the fixed end Part No. 960.40.300

For an additional noise dampening with silencer profile, please add index A - Example: Part No. 973.30.SLA

Aluminum SuperTrough Basic in detail and the Heavy-Duty version for heavy machinery from page 1302

3D-CAD files, configurators, PDF, applications www.igus.eu/eu/3D-CAD
Stable due to undercut design, large inner height

**When to use Series E4.56:**
- If a robust e-chain/e-tube with an inner height of 56 mm is required
- If inner widths up to 600 mm are required
- For unsupported lengths up to 5,0 m and fill weights up to 62 kg/m
- For long travels up to 400 m
- Also suitable for side-mounted, vertical standing or hanging applications
- If many options and accessories are desired

**When to use a different igus® Series:**
- If an extremely low-noise and low-vibration e-chain® is required (≤46 dB(A))
  - Series E6.52, page 956
  - If the e-chain® shall be used in cleanroom applications
  - Series E6.52, page 956
  - If a less stable e-chain® can be used for economical reasons
  - Series 14040/14140/R18840, page 784

The igus® E4 e-chain® opener reduces assembly time page 621

**Dimensions**

- **Pitch** = 91 mm/link
- **Links/m** = 11 (1001 mm)
- **Chain length** = \(\frac{S}{2} + K\)

<table>
<thead>
<tr>
<th>Length of travel S (m)</th>
<th>Unsupported length FLG (m)</th>
<th>Unsupported length FLB (m)</th>
<th>FLG</th>
<th>FLB</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
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<td>2</td>
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<tr>
<td>3</td>
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<td>5</td>
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<td>6</td>
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<tr>
<td>9</td>
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</tr>
<tr>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

The required clearance height: \(H_F = H + 50\) mm (with 3.0 kg/m fill weight)

Available from stock. Delivery time® in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
**E4.1 Series E4.56 Product range | Standard**

---

**e-chains®** Series E4.56 crossbars every link | Series H4.56 crossbars every 2nd link

- **Part No.** | **Bi** | **Ba** | **E4.56** | **H4.56**
- **crossbars every link**
  - E4.56- H4.56- 05. R0  50  84  3,301  3,158
  - E4.56- H4.56- 06. R0  65  99  3,390  3,202
  - E4.56- H4.56- 07. R0  75 109  3,458  3,236
  - E4.56- H4.56- 08. R0  87 121  3,538  3,276
  - E4.56- H4.56- 10. R0 100 134  3,633  3,323
  - E4.56- H4.56- 11. R0 112 147  3,749  3,382
  - E4.56- H4.56- 12. R0 125 159  3,827  3,442
  - E4.56- H4.56- 13. R0 137 172  3,963  3,498
  - E4.56- H4.56- 15. R0 150 184  4,000  3,507
  - E4.56- H4.56- 16. R0 162 197  4,113  3,563
  - E4.56- H4.56- 17. R0 175 209  4,245  3,630
  - E4.56- H4.56- 18. R0 187 222  4,357  3,685
  - E4.56- H4.56- 20. R0 200 234  4,413  3,713
  - E4.56- H4.56- 21. R0 212 247  4,484  3,749
  - E4.56- H4.56- 22. R0 225 259  4,553  3,784
  - E4.56- H4.56- 23. R0 237 272  4,663  3,838
  - E4.56- H4.56- 25. R0 250 284  4,774  3,894
  - E4.56- H4.56- 26. R0 262 297  4,865  3,939
  - E4.56- H4.56- 27. R0 275 309  4,967  3,990
  - E4.56- H4.56- 28. R0 287 322  5,025  4,019
  - E4.56- H4.56- 30. R0 300 334  5,177  4,055

---

**e-tubes** Series R4.56 - fully enclosed

- **Part No.** | **Bi** | **Ba** | **R4.56**
- **fully enclosed**
  - R4.56- 07. R0 75 109  3,910
  - R4.56- 10. R0 100 134  4,200
  - R4.56- 12. R0 125 159  4,560
  - R4.56- 15. R0 150 184  4,940
  - R4.56- 17. R0 175 209  5,250
  - R4.56- 20. R0 200 234  5,560

---

**Available bending radii R (mm) 150 175 200 240 250 300 350 400 450 500**

Supplement Part No. with required radius (R). Example: E4.56.30.300.0

---

**Order key for all types**

- **E4.56.30.300.0** e-chain® (crossbars every link)
- **H4.56.30.300.0** e-chain® (crossbars every 2nd link)
- **R4.56.30.300.0** Fully enclosed e-tube

---

**Dimensioning**

---

**e-chain links as single parts, overview ★ page 623**

- Configuration options and order keys, overview ★ page 624

---

**Available from stock, Delivery time★ in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

---

**3D-CAD files, configurators, PDF, applications ★ www.igus.eu/eu/E4.56**

---

**info@igus.de**

**GmbH Germany**
QuickLock crossbars | Quick opening - up to 25% faster assembly

<table>
<thead>
<tr>
<th>Part No.</th>
<th>QuickLock crossbar for every link (mm)</th>
<th>QuickLock crossbar for every 2nd link (mm)</th>
<th>Bi (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.56, H4.56</td>
<td>15Q, R, 0</td>
<td>15Q, R, 0</td>
<td>15Q, R, 0</td>
</tr>
<tr>
<td>E4.56, H4.56</td>
<td>15Q, R, 0</td>
<td>15Q, R, 0</td>
<td>15Q, R, 0</td>
</tr>
<tr>
<td>E4.56, H4.56</td>
<td>17Q, R, 0</td>
<td>17Q, R, 0</td>
<td>17Q, R, 0</td>
</tr>
<tr>
<td>E4.56, H4.56</td>
<td>18Q, R, 0</td>
<td>18Q, R, 0</td>
<td>18Q, R, 0</td>
</tr>
<tr>
<td>E4.56, H4.56</td>
<td>20Q, R, 0</td>
<td>20Q, R, 0</td>
<td>20Q, R, 0</td>
</tr>
<tr>
<td>E4.56, H4.56</td>
<td>21Q, R, 0</td>
<td>21Q, R, 0</td>
<td>21Q, R, 0</td>
</tr>
<tr>
<td>E4.56, H4.56</td>
<td>22Q, R, 0</td>
<td>22Q, R, 0</td>
<td>22Q, R, 0</td>
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<tr>
<td>E4.56, H4.56</td>
<td>23Q, R, 0</td>
<td>23Q, R, 0</td>
<td>23Q, R, 0</td>
</tr>
<tr>
<td>E4.56, H4.56</td>
<td>25Q, R, 0</td>
<td>25Q, R, 0</td>
<td>25Q, R, 0</td>
</tr>
<tr>
<td>E4.56, H4.56</td>
<td>26Q, R, 0</td>
<td>26Q, R, 0</td>
<td>26Q, R, 0</td>
</tr>
<tr>
<td>E4.56, H4.56</td>
<td>27Q, R, 0</td>
<td>27Q, R, 0</td>
<td>27Q, R, 0</td>
</tr>
<tr>
<td>E4.56, H4.56</td>
<td>28Q, R, 0</td>
<td>28Q, R, 0</td>
<td>28Q, R, 0</td>
</tr>
<tr>
<td>E4.56, H4.56</td>
<td>30Q, R, 0</td>
<td>30Q, R, 0</td>
<td>30Q, R, 0</td>
</tr>
<tr>
<td>E4.56, H4.56</td>
<td>31Q, R, 0</td>
<td>31Q, R, 0</td>
<td>31Q, R, 0</td>
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<tr>
<td>E4.56, H4.56</td>
<td>32Q, R, 0</td>
<td>32Q, R, 0</td>
<td>32Q, R, 0</td>
</tr>
<tr>
<td>E4.56, H4.56</td>
<td>33Q, R, 0</td>
<td>33Q, R, 0</td>
<td>33Q, R, 0</td>
</tr>
<tr>
<td>E4.56, H4.56</td>
<td>35Q, R, 0</td>
<td>35Q, R, 0</td>
<td>35Q, R, 0</td>
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<tr>
<td>E4.56, H4.56</td>
<td>36Q, R, 0</td>
<td>36Q, R, 0</td>
<td>36Q, R, 0</td>
</tr>
<tr>
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<td>37Q, R, 0</td>
<td>37Q, R, 0</td>
</tr>
<tr>
<td>E4.56, H4.56</td>
<td>38Q, R, 0</td>
<td>38Q, R, 0</td>
<td>38Q, R, 0</td>
</tr>
<tr>
<td>E4.56, H4.56</td>
<td>40Q, R, 0</td>
<td>40Q, R, 0</td>
<td>40Q, R, 0</td>
</tr>
</tbody>
</table>

QuickLock crossbars: inner widths from 150 mm possible!

Configuration options and order keys, overview | page 624

Noise dampening | ≤60 dB(A)

With pads Bi With pads Bi
| E4.4 | 50 | E4.4 | 32 |
| H4.4 | 50 | H4.4 | 32 |
| R4.4 | 50 | R4.4 | 32 |
| E4.5 | 50 | E4.5 | 32 |
| H4.5 | 50 | H4.5 | 32 |
| R4.5 | 50 | R4.5 | 32 |
| E4.6 | 50 | E4.6 | 32 |
| H4.6 | 50 | H4.6 | 32 |
| R4.6 | 50 | R4.6 | 32 |
| E4.7 | 50 | E4.7 | 32 |
| H4.7 | 50 | H4.7 | 32 |
| R4.7 | 50 | R4.7 | 32 |

NC-Version Bi NC-Version Bi
| E4.4 | H4.4 | R4.4 | E4.4 | H4.4 | R4.4 | E4.4 | H4.4 | R4.4 | E4.4 | H4.4 | R4.4 |
| 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |

Configuration options and order keys, overview | page 624

Noise dampening - Delivery time ≤3-5 work days, NC-Version - Delivery time ≤24 hours today!

*Delivery time means time until shipping of goods (after technical release)

ESD/ATEX permanently conductive e-chains® - E4.56 several widths with delivery from stock:
- Inner widths: 75 - 300 mm, radii R: 135 - 250 mm
- Full ESD product range | www.igus.eu/ESD

 igus® Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu
**E4.1 | Series E4.56 | Interior separation | Standard**

New generation interior separation - for e-chains® and e-tubes

---

**Note:** Please observe a lateral spacing to the side links! e-tube: 40 mm | e-chain®: 16 mm

In the standard configuration separators are assembled every 2nd e-chain® link!

---

**Standard separator, wide base**

Separator with a wide base for maximum locking strength and safe standing in e-chains® and e-tubes.

---

**For many thin cables**

Separator with a narrow base for a large number of thin cables side by side. Saves space in e-chains® and e-tubes. Also available for QuickLock crossbars.

---

**Asymmetrical separator**

Asymmetrical separator, for defined distance. No additional spacers necessary for e-chains® and e-tubes.

---

**For side-mounted applications**

Separator for QuickLock crossbar unassembled 56.2 assembled 56.2.1

---

**For even faster installation**

Separator for igus® QuickLock crossbar 450.X.Q. Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip). For e-tubes also.

---

**Locks safely onto in 5 mm increments**

Notch separator for the notch crossbar, with scaling on the notch crossbars. For exact positioning in e-chains® and e-tubes. Recommended for side-mounted applications.

---

**Horizontal separation**

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.

---

**Lockable full-width shelves - for the standard interior separation**

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>050</td>
<td>520.050</td>
<td>521.050</td>
</tr>
<tr>
<td>065</td>
<td>520.065</td>
<td>521.065</td>
</tr>
<tr>
<td>075</td>
<td>520.075</td>
<td>521.075</td>
</tr>
<tr>
<td>100</td>
<td>520.100</td>
<td>521.100</td>
</tr>
<tr>
<td>125</td>
<td>520.125</td>
<td>521.125</td>
</tr>
<tr>
<td>150</td>
<td>520.150</td>
<td>521.150</td>
</tr>
</tbody>
</table>

---

**Interior separation with single-part order. Delivery time® in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

---

igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu
Option | Shelves for e-chains® and e-tubes

Middle plate 403
Middle plates form the basic pattern of a shelf system. Shelves 420.X (table left page) can be arranged at 7 different heights (in 7 mm increments).

Locking vertical separator 410 (e-chains® only)
Works like middle plate, for applications exposed to very high humidity (> 85%).

Side plate 402
Works like middle plate.

Open, slotted separator 409 (unilateral open)
Fast assembly - can be retrofitted into an existing interior separation system without a need for dismantling the interior separators. During an installation of open slotted separators, the top and bottom notches cannot be occupied by shelves.

Slotted separator 408
For very fine subdivisions. However, they cannot be retrofitted into an existing separation system without dismantling the interior separators first.

Shelf 420.X
For horizontal separation. Shelves of various widths can be arranged at 7 different heights (in 7 mm increments). (not in combination with 404).
**E4.1 Series E4.56 | KMA mounting brackets**

**For tight installation conditions, all-sides attachment**

<table>
<thead>
<tr>
<th>Part No. structure (pivoting)</th>
<th>Width index</th>
<th>Part No. full set</th>
<th>Width index</th>
<th>Bi (mm)</th>
</tr>
</thead>
</table>

**For very high speed and acceleration, all-sides attachment**

<table>
<thead>
<tr>
<th>Part No. structure (locking)</th>
<th>Width index</th>
<th>Part No. full set</th>
<th>Width index</th>
<th>Bi (mm)</th>
</tr>
</thead>
</table>

**Strain relief, e.g., clamps, tie strap plates, nipples and plug-in clips are available from stock.**

**Notes:**
- The E4.1 System may end with either an inner or an outer side link. Keep in mind that an outer side link always forms the first e-chain link at the moving end. The Part Nos. depend on an even or odd number of links. Please insert index (for odd) or (for even)!
- The E4.1 System may end with either an inner or an outer side link. Keep in mind that an outer side link always forms the first e-chain link at the moving end. The Part Nos. depend on an even or odd number of links. Please insert index (for odd) or (for even)!
**Extension links | for extremely wide e-chains** up to 3.0 m

- The extension link design allows virtually limitless side-by-side attachment.
- High fill weights necessitate extremely wide e-chains (up to 3000 mm).
- The unsupported length LFL, max. can be increased when additional loads are required.
- Suitable for unsupported and gliding applications in a guide trough.
- Attachment with KMA or steel mounting brackets.

**Order example - 3 chambers**

\[E_{4.56.10}/20/30.200.0\]

Extension link - single-part order

422.R, (please indicate radius)

**Round or square extender crossbar** 1, combined with snap-open crossbars or 3, attached directly on the side link (view from the fixed point).

**Extender crossbars | careful guide of hosed applications**

- Suitable for hoses with a maximum outer diameter of 245 mm.
- Gliding with crossbars assembled along outer radius and a special guide trough.
- Extender crossbar 1 for snap-open crossbars or 3, attached directly on the side link.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Max Ø [mm]</th>
<th>Form</th>
<th>2 Installation on side link</th>
<th>3 Combination with snap-open crossbars</th>
</tr>
</thead>
<tbody>
<tr>
<td>450.15.RHD115</td>
<td>115</td>
<td>round</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>450.17.RD115</td>
<td>115</td>
<td>round</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>450.25.D150</td>
<td>150</td>
<td>square</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>450.30.D200</td>
<td>180</td>
<td>square</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>450.35.D250</td>
<td>195</td>
<td>square</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>450.40.D300</td>
<td>245</td>
<td>square</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>450.20.HD150</td>
<td>150</td>
<td>square</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>450.25.HD200</td>
<td>180</td>
<td>square</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>450.30.HD250</td>
<td>195</td>
<td>square</td>
<td>no</td>
<td>yes</td>
</tr>
</tbody>
</table>

**E4 snapclip | 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 required.
- Compatible with many E4 e-chains.
- Stylish and economical.
- One clip and one locking band are needed for each e-chain link.

**Order example**

- Inner radius "Z":
  \[E_{4.56.10}/15RDZ115/10.R0\]

**Installation on side link**

- RD115 for outer radius "E" incl. e-chain:
  \[E_{4.56.10}/15RD115/115/10.R0\]

**Support tray tool kit**

For support of the lower run. Simple one-piece support trays according to your requirements and specification.

**Strain relief system**

Clamps, tiewrap plates, nuggets and plug-in clips. The complete chainfix range with many order options.

**E4.56 | e-chain® accessories**
Gliding applications  
For long travels from 12 m to max. 400 m

Solution for long travel applications - In this case the e-chain® upper run will be introduced in a guide trough on the lower run. For travels more than 100 m we recommend to realize the engineering of such a plant by our technicians. In case of travels between 10 and 12 m we recommend a longer unsupported length. More information ▸ Design, from page 106

Pitch = 91 mm/link ▪ Links/m = 11 (1001 mm) ▪ Chain length = \( S/2 + K_2 \)

- **R** 135°  150  175  200  240  250  300  350  400  450  500
- **H_a** 270 266 266 266 266 266 266 266 266 266
- **D_2** 268 450 580 710 900 980 1180 1530 1700 1850
- **K_2** 610 819 1092 1274 1547 1638 2002 2275 2548 2912 3276
- **ACL** - 159 259 359 509 559 709 909 959 1059 1159

*Suitable not available for e-tubes

More solutions  ▪ For long travel applications

- System E4.56 - profile e-chain®, low-noise  ▪ Travels up to 800 m  ▪ \( v_{\text{max}} \geq 10 \) m/s
- Roll e-chain® 4040R - Rolling instead of gliding  ▪ Travels up to 800 m  ▪ \( v_{\text{max}} \geq 6 \) m/s
- Major reduction in drive power to less than 25 % for moving the e-chain®

- AutoGlide E4.56.BLR,0.4G - Self-guiding, no guide troughs  ▪ Travels \( \leq 50 \) m  ▪ \( v_{\text{max}} \geq 1.5 \) m/s

Self-guiding e-chainsystems  ▪ No guide troughs required!

Specialty:  ▪ guidelok horizontal - Upper run guide, unsupported  ▪ Travels \( \leq 50 \) m

Chips cannot get stuck between upper and lower run - enormous increase of "self supporting" length of e-chains

### Dimensions  ▪ Long travels

**Info@igus.de**  ▪ Phone +49 2203 9649-800  ▪ Fax -222  ▪ GmbH Germany

3D-CAD files, configurators, PDF, applications ▪ www.igus.eu/eu/E4.56
**E4.80**

**H4.80**

**R4.80**

---

**Introduction**

**Stable due to undercut design, very large inner height**

**When to use Series E4.80:**
- If a robust e-chain/e-tube with an inner height of 80 mm is required
- If inner widths up to 600 mm are required
- For unsupported lengths up to 6,0 m and fill weights up to 80 kg/m
- For long travels up to 400 m
- Also suitable for side-mounted, vertical standing or hanging applications
- If many options and accessories are desired

**When to use a different igus® Series:**
- If an extremely low-noise and low-vibration e-chain® is required (≤ 50 dB(A))
  - Series E6.80, page 984
- If the e-chain® shall be used in cleanroom applications
  - Series E6.80, page 984
- If a less stable e-chain® can be used for economical reasons
  - Series 15050/15150/R19850, page 830

---

**Dimensions**

**Unsupported**

**Series E4.80**

<table>
<thead>
<tr>
<th>Length of travel S [m]</th>
<th>Fill weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
</tr>
<tr>
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</tr>
<tr>
<td>75</td>
<td>75</td>
</tr>
<tr>
<td>80</td>
<td>80</td>
</tr>
</tbody>
</table>

**Example**

- Fill weight = 20 [kg/m]
- Unsupported length FL = 4.3 m
- Length of travel = 8,6 m

**Example Chart**

- FLG = with straight upper run
- FLB = with permitted sag
- R = Bending radius
- H = Nominal clearance height
- D = Overlength e-chain®, radius in final position
- DF = Required clearance height
- K = K = x + R + "safety"

---

**Technical Data**

<table>
<thead>
<tr>
<th>Pitch</th>
<th>= 111 mm/link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Links/m</td>
<td>= 9 (999 mm)</td>
</tr>
<tr>
<td>Chain length</td>
<td>= S/2 + K</td>
</tr>
</tbody>
</table>

---

**Unsupported applications**

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height HF. Please consult igus® if space is particularly restricted. More information ➤ Design, page 95

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**Design, page 95**

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**Available from stock. Delivery time in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

---

**3D-CAD files, configurators, PDF** ➤ www.igus.eu/E4.80
**Configuration options and order keys, overview**

**e-chain**

- **Series E4.80 crossbars every link**
  - Part No.: E4.80.
  - Bi: 05. R0
  - R: 50 100
  - Ba: 5,339 5,221
  - E4.80: 05 06 07 08 09 10 11 12 13 14 15 16 17
  - H4.80: 05 06 07 08 09 10 11 12 13 14 15 16
  - Bi: 05 06 07 08 09 10 11 12 13 14 15 16
  - Ba: 05 06 07 08 09 10 11 12 13 14 15 16
  - E4.80: 05 06 07 08 09 10 11 12 13 14 15 16
  - H4.80: 05 06 07 08 09 10 11 12 13 14 15 16

- **Series H4.80 crossbars every 2nd link**
  - Part No.: H4.80.
  - Bi: 31. R0
  - R: 312 363
  - Ba: 6,004 6,004
  - E4.80: 31 32 33 34 35 36 37 38 39 40 41 42
  - H4.80: 31 32 33 34 35 36 37 38 39 40 41 42
  - Bi: 31 32 33 34 35 36 37 38 39 40 41 42
  - Ba: 31 32 33 34 35 36 37 38 39 40 41 42
  - E4.80: 31 32 33 34 35 36 37 38 39 40 41 42
  - H4.80: 31 32 33 34 35 36 37 38 39 40 41 42

**e-tube**

- **Series E4.80 crossbars every link**
  - Part No.: E4.80.
  - Bi: 05. R0
  - R: 50 100
  - Ba: 5,339 5,221
  - E4.80: 05 06 07 08 09 10 11 12 13 14 15 16 17
  - H4.80: 05 06 07 08 09 10 11 12 13 14 15 16
  - Bi: 05 06 07 08 09 10 11 12 13 14 15 16
  - Ba: 05 06 07 08 09 10 11 12 13 14 15 16
  - E4.80: 05 06 07 08 09 10 11 12 13 14 15 16
  - H4.80: 05 06 07 08 09 10 11 12 13 14 15 16

- **Series H4.80 crossbars every 2nd link**
  - Part No.: H4.80.
  - Bi: 31. R0
  - R: 312 363
  - Ba: 6,004 6,004
  - E4.80: 31 32 33 34 35 36 37 38 39 40 41 42
  - H4.80: 31 32 33 34 35 36 37 38 39 40 41 42
  - Bi: 31 32 33 34 35 36 37 38 39 40 41 42
  - Ba: 31 32 33 34 35 36 37 38 39 40 41 42
  - E4.80: 31 32 33 34 35 36 37 38 39 40 41 42
  - H4.80: 31 32 33 34 35 36 37 38 39 40 41 42

- **Series E4.80 fully enclosed e-tube**
  - Part No.: E4.80.
  - Bi: 05. R0
  - R: 50 100
  - Ba: 5,339 5,221
  - E4.80: 05 06 07 08 09 10 11 12 13 14 15 16 17
  - H4.80: 05 06 07 08 09 10 11 12 13 14 15 16
  - Bi: 05 06 07 08 09 10 11 12 13 14 15 16
  - Ba: 05 06 07 08 09 10 11 12 13 14 15 16
  - E4.80: 05 06 07 08 09 10 11 12 13 14 15 16
  - H4.80: 05 06 07 08 09 10 11 12 13 14 15 16

- **Series H4.80 fully enclosed e-tube**
  - Part No.: H4.80.
  - Bi: 31. R0
  - R: 312 363
  - Ba: 6,004 6,004
  - E4.80: 31 32 33 34 35 36 37 38 39 40 41 42
  - H4.80: 31 32 33 34 35 36 37 38 39 40 41 42
  - Bi: 31 32 33 34 35 36 37 38 39 40 41 42
  - Ba: 31 32 33 34 35 36 37 38 39 40 41 42
  - E4.80: 31 32 33 34 35 36 37 38 39 40 41 42
  - H4.80: 31 32 33 34 35 36 37 38 39 40 41 42

- **Order key for all types**
  - E4.80: 30. 300. 0
  - H4.80: 30. 300. 0

**Dimensioning**

- **Bi**: 72 max.
- **Ba**: 80
- **Width index (depends on Ba)**
- **Inner height**
- **Series / Type**

Available bending radii R: 200 | 250 | 300 | 350 | 400 | 500 | 550 | 600 | 1000

Supplement Part No. with required radius (R). Example: E4.80.30.300.0

**e-chain links as single parts, overview**

- Available from stock. Delivery time*: in 24h or today!

**Configuration options and order keys, overview**

- *Delivery time means time until shipping of goods after technical release*

**e-chain links as single parts, overview**

- Available from stock. Delivery time*: in 24h or today!

**Configuration options and order keys, overview**

- *Delivery time means time until shipping of goods after technical release*
Noise dampening - Delivery time* 3-5 work days. NC-Version - Delivery time* in 24h or today!

1) QuickLock crossbars - Delivery time* 3-5 work days.

- QuickLock crossbars | Quick opening - up to 25% faster assembly

<table>
<thead>
<tr>
<th>Part No. with crossbars</th>
<th>QuickLock crossbar for inner &amp; outer link</th>
<th>Bi [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.1 H4.1</td>
<td>0.5, 0.6, 0.7</td>
<td>225</td>
</tr>
<tr>
<td>E4.1 H4.1</td>
<td>0.8, 0.9, 1.0</td>
<td>225</td>
</tr>
<tr>
<td>E4.1 H4.1</td>
<td>1.2, 1.3, 1.4</td>
<td>225</td>
</tr>
<tr>
<td>E4.1 H4.1</td>
<td>1.5, 1.6, 1.7</td>
<td>225</td>
</tr>
<tr>
<td>E4.1 H4.1</td>
<td>1.8, 1.9, 2.0</td>
<td>225</td>
</tr>
<tr>
<td>E4.1 H4.1</td>
<td>2.2, 2.3, 2.4</td>
<td>225</td>
</tr>
<tr>
<td>E4.1 H4.1</td>
<td>2.5, 2.6, 2.7</td>
<td>225</td>
</tr>
<tr>
<td>E4.1 H4.1</td>
<td>2.8, 2.9, 3.0</td>
<td>225</td>
</tr>
<tr>
<td>E4.1 H4.1</td>
<td>3.2, 3.3, 3.4</td>
<td>225</td>
</tr>
<tr>
<td>E4.1 H4.1</td>
<td>3.5, 3.6, 3.7</td>
<td>225</td>
</tr>
<tr>
<td>E4.1 H4.1</td>
<td>3.8, 3.9, 4.0</td>
<td>225</td>
</tr>
</tbody>
</table>

QuickLock crossbars: inner widths from 150 mm possible!

- Noise dampening | Delivery time* = 10 dB(A)

<table>
<thead>
<tr>
<th>Series E4.80</th>
<th>Product range</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.1</td>
<td>Series E4.80</td>
<td>Options</td>
</tr>
</tbody>
</table>

- QuickOpening - Delivery time* 3-5 work days.

- E4.80 H4.80 R4.80

- With crossbars every 2nd link R4 = e-tube fully enclosed

Example: ES4.80.30.300.0 or E4.80.30.300.0 NC

- E4.80 3D-CAD files, configurators, PDF, applications www.igus.eu/e4.80
New generation interior separation - for e-chains® and e-tubes

**Standard**

*Note: Please observe a lateral spacing to the side links! e-tube: 40 mm | e-chain: 16 mm*

In the standard configuration separators are assembled every 2nd e-chain link!

**Standard - for all applications**

Separator with a wide base for maximum locking strength and safe standing in e-chains® and e-tubes.

**For many thin cables**

Separator with a narrow base for a large number of thin cables side by side. Saves space in e-chains® and e-tubes. Also available for QuickLock crossbars.

**For side-mounted applications**

Asymmetrical separator, for defined distance. No additional spacers necessary for e-chains® and e-tubes.

**Note:** Please observe a lateral spacing to the side links! e-tube: 40 mm | e-chain: 16 mm

Interior separation - for e-chains® and e-tubes

*Delivery time in 24h or today!*
Option 'Shelves for e-chains' and e-tubes

Middle plate 503
Middle plates form the basic pattern of a shelf system. Shelves 420.X (table left page) can be arranged at 11 different heights (in 7 mm increments).

Locking vertical separator 510 (e-chains only)
Works like middle plate, for applications exposed to very high humidity (> 85%).

Side plate T802
Works like middle plate. Allows modular shelving close to the side links.

Open, slotted separator 509 (unilateral open)
Fast assembly - can be retrofitted into an existing interior separation system without a need for dismantling the interior separators. During an installation of open slotted separators, the top and bottom notches cannot be occupied by shelves.

Slotted separator 505
For very fine subdivisions. However, they cannot be retrofitted into an existing separation system without dismantling the interior separators first.

Shelf 420.X
For horizontal separation. Shelves of various widths can be arranged at 11 different heights (in 7 mm increments). (not in combination with 504, 508).

Shelving options

<table>
<thead>
<tr>
<th>Width X (mm)</th>
<th>Unassembled</th>
<th>Assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>018</td>
<td>420.18</td>
<td>421.18</td>
</tr>
<tr>
<td>023</td>
<td>420.23</td>
<td>421.23</td>
</tr>
<tr>
<td>025</td>
<td>420.25</td>
<td>421.25</td>
</tr>
<tr>
<td>028</td>
<td>420.28</td>
<td>421.28</td>
</tr>
<tr>
<td>033</td>
<td>420.33</td>
<td>421.33</td>
</tr>
<tr>
<td>043</td>
<td>420.43</td>
<td>421.43</td>
</tr>
</tbody>
</table>

Extra retention force by asymmetric claws. Ensure proper alignment. Tip: one locking separator per e-chain link for better mounting.

locking separator 503 (e-chains only)
For applications exposed to very high humidity (> 85%). Locks with extra retention force. Tip: one locking separator per e-chain link for better mounting.

locking separator 508 (e-chains only)
For applications exposed to very high humidity (> 85%). Extra retention force by asymmetric claws. Ensure proper alignment. Tip: one locking separator per e-chain link for better mounting.

locking separator 507 (e-chains only)
For applications exposed to very high humidity (> 85%). Extra retention force by asymmetric claws. Ensure proper alignment. Tip: one locking separator per e-chain link for better mounting.

Split separator T803 (e-chains only)
Ideal for subsequent shelving or for the initial assembly of the e-chain without a need for dismantling the interior separators.

Rollclip (e-chains only)
Minimizes abrasion of particularly sensitive hoses - simply clamped onto the opening crossbar. The movable rollers compensate for relative movement between the e-chain and hose.

Options

<table>
<thead>
<tr>
<th>Width X (mm)</th>
<th>Unassembled</th>
<th>Assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>018</td>
<td>420.18</td>
<td>421.18</td>
</tr>
<tr>
<td>023</td>
<td>420.23</td>
<td>421.23</td>
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<tr>
<td>025</td>
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<td>421.25</td>
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<td>028</td>
<td>420.28</td>
<td>421.28</td>
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<tr>
<td>033</td>
<td>420.33</td>
<td>421.33</td>
</tr>
<tr>
<td>043</td>
<td>420.43</td>
<td>421.43</td>
</tr>
</tbody>
</table>

Note: Please observe a lateral spacing to the side links! e-tube: 40 mm | e-chain: 16 mm
In the standard configuration separators are assembled every 2nd e-chain link!
### KMA mounting brackets: Pivoting

**E4.1 | Series E4.80**

For tight installation conditions, all-sides attachment

- **Width**
  - Part No. full set pivoting (+ C-profile option)
  - Part No. full set pivoting (+ C-profile option)
  - Part No. structure (pivoting)

- **Bi (mm)**
  - 06. E4.800 - 32.12.C
  - 08. E4.800 - 34.12.C

**Part No. structure (pivoting)**

- E4.800.30.12.C
- E4.800.30.12.C
- E4.800.30.12.C
- E4.800.30.12.C
- E4.800.30.12.C
- E4.800.30.12.C

**Bi (mm)**

- 125
- 35
- 20
- 35
- 20
- 35

**Notes:**

- The E4.1 System may end with either an inner or an outer side link. Keep in mind that an outer side link always forms the first e-chain link at the moving end. The Part Nos. depend on an even or odd number of links. Please insert Index (for odd) or (for even)!

**Strain relief, e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148.**

### KMA mounting brackets: Locking

**E4.1 | Series E4.80**

For very high speed and acceleration, all-sides attachment

- **Width**
  - Part No. full set locking (+ C-profile option)
  - Part No. full set locking (+ C-profile option)
  - Part No. structure (locking)

- **Bi (mm)**
  - 06. E4.801 - 32.12.C
  - 08. E4.801 - 34.12.C

**Part No. structure (locking)**

- E4.800.30.12.C
- E4.800.30.12.C
- E4.800.30.12.C
- E4.800.30.12.C
- E4.800.30.12.C

**Bi (mm)**

- 125
- 35
- 20
- 35
- 20

**Notes:**

- The E4.1 System may end with either an inner or an outer side link. Keep in mind that an outer side link always forms the first e-chain link at the moving end. The Part Nos. depend on an even or odd number of links. Please insert Index (for odd) or (for even)!

**Strain relief, e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148.**
**E4.80 | Series E4.80 | More options**

**Extension links | for extremely wide e-chains** up to 3 m

- The extension link design allows virtually limitless side-by-side attachment
- High fill weights necessitate extremely wide e-chains” (up to 3000 mm)
- The unsupported length FL_{max} can be increased when additional loads are required
- Suitable for unsupported and gliding applications in a guide trough
- Attachment with KMA or steel mounting brackets

**Order example - 3 chambers**

E4.80.B1 / B2 / B3.0 =

E4.80.10/20/10.200.0

**Extension links: single part order**:

E4.80.P.01 (outer link)

E4.80.M.02.R. (inner link)

(please indicate radius)

**Order example** - 3 chambers

E4.80.B1 / B2 / B3.0 =

E4.80.10/20/10.200.0

**Extension links: single part order**:

E4.80.P.01 (outer link)

E4.80.M.02.R. (inner link)

(please indicate radius)

**RHD115 for outer radius” E incl. e-chain®**: The unsupported length FL_{max} can be increased when additional loads are required

**RD115 for inner radius” Z incl. e-chain®**: The unsupported length FL_{max} can be increased when additional loads are required

**Part No.** | **Form**
---|---
450.15.RHD115 | 150 | Ø round | yes | no | yes
450.17.RD115 | 150 | Ø square | yes | no | no
450.25.D115 | 200 | Ø square | yes | no | no
450.30.D220 | 200 | Ø square | yes | no | no
450.40.D300 | 200 | Ø square | yes | no | no
450.20.HD115 | 150 | Ø square | yes | no | yes
450.25.HD120 | 200 | Ø square | yes | no | yes
450.30.HD220 | 200 | Ø square | yes | no | yes

**Round or square extender crossbar | combined with snap-open crossbars or 3, attached directly on the side link** (view from the fixed point)

**Extender crossbars | careful guide of hosed applications**

- Suitable for hoses with a maximum outer diameter of 270 mm
- Gliding with crossbars assembled along outer radius and a special guide trough
- Extender crossbar for snap-open crossbars or 3, attached directly on the side link

**E4.1 | Series E4.80 | e-chain® accessories**

**E4 snapclip | 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 required
- Compatible with many E4 e-chains® Stylish and economical
- One clip and one locking band are needed for each e-chain” link

**Order example**

E4.80.B12.00.R.0

**Support tray tool kit**

For support of the lower run. Simple one-piece support trays according to your requirements and specification

**Strain relief system**

Clamps, tiewrap plates, nuggets and plug-in clips. The complete chainfix range with many order options ➤ from page 1148
E4.1 | Series E4.80 | Dimensions | Long travels

**Gilding applications**
For long travels from 12 m to max. 400 m

Solution for long travel applications - In this case the e-chain® upper run will be introduced in a guide trough on the lower run. For travels more than 100 m we recommend to realize the engineering of such a plant by our technicians. In case of travels between 10 and 12 m we recommend a longer unsupported length. More information ▶ Design, from page 105.

**Principle sketch:** Number of installation sets to be installed = Number of trough sections + 1

**Insert for the installation set “Heavy-Duty”**
975.50.XXX instead of 960.50.XXX on the right column “attached outwards”

**Components, trough “Basic”**
- Trough side parts, aluminum, 2 m
- Glide bar, plastic, 2 m
- Glide strips, plastic, 2 m (without glide strips on request)
- Bottom clamp, aluminum, C-profile, galvanized steel
- Screw M8 x 20
- Interface connector, plastic rubber
- Guide trough with glide bar
- Guide trough without glide bar

**Components, installation set “Basic”**
- Bottom clamp, aluminum, C-profile, galvanized steel
- Screw M8 x 20
- Sliding nut M6
- Interface connector, plastic rubber

**Order example:** Length of travel 30 m -
Center mounted for Series E4.80.30.300.0 with H4.80R4.80

**Order text:**
- Length of travel 30 m 975.30.SL Part No.
- Guide trough without glide bar 975.30.SL Part No.
- Guide trough with glide bar 975.31.SL Part No.
- Installation set “Basic” complete 975.50.SLA Part No.

**Further solutions**
For long travel applications

**System P4.80 - profile e-chain®**, low-noise
Safe, maintenance-free for outdoor cranes or conveyor systems. Low-noise operation, high service life

**rol e-chain® 5050R - Rolling instead of gilding**
Major reduction in drive power to less than 25 % for moving the e-chain®

**autoglide E4.80.BUR.05AG - Self-guiding, no guide troughs**
Travels ≤ 50 m

**Self-guiding e-chain systems** - No guide troughs required!

**Pitch = 111 mm/link • Links/m = 9 099 mm • Chain length = S/2 + K2**

**Dimensions**

- H2: 242 242 242 242 242 242 242
- K2: 890 1330 1665 2000 2330 2660 3440

**Notes:**
- Not available for e-tubes
- For travels run. For travels more than 100 m we recommend to realize the engineering of such a plant by our technicians.

**Order text:**
- Guide trough with glide bar (set of 2 trough side parts, incl. glide strips) 975.30.SLA Part No.
- Guide trough without glide bar (set of 2 trough side parts, incl. glide strips) 975.30.SLA Part No.

**Order text:**
- Installation set “Basic” complete 975.50.SLA Part No.

**Order text:**
- Module for the fixed end 975.80 Part No.

**Option:**
For an additional noise damping with silencer profile, please add index A - Example:
- 975.30.SLA Part No.

**Length of guide trough according to dimension H4.80 (see table)**

- H4.80R4.80

**Order text:**
- Installation set “Basic” complete 975.50.SLA Part No.

**Insert for the installation set “Heavy-Duty”**
975.50.XXX instead of 960.50.XXX on the right column “attached outwards”

**Order text:**
- Installation set “Basic” complete 975.50.SLA Part No.

**Order text:**
- Module for the fixed end 975.80 Part No.

**Option:**
For an additional noise damping with silencer profile, please add index A - Example:
- 975.30.SLA Part No.

**Components, installation set “Basic”**
- Bottom clamp, aluminum, C-profile, galvanized steel
- Screw M8 x 20
- Sliding nut M6
- Interface connector, plastic rubber

**Components, trough “Basic”**
- Trough side parts, aluminum, 2 m
- Glide bar, plastic, 2 m
- Glide strips, plastic, 2 m (without glide strips on request)
- Bottom clamp, aluminum, C-profile, galvanized steel
- Screw M8 x 20
- Interface connector, plastic rubber

**Components, installation set “Basic”**
- Bottom clamp, aluminum, C-profile, galvanized steel
- Screw M8 x 20
- Sliding nut M6
- Interface connector, plastic rubber

**Order text:**
- Guide trough with glide bar (set of 2 trough side parts, incl. glide strips) 975.30.SLA Part No.
- Guide trough without glide bar (set of 2 trough side parts, incl. glide strips) 975.30.SLA Part No.

**Order text:**
- Installation set “Basic” complete 975.50.SLA Part No.

**Order text:**
- Module for the fixed end 975.80 Part No.

**Option:**
For an additional noise damping with silencer profile, please add index A - Example:
- 975.30.SLA Part No.
### Stable due to undercut design - new very large inner height

**When to use Series E4.112:**
- If a robust e-chain/e-tube with an inner height of 112 mm is required (e-tube 108 mm inner height)
- If inner widths up to 600 mm are required
- For unsupported lengths up to 6.5 m and fill weights up to 85 kg/m
- For long travels up to 450 m
- Also suitable for side-mounted, vertical standing or hanging applications
- If many options and accessories are desired

**When to use a different igus® Series:**
- When an e-chain® is needed for rough applications with even greater inner height:
  - Series 800, page 724
- When a light version is needed:
  - Series 1640, page 860

### Unsupported applications

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height $H_F$. Please consult igus® if space is particularly restricted. More information ➤ Design, page 95

### Dimensions

<table>
<thead>
<tr>
<th>Pitch</th>
<th>143 mm/link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Links/m</td>
<td>7 (1001 mm)</td>
</tr>
<tr>
<td>Chain length</td>
<td>$\frac{S}{2} + K$</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>$R$ (m)</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
<th>400</th>
<th>450</th>
<th>500</th>
<th>550</th>
<th>600</th>
<th>700</th>
<th>800</th>
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</thead>
<tbody>
<tr>
<td>$H$ (mm)</td>
<td>545</td>
<td>645</td>
<td>745</td>
<td>845</td>
<td>945</td>
<td>1045</td>
<td>1145</td>
<td>1245</td>
<td>1345</td>
<td>1445</td>
<td>1545</td>
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<tr>
<td>$D$ (mm)</td>
<td>415</td>
<td>465</td>
<td>515</td>
<td>555</td>
<td>605</td>
<td>655</td>
<td>705</td>
<td>755</td>
<td>805</td>
<td>855</td>
<td>905</td>
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<tr>
<td>$K$ (mm)</td>
<td>915</td>
<td>1075</td>
<td>1230</td>
<td>1390</td>
<td>1545</td>
<td>1700</td>
<td>1860</td>
<td>2015</td>
<td>2175</td>
<td>2645</td>
<td>3430</td>
</tr>
</tbody>
</table>

The required clearance height: $H_F = H + 100$ mm (with 5.0 kg/m fill weight)

*Radius not available for e-tubes

---

**Technical Data**

- Speed, material, temperature and flammability class ➤ page 622

**Diagram values provisionally! Please consult igus®**

**Diagram values provisionally! Please consult igus®**

**Diagram values provisionally! Please consult igus®**

---

**Available from stock. Delivery time in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

**3D-CAD files, configurators, PDF ➤ www.igus.eu/eu/E4.112**

---

**igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu | 711**
**E4.112**

**Series E4.112**

**Product range**

**Standard**

---

**e-chains**

Series E4.112 crossbars every link

Series H4.112 crosses every 2nd link

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>E4.112</th>
<th>H4.112</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.112</td>
<td>05.R0</td>
<td>50</td>
<td>102</td>
<td>6.89</td>
</tr>
<tr>
<td>E4.112</td>
<td>06.R0</td>
<td>65</td>
<td>117</td>
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<td>07.R0</td>
<td>75</td>
<td>127</td>
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<td>E4.112</td>
<td>08.R0</td>
<td>87</td>
<td>139</td>
<td>7.05</td>
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<td>E4.112</td>
<td>10.R0</td>
<td>100</td>
<td>152</td>
<td>7.10</td>
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<td>E4.112</td>
<td>11.R0</td>
<td>112</td>
<td>164</td>
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<td>E4.112</td>
<td>12.R0</td>
<td>125</td>
<td>177</td>
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<td>E4.112</td>
<td>13.R0</td>
<td>137</td>
<td>189</td>
<td>7.31</td>
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<tr>
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<td>E4.112</td>
<td>16.R0</td>
<td>162</td>
<td>214</td>
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<td>200</td>
<td>252</td>
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<tr>
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<td>302</td>
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<td>E4.112</td>
<td>27.R0</td>
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<td>7.99</td>
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<td>E4.112</td>
<td>28.R0</td>
<td>300</td>
<td>352</td>
<td>8.09</td>
</tr>
</tbody>
</table>

Available bending radii R \( \text{mm} \): 200 | 250 | 300 | 350 | 400 | 500 | 550 | 600 | 750 | 1000

Supplement Part No. with required radius (R). Example: E4.112.30.300.0

---

**Order key for all types**

**E4.112. 30, 300, 0**

- e-chain (crossbars every link)
- e-chain (crossbars every 2nd link)

**H4.112. 30, 300, 0**

- Fully enclosed e-tube

**Dimensioning**

- Standard color black
- Bending radius R
- Width index 1 - 125
- Inner height
- Series / Type

---

**e-tubes**

Series R4.112 - fully enclosed

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>R4.112</th>
</tr>
</thead>
<tbody>
<tr>
<td>R4.112</td>
<td>20.R0</td>
<td>200</td>
<td>252</td>
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<td>R4.112</td>
<td>25.R0</td>
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<tr>
<td>R4.112</td>
<td>30.R0</td>
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<td>352</td>
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</tbody>
</table>

Available bending radii R \( \text{mm} \): 250 | 300 | 400 | 500 | 600 | 750 | 1000

Supplement Part No. with required radius (R). Example: R4.112.30.300.0

---

**e-chain' links as single parts, overview**

Available from stock. Delivery time* in 24h or today!

Additional links as single parts, overview

- Standard color black
- Bending radius R
- Width index 1 - 125
- Inner height
- Series / Type

---

**Configuration options and order keys, overview**

Available from stock. Delivery time* in 24h or today!

---

**Configuration options and order keys, overview**

Available from stock. Delivery time* in 24h or today!

---

E4.112

H4.112

R4.112
E4.112
H4.112
R4.112

E4.1 Series E4.112 Product range Options

E4.112
H4.112
R4.112

E4.1 Series E4.112 Product range Options

...–10 dB(A)

...NC-Version

depends on environmental conditions,
similar to figure

Noise dampening | - ≈10 dB(A)

QuickLock crossbars | Quick opening - up to 25% faster assembly
Part No.

QuickLock crossbar for

crossbars crossbars
every link every 2nd link

Inner
radius

Outer
radius

Both
radii

Bi
[mm]

Part No.
crossbars crossbars
every link every 2nd link

QuickLock crossbar for
Inner
radius

Outer
radius

Both
radii

Bi
[mm]

With pads
E41)| H41)| R41)

Bi
[mm]

With pads
E41)| H41)| R41)

Bi
[mm]

E4.112. H4.112.15.QZ.R.0 15.QE.R.0
E4.112. H4.112.16.QZ.R.0 16.QE.R.0

15.Q. R.0 150
16.Q. R.0 162

E4.112. H4.112.41.QZ.R.0 41.QE.R.0
E4.112. H4.112.42vQZ.R.0 42vQE.R.0

41.Q. R.0 412
42vQ. R.0 425

ES4
. HS4 –
ES4 HS4 –

.112. 05. R.0 50
.112. 06. R.0 65

E4.112. H4.112.17.QZ.R.0 17.QE.R.0
E4.112. H4.112.18.QZ.R.0 18.QE.R.0
E4.112. H4.112.20.QZ.R.0 20.QE.R.0

17.Q. R.0 175
18.Q. R.0 187
20.Q. R.0 200

E4.112. H4.112.43.QZ.R.0 43.QE.R.0
E4.112. H4.112.45.QZ.R.0 45.QE.R.0
E4.112. H4.112.46.QZ.R.0 46.QE.R.0

43.Q. R.0 437
45.Q. R.0 450
46.Q. R.0 462

ES4 HS4 –
ES4 HS4 –
ES4 HS4 –

.112. 07. R.0 75 ES4 HS4 – .112. 33. R.0 337
.112. 08. R.0 87 ES4 HS4 RS4 .112. 35. R.0 350
.112. 10. R.0 100 ES4 HS4 – .112. 36. R.0 362

E4.112. H4.112.21.QZ.R.0 21.QE.R.0
E4.112. H4.112.22.QZ.R.0 22.QE.R.0

21.Q. R.0 212
22.Q. R.0 225

E4.112. H4.112.47.QZ.R.0 47.QE.R.0
E4.112. H4.112.48.QZ.R.0 48.QE.R.0

47.Q. R.0 475
48.Q. R.0 487

ES4 HS4 –
ES4 HS4 –

.112. 11. R.0 112 ES4 HS4 –
.112. 12. R.0 125 ES4 HS4 –

E4.112. H4.112.23.QZ.R.0 23.QE.R.0
E4.112. H4.112.25.QZ.R.0 25.QE.R.0
E4.112. H4.112.26.QZ.R.0 26.QE.R.0

23.Q. R.0 237
25.Q. R.0 250
26.Q. R.0 262

E4.112. H4.112.50.QZ.R.0 50.QE.R.0
E4.112. H4.112.51.QZ.R.0 51.QE.R.0
E4.112. H4.112.52.QZ.R.0 52.QE.R.0

50.Q. R.0 500
51.Q. R.0 512
52.Q. R.0 525

ES4 HS4 –
ES4 HS4 –

E4.112. H4.112.27.QZ.R.0 27.QE.R.0
E4.112. H4.112.28.QZ.R.0 28.QE.R.0

27.Q. R.0 275
28.Q. R.0 287

E4.112. H4.112.53.QZ.R.0 53.QE.R.0
E4.112. H4.112.55.QZ.R.0 55.QE.R.0

53.Q. R.0 537
55.Q. R.0 550

.112. 13. R.0 137 ES4 HS4 RS4 .112. 40. R.0
.112. 15. R.0 150 ES4 HS4 – .112. 41. R.0
.112. 16. R.0 162 ES4 HS4 – .112. 42vR.0
.112. 17. R.0 175 ES4 HS4 – .112. 43. R.0
.112. 18. R.0 187 ES4 HS4 – .112. 45. R.0

E4.112. H4.112.30.QZ.R.0 30.QE.R.0
E4.112. H4.112.31.QZ.R.0 31.QE.R.0
E4.112. H4.112.32.QZ.R.0 32.QE.R.0

30.Q. R.0 300
31.Q. R.0 312
32.Q. R.0 325

E4.112. H4.112.60.QZ.R.0 60.QE.R.0

60.Q. R.0 600

.112. 46. R.0 462
.112. 47. R.0 475
.112. 48. R.0 487

E4.112. H4.112.33.QZ.R.0 33.QE.R.0
E4.112. H4.112.35.QZ.R.0 35.QE.R.0

33.Q. R.0 337
35.Q. R.0 350

ES4 HS4 –
ES4 HS4 –
ES4 HS4 RS4 .112. 20. R.0 200 ES4 HS4 –
ES4 HS4 – .112. 21. R.0 212 ES4 HS4 –
ES4 HS4 – .112. 22. R.0 225 ES4 HS4 –
ES4 HS4 – .112. 23. R.0 237 ES4 HS4 –
ES4 HS4 RS4 .112. 25. R.0 250 ES4 HS4 –

E4.112. H4.112.36.QZ.R.0 36.QE.R.0
E4.112. H4.112.37.QZ.R.0 37.QE.R.0
E4.112. H4.112.38.QZ.R.0 38.QE.R.0

36.Q. R.0 362
37.Q. R.0 375
38.Q. R.0 387

ES4 HS4 –
ES4 HS4 –
ES4 HS4 –

.112. 52. R.0 525
.112. 53. R.0 537
.112. 55. R.0 550

E4.112. H4.112.40.QZ.R.0 40.QE.R.0

40.Q. R.0 400

QuickLock crossbars: inner widths from 150 mm possible!

Available bending radii R [mm] 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 750 | 1000
Supplement Part No. with required radius (R). Example: E4.112.30QZ.300.0

ES4 HS4 –

ES4 HS4 –
ES4 HS4 –

NC-Version | Without pretension

.112. 31. R.0 312
.112. 32. R.0 325

.112. 37. R.0 375
.112. 38. R.0 387
400
412
425
437
450

.112. 50. R.0 500
.112. 51. R.0 512

.112. 26. R.0 262 ES4 HS4 –
.112. 27. R.0 275 ES4 HS4 –
.112. 28. R.0 287 ES4 HS4 –

NC-Version
E41)| H41)| R41)
E4 H4 – .112. 05. R.0.NC
E4 H4 – .112. 06. R.0.NC
E4 H4 – .112. 07. R.0.NC
E4 H4 – .112. 08. R.0.NC
E4 H4 – .112. 10. R.0.NC
E4 H4 – .112. 11. R.0.NC
E4 H4 – .112. 12. R.0.NC
E4 H4 – .112. 13. R.0.NC
E4 H4 – .112. 15. R.0.NC
E4 H4 – .112. 16. R.0.NC
E4
E4
E4
E4

H4
H4
H4
H4

Bi
[mm]

50
65

NC-Version
E41)| H41)| R41)

Bi
[mm]

E4 H4 – .112. 31. R.0.NC 312
E4 H4 – .112. 32. R.0.NC 325

75 E4 H4 – .112. 33. R.0.NC 337
87 E4 H4 R4.112. 35. R.0.NC 350
100 E4 H4 – .112. 36. R.0.NC 362
112 E4 H4 – .112. 37. R.0.NC 375
125 E4 H4 – .112. 38. R.0.NC 387

137 E4 H4 R4.112. 40. R.0.NC
150 E4 H4 – .112. 41. R.0.NC
162 E4 H4 – .112. 42vR.0.NC
– .112. 17. R.0.NC 175 E4 H4 – .112. 43. R.0.NC
– .112. 18. R.0.NC 187 E4 H4 – .112. 45. R.0.NC
R4.112. 20. R.0.NC 200 E4 H4 – .112. 46. R.0.NC
– .112. 21. R.0.NC 212 E4 H4 – .112. 47. R.0.NC
– .112. 22. R.0.NC 225 E4 H4 – .112. 48. R.0.NC

E4 H4
E4 H4 – .112. 23. R.0.NC 237 E4
E4 H4 R4.112. 25. R.0.NC 250 E4
E4 H4 – .112. 26. R.0.NC 262 E4
E4 H4 – .112. 27. R.0.NC 275 E4
E4 H4 – .112. 28. R.0.NC 287 E4

400
412
425
437
450
462
475
487

H4 – .112. 50. R.0.NC 500
H4 – .112. 51. R.0.NC 512
H4 – .112. 52. R.0.NC 525
H4 – .112. 53. R.0.NC 537
H4 – .112. 55. R.0.NC 550

ES4 HS4 RS4 .112. 30. R.0 300 ES4 HS4 – .112. 60. R.0 600
E4 H4 R4.112 30. R.0.NC 300 E4 H4 – .112 60. R.0.NC 600
Available bending radii R [mm] 200* | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 750 | 1000 *Radius not available for e-tubes
Supplement Part No. with required radius (R). Example: ES4.112.30.300.0 or E4.112.30.300.0.NC
1) E4 = e-chain with crossbars every link H4 = e-chain with crossbars every 2nd link R4 = e-tube fully enclosed
®

e-chain links as single parts, overview
®

page 623

®

e-chain links as single parts, overview
®

page 623

e-chain with QuickLock crossbars - Delivery time* 3-5 work days.

Noise dampening - Delivery time* 3-5 work days. NC-Version - Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

*Delivery time means time until shipping of goods (after technical release)

®

714 3D-CAD files, configurators, PDF, applications

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715


**Series E4.112 | Interior separation**

**Interior separation - for e-chains' and e-tubes**

**Option 1 | Separators and spacers**

Separator 6401 (e-chains' only)
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).

Locking separator 6408 (e-chains' only)
For applications exposed to very high humidity (> 85%). Locks with extra retention force. Tip: use locking separator per e-chain link for better mounting.

Spacer* 405.XX (e-chains' only)
Separators can be fixed in position by spacers. The available interior height is reduced by 2 mm per spacer (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). XX = width of the spacer (please choose between 10, 15, 20, 30, 40 mm).

**Additional elements - interior separation**

Rollclip
Minimizes abrasion of particularly sensitive hoses - simply clamped onto the opening crossbar. The movable rollers compensate for relative movement between the e-chain' and hose.

**Option 2 | Shelves**

Open, slotted separator 6405 (unilateral open)
Fast assembly can be achieved into an existing interior separation system without a need for dismantling the interior separators. During an installation of open slotted separators, the top and bottom notches cannot be occupied by shelves, e-chains' only.

Middle plate 6403 (e-chains' only)
To achieve a modular shelving the shelf 420.X can be arranged at 15 different heights (in 7 mm increments).

Middle plate 6003 (e-tubes only)
Works like middle plate 6003 on e-tube 1608.

Side plate 6002 (e-chains'/e-tubes)
Works like middle plate. Allows modular shelving close to the side links.

Shelf 420.X
For horizontal separation. Shelves of various widths can be arranged at 15 different heights (in 7 mm increments) - see table below.

**Note:** Please observe a lateral spacing to the side links. e-tube: 32 mm | e-chain': 16 mm

In the standard configuration separators are assembled every 2nd e-chain' link.

*Rollclip

Separator* 415.X (e-chains' only)

Open, slotted separator 415.X (e-chains' only)

Spacer* 415.XX (e-chains' only)

Locking separator 6411

**Additional elements - interior separation**

Rollclip

Minimizes abrasion of particularly sensitive hoses - simply clamped onto the opening crossbar. The movable rollers compensate for relative movement between the e-chain' and hose.

**Option 2 | Shelves**

Open, slotted separator 6415 (unilateral open)
Fast assembly can be achieved into an existing interior separation system without a need for dismantling the interior separators. During an installation of open slotted separators, the top and bottom notches cannot be occupied by shelves, e-chains' only.

Middle plate 6413 (e-chains' only)
To achieve a modular shelving the shelf 421.X can be arranged at 15 different heights (in 7 mm increments).

Middle plate 6013 (e-tubes only)
Works like middle plate 6013 on e-tube 1608.

Side plate 6012 (e-chains'/e-tubes)
Works like middle plate. Allows modular shelving close to the side links.

Shelf 421.X
For horizontal separation. Shelves of various widths can be arranged at 15 different heights (in 7 mm increments) - see table below.

**Note:** Please observe a lateral spacing to the side links. e-tube: 32 mm | e-chain': 16 mm

In the standard configuration separators are assembled every 2nd e-chain' link.

*Rollclip
**Steel pivoting | Recommended for unsupported and gliding applications**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Mounting bracket</th>
<th>Notes</th>
</tr>
</thead>
</table>
| E4.11210.3 | Full set (both sides), ending with outer side link, screwed - Standard |  ● For pivoting connections  
  ● Secure connection  
  ● One part (two-piece) for all e-chain widths  
  ● Electrically conductive  
  ● Stainless steel version available - please add index \(E\)  
  (Material: stainless steel 1.4301) |
| E4.11210.4 | Full set (both sides), beginning with outer side link (moving end), ending with inner side link (fixed end), screwed - Standard |  |

**Steel locking | Recommended for vertical hanging and standing applications**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Mounting bracket</th>
<th>Notes</th>
</tr>
</thead>
</table>
| E4.11210.1 | Full set (both sides), ending with outer side link, screwed - Standard |  ● For locking connections  
  ● Secure connection  
  ● One part (two-piece) for all e-chain widths  
  ● Electrically conductive  
  ● Stainless steel version available - please add index \(E\)  
  (Material: stainless steel 1.4301) |
| E4.11210.2 | Full set (both sides), beginning with outer side link (moving end), ending with inner side link (fixed end), screwed - Standard |  |

**Strain relief | e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148**

- [Strain relief](https://www.igus.eu)
**E4.1 Series E4.112 | More options**

**Extension links | for extremely wide e-chains® up to 3.0 m**
- The extension link design allows virtually limitless side-by-side attachment
- High fill weights necessitate extremely wide e-chains® up to 3,000 mm
- The unsupported length \( L_u \), max. can be increased when additional loads are required
- Suitable for unsupported and gliding applications in a guide trough
- Attachment with KMA or steel mounting brackets

**Order example - 2 chambers**
- E4.112.10/20.200.0
- Extension links: single-part order:
- 6022.R, (please indicate radius)

**Round or square extender crossbar: combined with snap-open crossbars or attached directly on the side link (view from the fixed point)**

**Extender crossbars | careful guide of hosed applications**
- Suitable for hoses with a maximum outer diameter of 300 mm
- Gliding with crossbars assembled along outer radius and a special guide trough
- Extender crossbar 2| for snap-open crossbars or | attached directly on the side link

**Order examples - extender crossbar**
1. Combination with snap-open crossbars
   - RD115 for outer radius "E" incl. e-chain:
   - E4.112.15/19RDH115/15.R0
   - RD115 for inner radius "Z" incl. e-chain:
   - E4.112.15/19RDH115/15.R0

2. Installation on side link
   - RD115 for outer radius "E" incl. e-chain:
   - E4.112.17RD115.R0
   - RD115 for inner radius "Z" incl. e-chain:
   - E4.112.17RD115.R0

**E4 snapclip | 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 required
- Compatible with many E4 e-chains®
- Stylish and economical

**Part No. | Form**
- 450.B12 Locking clip, comprising a locking element
- 450.B12.200 Locking band, comprising a locking element and band; 12 x 1.5 x 200 mm

**Strain relief system**
- Clamps, tiewrap plates, nuggets and plug-in clips. The complete chainfix range with many order options [from page 1148]

**Support tray tool kit**
- For support of the lower run. Simple one-piece support trays according to your requirements and specification [from page 1258]
**Steel Guide Troughs | Heavy-Duty**

**Part No. 98.30 | 98.31 | Trough height: 300 mm**

**Installation set with C-profile for e-chains**

<table>
<thead>
<tr>
<th>Ser. No.</th>
<th>Width (mm)</th>
<th>B</th>
<th>Part No.</th>
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</table>

**More solutions | For long travel applications**

**guidekol horizontal - Upper run guide, unsupported**

**Travels ≤ 50 m**

Chips cannot get stuck between upper and lower run - enormous increase of “self supporting” length of e-chains

**Special solutions for long travel applications**

**3D-CAD files, configurators, PDF, applications**

www.igus.eu/eu/E4.112

**Principle sketch:** Number of installation sets to be installed = Number of trough sections + 1
For rough conditions, very large inner height

When to use Series 800:
- If a robust e-chain® with an inner height of 200 mm is required
- If inner widths up to 600 mm are required
- For unsupported lengths up to 8.0 m and fill weights up to 90 kg/m
- For long travels up to 450 m
- For rough environmental conditions or rigid hoses

When to use a different igus® Series:
- If a light weighted, less stable e-chain® with identical inner height is required
  - Series 840, page 732

Unsupported applications
Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height HF. Please consult igus® if space is particularly restricted. More information ▶ Design, page 95

Gilding applications
Travels up to 450 m.
More information ▶ page 730

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)

3D-CAD files, configurators, PDF ▶ www.igus.eu/eu/800
### E4.1 Series 800 Product range Standard

#### e-chains® | Series 800 with crossbars every link

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>800 [kg/m]</th>
</tr>
</thead>
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<td>R.0</td>
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Available bending radii R [mm]: 325, 350, 400, 450, 500, 600, 750, 1000

Supplement Part No. with required radius (R). Example: 800.40.400.0

#### Order key

**800.40.400.0**

- Standard color black
- Bending radius R
- Width index (depends on Bi)
- Series / Type

### E4.1 Series 800 Options

#### NC-Version | Without pretension

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
</tr>
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<td>R.0</td>
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Available bending radii R [mm]: 325, 350, 400, 450, 500, 600, 750, 1000

Supplement Part No. with required radius (R). Example: 800.40.400.0.NC

### Configuration options and order keys, overview page 624

- NC-Version - Delivery time* 3-5 work days.
  *Delivery time means time until shipping of goods (after technical release)

**Configuration options and order keys, overview page 624**

**Order key**

**800.40.400.0.NC**

**Standard color black**

**Bending radius R**

**Width index (depends on Bi)**

**Available from stock. Delivery time** in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
E4.1 | Series 800 | Interior separation | Standard

Separator 8001.
For a vertical subdivision. Offers safe stability due to its wide base design, also when used with thick cables or hoses.

Spacer® 6005.XX
Separators can be fixed in position by spacers. The available interior height is reduced by 2 mm per spacer (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). XX = width of the spacer (please choose between 10, 15, 20 mm).

Modular E4 shelving system for Series 800
- Secure guide even for large cables
- Easy assembly
- Robust, also for large cable diameters
- Modular
- Widths from 50 - 600 mm

Steel pivoting | Recommended for unsupported, gliding, vertical hanging and standing applications

鋼制 cessation brackets
Steel mounting brackets
For pivoting connections
- Secure connection
- One part (two-piece) for all e-chain® widths
- Electrically conductive
- Stainless steel version available – please add index E

Strain relief, e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148.
Gliding applications | For long travels from 15 m to max. 450 m

Solution for long travel applications - In this case the e-chain® upper run will be introduced in a guide trough on the lower run. For travels more than 100 m we recommend to realize the engineering of such a plant by our technicians. In case of travels between 12 and 15 m we recommend a longer unsupported length. More information ▶ Design, from page 106.

---

### Steel Guide Troughs | Heavy-Duty

**Part No. 90.30 | 90.31 | Trough height: 480 mm**

- **Guide trough without glide bars**
- **Guide trough with glide bars**
- **Installation sets as end connectors**

**Installation set with C-profile for e-chains®**

<table>
<thead>
<tr>
<th>For Width Index</th>
<th>( \beta_{M} ) ( \text{mm} )</th>
<th>Part No.</th>
<th>Installation set</th>
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</table>

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**Order example: Length of travel 30 m - Center mounted for Series 800.20.325.0 with \( \beta_{M} = 265 \)**

Guide trough set without glide bar(set of 2 trough side parts, incl. glide strips)

Order text: 16 m guide trough without glide bar (8 x 2 m sections) Part No. 90.30

Guide trough set with glide bar(set of 2 trough side parts, incl. glide strips)

Order text: 16 m guide trough with glide bar (8 x 2 m sections) Part No. 90.31

Installation set “Basic” complete (guide trough sets + 1)

Order text: 17 installation sets Part No. 90.50.450

---

### Steel guide trough in detail ▶ page 1234

- Trough set
- Installation set

This igus® steel guide trough has reinforced mounting angles for extreme applications.

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3D-CAD files, configurators, PDF, applications ▶ www.igus.eu/eu/800

igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu
E4.1 | Series 840 | Introduction

For rough conditions, very large inner height

When to use Series 840:

- If a robust e-chain® with an inner height of 204 mm is required
- If inner widths up to 563 mm are required
- For unsupported lengths up to 8.0 m and fill weights up to 90 kg/m
- For long travels up to 450 m
- Optimized ratio of interior and exterior dimension
- If many options and accessories are desired

When to use a different igus® Series:

- If an even more stable e-chain® with identical inner height is required
- Series 800, page 724

The igus® E4 e-chain® opener reduces assembly time ▶ page 621

E4.1 | Series 840 | Dimensions | Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height HF. Please consult igus® if space is particularly restricted. More information ▶ Design, page 95

Glding applications
Travels up to 450 m
More information ▶ page 738

Technical Data

Pitch = 250 mm/link
Links/m = 4 (1000 mm)
Chain length = $\frac{S}{2} + K$

<table>
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<tr>
<th>R</th>
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<th>350</th>
<th>400</th>
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The required clearance height: $H_F = H + 100\,\text{mm}$ (with 5.0 kg/m fill weight)

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
### Series 840 with crossbars every link

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Available bending radii R [mm]: 325 | 350 | 400 | 450 | 500 | 600 | 750 | 1000

Supplement Part No. with required radius (R). Example: 840.40.400.0

### Order key

**840. 40. 400. 0**

- **Standard color black**
- **Bending radius R**
- **Width index (depends on Bi)**
- **Series / Type**

### Configuration options and order keys, overview ► page 623

### Options

**NC-Version without pretension**

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<td>840.27</td>
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Available bending radii R [mm]: 325 | 350 | 400 | 450 | 500 | 600 | 750 | 1000

Supplement Part No. with required radius (R). Example: 840.40.400.0.NC

### Configuration options and order keys, overview ► page 623

### NC-Version - Delivery time* 3-5 work days.

*Delivery time means time until shipping of goods (after technical release)

**Dimensions**

- **Ba**: 840 max.
- **Bi**: 235
- **234**: 234

### Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
E4.1 | Series 840 | Interior separation | Standard

Separator 8401
For a vertical subdivision. Offers safe stability due to its wide base design, also when used with thick cables or hoses.

Spacer® 405.XX
Separators can be fixed in position by spacers. The available interior height is reduced by 2 mm per spacer (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).

XX = width of the spacer (please choose between 10, 15, 20, 30, 40 mm).

Note: No lateral spacing to side links necessary!
In the standard configuration separators are assembled every 2nd e-chain link!

---

Steel pivoting | Recommended for unsupported, gliding, vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Mounting bracket pivoting</th>
</tr>
</thead>
<tbody>
<tr>
<td>8000.1</td>
<td>Full set (both sides), ending with outer side link, screwed - Standard</td>
</tr>
<tr>
<td>8000.2</td>
<td>Full set (both sides), beginning with outer side link (moving end), ending with inner side link (fixed end), screwed - Standard</td>
</tr>
<tr>
<td>8000.12</td>
<td>Full set (both sides), ending with outer side link, not screwed - Standard</td>
</tr>
<tr>
<td>8000.12</td>
<td>Full set (both sides), beginning with outer side link (moving end), ending with inner side link (fixed end), not screwed - Standard</td>
</tr>
</tbody>
</table>

Note: Depending on the e-chain length, the carrier will end with outer or inner side links. For the best appearance, make sure the e-chain ends with outer side link whenever possible. (with odd number of links)

Strain relief, e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148.
**E4.1 | Series 840 | Dimensions | Long travels**

**Gliding applications** | **For long travels from 15 m to max. 450 m**

Solution for long travel applications - In this case, the e-chain® upper run will be introduced in a guide trough on the lower run. For travels more than 100 m we recommend to realize the engineering of such a plant by our technicians. In cases of travels between 12 and 15 m we recommend a longer unsupported length. More information ▶ Design, from page 106

**Pitch** = 250 mm/link · **Links/m** = 4 (1000 mm) · **Chain length** = \( \frac{S}{2} + K_2 \)

<table>
<thead>
<tr>
<th>R</th>
<th>325</th>
<th>350</th>
<th>400</th>
<th>450</th>
<th>500</th>
<th>600</th>
<th>750</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>H_2</td>
<td>580</td>
<td>580</td>
<td>580</td>
<td>580</td>
<td>580</td>
<td>580</td>
<td>580</td>
<td>580</td>
</tr>
<tr>
<td>D_2</td>
<td>1030</td>
<td>1080</td>
<td>1380</td>
<td>1610</td>
<td>2000</td>
<td>2480</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K_2</td>
<td>2000</td>
<td>2000</td>
<td>2500</td>
<td>3000</td>
<td>3250</td>
<td>4000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACL</td>
<td>250</td>
<td>300</td>
<td>550</td>
<td>750</td>
<td>1050</td>
<td>1400</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Value upon request!

**Steel Guide Troughs | Heavy-Duty**

**Part No. 90.30 | 90.31 | Trough height: 480 mm**

- **Guide trough without glide bars**
- **Guide trough with glide bars**
- **Installation sets as end connectors**
  - **Part No. 90.30**
  - **Part No. 90.31**

J000 indicates the length of the C-profile on which the guide trough is mounted. (see table).

The values and part numbers are specified in the table on the left. Standard length of the trough components and glide bars is 2 m. The required overall length of the guide trough directly correlates to the length of travel. Special dimensions are available for confined spaces.

**Order example:** Length of travel 30 m -

- Center mounted for Series 840.13.325.0 with **B_{Ba} = 165**

**Guide trough set without glide bar** (set of 2 trough side parts, incl. glide strips)

**Guide trough set with glide bar** (set of 2 trough side parts, incl. glide strips)

**Guide trough set with glide bar** (set of 2 trough side parts, incl. glide strips)

**Installation set** "Basic" complete (guide trough sets + 1)

**Steel guide trough in detail ▶ page 1234**

Principle sketch: Number of installation sets to be installed = Number of trough sections + 1.
**Series E4.350**

**Introduction**

Largest all-plastic e-chain®, extreme inner height 350 mm

When to use Series E4.350:
- If the world's largest all-plastic e-chain® (issue 04/2010) with an inner height of 350 mm is required
- For a very huge interior up to a diagonal of 42" and an inner width up to 940 mm
- For unsupported lengths up to 6.5 m and fill weights >100 kg/m
- For large, heavy and stiff cables
- Ideal for rough use on oil platforms, in steel plants, or in Heavy-Duty machinery
- Maintenance-free - no grease or oil needed to lubricate the joints
- Less abrasion due to rollers

**Fill weight [kg/m]**

<table>
<thead>
<tr>
<th>Unsupported length FLG</th>
<th>Length of travel S</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,9 m</td>
<td>7,8 m</td>
<td></td>
</tr>
</tbody>
</table>

**Dimensions**

- Pitch = 470 mm/link
- Links/m = 2 (940 mm)
- Chain length = \( \frac{S}{2} + K \)

The required clearance height: \( H_F = H + 150 \) mm

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

**3D-CAD files, configurators, PDF** [www.igus.eu/eu/E4.350](www.igus.eu/eu/E4.350)
### e-chains® | Series E4.350 with crossbars every link

**Part No.**
- E4.350 400. R.0 400 540 61.9
- E4.350 500. R.0 500 640 65.7
- E4.350 600. R.0 600 740 69.6

Available bending radii \( R \) (\[mm\]): 500 | 750 | 1000

Supplement Part No. with required radius \( (R) \). Example: E4.350.500.500.0

### Horizontal shelves

**Width X (mm)**
- \( 50 \): unassembled \( 450.50 \) assembled \( 451.50 \)
- \( 65 \): unassembled \( 450.65 \) assembled \( 451.65 \)
- \( 75 \): unassembled \( 450.75 \) assembled \( 451.75 \)
- \( 87 \): unassembled \( 450.87 \) assembled \( 451.87 \)
- \( 100 \): unassembled \( 450.100 \) assembled \( 451.100 \)
- \( 112 \): unassembled \( 450.112 \) assembled \( 451.112 \)
- \( 125 \): unassembled \( 450.125 \) assembled \( 451.125 \)
- \( 137 \): unassembled \( 450.137 \) assembled \( 451.137 \)
- \( 150 \): unassembled \( 450.150 \) assembled \( 451.150 \)
- \( 162 \): unassembled \( 450.162 \) assembled \( 451.162 \)
- \( 175 \): unassembled \( 450.175 \) assembled \( 451.175 \)
- \( 187 \): unassembled \( 450.187 \) assembled \( 451.187 \)
- \( 200 \): unassembled \( 450.200 \) assembled \( 451.200 \)
- \( 212 \): unassembled \( 450.212 \) assembled \( 451.212 \)

**Dimensions**
- \( Bi \) and \( Ba \)
- \( 315 \text{ max.} \)
- \( 350 \)
- \( 450 \)

---

*Delivery time means time until shipping of goods (after technical release)*

**Note:** No lateral spacing to side links necessary!

---

**Separator for vertical subdivision 350.1**

For a vertical subdivision \( 450.0 \) in 3 levels.

**Shelf for horizontal subdivision 450.0**

For horizontal separation with clips separators for vertical subdivision. Horizontal shelves of various widths can be arranged at 3 different levels.

---

**Configuration options and order keys, overview ➤ page 624**

**Available from stock. Delivery time* in 24h or today!**
Steel mounting brackets

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Mounting bracket locking</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.350100.1</td>
<td>Full set (both sides), screwed - Standard</td>
<td>For locking connections</td>
</tr>
<tr>
<td>E4.350100.1</td>
<td>Full set (both sides), ending with outer side link, not screwed - Standard</td>
<td>Electrically conductive</td>
</tr>
</tbody>
</table>

Robust steel mounting bracket for secure fixation and connection.

The worldwide largest polymer e-chain® used for sludge treatment. The heavy hoses (approx. 100 kg/m) have to be routed safely and protected from mechanical abrasion on the bridge. More Information [www.igus.eu/eu/amoras](http://www.igus.eu/eu/amoras)
E4.1 light

e-chains® and e-tubes, high dynamics, light and cost-effective
R4.1 light - New in this catalog

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

All-round e-chains® and e-tubes for high dynamics. The E4.1 light series have been developed to combine the advantages of the E2/000 and E4.1 in one series. The stability of the E4.1 system on the one hand and the easy accessibility of the E2/000 system on the other. The stability and the price of E4.1 light lies exactly between these systems and thus constitutes a perfect alternative for you if the stability of E2/000 is insufficient and an E4.1 is oversized.

- 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 radius
- Ideal ratio of internal and external dimensions through thinner outer links and optimised crossbar geometry
- Inner diameter completely accessible for easy filling

Typical industries and applications

- Machine tools
- General mechanical engineering
- If the stability of the E2/000 is insufficient, but an E4.1 is oversized

Denseness test at the igus®-lab: High chip protection in this test scenario. Stop dogs completely free of chips

New snap-open mechanism, Series E4.1 and R4.1 light choice of snap-open on left or right

Low noise operation: Due to integrated “brakes”

ESD classification: Electrically conductive

ESD/ATEX version upon request

System E4 - 4-piece e-chain® links

Contents, selection table and assembly instructions next page
**E4.1 light**

**Contents**

**Selection Table**

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height hi (mm)</th>
<th>Inner width Bi (mm)</th>
<th>Outer width Ba (mm)</th>
<th>Outer height ha (mm)</th>
<th>Bending radius R (mm)</th>
<th>Unsupported length max. (m)</th>
<th>page</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.38L</td>
<td>38</td>
<td>50 - 175</td>
<td>66 - 191</td>
<td>54</td>
<td>063 - 300</td>
<td>2.75</td>
<td>754</td>
</tr>
<tr>
<td>E4.48L</td>
<td>48</td>
<td>50 - 175</td>
<td>70 - 195</td>
<td>64</td>
<td>075 - 350</td>
<td>3.75</td>
<td>764</td>
</tr>
</tbody>
</table>

**Crossbars every link**

Crossbars on both sides pivotable, snap-open along the inner and outer radius

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height hi (mm)</th>
<th>Inner width Bi (mm)</th>
<th>Outer width Ba (mm)</th>
<th>Outer height ha (mm)</th>
<th>Bending radius R (mm)</th>
<th>Unsupported length max. (m)</th>
<th>page</th>
</tr>
</thead>
<tbody>
<tr>
<td>R4.38L New*</td>
<td>38</td>
<td>100</td>
<td>116</td>
<td>54</td>
<td>125 - 300</td>
<td>2.75</td>
<td>754</td>
</tr>
<tr>
<td>R4.48L New*</td>
<td>48</td>
<td>75 - 175</td>
<td>95 - 195</td>
<td>64</td>
<td>125 - 350</td>
<td>3.75</td>
<td>764</td>
</tr>
</tbody>
</table>

**e-tubes, fully enclosed**

Lids on both sides pivotable, snap-open along the inner and outer radius

**Assembly instruction**

1. Line up two inner side links, side by side...
2. ...attach an outer side link between
3. Insert crossbar at one side, close and snap-in
4. Openable, just place the screwdriver at the inner site of the closing mechanism and lever to open

**New size E4.1 light - 31 mm inner height**

- Light, highly dynamic, cost-effective e-chains® and e-tubes with 31 mm inner height available
- Snaps open on both sides
- Reduced weight, higher dynamics
- Optimized interior-exterior dimensions ratio
- Quick assembly
- Delivery time upon request
- More information: www.igus.eu/E41.light

**Technical Data, overview** page 752

**e-chain® links as single parts, overview** page 752

**Configuration options and order keys, overview** page 753

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

**Assembly video available online at** www.igus.eu/E4L_assembly
Technical Data - E4.1 light

<table>
<thead>
<tr>
<th>Gliding speed / acceleration (maximum)</th>
<th>upon request</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed / acceleration ( F_{g_{\text{max}}} )</td>
<td>( 20 , \text{[m/s]} ), ( 200 , \text{[m/s]} )</td>
</tr>
<tr>
<td>Speed / acceleration ( F_{g_{\text{max}}} )</td>
<td>( 3 , \text{[m/s]} ), ( 6 , \text{[m/s]} )</td>
</tr>
<tr>
<td>Material - permitted temperature °C, igumid G</td>
<td>(-40^\circ \text{C} ) bis (+120^\circ \text{C} )</td>
</tr>
<tr>
<td>Flammability class, igumid G</td>
<td>VDE 0304 IIC UL94-HB</td>
</tr>
</tbody>
</table>

Installation methods overview, maximum travels - E4.1 light

<table>
<thead>
<tr>
<th>e-chain’ Series</th>
<th>Unsupported application</th>
<th>Gilding application</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.38L/R4.38L*</td>
<td>( \leq 2.75 , \text{m} )</td>
<td>( \leq 80 , \text{m} )</td>
<td>( \leq 50 , \text{m} )</td>
<td>( \leq 3 , \text{m} )</td>
<td>( \leq 1.0 , \text{m} )</td>
</tr>
<tr>
<td>E4.48L/R4.48L*</td>
<td>( \leq 3.75 , \text{m} )</td>
<td>( \leq 100 , \text{m} )</td>
<td>( \leq 80 , \text{m} )</td>
<td>( \leq 3 , \text{m} )</td>
<td>( \leq 1.2 , \text{m} )</td>
</tr>
</tbody>
</table>

Part No. 4-piece e-chain’ links as single parts - E4.1 light

<table>
<thead>
<tr>
<th>Series</th>
<th>Crossbar(^{(1)})</th>
<th>Lid(^{(1)})</th>
<th>Bottom(^{(1)})</th>
<th>Outer side link(^{(2)})</th>
<th>Inner side link(^{(3)})</th>
</tr>
</thead>
</table>

1) Crossbar (bottom) - supplement Part No. with required width index (Bi), example: C622.150
2) Outer side link - suitable for all radii
3) Inner side link - supplement Part No. with required width index (Bi) and required radius (Fl), example: E4.38L.02.150

Options with order keys based on Series E4.38 light

<table>
<thead>
<tr>
<th>Order example</th>
<th>Order key and color options based on Series E4.38 light</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order example for complete e-chain’ (1,0 m), color black, with mounting brackets and interior separation</td>
<td>e-chain’ (1,0 m), Please indicate e-chain’ length or number of links: 1.0 m or 18 links</td>
</tr>
<tr>
<td>+ Mounting brackets</td>
<td>KMA - 1 set (with odd number of links and integrated C-profiles)</td>
</tr>
<tr>
<td>+ Interior separation</td>
<td>with 2 separators assembled every 2nd link</td>
</tr>
<tr>
<td>Order example</td>
<td>2 x 38.1.1</td>
</tr>
</tbody>
</table>

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
High dynamics, low weight and cost-effective

When to use Series E4.38L-R4.38L:

- If a lightweight, cost-effective e-chain with 38 mm inner height for high dynamics is desired
- Less weight, enhanced dynamics possible
- For unsupported lengths up to 2,75 m and fill weights up to 13 kg/m
- Optimized interior-exterior dimensions ratio due to narrow outer links
- If very tightly fitting lids and bottoms are required
- Also suitable for side-mounted, vertical standing or hanging applications
- If short assembly times are required

When to use a different igus® Series:

- If an extremely low-noise and low-vibration e-chain® is required (≤46 dB(A))
- Series E6.35, page 938
- Series E4.32, page 646
- For long travels with gliding applications
- Series E4.32, page 646
- If weight and price reduction as well as a compromise in strength is needed

Series 2600/2700, page 444

Available from stock. Delivery time® in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

3D-CAD files, configurators, PDF ➤ www.igus.eu/eu/E4.38L

 Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height HF. Please consult igus® if space is particularly restricted. More information ➤ Design, page 95

Technical Data

Pitch

= 56 mm/link

Links/m = 18 (1008 mm)

Chain length = \( \frac{S}{2} + K \)

The required clearance height: HF = H + 40 mm (with 2,0 kg/m fill weight)

1) Radius not available for e-tubes. *Radius available upon request, please consult igus® for delivery time!

igth® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu
**Color index (standard black)**

**Bending radius R, example:**

\[ R \approx 1,90 \approx 228,5 \approx 0.0 \]

Available bending radii

\[ \text{max.} 54 \quad 38 \quad 34 \quad 28 \quad 22 \quad 16 \quad 10 \]

\[ 175 \quad 200 \quad 250 \quad 300 \quad 350 \]

**Width available upon request, please consult igus**

**Radius available upon request, please consult igus**

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

**links as single parts, overview ★ page 752**

**Configuration options and order keys, overview ★ page 753**

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)
E4.1 light | Series E4.38L-R4.38L | Options

E4.1 light | Series E4.38L-R4.38L | Interior separation

New generation interior separation - for e-chains® and e-tubes

Note: Please observe a lateral spacing of 8 mm to the side links.
In the standard configuration separators are assembled every 2nd e-chain® link.

**Delivery time means time until shipping of goods (after technical release)**

NC-Version | Without pretension

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>3200.050</td>
<td>50</td>
<td>66</td>
</tr>
<tr>
<td>3200.062</td>
<td>62.5</td>
<td>78.5</td>
</tr>
<tr>
<td>3200.075</td>
<td>75</td>
<td>91</td>
</tr>
<tr>
<td>3200.087</td>
<td>87.5</td>
<td>103.5</td>
</tr>
<tr>
<td>3200.100</td>
<td>100</td>
<td>116</td>
</tr>
<tr>
<td>3200.105</td>
<td>105</td>
<td>125</td>
</tr>
<tr>
<td>3200.125</td>
<td>125</td>
<td>141</td>
</tr>
<tr>
<td>3200.137</td>
<td>137.5</td>
<td>153.5</td>
</tr>
<tr>
<td>3200.150</td>
<td>150</td>
<td>166</td>
</tr>
<tr>
<td>3200.162</td>
<td>162.5</td>
<td>178.5</td>
</tr>
<tr>
<td>3200.175</td>
<td>175</td>
<td>191</td>
</tr>
<tr>
<td>3200.187</td>
<td>187.5</td>
<td>203.5</td>
</tr>
<tr>
<td>3200.200</td>
<td>200</td>
<td>216</td>
</tr>
<tr>
<td>3200.212</td>
<td>212.5</td>
<td>228.5</td>
</tr>
</tbody>
</table>

| Part No. | Part No. e-tube |
|----------|----------------
| E4.38L  | R.O.NC E4.38L.050.R.O.NC** |
| E4.38L  | R.O.NC E4.38L.062.R.O.NC** |
| E4.38L  | R.O.NC E4.38L.075.R.O.NC** |
| E4.38L  | R.O.NC E4.38L.087.R.O.NC** |
| E4.38L  | R.O.NC E4.38L.100.R.O.NC** |
| E4.38L  | R.O.NC E4.38L.105.R.O.NC** |
| E4.38L  | R.O.NC E4.38L.125.R.O.NC** |
| E4.38L  | R.O.NC E4.38L.137.R.O.NC** |
| E4.38L  | R.O.NC E4.38L.150.R.O.NC** |
| E4.38L  | R.O.NC E4.38L.162.R.O.NC** |
| E4.38L  | R.O.NC E4.38L.175.R.O.NC** |
| E4.38L  | R.O.NC E4.38L.200.R.O.NC** |
| E4.38L  | R.O.NC E4.38L.212.R.O.NC** |

**Delivery time means time until shipping of goods (after technical release)**

**Radius not available for e-tubes**

**Width available upon request, please consult igus®**

**Note:** Please observe a lateral spacing of 8 mm to the side links.
In the standard configuration separators are assembled every 2nd e-chain® link.

**Interior separation with single-part order:** Delivery time in 24h or today!

**Interior separation with single-part order:** Delivery time in 24h or today!
KMA pivoting | All-sides attachment
Recommended for unsupported and gliding applications

KMA locking | All-sides attachment
Recommended for vertical hanging and standing applications

**Notes** The E4.1 System may end with either an inner or an outer side link. Keep in mind that an outer side link always forms the first e-chain link at the moving end. The Part Nos. depend on an even or odd numbers of links. Please insert: Index (for odd) or (for even)!

*Width available upon request. Please consult igus® delivery time.

**Strain relief**, e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options | from page 1148

---

For tight installation conditions, all-sides attachment

For very high speed and acceleration, all-sides attachment
Gilding applications | For long travels from 10 m to max. 80 m

Solution for long travel applications - In this case the e-chain® upper run will be introduced in a guide trough on the lower run.

Remark: Please avoid raw dirt and dust. Please mind of an exact alignment of the trough. We recommend to realise the engineering of such a plant by our technicians. In case of travels between 5 and 10 m we recommend a longer unsupported length.

Pitch = 56 mm/link • Links/m = 18 (0.008 mm) • Chain length = $S_2 + K$

For Width Index $B_{Bi}$ mm Part No. attach/fixed upon request Part No. attach/fixed $B_{Bd}$ mm
090. 70 upon request 960.30.100
092. 82 upon request 960.30.100
075. 95 upon request 960.30.125
077. 107 upon request 960.30.125
112. 125 960.30.200 960.30.200
125. 145 960.30.300 960.30.300
137. 157 960.30.400 960.30.400
150. 170 960.30.500 960.30.500
162. 185 960.30.750 960.30.750
178. 215 960.30.300 960.30.300
187. 215 960.30.350 960.30.350
200. 222 960.30.350 960.30.350
212. 235 960.30.350 960.30.350
225. 245 960.30.350 960.30.350
237. 257 960.30.350 960.30.350
250. 270 960.30.350 960.30.350
262. 282 960.30.350 960.30.350
276. 296 960.30.300 960.30.300
290. 300 960.30.350 960.30.350
312. 332 960.30.350 960.30.350
325. 345 960.30.350 960.30.350
337. 357 960.30.350 960.30.350
350. 370 960.30.350 960.30.350
362. 382 960.30.350 960.30.350
375. 395 960.30.350 960.30.350
387. 400 960.30.350 960.30.350
400. 420 960.30.350 960.30.350

Guide trough without glide bar
Guide trough with glide bar

More solutions | For long travel applications

System P4.32 - profile-rol e-chain®, low-noise

Travels up to 600 m $V_{max}$ 10 m/s

Safe, maintenance-free for outdoor cranes or conveyor systems. Low-noise operation, high service life

rol e-chain® 2828R - rolling instead of gliding

Travels up to 400 m $V_{max}$ 6 m/s

Major reduction in drive power to less than 25 % for moving the e-chain®

E4.32.BL.0.0AG - self-guiding, no guide troughs

Travels ≤ 50 m $V_{max}$ 1.5 m/s

Self-guiding e-chain systems® - No guide troughs required!

Special solutions for long travel applications® from page 1264

Order example: Length of travel 30 m - Center mounted for Series E4.38L 100.150.0 with $B_{Bi} = 120$

Guide trough set without glide bar
(set of 2 trough side parts, incl. glide strips)

Order text: 16 m guide trough without glide bar (B 2 m sections) Part No. 972.30.SL

Guide trough with glide bar
(set of 2 trough side parts, incl. glide strips)

Order text: 16 m guide trough with glide bar (B 2 m sections) Part No. 972.31.SL

Installation set “Basic” complete

Order text: 17 installation sets Part No. 960.30.175

Module for the fixed end

Order text: 1 set Part No. 972.80.4

Option: For an additional noise damping with silencer profile, please add index A - Example: Part No. 972.30.SLA

Principle sketch: Number of installation sets to be installed = Number of trough sections + 1

Aluminum SuperTrough “Basic” in detail and the “Heavy-Duty” version for heavy machinery® from page 1196

E4.32 light E4.38L-R4.38L Dimensions | Long travels
**E4.48L-R4.48L**

*New* in this catalog

**High dynamics, low weight and cost-effective**

When to use Series E4.48L-R4.48L:
- If a lightweight, cost-effective e-chain® with 48 mm inner height for high dynamics is desired
- Less weight, enhanced dynamics possible
- Inner widths up to 150 mm
- For unsupported lengths up to 3.75 m and fill weights up to 26 kg/m
- Optimized interior-exterior dimensions ratio due to narrow outer links
- If very tightly fitting lids and bottoms are required
- Also suitable for side-mounted, vertical standing or hanging applications
- If short assembly times are required

**When to use a different igus® Series:**
- If an extremely low-noise and low-vibration e-chain® is required (<46 dB(A))
- More information ▶ Design, page 95

**Supported applications**
- Travels up to 100 m.

**Dimensions**
- Fill weight [kg/m]
- Unsupported length FLG / FLB [m]
- Length of travel S [m]

**Example**
- Fill weight = 2.0 [kg/m]
- Unsupported length FLG = 3.0 m
- Length of travel = 6.0 m

The required clearance height: HF = H + 40 mm (with 2.5 kg/m fill weight)

**Table**

<table>
<thead>
<tr>
<th>FLG</th>
<th>FLB</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**Available from stock. Delivery time® in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)
**Product range | Standard**

### e-chains® | E4.48L crossbars every link | pivotable on both sides, snap-open along inner and outer radius

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>E4.48L</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.48L, 050, R.0</td>
<td>50</td>
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<tr>
<td>E4.48L, 062, R.0</td>
<td>62.5</td>
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<td>~1.58</td>
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<td>E4.48L, 212, R.0**</td>
<td>212.5</td>
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</tr>
</tbody>
</table>

**Part No. | Bi [mm] | Ba [mm] | E4.48L [kg/m]**

Available bending radii R [mm]: 075 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350

**Order key**

- E4.48L, 175, 150.0
  - E-chain®, crossbars every link
  - E4.48L, fully enclosed

**Configuration options and order keys, overview**

- Available from stock. Delivery time* in 24h or today!

---

**e-tubes | R4.48L fully enclosed | pivotable on both sides, snap-open along inner and outer radius**

| Part No. | Bi [mm] | Ba [mm] | R4.48L [kg/m]**
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>R4.48L, 050, R.0**</td>
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**Part No. | Bi [mm] | Ba [mm] | R4.48L [kg/m]**

Available bending radii R [mm]: 075 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350

**Configuration options and order keys, overview**

- Available from stock. Delivery time* in 24h or today!

---

*Delivery time means time until shipping of goods (after technical release)
E4.1 light | Series E4.48L-R4.48L | Product range | Options

**NC-Version | Without pretension**

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<thead>
<tr>
<th>Part No.</th>
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<th>Bi</th>
<th>Part No.</th>
<th>e-tube</th>
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<td>4.48L 212.0 NC**</td>
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</tr>
</tbody>
</table>

*Width available upon request, please consult igus® for delivery time. 1) Radius not available for e-tubes.

**Available bending radii R [mm]: 075| 100| 125| 150| 175| 200| 250| 300| 350

Supplement Part No. with required radius (R), example: E4.38L 175.150.0 NC

---

**Interior separation**

New generation interior separation - for e-chains® and e-tubes

---

**NC-Version with single-part order. Delivery time in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)
E4.48L R4.48L | KMA mounting brackets

For tight installation conditions, all-sides attachment

KMA pivoting | All-sides attachment

Recommended for unsupported and gliding applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set (C-profile option)</th>
<th>Bi [mm]</th>
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<tbody>
<tr>
<td>050.</td>
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</table>

*Width available upon request. Please consult igus® for delivery times.

KMA locking | All-sides attachment

Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set (C-profile option)</th>
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<tbody>
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<td>062.</td>
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<tr>
<td>075.</td>
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<td>087.</td>
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<tr>
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<td>E4.48L·R4.48L.112.12C</td>
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<tr>
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<tr>
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</tbody>
</table>

*Width available upon request. Please consult igus® for delivery times.

**Notes:**

The E4.1 System may end with either an inner or an outer side link. Keep in mind that an outer side link always forms the first e-chain link at the moving end. The Part Nos. depend on an even or odd number of links. Please insert: Index (for odd) or (for even)!

**Strain relief, e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainflex range with order options from page 1148**
**Gilding applications** | For long travels from 10 m to max. 100 m

Solution for long travel applications - in this case the e-chain® upper run will be introduced in a guide trough on the lower run.

**Remark:** Please avoid raw dirt and dust. Please mind of an exact alignment of the trough. We recommend to realize the engineering of such a plant by our technicians. In case of travels between 5 and 10 m we recommend a longer unsupported length.

---

**More solutions** | For long travel applications

**System P4.42 - profile-rol e-chain®, low-noise**

Travels up to 800 m $v_{\text{max}} \leq 10 \text{ m/s}$

Safe, maintenance-free for outdoor cranes or conveyor systems. Low-noise operation, high service life

**rol e-chain® 3838R - rolling instead of gliding**

Travels up to 600 m $v_{\text{max}} \leq 6 \text{ m/s}$

Major reduction in drive power to less than 25 % for moving the e-chain®

**autoglide E4.42.BL0.04AG - self-guiding, no guide troughs**

Travels $\leq 50 \text{ m} v_{\text{max}} \leq 1.5 \text{ m/s}$

Self-guiding e-chain systems - No guide troughs required!

---

**Components, trough “Basic”:**

- Trough side parts, aluminum, 2 m
- Glide bar, plastic, 2 m
- Glide strips, plastic, 2 m (without glide strips on request)
- Optional: Silent profile, rubber

**Components, guide trough set “Basic”:**

- Bottom clamp, aluminum C-profile, galvanized steel table
- Sliding bar M8 x 20
- Interface connector, plastic

---

**Order example: Length of travel 30 m - Center mounted for Series E4.48L**

$v_{\text{max}} \leq 50 \text{ m/s}$

**Guide trough set with glide bar** (set of 2 trough side parts, incl. glide strips)

**Order text:** Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips)

**Part No.** 973.30.SL

---

**More solutions** | For long travel applications

**System P4.42 - profile-rol e-chain®, low-noise**

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Travels $\leq 50 \text{ m} v_{\text{max}} \leq 1.5 \text{ m/s}$

Self-guiding e-chain systems - No guide troughs required!
Light, stable and cost-effective - E4/light

E4/light - Weight reduction, a large interior space and price reduction result as well as a compromise in strength. The "light" features appear in two places: A reduced thickness of the side links (for all types), and a thinner crossbar (for some types: 14240, 14340). E4/light e-chains® achieve optimum price-performance solutions for many industries. Especially for unsupported short travels, hanging and short standing designs. E4/light types are often first choice.

Typical industries and applications
● Machine tools
● Material handling
● Stone cutting machines
● Woodworking machines
● General machinery
● Vehicles
● Construction machinery
● Limited long travel applications

Special equipment: Electrically conductive ESD/ATEX version upon request
Side-mounted - unsupported
High torsional rigidity
System E4 - 4-piece design link

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 e-chains® the overall dimension for the installation of this crane system was considerably reduced
### E4/light | Contents | Selection Table

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width</th>
<th>Outer height</th>
<th>Bending radius</th>
<th>Unsupported length max.</th>
<th>page</th>
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<tbody>
<tr>
<td></td>
<td>hi [mm]</td>
<td>Bi [mm]</td>
<td>Ba [mm]</td>
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<td>R [mm]</td>
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<td>14040</td>
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<td>135 - 500</td>
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### Crossbars every link

**Recommendation:** Lateral acceleration > 0,5 m/s

- High fill weights and rigid hydraulic hoses
- Humidity: > 85%, temperature: > 50°C (122° F)

### Crossbars every 2nd link

**Standard:** Suitable for nearly all applications

### e-tubes

**Recommendation:** Excellent cable protection

- Lids along the entire inner radius are completely removable

---

### E4/light | Assembly Instruction

1. Position side links at one side...
2. ...and snap in
3. Position opposite side, press together and snap in
4. Assemble crossbars - push down and snap in by using a screwdriver

---

**The E4 e-chain® opener reduces assembly time**

- e-chain® opener tools for convenient opening and closing of E4 series igus® e-chains®
- Especially for e-chains® with many crossbars the assembly is much easier

**More information:** [www.igus.eu/E4savetime](http://www.igus.eu/E4savetime)

---

**Technical Data, overview** | page 780  
**e-chain® links as single parts, overview** | page 781  
**Configuration options and order keys, overview** | page 782  
**Assembly video available online at:** [www.igus.eu/eu/E4_assembly](http://www.igus.eu/eu/E4_assembly)

---

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)
### Technical data - E4/light

<table>
<thead>
<tr>
<th>Application</th>
<th>Supported by FLG</th>
<th>Supported by FLB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gliding</td>
<td>Unsupported with straight upper run</td>
<td>Unsupported with permitted sag</td>
</tr>
<tr>
<td>Vertical hanging</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vertical standing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Side mounted unsupported</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rotary application</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zig-zag application</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unsupported length lower run</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Installation methods overview, maximum travels - E4/light

<table>
<thead>
<tr>
<th>Series e-chain®/e-tube</th>
<th>Unsupported application</th>
<th>Gliding application</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
<th>Rotary application</th>
<th>Zig-zag application</th>
<th>Unsupported length lower run</th>
</tr>
</thead>
<tbody>
<tr>
<td>14040/14140/18840</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>14240/14340</td>
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<tr>
<td>14550/14650/19050</td>
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<tr>
<td>15050/15150/19850</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>15250/15350</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1640/1608</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **FLG** = unsupported with straight upper run
- **FLB** = unsupported with permitted sag

### Technical data - E4/light

- **Gliding speed / acceleration:** max. 5 [m/s] / max. 50 [m/s] **FLG**  
- **Speed / acceleration FLG** max. 20 [m/s] / max. 200 [m/s] **FLG**  
- **Speed / acceleration FLB** max. 3 [m/s] / max. 6 [m/s] **FLB**  
- **Material:** permitted temperature °C, igumid G **FLG**  
- **Flammability class:** igumid G **FLB**  
- **FLG** = unsupported with straight upper run  
- **FLB** = unsupported with permitted sag

#### Series Crossbar® e-chain® Lid® e-tube Bottom® e-tube Left side link** Right side link***

<table>
<thead>
<tr>
<th>Series e-chain®/e-tube</th>
<th>Crossbar® e-chain®</th>
<th>Lid® e-tube</th>
<th>Bottom® e-tube</th>
<th>Left side link**</th>
<th>Right side link***</th>
</tr>
</thead>
<tbody>
<tr>
<td>14240/14340</td>
<td>385.Bi</td>
<td>-</td>
<td>-</td>
<td>14240.01.R</td>
<td>14240.02.R</td>
</tr>
<tr>
<td>15250/15350</td>
<td>385.Bi</td>
<td>-</td>
<td>-</td>
<td>15250.01.R</td>
<td>15250.02.R</td>
</tr>
</tbody>
</table>

- **Crossbar / lid / bottom** - supplement Part No. with required width index (Bi), example: 450.150
- **Left side link** - supplement Part No. with required radius (R), Example: 14040.01.100
- **Right side link** - supplement Part No. with required radius (R), Example: 14040.02.100

#### Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
**E4/light | Configuration options and order key**

(based on Series 14040)

**Standard**
- Additional noise dampening with pads
- QuickLock crossbar - reduce assembly time up to 25%

**Part No.**
- Standard e-chains/e-tubes
- Low noise (with pads) e-chains/e-tubes
- QuickLock crossbar

**Delivery time**
- 24h or today!
- 3-5 work days

**Configuration options and order key**

<table>
<thead>
<tr>
<th>Low noise option</th>
<th>QuickLock crossbar</th>
<th>NC-Version</th>
<th>Reverse bending radius for circular movements</th>
<th>Unsupported lengths +25% possible</th>
<th>No burning-in of hot chips up to 850°C (1562° F)</th>
<th>ATEX/ESD classified e-chains (1) 2 GD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No.</td>
<td></td>
<td>Part No.</td>
<td>Part No.</td>
<td>Part No.</td>
<td>Part No.</td>
<td>Part No.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>e-chains/e-tubes</td>
<td>e-chains/e-tubes</td>
<td>QuickLock crossbar for inner radius</td>
<td>QuickLock crossbar for outer radius</td>
<td>QuickLock crossbar for both radii</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14040.30.R.0</td>
<td>Crossbar every link</td>
<td>14040.30.R.0</td>
<td>14040.30.Q.R.0</td>
<td>14040.30.Q.E.R.0</td>
<td>14040.30.Q.R.0</td>
<td>14040.30.Q.E.R.0</td>
</tr>
<tr>
<td>14140.30.R.0</td>
<td>Crossbar every 2nd link</td>
<td>14140.30.R.0</td>
<td>14140.30.Q.R.0</td>
<td>14140.30.Q.E.R.0</td>
<td>14140.30.Q.R.0</td>
<td>14140.30.Q.E.R.0</td>
</tr>
</tbody>
</table>

**Order example**

**Order key**

14040.30.300.0

Order example for complete e-chain series 14040 (3.0 m, with crossbars every link), color black, mounting brackets and interior separation

- e-chain (3.0 m) Please indicate e-chain length or number of links: 3.0 m or 33 links
- Mounting brackets 1 set (with odd number of links and integrated C-profiles)
- Interior separation with 2 separators assembled every 2nd link

Order text: 3.0 m 14040.30.300.0 + 14140.30.12.C + 2 x 56.1.1

**Color options for e-chains and e-tubes**

<table>
<thead>
<tr>
<th>Color</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>.0</td>
</tr>
<tr>
<td>White</td>
<td>.1</td>
</tr>
<tr>
<td>Slate grey</td>
<td>.65</td>
</tr>
<tr>
<td>ESD Grey</td>
<td>.15</td>
</tr>
<tr>
<td>Orange</td>
<td>.2</td>
</tr>
<tr>
<td>Yellow</td>
<td>.4</td>
</tr>
<tr>
<td>Dusty grey</td>
<td>.3</td>
</tr>
<tr>
<td>Light grey</td>
<td>.14</td>
</tr>
</tbody>
</table>

**Available from stock. Delivery time in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*
**Introduction**

"Light design", large inner height

**When to use Series 14040-14140-18840:**
- If weight and price reduction as well as a compromise in strength is needed
- If an e-chain/e-tube with an inner height of 56 mm is required
- If inner widths up to 600 mm are required
- For unsupported lengths up to 4.0 m and fill weights up to 40 kg/m
- For long travels up to 150 m
- Also suitable for side-mounted, vertical standing or hanging applications

**When to use a different igus® Series:**
- If an extremely low-noise and low-vibration e-chain® is required ($\leq 46$ dB(A))
  - Series E6.52, page 956
- If larger unsupported lengths are required in side-mounted applications
  - Series E4.56, page 678
- If increased unsupported lengths and longer travels are required
  - Series E4.56, page 678

**Lateral glide surfaces for side-mounted operation**

The igus® E4-e-chain® opener reduces assembly time ➔ page 779

**Chip protection**

**NC without pretension**

**Noise dampening pads, optional $\approx -10$ dB(A)**

**All-sides attachment**

**25% faster assembly with QuickLock system**

**Very high capacity due to the undercut design**

**Notch crossbar with backside scaling**

**Available from stock. Delivery time* in 24h or today!**
*Delivery time means time until shipping of goods (after technical release)

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**Dimensions**

**Unsupported applications**

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height $H_F$. Please consult igus® if space is particularly restricted. More information ➔ Design, page 95

**Gliding applications**

Travels up to 150 m.

More information ➔ page 798

**Technical Data**

Speed, material, temperature and flammability class ➔ page 780

**Pitch**

$= 91$ mm/link

**Links/m**

$= 11$ (1001 mm)

**Chain length**

$= S/2 + K$

**Example**

<table>
<thead>
<tr>
<th>Fill weight [kg/m]</th>
<th>Unsupported length $FL_{UG}$ [m]</th>
<th>Length of travel $S$ [m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>2.75</td>
<td>5.5</td>
</tr>
</tbody>
</table>

The required clearance height:

$H_F = H + 50$ mm (with 2.0 kg/m fill weight)

*Radius not available for e-tubes.

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igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu

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3D-CAD files, configurators, PDF ➔ www.igus.eu/14040

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---
Series 14040 crossbars every link | Series 14140 crossbars every 2nd link

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>14040</th>
<th>14140</th>
</tr>
</thead>
<tbody>
<tr>
<td>14040, 14140, 05. R0</td>
<td>50</td>
<td>76</td>
<td>+2.66</td>
<td>+2.48</td>
</tr>
<tr>
<td>14040, 14140, 06. R0</td>
<td>65</td>
<td>91</td>
<td>+2.47</td>
<td>+2.51</td>
</tr>
<tr>
<td>14040, 14140, 07. R0</td>
<td>75</td>
<td>101</td>
<td>+2.75</td>
<td>+2.25</td>
</tr>
<tr>
<td>14040, 14140, 08. R0</td>
<td>87</td>
<td>113</td>
<td>+2.84</td>
<td>+2.44</td>
</tr>
<tr>
<td>14040, 14140, 10. R0</td>
<td>100</td>
<td>126</td>
<td>+2.93</td>
<td>+2.61</td>
</tr>
<tr>
<td>14040, 14140, 11. R0</td>
<td>112</td>
<td>139</td>
<td>+3.00</td>
<td>+2.67</td>
</tr>
<tr>
<td>14040, 14140, 12. R0</td>
<td>125</td>
<td>151</td>
<td>+3.12</td>
<td>+2.74</td>
</tr>
<tr>
<td>14040, 14140, 13. R0</td>
<td>137</td>
<td>164</td>
<td>+3.26</td>
<td>+2.77</td>
</tr>
<tr>
<td>14040, 14140, 15. R0</td>
<td>150</td>
<td>176</td>
<td>+3.32</td>
<td>+2.81</td>
</tr>
<tr>
<td>14040, 14140, 16. R0</td>
<td>162</td>
<td>189</td>
<td>+3.43</td>
<td>+2.86</td>
</tr>
<tr>
<td>14040, 14140, 17. R0</td>
<td>175</td>
<td>201</td>
<td>+3.54</td>
<td>+2.92</td>
</tr>
<tr>
<td>14040, 14140, 18. R0</td>
<td>187</td>
<td>214</td>
<td>+3.65</td>
<td>+2.97</td>
</tr>
<tr>
<td>14040, 14140, 20. R0</td>
<td>200</td>
<td>226</td>
<td>+3.67</td>
<td>+2.98</td>
</tr>
<tr>
<td>14040, 14140, 21. R0</td>
<td>212</td>
<td>239</td>
<td>+3.78</td>
<td>+3.04</td>
</tr>
<tr>
<td>14040, 14140, 22. R0</td>
<td>225</td>
<td>251</td>
<td>+3.85</td>
<td>+3.07</td>
</tr>
<tr>
<td>14040, 14140, 23. R0</td>
<td>237</td>
<td>264</td>
<td>+3.98</td>
<td>+3.14</td>
</tr>
<tr>
<td>14040, 14140, 25. R0</td>
<td>250</td>
<td>276</td>
<td>+4.07</td>
<td>+3.18</td>
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<tr>
<td>14040, 14140, 26. R0</td>
<td>262</td>
<td>289</td>
<td>+4.16</td>
<td>+3.22</td>
</tr>
<tr>
<td>14040, 14140, 27. R0</td>
<td>275</td>
<td>301</td>
<td>+4.27</td>
<td>+3.28</td>
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<tr>
<td>14040, 14140, 28. R0</td>
<td>287</td>
<td>314</td>
<td>+4.29</td>
<td>+3.29</td>
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<tr>
<td>14040, 14140, 30. R0</td>
<td>300</td>
<td>326</td>
<td>+4.51</td>
<td>+3.40</td>
</tr>
</tbody>
</table>

Part No. 14040, 14140 is available from stock.

Series 18840 - fully enclosed

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>18840</th>
</tr>
</thead>
<tbody>
<tr>
<td>18840, 07. R0*</td>
<td>07</td>
<td>010</td>
<td>3.20</td>
</tr>
<tr>
<td>18840, 10. R0</td>
<td>100</td>
<td>126</td>
<td>3.49</td>
</tr>
<tr>
<td>18840, 12. R0</td>
<td>125</td>
<td>151</td>
<td>3.85</td>
</tr>
<tr>
<td>18840, 15. R0</td>
<td>150</td>
<td>176</td>
<td>4.28</td>
</tr>
<tr>
<td>18840, 17. R0</td>
<td>175</td>
<td>201</td>
<td>4.54</td>
</tr>
<tr>
<td>18840, 20. R0</td>
<td>200</td>
<td>226</td>
<td>4.85</td>
</tr>
</tbody>
</table>

Available bending radii R [mm]: 150, 175, 200, 250, 300, 400, 500

Order key for all types

**Example:** 14040, 30. 300. 0 (e-chain, crossbars every link)

**Example:** 14140, 30. 300. 0 (e-chain, crossbars every 2nd link)

**Example:** 18840, 30. 300. 0 (e-tube, fully enclosed)

Configuration options and order keys, overview ➤ page 781

Configuration options and order keys, overview ➤ page 782

Available from stock. Delivery time* in 24h or today!

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods after technical release

Supplement Part No. with required radius (R). Example: 18840, 30, 300.0

Supplement Part No. with required radius (R). Example: 14040, 30, 300.0

Supplement Part No. with required radius (R). Example: 14040, 30, 300.0
...QuickLock crossbars | Quick opening - up to 25% faster assembly

QuickLock crossbars: inner widths from 150 mm possible!

Available bending radii R [mm] 135 | 150 | 175 | 200 | 250 | 300 | 400 | 500

Supplement Part No. with required radius (R). Example: 14040.30.QZ.300.0

With pads | Options
---|---

Quick opening - up to 25% faster assembly

Noise dampening and NC-Version - Delivery time* 3-5 work days

igus' GmbH Germany | Phone +49 2203 9649-900 | Fax -222 | info@igus.de | www.igus.eu
E4/light | 14040-14140-18840 | Interior separation | Standard

New generation interior separation - for e-chains* and e-tubes

**Note:** Please observe a lateral spacing to the side links! e-tube: 40 mm | e-chain*: 16 mm
In the standard configuration separators are assembled every 2nd e-chain link!

---

**Standard separator, wide base**

Separator with a wide base for maximum locking strength and safe standing in e-chains* and e-tubes.

**For many thin cables**

Separator with a narrow base for a large number of thin cables side by side. Saves space in e-chains* and e-tubes. Also available for QuickLock crossbars.

**For side-mounted applications**

Asymmetrical separator, for defined distance. No additional spacers necessary for e-chains* and e-tubes.

---

**Lockable full-width shelves - for the standard interior separation**

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>050</td>
<td>520.050</td>
<td>521.050</td>
</tr>
<tr>
<td>065</td>
<td>520.065</td>
<td>521.065</td>
</tr>
<tr>
<td>075</td>
<td>520.075</td>
<td>521.075</td>
</tr>
<tr>
<td>100</td>
<td>520.100</td>
<td>521.100</td>
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<tr>
<td>125</td>
<td>520.125</td>
<td>521.125</td>
</tr>
<tr>
<td>150</td>
<td>520.150</td>
<td>521.150</td>
</tr>
</tbody>
</table>

---

**Interior separation single-part order. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)
Option | Shelves for e-chains and e-tubes

Middle plate 403
Middle plates form the basic pattern of a shelf system. Shelves 420.X (table left page) can be arranged at 7 different heights (in 7 mm increments).

Locking vertical separator 410 (e-chains’ only)
Works like middle plate, for applications exposed to very high humidity (> 85%).

Side plate 402
Works like middle plate. Allows modular shelving close to the side links.

Open, slotted separator 409 (unilateral open)
Fast assembly - can be retrofitted into an existing interior separation system without a need for dismantling the interior separators. During an installation of open slotted separators, the top and bottom notches cannot be occupied by shelves.

Slotted separator 408
For very fine subdivisions. However, they cannot be retrofitted into an existing separation system without dismantling the interior separators.

Shelf 420.X
For horizontal separation. Shelves of various widths can be arranged at 7 different heights (in 7 mm increments), (not in combination with 404).

Note: Please observe a lateral spacing to the side links! e-tube: 40 mm | e-chain: 16 mm
In the standard configuration separators are assembled every 2" e-chain’ link!

Option | Additional elements for interior separation

Locking separator 404 (e-chains’ only)
For applications exposed to very high humidity (> 85%). Locks with extra retention force. Tip: one locking separator per e-chain’ link for better mounting.

Split separator T563 (e-chains’ only)
Ideal for subsequent shelving or for the initial assembly of the e-chain without a need for dismantling the interior separators.

Separator for center crossbars (e-chains’ only)
For applications with a large number of thin cables. The separator for center crossbars Part No. 450.BLS offers the option of subdividing the e-chain independently into upper and lower halves.

Rollclip
Minimizes abrasion of particularly sensitive hoses - simply clamped onto the opening crossbar. The movable rollers compensate for relative movement between the e-chain and hose.

Roller separator
Performs a similar function to the Rollclip, but doubles as a separator. For rigid cables and hoses.

<table>
<thead>
<tr>
<th>Width X (mm)</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>018</td>
<td>420.18</td>
<td>421.18</td>
</tr>
<tr>
<td>023</td>
<td>420.23</td>
<td>421.23</td>
</tr>
<tr>
<td>025</td>
<td>420.25</td>
<td>421.25</td>
</tr>
<tr>
<td>028</td>
<td>420.28</td>
<td>421.28</td>
</tr>
<tr>
<td>033</td>
<td>420.33</td>
<td>421.33</td>
</tr>
<tr>
<td>043</td>
<td>420.43</td>
<td>421.43</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Width X (mm)</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>050</td>
<td>420.50</td>
<td>421.50</td>
</tr>
<tr>
<td>062</td>
<td>420.62</td>
<td>421.62</td>
</tr>
<tr>
<td>075</td>
<td>420.75</td>
<td>421.75</td>
</tr>
<tr>
<td>088</td>
<td>420.88</td>
<td>421.88</td>
</tr>
<tr>
<td>100</td>
<td>420.100</td>
<td>421.100</td>
</tr>
<tr>
<td>125</td>
<td>420.125</td>
<td>421.125</td>
</tr>
</tbody>
</table>

E4/light | 14040-14140-18840 | Interior separation | Options

Previous interior separation
All elements can still be ordered www.igus.eu/eu/14040

Options

All elements can still be ordered www.igus.eu/eu/14040
**KMA pivoting | All-sides attachment**

Recommended for unsupported and gliding applications

<table>
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<tr>
<th>Width index</th>
<th>Part No. full set</th>
<th>Bi (mm)</th>
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</table>

- Standard
- For tight installation conditions
- Option: integrated chainfix strain relief with C-profile
- Corrosion resistant
- Option threaded sockets upon request (KMA = Polymer Metal Mounting Bracket)

**KMA locking | All-sides attachment**

Recommended for vertical hanging and standing applications

<table>
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<tr>
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<td>140400.</td>
<td>30.12.C</td>
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</tbody>
</table>

- Locked connections
- At high acceleration
- Universally mountable
- C-profile option
- Corrosion resistant
- Option threaded sockets upon request (KMA = Polymer Metal Mounting Bracket)

---

**Strain relief**

E.g., clamps, tie-plate plates, nuts and plug-in clips are available from stock. The complete chainfix range with order options from page 1148.
Order example - 3 chambers
14040.10/20/10200.0
Order example - inner with Bi 150
14040.15.B12.200Z.R0
Order example - 3 chambers
14040.10/20/10200.0
Extension link - single-part order
422.R (please indicate radius)

Order examples - extender crossbar
1 Combination with snap-open crossbars
RH Dol for outer radius "E" incl. e-chain:
14040.10/15RHDE115/10.R0
RH Dol for inner radius "Z" incl. e-chain:
14040.10/15RDZ115/10.R0
2 Installation on side link
RD15 for outer radius "E" incl. e-chain:
14040.15.RDH115/15.R0
RD15 for inner radius "Z" incl. e-chain:
14040.15.RDHZ115/10.R0

Part No. | Max Ø [mm] | Form | Installation on side link | Combination with snap-open crossbars
--- | --- | --- | --- | ---
450.15.RHD115 | 115 | round | no | yes
450.17.RD115 | 115 | round | yes | no
450.25.D150 | 150 | square | yes | no
450.30.D200 | 180 | square | yes | no
450.35.D250 | 195 | square | yes | no
450.40.D300 | 245 | square | yes | no
450.20.HD150 | 150 | square | yes | no
450.25.HD200 | 180 | square | no | yes
450.30.HD250 | 195 | square | no | yes

E4 snapclip | 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 required
Compatible with many E4 e-chains
Stylish and economical
One clip and one locking band are needed for each e-chain link

Part No. | Form
--- | ---
450.B12 | Locking clip, comprising a locking element
450.B12.D200 | Locking band, comprising a locking element and band, 12 x 1.5 x 200 mm

Extension links | for extremely wide e-chains* up to 3.0 m
The extension link design allows virtually limitless side-by-side attachment
High fill weights necessitate extremely wide e-chains* (up to 3000 mm)
The unsupported length FLG max. can be increased when additional loads are required
Suitable for unsupported and gliding applications in a guide trough
Attachment with KMA or steel mounting brackets

Part No. | Max Ø [mm] | Form | Installation on side link | Combination with snap-open crossbars
--- | --- | --- | --- | ---
450.15 | 115 | round | no | yes
450.17 | 115 | round | yes | no
450.25 | 150 | square | yes | no
450.30 | 180 | square | yes | no
450.35 | 195 | square | yes | no
450.40 | 245 | square | yes | no
450.20 | 150 | square | yes | no
450.25 | 180 | square | no | yes
450.30 | 195 | square | no | yes

Order example - extender crossbar
1 Combination with snap-open crossbars
RH Dol for outer radius "E" incl. e-chain:
14040.10/15RHDE115/10.R0
RH Dol for inner radius "Z" incl. e-chain:
14040.10/15RDZ115/10.R0
2 Installation on side link
RD15 for outer radius "E" incl. e-chain:
14040.15.RDH115/15.R0
RD15 for inner radius "Z" incl. e-chain:
14040.15.RDHZ115/10.R0

Strain relief system
Clamps, tiewrap plates, nuggets and plug-in clips. The complete chainfix range with many order options ➤ from page 1148

Support tray tool kit
For support of the lower run. Simple one-piece support trays according to your requirements and specification ➤ from page 1258

E4/light | 14040-14140-18840 | e-chain® accessories
### Gliding applications

For long travels from 12 m to max. 150 m

Solution for long travel applications - in this case the e-chain’s upper run will be introduced in a guide trough on the lower run. For travels more than 100 m we recommend to realize the engineering of such a plant by our technicians. In case of travels between 8 and 12 m we recommend a longer unsupported length. More information | Design, from page 106

#### Pitch

\[ \text{Pitch} = 91 \text{ mm/link} \]

\[ \text{Links/m} = 11 (1001 \text{ mm}) \]

\[ \text{Chain length} = S/2 + K_2 \]

<table>
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<tr>
<th>( R )</th>
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<table>
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<th>1001</th>
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<th>1911</th>
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<th>359</th>
<th>509</th>
<th>659</th>
<th>959</th>
<th>1159</th>
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</thead>
</table>

*Table not available for e-chains*

### More solutions | For long travel applications

**System P4.56** - profile-rol e-chain’, low-noise

Travels up to 800 m \( v_{\text{max}} = 10 \text{ m/s} \)

Safe, maintenance-free for outdoor cranes or conveyor systems. Low-noise operation, high service life

**rol e-chain’ 4040R** - rolling instead of gliding

Travels up to 800 m \( v_{\text{max}} = 6 \text{ m/s} \)

Major reduction in drive power to less than 25 % for moving the e-chain

### Components, trough “Basic”

- Trough side parts, aluminum, 2 m
- Glide bar, plastic, 2 m
- Glide strips, plastic, 2 m (without glide strips on request)
- Optional: Silencer profile, rubber
- Components, installation set “Basic”:
  - Bottom clamp, aluminum, C-profile, galvanized steel table
  - Screw M8 x 20
  - Sliding nut M8
  - Interface connector, plastic

**Installation set “Basic” complete**

*Guide trough set (8 x 2 m sections)*

**Part No.** 974.30.SL

**Installation set “Heavy-Duty”**

For travels more than 100 m we recommend to realize the engineering of such a plant by our technicians.

**Order example:**

Length of travel 30 m -

Center mounted for Series 14040.10.200 with \( B = 130 \)

Guide trough set without glide bar (set of 2 trough side parts, incl. glide strips)

**Part No.** 974.30.SL

Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips)

**Part No.** 974.31.SL

**Installation set “Basic” complete (guide trough sets + 1)**

**Part No.** 960.50.200

**Module for the fixed end**

**Part No.** 974.81.5

**Option:**

For an additional noise dampening with silencer profile, please add Index A - Example:

**Part No.** 974.30.SLA

### Principle sketch: Number of installation sets to be installed = Number of trough sections + 1

**Insert for the installation set “Heavy-Duty”:**

974.50.XXX instead of 960.50.XXX on the right column "attached outwards"
**Introduction**

**"Light design", large inner height**

When to use Series 14240-14340:
- If weight and price reduction as well as a compromise in strength is needed
- If an e-chain/e-tube with an inner height of 62 mm is required
- If inner widths up to 400 mm are required
- For unsupported lengths up to 4,0 m and fill weights up to 40 kg/m
- For long travels up to 150 m
- Also suitable for side-mounted, vertical standing or hanging applications

When to use a different igus® Series:
- If an extremely low-noise and low-vibration e-chain is required (≤46 dB(A))
  - Series E6.62, page 966
- If larger unsupported lengths are required in side-mounted applications
  - Series E4.56, page 678
- If high fill weights and/or stiff cables and hoses are used
  - Series 14040, page 784
- If chip protection is necessary
  - Series 18840, page 784

**Dimensions**

<table>
<thead>
<tr>
<th>Pitch</th>
<th>= 91 mm/link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Links/m</td>
<td>= 11 (1001 mm)</td>
</tr>
<tr>
<td>Chain length</td>
<td>= ( \frac{S}{2} + K )</td>
</tr>
</tbody>
</table>

The required clearance height: \( H_F = H + 50 \text{ mm} \) (with 2,0 kg/m fill weight)

**Technical Data**

**Unsupported applications**

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height \( H_F \). Please consult igus® if space is particularly restricted. More information ▶ Design, page 95

**Glanding applications**

Travels up to 150 m.
More information ▶ page 834

**When to use Series 14240-14340:**
- If weight and price reduction as well as a compromise in strength is needed
- If an e-chain/e-tube with an inner height of 62 mm is required
- If inner widths up to 400 mm are required
- For unsupported lengths up to 4,0 m and fill weights up to 40 kg/m
- For long travels up to 150 m
- Also suitable for side-mounted, vertical standing or hanging applications

**When to use a different igus® Series:**
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- If larger unsupported lengths are required in side-mounted applications
  - Series E4.56, page 678
- If high fill weights and/or stiff cables and hoses are used
  - Series 14040, page 784
- If chip protection is necessary
  - Series 18840, page 784

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</table>

The required clearance height: \( H_F = H + 50 \text{ mm} \) (with 2,0 kg/m fill weight)
With the space-saving igus® E4 Polymer e-chains® the overall dimension for the installation of this crane system was considerably reduced.

### Standard color black

Bending radius

Width index (depends on \( Bi \))

Series / Type

Order key for all types

Part No.

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Supplement Part No. with required radius (R). Example: 14240.30.300.0

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
QuickLock crossbars | Quick opening - up to 25% faster assembly


QuickLock crossbars: inner widths from 100 mm possible!

Configuration options and order keys, overview ▶ page 782

E4/light | Series 14240-14340 | Product range | Options

- 10 dB(A) depends on environmental conditions, shipping time.

Configuration options and order keys, overview ▶ page 782

Noise damping and NC-Version - Delivery time* 3-5 work days

Without pretension

Available bending radii R [mm]: 135 | 150 | 175 | 200 | 250 | 300 | 400 | 500
Supplement Part No. with required radius (R). Example: 14240.300.0 NC
1/14240 = e-chain® with crossbars every 1st link, 14340 = e-chain® with crossbars every 2nd link

ESD/ATEX permanently conductive e-chains® - 14240 several widths with delivery from stock:
Inner widths 50 - 200 mm, radii R 150 - 250 mm. Full ESD product range ▶ www.igus.eu/ESD
E4/light | Series 14240-14340 | Interior separation | Standard

New generation interior separation - for e-chains®

Note: No lateral spacing to side links necessary!
In the standard configuration separators are assembled every 2ⁿ e-chain® link!

Standard separator, wide base
 unassembled 62.1
 assembled 62.1.1

Standard - for all applications
Separator with a wide base for maximum locking strength and safe standing in e-chains®.

Separator for QuickLock crossbar
 unassembled 62.2
 assembled 62.2.1

Notch separator for the notch crossbar, with scaling on the notch crossbars. For exact positioning in e-chains®.
Recommended for side-mounted applications.

Horizontal separation
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.

Lockable full-width shelves - for the standard interior separation

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<th>assembled</th>
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</tbody>
</table>

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).

Horizontal separation
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.

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).

For easy cable assembly (slight grip).

igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu
**Separator 407**
For a vertical subdividing. Offers safe stability due to its wide base design, also when used with thick cables or hoses.

**Spacer® 381.XX**
Separators can be fixed in position by spacers. The available interior height is reduced by 2 mm per spacer (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). XX = width of the spacer (please choose between 10, 15, 20 mm).

**Shelves 386.X**
For horizontal separation. Shelves of various widths can be arranged at 7 different heights (in 7 mm increments).

**Middle plate 148**
Middle plates form the basic pattern of a shelf system. Shelves 386.X (table left page) can be arranged at 7 different heights (in 7 mm increments).

**Slotted separator 1407**
For very fine subdivisions. However, they cannot be retro-fitted into an existing separation system without dismantling the interior separators first.

**Side plate 146**
Works like middle plate. Allows modular shelving close to the side links.

**Shelf 386.X**
For horizontal separation. Shelves of various widths can be arranged at 7 different heights (in 7 mm increments).
KMA pivoting | All-sides attachment
Recommended for unsupported and gliding applications

<table>
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<tr>
<th>Width</th>
<th>Part No. full set (C-profile option)</th>
<th>Bi [mm]</th>
<th>Width</th>
<th>Part No. full set (C-profile option)</th>
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</tr>
</tbody>
</table>

Part No. structure (pivoting)
143400 30.12.C

- Standard
- For tight installation conditions
- Option: integrated chainfix strain relief with C-profile
- Corrosion resistant
- Option threaded sockets upon request

KMA locking | All-sides attachment
Recommended for very high speed and acceleration, all-sides attachment

<table>
<thead>
<tr>
<th>Width</th>
<th>Part No. full set (C-profile option)</th>
<th>Bi [mm]</th>
<th>Width</th>
<th>Part No. full set (C-profile option)</th>
<th>Bi [mm]</th>
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</table>

Part No. structure (locking)
142400 30.12.C

- Locked connections
- At high acceleration
- Universally mountable
- C-profile option
- Corrosion resistant
- Option threaded sockets upon request

Strain relief, e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148
**Hinged crossbars**
- Typically e-chain® crossbars are completely removable. For cases where the snap-open crossbars have to remain at the open link of the e-chain®, a hinged design has been developed.
- Please consult igus® for design assistance.
- **Hinged crossbar**: Part No. 385.02
- **Snap-open crossbar (shortened)**: Bi-37,5 mm Part No. 385.03 (smallest inner width Bi = 87,5)

**Order example** (smallest inner width Bi = 150)
- 14240.15.7.R.0 = 14240.15.7.R.0
- 14240.15.7.R.0
- Supplement Index “Z” with required option number 1, 2, 3 or 4

**Order examples - hinged crossbar**
1. Combination with snap-open crossbars
   - RHD115 for outer radius “E” incl. e-chain®:
     - 14240.10/15RHD115.E/R.0
   - RHD115 for inner radius “Z” incl. e-chain®:
     - 14240.10/15RHD115.Z/R.0

2. Installation on side link
   - RD115 for outer radius “E” incl. e-chain®:
     - 14240.10/15RD115.E/R.0
   - RD115 for inner radius “Z” incl. e-chain®:
     - 14240.10/15RD115.Z/R.0

**Round extender crossbar**
- Combined with snap-open crossbars or attached directly on the side link (view from the fixed point)

**Extender crossbars | careful guide of hosed applications**
- Suitable for hoses with a maximum outer diameter of 115 mm
- Gliding with crossbars assembled along outer radius and a special guide trough
- Extender crossbar 1 for snap-open crossbars or 2 attached directly on the side link

<table>
<thead>
<tr>
<th>Part No.</th>
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<th>Form</th>
<th>Installation</th>
<th>Combination with snap-open crossbars</th>
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<td>Round</td>
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<tr>
<td>385.18.RD115</td>
<td>115</td>
<td>Round</td>
<td>Yes</td>
<td>No</td>
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**Strain relief system**
- Clamps, tiewrap plates, nuggets and plug-in clips. The complete chainfix range with many order options ► from page 1148

**Support tray tool kit**
- For support of the lower run. Simple one-piece support trays according to your requirements and specification ► from page 1258
**3D-CAD files, configurators, PDF, applications**

- Solution for long travel applications - This case the e-chain’ upper run will be introduced in a guide trough on the lower run. For travels more than 10 m we recommend to realize the engineering of such a plant by our technicians. In case of travels between 9 and 12 m we recommend a longer unsupported length. More information Design, from page 106

- **Pitch** = 91 mm/link · Links/m = 11 (1001 mm) · Chain length = \( \frac{S}{2} + K_2 \)

- **Components, trough “Basic”:**
  - Trough side parts, aluminum, 2 m
  - Glide bar, plastic, 2 m
  - Glide strips, plastic, 2 m (without glide strips on request)

- **Optional: Silencer profile, rubber**

- **Components, installation set “Basic”:**
  - Bottom clamp, aluminum C-profile, galvanized steel table
  - Screw M8 x 20
  - Sliding nut M8
  - Interface connector, plastic

- **Components, trough “Basic”:**
  - Rubber

- **Components, installation sets:**
  - Gliding applications: Guide trough without glide bar
  - Gliding applications: Guide trough with glide bar

- **Guide trough without glide bar** (set of 2 trough side parts, incl. glide strips)

- **Guide trough with glide bar**

- **Insert for the installation set “Heavy-Duty”:**
  - E4/light, P4, autoglide, rol e-chain

- **Special solutions for long travels:**
  - From page 1264

- **Part No.** 974.30.SL
  - Guide trough with glide bar

- **Part No.** 974.31.SL
  - Guide trough without glide bar

- **Part No.** 974.30.SL (8 x 2 m sections)
  - 16 m guide trough without glide bar (set of 2 trough side parts, incl. glide strips)

- **Part No.** 974.31.SL
  - 16 m guide trough with glide bar (set of 2 trough side parts, incl. glide strips)

- **Part No.** 974.30.SL (8 x 2 m sections)
  - Guide trough without glide bar

- **Part No.** 960.50.XXX
  - Insert for the installation set “Heavy-Duty”

- **Part No.** 974.81.5
  - Insert for the installation set “Heavy-Duty” instead of 960.50.XXX on the right column “attached outwards”
**Light design**, large inner height

**When to use Series 14550-14650-19050:**
- If weight and price reduction as well as a compromise in strength is needed
- If an e-chain/e-tube with an inner height of 70 mm is required
- If inner widths up to 600 mm are required
- For unsupported lengths up to 4.2 m and fill weights up to 48 kg/m
- Also suitable for side-mounted, vertical standing or hanging applications

**When to use a different igus® Series:**
- If an extremely low-noise and low-vibration e-chain® is required (<46 dB(A))
- If larger unsupported lengths are required in side-mounted applications
- If increased unsupported lengths and longer travels are required

The igus® E4 e-chain® opener reduces assembly time ➤ page 779

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**Dimensions**

**Unsupported e-chains** feature positive camber over short travels. This must be accounted for when specifying the clearance height HF. Please consult igus® if space is particularly restricted. More information ➤ Design, page 95

**Unsupported applications**

Travels up to 250 m.
More information ➤ page 828

**Technical Data**

- Speed, material, temperature and flammability class ➤ page 780

**Pitch** = 91 mm/link

**Links/m** = 11 (1001 mm)

**Chain length** = \( \frac{S}{2} + K \)

---

The required clearance height: \( HF = H + 50 \text{ mm} \) (with 2.5 kg/m fill weight)

---

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

3D-CAD files, configurators, PDF ➤ www.igus.eu/eu/14550
**e-chains®** Series 14550 crossbars every link | Series 14650 crossbars every 2nd link

<table>
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<tr>
<th>Part No.</th>
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<th>14650</th>
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Part No. | Bi | Ba | 14550 | 14650 |
----------|----|----|-------|-------|
14650.05 | R.0 | 312| 339   | 5,20  |
14650.31 | R.0 | 325| 352   | 5,30  |
14650.33 | R.0 | 337| 364   | 5,42  |
14650.35 | R.0 | 350| 377   | 5,62  |
14650.36 | R.0 | 362| 389   | 5,83  |
14650.37 | R.0 | 375| 402   | 6,03  |
14650.38 | R.0 | 387| 414   | 6,24  |
14650.40 | R.0 | 400| 427   | 6,45  |
14650.41 | R.0 | 412| 439   | 6,66  |
14650.42 | R.0 | 425| 452   | 6,87  |
14650.43 | R.0 | 437| 464   | 7,08  |
14650.45 | R.0 | 450| 477   | 7,29  |
14650.46 | R.0 | 462| 498   | 7,50  |
14650.47 | R.0 | 475| 502   | 7,71  |
14650.48 | R.0 | 487| 514   | 7,92  |
14650.50 | R.0 | 500| 527   | 8,13  |
14650.51 | R.0 | 512| 539   | 8,34  |
14650.52 | R.0 | 525| 552   | 8,55  |
14650.53 | R.0 | 537| 564   | 8,76  |
14650.55 | R.0 | 550| 577   | 8,97  |
14650.60 | R.0 | 600| 627   | 9,18  |

**e-tubes** Series 19050 - fully enclosed

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>19050</th>
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</table>
19050.07 | R.0 | 75 | 102   | 4,00  |
19050.10 | R.0 | 100| 127   | 4,33  |
19050.12 | R.0 | 125| 152   | 4,70  |
19050.15 | R.0 | 150| 177   | 5,04  |
19050.17 | R.0 | 175| 202   | 5,41  |
19050.20 | R.0 | 200| 227   | 5,88  |

Available bending radii (mm) 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600

**Order key for all types**

**Configuration options and order keys, overview → page 781**

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

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**Dimensioning**

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</table>

**e-chain links as single parts, overview → page 782**

*Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
## QuickLock crossbars | Quick opening - up to 25% faster assembly

<table>
<thead>
<tr>
<th>Part No.</th>
<th>QuickLock crossbar for every link</th>
<th>QuickLock crossbar for every 2th link</th>
<th>Bi [mm]</th>
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<td>14550.14650.19050</td>
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<td>15. QZ.R.0</td>
<td>15. QZ.R.0</td>
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</tbody>
</table>

QuickLock crossbars: inner widths from 150 mm possible!

### 3D-CAD files, configurators, PDF, applications

www.igus.eu/en/14550

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### Configuration options and order keys, overview page 782

**e-chain** with QuickLock crossbars - Delivery time* 3-5 work days.

*Delivery time means time until shipping of goods after technical release.*
E4/light - 14550-14650-19050 - Interior separation - Standard

New generation interior separation - for e-chains® and e-tubes

**Standard separator, wide base**
- Unassembled: 70.1
- Assembled: 70.1.1

**For many thin cables**
Separator with a narrow base for a large number of thin cables side by side. Saves space in e-chains® and e-tubes. Also available for QuickLock crossbars.

**For side-mounted applications**
Asymmetrical separator for defined distance. No additional spacers necessary for e-chains® and e-tubes.

**For even faster installation**
Separator for igus® QuickLock crossbar 450.X.Q. Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip). For e-tubes also.

**Locks safely onto in 5 mm increments**
Notch separator for the notch crossbar, with scaling on the notch crossbars. For exact positioning in e-chains® and e-tubes. Recommended for side-mounted applications.

**Horizontal separation**
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.

**Lockable full-width shelves - for the standard interior separation**

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>Unassembled</th>
<th>Assembled</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>150</td>
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<td>521.150</td>
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</table>

**Interior separation with single-part order. Delivery time® in 24h or today!**
- Delivery time means time until shipping of goods (after technical release)
- 3D-CAD files, configurators, PDF, applications www.igus.eu/E4.14550
### KMA pivoting | All-sides attachment

Recommended for unsupported and gliding applications

<table>
<thead>
<tr>
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<th>Part No. full set</th>
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<td>14550...</td>
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<td>14550...</td>
<td>08.</td>
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<tr>
<td>09.</td>
<td>14550/19050...</td>
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<tr>
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<td>14550/19050...</td>
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<td>14550/19050...</td>
<td>14.</td>
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<tr>
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<td>14550/19050...</td>
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<td>14550/19050...</td>
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#### Part No. structure (pivoting)

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</table>

#### Single-part order

- Mounting bracket: Moving end
- Mounting bracket: Fixed end

### KMA locking | All-sides attachment

Recommended for vertical hanging and standing applications

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<tr>
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<th>Part No. full set</th>
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<td>145510/190510...</td>
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<td>145510...</td>
<td>08.</td>
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<td>16.</td>
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<td>145510/190510...</td>
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<td>145510/190510...</td>
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<td>24.</td>
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<td>26.</td>
<td>145510/190510...</td>
<td>26.</td>
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#### Part No. structure (locking)

<table>
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</thead>
<tbody>
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<td>1.C</td>
<td>145510...</td>
</tr>
</tbody>
</table>

#### Single-part order

- Mounting bracket: Moving end
- Mounting bracket: Fixed end

---

**Strain relief**, e.g. clamps, tiestrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options can be found starting from page 1148.

---

[824 3D-CAD files, configurators, PDF, applications](www.igus.eu/en/14550)
**Extender crossbars | careful guide of hosed applications**
- Suitable for hoses with a maximum outer diameter of 270 mm
- Gliding with crossbars assembled along outer radius and a special guide trough
- Extender crossbar 1: combined with snap-open crossbars or 2: attached directly on the side link

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Max Ø [mm]</th>
<th>Form</th>
<th>Installation on side link</th>
<th>Combination with snap-open crossbars</th>
</tr>
</thead>
<tbody>
<tr>
<td>450.15.RHD115</td>
<td>115</td>
<td>round</td>
<td>no</td>
<td>yes</td>
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<tr>
<td>450.17.RD115</td>
<td>115</td>
<td>round</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>450.25.D150</td>
<td>150</td>
<td>square</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>450.30.D200</td>
<td>200</td>
<td>square</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>450.35.D250</td>
<td>220</td>
<td>square</td>
<td>yes</td>
<td>no</td>
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<tr>
<td>450.40.D300</td>
<td>270</td>
<td>square</td>
<td>yes</td>
<td>no</td>
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<tr>
<td>450.20.HD150</td>
<td>150</td>
<td>square</td>
<td>no</td>
<td>yes</td>
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<td>450.25.HD200</td>
<td>200</td>
<td>square</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>450.30.HD250</td>
<td>220</td>
<td>square</td>
<td>no</td>
<td>yes</td>
</tr>
</tbody>
</table>

**Order examples - extender crossbar**
1: Combination with snap-open crossbars
RHD115 for outer radius "E" incl. e-chain:
14550.10/15RHD115/10.R.0
RHD115 for inner radius "Z" incl. e-chain:
14550.10/15RHD115/10.R.0
2: Installation on side link
RD115 for outer radius "E" incl. e-chain:
14550.17RDE115.R.0
RD115 for inner radius "Z" incl. e-chain:
14550.17RDZ115.R.0

**E4/light e-tubes protect tubes and hoses safely against dirt and chips**

**Support tray tool kit**
For support of the lower run. Simple one-piece support trays according to your requirements and specification from page 1258

**Strain relief system**
Clamps, tie-wrap plates, nuggets and plug-in clips. The complete chainfix range with many order options from page 1148

**3D-CAD files, configurators, PDF, applications**
www.igus.eu/eu/14550

**Strain relief system**
Clamps, tie-wrap plates, nuggets and plug-in clips. The complete chainfix range with many order options from page 1148

**Support tray tool kit**
For support of the lower run. Simple one-piece support trays according to your requirements and specification from page 1258
### Gilding applications

For long travels from 12 m to max. 250 m

Solution for long travel applications - In this case the e-chain upper run will be introduced in a guide trough on the lower run. For travels more than 100 m we recommend to realize the engineering of such a plant by our technicians. In case of travels between 8 and 12 m we recommend a longer unsupported length. More information & Design, from page 106

---

**Pitch = 91 mm/link**

**Links/m = 11 (1001 mm)**

**Chain length = \( S/2 + K_2 \)**

- **R = 150°, 175°**
- **200, 250, 300, 350, 400, 450, 500, 600**

---

<table>
<thead>
<tr>
<th>Pitch</th>
<th>Links/m</th>
<th>Chain length</th>
</tr>
</thead>
<tbody>
<tr>
<td>91 mm/link</td>
<td>11 (1001 mm)</td>
<td>( S/2 + K_2 )</td>
</tr>
</tbody>
</table>

---

**Part No. 94.14550.30**

- **Guide trough without glide bars**
- **Part No. 94.14550.31**

---

**Installation sets as end connectors**

Part No. 94.50.XXX

J00D indicates the length of the C-profile on which the guide trough is mounted. (see table).

The values and part numbers are specified in the table on the left. Standard length of the trough components and glide bars is 2 m. The required overall length of the guide trough directly correlates to the length of travel. Special dimensions are available for confined spaces.

---

**Order example:**

Length of travel 30 m - Center mounted for Series 14550.10.300.0 with BRi = 132

Guide trough set without glide bar (set of 2 trough side parts, incl. glide strips)

Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips)

Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips)

Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips)

Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips)

Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips)

Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips)

---

**Part No. 94.14550.250**

- **Installation set**

---

**Steel Guide Troughs**

- **Heavy-Duty**

---

**Part No. 94.14550.30 | 94.14550.31**

Trough height: 170 mm

---

**Installation set with C-profile for e-chains**

For Width Index B_a (mm) Part No. Installation set

---

**Steel Guide Trough in detail**

---

**Installation set**

- **B_a = Inner trough width**
- **B_b = Outer trough width**
- **H_a = Inner trough height**
- **H_b = Outer trough height**
- **n_a = Number of installation sets**
- **n_b = Number of installation sections**

---

**Principle sketch:**

Number of installation sets to be installed = Number of trough sections + 1

---

**Correlation to Travel Length**

<table>
<thead>
<tr>
<th>CL</th>
<th>R</th>
<th>S/2</th>
<th>D2</th>
<th>H_a</th>
<th>H_b</th>
</tr>
</thead>
<tbody>
<tr>
<td>829</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
</tbody>
</table>
**“Light design”, very large inner height**

*When to use Series 15050-15150-19850:*
- If weight and price reduction as well as a compromise in strength is needed
- If an e-chain/e-tube with an inner height of 80 mm is required
- If inner widths up to 600 mm are required
- For unsupported lengths up to 4.6 m and fill weights up to 54 kg/m
- For long travels up to 250 m
- Also suitable for side-mounted, vertical standing or hanging applications

*When to use a different igus® Series:*
- If an extremely low-noise and low-vibration e-chain® is required (≤46 dB(A))
  - Series E6.80, page 984
- If larger unsupported lengths are required in side-mounted applications
  - Series E4.80, page 694
- If increased unsupported lengths and longer travels are required
  - Series E4.80, page 694

---

**The igus® E4 e-chain® opener reduces assembly time** page 779

---

**Supported applications**
- Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height \( HF \). Please consult igus® if space is particularly restricted. More information Design, page 95

---

**Dimensions**

**Unsupported**

---

**Technical Data**

- Speed, material, temperature and flammability class page 780

---

**Pitch** = 91 mm/link

**Links/m** = 11 (1001 mm)

**Chain length** = \( S/2 + K \)

---

**The required clearance height: \( HF = H + 60 \text{ mm} \) (with 3.0 kg/m fill weight)**

- Radius not available for e-tubes
- \( FL_G \) = with straight upper run
- \( FL_B \) = with permitted sag
- \( S \) = Length of travel
- \( R \) = Bending radius
- \( H \) = Nominal clearance height
- \( H_F \) = Required clearance height
- \( D \) = Overlength e-chain®, radius in final position

---

**Notch crossbar with backside scaling**

---

**Chip protection**

---

**All-sides attachment**

---

**Noise dampening pads, optional**

---

**Lateral glide surfaces for side-mounted operation**

---

**25% faster assembly with QuickLock system**

---

**Very high capacity due to the undercut design**

---

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

---

**3D-CAD files, configurators, PDF**  www.igus.eu/eu/15050

---

**igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu**
### e-chains® Series 15050 crossbars every link | Series 15150 crossbars every 2nd link

<table>
<thead>
<tr>
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<th>Bi</th>
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<th>15150</th>
<th>15050</th>
<th>15150</th>
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### e-tubes | Series 19850 fully enclosed

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<tr>
<th>Part No.</th>
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<th>19850</th>
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<tbody>
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<td>100</td>
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<td>R.0</td>
<td>200</td>
<td>230</td>
<td>6.11</td>
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</table>

### Available bending radii R (mm) 200 | 250 | 300 | 350 | 400 | 500 | 600

### Order key for all types

- **E4/light** 15050-15150-19850 Product range | **Standard**

### Dimensioning

- **Bi**
- **Ba**

### Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
QuickLock crossbars | Quick opening - up to 25% faster assembly

<table>
<thead>
<tr>
<th>Part No.</th>
<th>QuickLock crossbar for every link</th>
<th>Inner radius</th>
<th>Outer radius</th>
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</table>

QuickLock crossbars: inner widths from 150 mm possible!

Configuration options and order keys, overview ▶ page 782

e-chain® with QuickLock crossbars - Delivery time* 3-5 work days.

*Delivery time means time until shipping of goods (after technical release)

Noise dampening and NC-Version - Delivery time* 3-5 work days.

*Delivery time means time until shipping of goods (after technical release)

ESD/ATEX permanently conductive e-chains® - 15050 several widths with delivery from stock
Inner widths 75 - 300 mm, radii R 150 - 250 mm. Full ESD product range ▶ www.igus.eu/ESD

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834 3D-CAD files, configurators, PDF, applications ▶ www.igus.eu/eu/15050

835
New generation interior separation - for e-chains® and e-tubes

- Standard separator, wide base
  - Unassembled: 80.1
  - Assembled: 80.1
  - For all applications
  - Separator with a wide base for maximum locking strength and safe standing in e-chains® and e-tubes.

- Separator, narrow base
  - Unassembled: 80.3
  - Assembled: 80.3
  - For many thin cables
  - Separator with a narrow base for a large number of thin cables side by side. Saves space in e-chains® and e-tubes. Also available for QuickLock crossbars.

- Asymmetrical separator
  - Unassembled: 80.4
  - Assembled: 80.4
  - For side-mounted applications
  - Asymmetrical separator, for defined distance. No additional spacers necessary for e-chains® and e-tubes.

- Notch separator for notch crossbar
  - Unassembled: 80.5
  - Assembled: 80.5
  - Locks safely onto in 5 mm increments
  - Notch separator for the notch crossbar, with scaling on the notch crossbars. For exact positioning in e-chains® and e-tubes. Recommended for side-mounted applications.

- Full-width shelf, lockable
  - Unassembled: 520.X
  - Assembled: 521.X
  - Horizontal separation
  - 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.

- Separator for QuickLock crossbar 450.X.Q
  - Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip). For e-tubes also.

- Separator for igus® QuickLock crossbar
  - For even faster installation
  - Separator for igus® QuickLock crossbar 450.X.Q. Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip). For e-tubes also.

- Interior separation single-part order. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

3D-CAD files, configurators, PDF, applications: www.igus.eu/eu/15050

igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu
Option | Shelves for e-chains® and e-tubes

- **Middle plate 503**
  Middle plates form the basic pattern of a shelf system. Shelves 420.X (table left page) can be arranged at 11 different heights (in 7 mm increments).

- **Locking vertical separator 510 (e-chains® only)**
  Works like middle plate, for applications exposed to very high humidity (>85%).

- **Side plate 502**
  Works like middle plate. Allows modular shelving close to the side links.

- **Open, slotted separator 509 (unilateral open)**
  Fast assembly - can be retrofitted into an existing interior separation system without a need for dismantling the interior separators. During an installation of open slotted separators, the top and bottom notches cannot be occupied by shelves.

- **Slotted separator 505**
  For very fine subdivisions. However, they cannot be retrofitted into an existing separation system without dismantling the interior separators first.

- **Shelf 420.X**
  For horizontal separation. Shelves of various widths can be arranged at 11 different heights (in 7 mm increments), (not in combination with 504, 508).

**Note**: Please observe a lateral spacing to the side links! e-tube: 40 mm | e-chain: 16 mm

In the standard configuration separators are assembled every 2nd e-chain link!

### Middle plate 503
Middle plates form the basic pattern of a shelf system. Shelves 420.X (table left page) can be arranged at 11 different heights (in 7 mm increments).

### Locking vertical separator 510 (e-chains® only)
Works like middle plate, for applications exposed to very high humidity (>85%).

### Side plate 502
Works like middle plate. Allows modular shelving close to the side links.

### Open, slotted separator 509 (unilateral open)
Fast assembly - can be retrofitted into an existing interior separation system without a need for dismantling the interior separators. During an installation of open slotted separators, the top and bottom notches cannot be occupied by shelves.

### Slotted separator 505
For very fine subdivisions. However, they cannot be retrofitted into an existing separation system without dismantling the interior separators first.

### Shelf 420.X
For horizontal separation. Shelves of various widths can be arranged at 11 different heights (in 7 mm increments), (not in combination with 504, 508).

---

**Options**

**Previous interior separation**

All elements can still be ordered [www.igus.eu/eu/15050](http://www.igus.eu/eu/15050)

---

**Options**

**Previous interior separation**

All elements can still be ordered [www.igus.eu/eu/15050](http://www.igus.eu/eu/15050)
For tight installation conditions, all-sides attachment

KMA pivoting | All-sides attachment

Recommended for unsupported and gliding applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set pivoting (+ C-profile option)</th>
<th>Bi [mm]</th>
<th>Part No. full set pivoting (+ C-profile option)</th>
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<td>23. 12.C</td>
<td>262</td>
<td>52. 150500.</td>
<td>52. 12.C</td>
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</table>

Part No. structure (pivoting) 150500.30.12.C

- Standard
- For tight installation conditions
- Option: integrated chainfix strain relief with C-profile
- Corrosion resistant
- Option: threaded sockets upon request

Full set Width index Series

Single-part order:
Mounting bracket Moving end

Moving end Fixed end
Strain relief, e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148
Extension links | for extremely wide e-chains® up to 3.0 m
● The extension link design allows virtually limitless side-by-side attachment
● High fill weights necessitate extremely wide e-chains® (up to 3000 mm)
● The unsupported length FLu,max can be increased when additional loads are required
● Suitable for unsupported and gliding applications in a guide trough
● Attachment with KMA or steel mounting brackets

Order example - 3 chambers
15050.10 / 10.200.0
Extension links: single-part order:
522.R (please indicate radius)

E4 snapclip | 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 required
● Compatible with many E4 e-chains® | Stylish and economical
● One clip and one locking band are needed for each e-chain® link

Part No. | Form
--- | ---
450.B12 | Locking clip, comprising a locking element
450.B12.200 | Locking band, comprising a locking element and band, 12 x 1.5 x 200 mm

E4/light | 15050-15150-19850 | e-chain® accessories

Order examples - extender crossbar
1 Combination with snap-open crossbars
RH215 for outer radius “E” incl. e-chain®:
15050.10/RH215/115/10.0
RH215 for inner radius “Z” incl. e-chain®:
15050.10/RH215/115/10.0
2 Installation on side link
RD15 for outer radius “E” incl. e-chain®:
15050.17/RD15/115.0
RD15 for inner radius “Z” incl. e-chain®:
15050.17/RD15/115.0

Strain relief system
Clamps, tiewrap plates, nuggets and plug-in clips. The complete chainfix range with many order options [from page 1148]

Support tray tool kit
For support of the lower run. Simple one-piece support trays according to your requirements and specification [from page 1258]
Gilding applications | For long travels from 12 m to max. 250 m
Solution for long travel applications - In this case the e-chain® upper run will be introduced in a guide trough on the lower run. For travels more than 100 m we recommend to realize the engineering of such a plant by our technicians. In case of travels between 9 and 12 m we recommend a longer unsupported length. More information ▶ Design, from page 106

Pitch = 91 mm/link · Links/m = 11 (1001 mm) · Chain length = \( S/2 + K_2 \)

- R = 150° 200 250 300 350 400 500 600
- H2 = 242 242 242 242 242 242 242 242
- \( D_2 = 550 \)
- K2 = 1274 1638 2002 2457 2734 3458 3833 4260
- \( \Delta C = 209 \) 409 509 709 1009 1109 1484

*Radius not available for e-tubes

More solutions | For long travel applications
System P4.80 - profile-rol e-chain® · Low noise · Travels up to 800 m · \( v_{\text{max}} = 10 \text{ m/s} \)
Rol e-chain 5050R - rolling instead of gliding · Travels up to 800 m · \( v_{\text{max}} = 6 \text{ m/s} \)
Major reduction in drive power to less than 25 % for moving the e-chain®

- e-chains® for long travels: E4/4HD, P4, autoglide, rol-e-chain® ▶ from page 1264
- Special solutions for long travel applications ▶ from page 1348

Aluminum SuperTrough | Basic Version
Part No. 975.30.SL | 975.31.SL | Trough height: 236 mm

Installation set “Basic” with C-Profile
Bottom clamp optionally attached inwards or outwards

| For Width Index | Part No. | Part No. | Part No.
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</thead>
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<td>S/2 + K2</td>
<td>975.30.SL</td>
<td>975.31.SL</td>
<td></td>
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</tbody>
</table>

Order example: Length of travel 30 m · Center mounted for Series 15050.30.300.0 with \( B_9 \) = 334

Guide trough set without glide bar (set of 2 trough side parts, incl. glide strips)

Order test: 16 m guide trough without glide bar (B2 x 2 m sections) Part No. 975.30.SL

Module for the fixed end

Order test: 1 set Part No. 960.50.400

Option: For an additional noise dampening with silencer profile, please add index A - Example: Part No. 975.30.SLA

Aluminum SuperTrough “Basic” in detail and the “Heavy-Duty” version for heavy machinery ▶ from page 1206

- Trough set
- C-Profile
- Installation set
- Glide bar
- Number of installation sets
- Number of trough sections

Principle sketch: Number of installation sets to be installed = Number of trough sections + 1

For more information on dimensions and installation, please refer to the respective pages.
**Introduction**

“Light design”, very large, inner height

When to use Series 15250-15350:
- If weight and price reduction as well as a compromise in strength is needed
- If an e-chain/e-tube with an inner height of 86 mm is required
- If inner widths up to 400 mm are required
- For unsupported lengths up to 4,6 m and fill weights up to 54 kg/m
- For long travels up to 250 m
- Also suitable for side-mounted, vertical standing or hanging applications

When to use a different igus® Series:
- If an extremely low-noise and low-vibration e-chain® is required (≤46 dB(A))
  - Series E6.80, page 984
- If larger unsupported lengths are required in side-mounted applications
  - Series E4.80, page 694
- If high fill weights and/or stiff cables and hoses are used
  - Series 15050, page 830
- If chip protection is necessary
  - Series 19850, page 830

**Technical Data**

- Pitch = 91 mm/link
- Links/m = 11 (1001 mm)
- Chain length = S/2 + K

The required clearance height: \( H_F = H + 60 \) mm (with 3,0 kg/m fill weight)

**Available from stock. Delivery time in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)
e-chains® | Series 15250 crossbars every link | Series 15350 crossbars every 2nd link

| Part No. | crossbars 

every link | crossbars 

every 2nd link | Bi [mm] | Ba [mm] | 15250 [kg/m] | 15350 [kg/m] |
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<td>R.0 200 230</td>
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<td>3.85</td>
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</table>

Available bending radii R [mm] 150 | 200 | 250 | 300 | 350 | 400 | 500 | 600
Supplement Part No. with required radius (R). Example: 15250.30.300.0

Order key for all types

| 15250.30.300.0 | e-chain®, crossbars every link |
| 15350.30.300.0 | e-chain®, crossbars every 2nd link |

Circular movements (also with reverse bending radius “RBR”) possible

Ordering notes

- e-chain® links as single parts, overview page 781
- Configuration options and order keys, overview page 782
- Available from stock. Delivery time* in 24h or today!
  *Delivery time means time until shipping of goods (after technical release)

Dimensioning

Standard color black
Bending radius R
Width index (depends on Bi)
Series / Type

3D-CAD files, configurators, PDF, applications www.igus.eu/eu/15250

igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu
QuickLock crossbars | Quick opening - up to 25% faster assembly

<table>
<thead>
<tr>
<th>Part No.</th>
<th>QuickLock crossbar for every link</th>
<th>Outer radius</th>
<th>Inner radius</th>
<th>Both radii</th>
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<td>17.Q.R.O</td>
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</table>

Available bending radii R [mm]: 150, 200, 250, 300, 350, 400, 500, 600
Supplement Part No. with required radius (R). Example: 15250.300QZ.300.0

Configuration options and order keys, overview ➤ page 782

*e-chain* with QuickLock crossbars - Delivery time* 3-5 work days.

*Delivery time means time until shipping of goods (after technical release)
**E4/light | Series 15250-15350 | Interior separation | Standard**

*New generation interior separation - for e-chains*

- **Standard separator, wide base**
  - unassembled: 86.1
  - assembled: 86.1.1

- **Standard - for all applications**
  - Separator with a wide base for maximum locking strength and safe standing in e-chains.

- **Separator for QuickLock crossbar**
  - unassembled: 86.2
  - assembled: 86.2.1

- **Notch separator**
  - for notch crossbar
  - unassembled: 86.5
  - assembled: 86.5.1

- **Full-width shelf, lockable**
  - unassembled: 3210.X
  - assembled: 3210.X

---

**Note:** No lateral spacing to side links necessary! In the standard configuration separators are assembled every 2nd e-chain link!

- **For even faster installation**
  - Separator for igus’ QuickLock crossbar 385.X.Q. Firmhold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip).

- **Locks safely onto in 5 mm increments**
  - Notch separator for the notch crossbar, with scaling on the notch crossbars. For exact positioning in e-chains.
  - Recommended for side-mounted applications.

- **Horizontal separation**
  - 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.

- **Lockable full-width shelves - for the standard interior separation**

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*igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu*
KMA pivoting | All-sides attachment
Recommended for unsupported and gliding applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set pivoting (+ C-profile option)</th>
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<td>.162</td>
<td>152500.162 12.C</td>
<td>162</td>
</tr>
<tr>
<td>.17</td>
<td>152500.17 12.C</td>
<td>168</td>
</tr>
<tr>
<td>.18</td>
<td>152500.18 12.C</td>
<td>175</td>
</tr>
<tr>
<td>.20</td>
<td>152500.20 12.C</td>
<td>200</td>
</tr>
</tbody>
</table>

---

**Strain relief**, e.g., clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options [from page 1148](#).
**Extender crossbars | careful guide of hosed applications**

- Suitable for hoses with a maximum outer diameter of 115 mm
- Gliding with crossbars assembled along outer radius and a special guide trough
- Extender crossbar for snap-open crossbars or attached directly on the side link

```
<table>
<thead>
<tr>
<th>Part No.</th>
<th>Max Ø (mm)</th>
<th>Form</th>
<th>Installation</th>
<th>Combination with single part</th>
<th>max Ø (mm)</th>
<th>Form</th>
<th>Installation</th>
<th>Combination with single part</th>
</tr>
</thead>
<tbody>
<tr>
<td>385.15.RHD115</td>
<td>115</td>
<td>round</td>
<td>no</td>
<td>yes</td>
<td>87.5</td>
<td>round</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>385.18.RD115</td>
<td>115</td>
<td>round</td>
<td>yes</td>
<td>no</td>
<td>87.5</td>
<td>round</td>
<td>yes</td>
<td>no</td>
</tr>
</tbody>
</table>
```

**Order examples - extender crossbar**

- Combination with snap-open crossbars
  - RHD115 for outer radius: "E" incl. e-chain: 15250.10/15RHD115/10.R.0
  - RHD115 for inner radius: "Z" incl. e-chain: 15250.10/15RHD115/10.R.0

**Hinged crossbars**

- "Typically e-chain" crossbars are completely removable. For cases where the snap-open crossbars have to remain at the open link of the e-chain, a hinged design has been developed
- Please consult igus® for design assistance
- Hinged crossbar: Part No. 385.02
  - Snap-open crossbar (shortened): Bi-37.5 mm Part No. 385.03
    - (smallest inner width Bi = 87.5 mm)

**Order example**

- RHD115 for inner radius: "Z" incl. e-chain: 15250.15.Z.R.0
- RD115 for outer radius: "E" incl. e-chain: 15250.15.E.R.0
- Suppment index "Z" with required option number 3, 4, 5, or 6

**Support tray tool kit**

For support of the lower run. Simple one-piece support trays according to your requirements and specification from page 1258

**Strain relief system**

- Clamps, tie-wrap plates, nuggets and plug-in clips. The complete chainfix range with many order options from page 1148

**Extender crossbar**

- Combination with snap-open crossbars
  - RHD115 for outer radius: "E" incl. e-chain: 15250.10/15RHD115/10.R.0
  - RHD115 for inner radius: "Z" incl. e-chain: 15250.10/15RHD115/10.R.0

**Support tray tool kit**

For support of the lower run. Simple one-piece support trays according to your requirements and specification.
Gilding applications | For long travels from 12 m to max. 250 m

Solution for long travel applications - In this case the chain's upper run will be introduced in a guide trough on the lower run. For travels more than 100 m we recommend to realize the engineering of such a plant by our technicians. In case of travels between 9 and 12 m we recommend a longer unsupported length. More information ▶ Design, from page 106

More solutions | For long travel applications

System P4.80 - profile role chain, low noise Travels up to 800 m  \(v_{\text{max}} \leq 10 \text{ m/s}\) Safe, maintenance-free for outdoor cranes or conveyor systems. Low noise operation, high service life

Rol-e-chain 5050R - rolling instead of gliding Travels up to 800 m  \(v_{\text{max}} \leq 6 \text{ m/s}\) Major reduction in drive power to less than 25 % for moving the chain

<table>
<thead>
<tr>
<th>R</th>
<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
<th>400</th>
<th>500</th>
<th>550</th>
<th>600</th>
</tr>
</thead>
<tbody>
<tr>
<td>(H_2)</td>
<td>242</td>
<td>242</td>
<td>242</td>
<td>242</td>
<td>242</td>
<td>242</td>
<td>242</td>
<td>242</td>
<td>242</td>
</tr>
<tr>
<td>(R_1)</td>
<td>1274</td>
<td>1638</td>
<td>2002</td>
<td>2457</td>
<td>2730</td>
<td>3458</td>
<td>3458</td>
<td>3458</td>
<td>3458</td>
</tr>
<tr>
<td>(D_2)</td>
<td>550</td>
<td>800</td>
<td>950</td>
<td>1200</td>
<td>1550</td>
<td>1700</td>
<td>2175</td>
<td>2175</td>
<td>2175</td>
</tr>
</tbody>
</table>

| Pitch | 91 mm/\(n\) · Links/\(n\) = 11 (1001 mm) · Chain length = \(\frac{N}{2} + K_2\) |

\(R_1\) = Mounting height (of the moving end and is set lower)  \(K_2\) = Further add-on (of the moving end and is set lower)  \(D_2\) = Over length - long travel, gliding  \(R\) = Bending radius  \(H_2\) = Inner trough height  \(S\) = Length of travel  \(S/2\) = Half length of travel

960.50.XXX and 975.50.XXX instead of 960.50.XXX

Insert the installation set “Heavy-Duty” 975.50.XXX on the right column “attached outwards”

<table>
<thead>
<tr>
<th></th>
<th>Part No.</th>
<th>Part No.</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(B_{\text{max}})</td>
<td>up to</td>
<td>on</td>
<td>(B_{\text{max}})</td>
</tr>
<tr>
<td></td>
<td>84</td>
<td>102</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>84</td>
<td>102</td>
<td>120</td>
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<tr>
<td></td>
<td>121</td>
<td>139</td>
<td>167</td>
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<td></td>
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<td>142</td>
<td>152</td>
</tr>
<tr>
<td></td>
<td>147</td>
<td>159</td>
<td>171</td>
</tr>
</tbody>
</table>

960.50.XXX

More information ▶ Design, from page 106
Stable due to undercut design, very large inner height

When to use Series 1640-1608:
- If a robust e-chain” with an inner height of 112 mm is required (108 mm on e-tube)
- If inner widths up to 600 mm are required
- For unsupported lengths up to 4,5 m and fill weights up to 50 kg/m
- For long travels up to 400 m
- Also suitable for side-mounted, vertical standing or hanging applications
- If many options and accessories are desired
- Optimized ratio of interior/exterior dimension

When to use a different igus® Series:
- If more stability is required 
  ▶ Series E4.112, page 710

The igus® E4-e-chain® opener reduces assembly time ▶ page 779

Steel mounting brackets
Noise damping pads, optional –10 dB(A)
Gilding surfaces, long travels
Chip protection
Very high capacity due to the undercut design
25% faster assembly with QuickLock system
Strait run due to the inner/outer link principle
Low noise operation due to integrated “brake”
Notch crossbar with backside scaling

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)

3D-CAD files, configurators, PDF ▶ www.igus.eu/1640
### e-chains® | Series 1640 with crossbars every link

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>1640</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[mm]</td>
<td>[mm]</td>
<td>[kg/m]</td>
</tr>
</tbody>
</table>

### e-tubes | Series 1608 - fully enclosed

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>1608</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[mm]</td>
<td>[mm]</td>
<td>[kg/m]</td>
</tr>
</tbody>
</table>

### Available bending radii
- R [mm]: 200 | 250 | 300 | 400 | 450 | 500 | 550 | 600

Supplement Part No. with required radius (R). Example: **1608.30.300.0**

### Order key for all types

**1640.30.300.0** e-chain®, crossbars every link

**1608.30.300.0** e-tube, fully enclosed

### Dimensioning

<table>
<thead>
<tr>
<th>Ba</th>
</tr>
</thead>
<tbody>
<tr>
<td>160</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>N - kneez height</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-chain 110 mm</td>
</tr>
<tr>
<td>e-tube 108 mm</td>
</tr>
</tbody>
</table>

| Standard color black |

| Bending radius R |

| Width index (depends on Bi) |

| Series / Type |

*Delivery time means time until shipping of goods (after technical release)*

*Configuration options and order keys, overview*  page 781
### QuickLock crossbars | Quick opening - up to 25% faster assembly

<table>
<thead>
<tr>
<th>Part No.</th>
<th>QuickLock crossbar for every link</th>
<th>QuickLock crossbar for every 2nd link</th>
<th>QuickLock crossbar for every 3rd link</th>
<th>Bi [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1640.15QZ.R0</td>
<td>1640.15QZ.R0</td>
<td>1640.15QZ.R0</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>1640.16QZ.R0</td>
<td>1640.16QZ.R0</td>
<td>1640.16QZ.R0</td>
<td>162</td>
<td></td>
</tr>
<tr>
<td>1640.17QZ.R0</td>
<td>1640.17QZ.R0</td>
<td>1640.17QZ.R0</td>
<td>175</td>
<td></td>
</tr>
<tr>
<td>1640.18QZ.R0</td>
<td>1640.18QZ.R0</td>
<td>1640.18QZ.R0</td>
<td>187</td>
<td></td>
</tr>
<tr>
<td>1640.20QZ.R0</td>
<td>1640.20QZ.R0</td>
<td>1640.20QZ.R0</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>1640.21QZ.R0</td>
<td>1640.21QZ.R0</td>
<td>1640.21QZ.R0</td>
<td>212</td>
<td></td>
</tr>
<tr>
<td>1640.22QZ.R0</td>
<td>1640.22QZ.R0</td>
<td>1640.22QZ.R0</td>
<td>225</td>
<td></td>
</tr>
<tr>
<td>1640.23QZ.R0</td>
<td>1640.23QZ.R0</td>
<td>1640.23QZ.R0</td>
<td>237</td>
<td></td>
</tr>
<tr>
<td>1640.25QZ.R0</td>
<td>1640.25QZ.R0</td>
<td>1640.25QZ.R0</td>
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<td></td>
</tr>
<tr>
<td>1640.26QZ.R0</td>
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<td>1640.26QZ.R0</td>
<td>262</td>
<td></td>
</tr>
<tr>
<td>1640.27QZ.R0</td>
<td>1640.27QZ.R0</td>
<td>1640.27QZ.R0</td>
<td>275</td>
<td></td>
</tr>
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<td>1640.28QZ.R0</td>
<td>1640.28QZ.R0</td>
<td>1640.28QZ.R0</td>
<td>287</td>
<td></td>
</tr>
<tr>
<td>1640.30QZ.R0</td>
<td>1640.30QZ.R0</td>
<td>1640.30QZ.R0</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>1640.31QZ.R0</td>
<td>1640.31QZ.R0</td>
<td>1640.31QZ.R0</td>
<td>312</td>
<td></td>
</tr>
<tr>
<td>1640.32QZ.R0</td>
<td>1640.32QZ.R0</td>
<td>1640.32QZ.R0</td>
<td>325</td>
<td></td>
</tr>
<tr>
<td>1640.33QZ.R0</td>
<td>1640.33QZ.R0</td>
<td>1640.33QZ.R0</td>
<td>337</td>
<td></td>
</tr>
<tr>
<td>1640.35QZ.R0</td>
<td>1640.35QZ.R0</td>
<td>1640.35QZ.R0</td>
<td>350</td>
<td></td>
</tr>
<tr>
<td>1640.36QZ.R0</td>
<td>1640.36QZ.R0</td>
<td>1640.36QZ.R0</td>
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<td></td>
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<tr>
<td>1640.37QZ.R0</td>
<td>1640.37QZ.R0</td>
<td>1640.37QZ.R0</td>
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<td>1640.38QZ.R0</td>
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<td>1640.38QZ.R0</td>
<td>387</td>
<td></td>
</tr>
<tr>
<td>1640.40QZ.R0</td>
<td>1640.40QZ.R0</td>
<td>1640.40QZ.R0</td>
<td>400</td>
<td></td>
</tr>
</tbody>
</table>

**Available bending radii R [mm]:** 150, 200, 250, 300, 350, 400, 450, 500, 550, 600

**Supplement Part No. with required radius (R):** Example: 1640.30QZ.R300

QuickLock crossbars: inner widths from 150 mm possible!

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### Configuration options and order keys, overview ▶️ page 782

**e-chain** with QuickLock crossbars - Delivery time* 3-5 work days.

*Delivery time means time until shipping of goods (after technical release)

---

### Noise dampening | = - 10 dB(A)

**With pads**

<table>
<thead>
<tr>
<th>Bi [mm]</th>
<th>With pads 1640/1608.1</th>
<th>Bi [mm]</th>
<th>With pads 1640/1608.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.05</td>
<td>S1640.1608.31.25.0</td>
<td>0.06</td>
<td>S1640.1608.32.25.0</td>
</tr>
<tr>
<td>0.08</td>
<td>S1640.1608.33.25.0</td>
<td>0.10</td>
<td>S1640.1608.35.25.0</td>
</tr>
<tr>
<td>0.12</td>
<td>S1640.1608.37.25.0</td>
<td>0.15</td>
<td>S1640.1608.40.25.0</td>
</tr>
</tbody>
</table>

**NC-Version | Without pretension**

<table>
<thead>
<tr>
<th>Bi [mm]</th>
<th>NC-Version 1640/1608.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.05</td>
<td>S1640.1608.31.25.0</td>
</tr>
<tr>
<td>0.06</td>
<td>S1640.1608.32.25.0</td>
</tr>
<tr>
<td>0.08</td>
<td>S1640.1608.33.25.0</td>
</tr>
<tr>
<td>0.10</td>
<td>S1640.1608.35.25.0</td>
</tr>
<tr>
<td>0.12</td>
<td>S1640.1608.37.25.0</td>
</tr>
<tr>
<td>0.15</td>
<td>S1640.1608.40.25.0</td>
</tr>
</tbody>
</table>

Available bending radii R [mm]: 200, 250, 300, 350, 400, 450, 500, 550, 600

*Noise dampening* - Delivery time* 3-5 work days. **NC-Version** - Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
**Option 1 | Separators and spacers**

Separator 6401 (e-chains’ only)

For a vertical subdivision. Offers safe stability due to its wide base design, also when used with thick cables or hoses (separators for e-tubes 1608 upon request).

Locking separator 6408 (e-chains’ only)

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* 405.XX (e-chains’ only)

Separators can be fixed in position by spacers. The available interior height is reduced by 2 mm per spacer (4 mm). To avoid this, the parts can also be installed from the outside on the opening crossbar. (not for long travel applications). XX = width of the spacer (please choose between 10, 15, 20, 30, 40 mm).

**Additional elements for interior separation**

Rollclip

Minimizes abrasion of particularly sensitive hoses - simply clamped onto the opening crossbar. The movable rollers compensate for relative movement between the e-chain’ and hose.

**Option 2 | Shelves**

Open, slotted separator 6405 (unilateral open)

Fast assembly - can be retrofitted into an existing interior separation system without a need for dismantling the interior separators. During an installation of open slotted separators, the top and bottom matches cannot be occupied by shelves. e-chains’ only!

Open, slotted separator 6005 (e-tubes only, unilateral open)

Works like open, slotted separator 6405 on e-tube 1608

Middle plate 6403 (e-chains’ only)

To achieve a modular shelving shelf 420.X can be arranged at 15 different heights (in 7 mm increments).

Middle plate 6003 (e-tubes only)

Works like middle plate 6403 on e-tube 1608

Side plate 6002 (e-chains’/e-tubes)

Works like middle plate close to the side links.

**Shelf 420.X**

For horizontal separation. Shelves of various widths can be arranged at 15 different heights (in 7 mm increments). - see table below.

<table>
<thead>
<tr>
<th>Width X [mm] unassembled</th>
<th>Width X [mm] unassembled</th>
<th>Width X [mm] unassembled</th>
<th>Width X [mm] unassembled</th>
</tr>
</thead>
<tbody>
<tr>
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<td>018</td>
<td>018</td>
<td>018</td>
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<tr>
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</tr>
<tr>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
</tr>
</tbody>
</table>
Steel pivoting | Recommended for unsupported, gliding, vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Mounting bracket pivoting</th>
</tr>
</thead>
<tbody>
<tr>
<td>16000.12VS.E</td>
<td>Full set (both sides), ending with outer side link, screwed - Standard</td>
</tr>
<tr>
<td>16000.12VS.E</td>
<td>Full set (both sides), beginning with outer side link (moving end), ending with inner side link (fixed end), screwed - Standard</td>
</tr>
<tr>
<td>16000.12E</td>
<td>Full set (both sides), ending with outer side link, not screwed - Standard</td>
</tr>
<tr>
<td>16000.12E</td>
<td>Full set (both sides), beginning with outer side link (moving end), ending with inner side link (fixed end), not screwed - Standard</td>
</tr>
</tbody>
</table>

Note: Depending on the e-chain® length, the carrier will end with outer or inner side links. For the best appearance, make sure the e-chain® ends with outer side link whenever possible. (with odd number of links)

Strain relief, e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148

Unsupported, harnessed Series 1640 in a stone machining application
Extension links | For extremely wide e-chains® up to 3,0 m
- The extension link design allows virtually limitless side-by-side attachment
- High fill weights necessitate extremely wide e-chains® (up to 3,000 mm)
- The unsupported length FLG\textsubscript{max} can be increased when additional loads are required
- Suitable for unsupported and gliding applications in a guide trough
- Attachment with KMA or steel mounting brackets

Extender crossbars | Careful guide of hosed applications
- Suitable for hoses with a maximum outer diameter of 300 mm
- Gliding with crossbars assembled along outer radius and a special guide trough
- Extender crossbar\textsuperscript{1} for snap-open crossbars or \textsuperscript{2} attached directly on the side link

Order example - 3 chambers
1640.B12 / B12 / B3.R.0 =
1640.10/20/10.200.0

Order example - extender crossbar
\textsuperscript{1} Combination with snap-open crossbars
RH.D115 for outer radius "E" incl. e-chain:
1640.10/1SRH.D115/10.R.0
RH.D115 for inner radius "Z" incl. e-chain:
1640.10/1SRH.D115/10.Z.0

\textsuperscript{2} Installation on side link
RD.D115 for outer radius "E" incl. e-chain:
1640.17RD.D115.R.0
RD.D115 for inner radius "Z" incl. e-chain:
1640.17RD.D115.Z.0

Strain relief system
Clamps, tiewrap plates, nuggets and plug-in clips. The complete chainfix range with many order options \(\Rightarrow\) from page 1148

Support tray tool kit
For support of the lower run. Simple one-piece support trays according to your requirements and specification \(\Rightarrow\) from page 1258

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 required
- Compatible with many E4 e-chains®
- One clip and one locking band are needed for each e-chain® link

Order examples
1640.B12 Locking clip, comprising a locking element
1640.B12.200 Locking band, comprising a locking element and band 12 x 1.5 x 200 mm
Steel Guide Troughs | Heavy-Duty
Part No. 98.30 | 98.31 | Trough height: 300 mm

<table>
<thead>
<tr>
<th>Installation set with C-profile for e-chains</th>
</tr>
</thead>
<tbody>
<tr>
<td>For Width Index</td>
</tr>
<tr>
<td>-----------------</td>
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<td>01</td>
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<tr>
<td>55</td>
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<tr>
<td>56</td>
</tr>
</tbody>
</table>

Steel guide trough in detail ➤ page 1232

- **Guide trough without glide bars** Part No. 98.30
- **Guide trough with glide bars** Part No. 98.31
- **Installation sets as end connectors** Part No. 98.50.XXX

**J00C** indicates the length of the C-profile on which the guide trough is mounted. (see table).

The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 2 m. The required overall length of the guide trough directly correlates to the length of travel. Special dimensions are available for confined spaces.

**Order example:** Length of travel 30 m - Center mounted for Series 1640.12.300.0 with \( B_{Bi} = 164 \)

Guide trough set without glide bars (set of 2 trough side parts, incl. glide strips)

Order text:
16 m guide trough without glide bars (8 x 2 m sections)
Part No. 98.30

Guide trough set with glide bars (set of 2 trough side parts, incl. glide strips)

Order text:
16 m guide trough with glide bars (8 x 2 m sections)
Part No. 98.31

Installation set “Basic” complete (guide trough sets + 1)

Order text:
17 installation sets Part No. 98.50.300

Guide trough set with glide bars Part No. 98.31

Guide trough set without glide bars Part No. 98.30

**C-Profile**

- **Ba** = Outer width e-chains
- **Bi** = Inner width e-chains
- **S/2** = Half length of travel
- **H_{i}** = Inner trough height
- **HR_{i}** = Inner trough height
- **HR_{a}** = Outer trough height
- **n_{Ri}** = Number of trough sections
- **n_{Mon}** = Number of installation sets
- **n_{i}** = Number of installation sets

**Steel Guide Troughs | Heavy-Duty**

For long travels from 14 m to max. 400 m

Solution for long travel applications: In this case the e-chain upper run will be introduced in a guide trough on the lower run. For travels more than 100 m we recommend to realize the engineering of such a plant by our technicians. In case of travels between 9 and 14 m we recommend a longer unsupported length. More information ➤ Design, from page 106

- **H_{2}** = Mounting height (if the moving end is set lower)
- **D_{2}** = Over length - long travels, gliding
- **K_{2}** = Further add-on (if the moving end is set lower)
- **R** = Bending radius
- **S/2** = Half length of travel
- **S** = Length of travel
- **S_{i}/2** = Half length of travel
- **K_{2}** = Further add-on (if the moving end is set lower)

**e-chains® for long travels:** E4/4HD, P4, autoglide, rol e-chain ➤ from page 1264

Special solutions for long travel applications ➤ from page 1348

*Radius not available for e-tubes
Extremely low-noise, dynamic, cleanroom

System T3 | E3 | E6 | E6.1
System T3 | System E3 | Low-noise, dynamic, cleanroom

Highly flexible, low-vibration band e-chain® without pin and bore connection - T3
- For short strokes with extreme demands on low noise (33dB(A))
- Rugged and modular. Connector replaces pin and hole
- Extremely quiet 37dB(A) - Figures determined in the igus® lab (according to DIN45635)
- Cost-effective, modular 3-piece e-chain® for high speeds and accelerations
- Very low weight
- Extremely quiet through small pitch and “brake” in the stop dog system
- Virtually no wear or abrasion - IPA Class 1 tested (E61.29.060.150.0.CR)
- 5 sizes and 3 designs available (e-chain®, e-tube and light version)
- Inner heights: 29, 35, 40, 52, 62, 80 mm
- www.igus.eu/eu/T3

E3 from page 896

Elastic, flexible connector strip, highly dynamic and suitable for cleanrooms - E3
- Extremely quiet 38dB(A) - Figures determined in the igus® lab (according to DIN45635)
- e-chain® for minimum installation spaces with modular chain link in 3 parts
- Ideal for cables such as ribbon cables
- Virtually no wear or abrasion - IPA Class 1 tested (E3.15.040.075.0)
- For short strokes with extreme demands on low noise and dynamics
- Inner heights: 10, 15, 22 mm
- www.igus.eu/eu/E3

E6 from page 916

Especially vibration-free, quiet, low abrasion and cleanroom suitable - E6
- Rugged and modular. Connector replaces pin and hole
- Extremely quiet 37dB(A) - Figures determined in the igus® lab (according to DIN45635)
- e-chain® with high stability and tensile strength with very smooth running
- Very low weight
- Extremely quiet through small pitch and “brake” in the stop dog system
- Virtually no wear or abrasion - IPA Class 1 tested (E6.29.060.150.0.CR)
- IPA Class 1 tested (E6.29.060.150.0.CR)
- 5 sizes and 3 designs available (e-chain®, e-tube and light version)
- Inner heights: 29, 35, 40, 52, 62, 80 mm
- www.igus.eu/eu/E6

E6.1 from page 994

Quiet running, cleanroom suitable and cost-effective - E6.1 2nd generation
- Extremely low vibration, virtually no polygon effect, thereby “even” run
- Extremely quiet through small pitch and “brake” in the stop dog system
- Virtually no wear or abrasion - IPA Class 1 tested (E61.29.060.150.0.CR)
- e-chain® with high stability and tensile strength with very smooth running
- E6.29: Crossbars swivel open on both sides and removable in the inner and outer radius
- Weight saving of approx. 30% compared to the E6 system
- Inner heights: 29, 52 mm
- www.igus.eu/eu/E6.1
Advantages | Extremely low-noise, low vibration

The extremely low-noise igus® e-chains® - T3, E3, E6 and E6.1

The e-chain® of the E3, T3, E6 and E6.1 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 vibration operation of the e-chain®. Due to the special fastening system, the e-chainsystems® have low wear or abrasion and are therefore suitable for cleanroom applications. The e-chain® Series E3, T3, E6 and E6.1 offer an extensive accessories package and are available in many dimensions off the shelf.

Advantages | Cleanroom, non abrasion

By eliminating the pin-hole connection, the unsupported E6 has very low abrasion and is suitable for cleanrooms

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 environments demand very high wear resistance of moving parts. e-chains®, for example, must be very wear resistant, in order to meet normal requirements for such a sensitive environment.

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

Comprehensive information for all e-chains® can be found at the relevant web link
igus® T3
Highly flexible & Low-vibration
Highly flexible, low-vibration T-band e-chain® - System T3

The T3 System combines low noise operation, low sound level, simple installation and economy. The side plates, which can be snapped together, replace the conventional pin and bore connection and prevent relative movements between the joints, giving an almost complete freedom from wear. By the novel 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

IPA Qualification Certificate - Report IG 1303-640-1:
ISO Class 2, according to DIN EN ISO 14644-1 for System T3, Series T3.29.050.038.0 at v = 0,5 m/s, 1 m/s, 2 m/s

igus® tests at 1 m measuring distance:
≈ 33 dB(A) for T3.29.050.038.0 at v = 1 m/s and 26.5 dB(A) basic sound level for Series T3.29.050.038

Extremely low noise - System T3 tests in the igus® lab at 1 m measuring distance showed a value of ≈ 33 dB(A) at 26.5 dB(A) basic sound level for Series T3.29.050.038.

Standardised modules for rotational movements with the T3 system. Various sizes available in a short time.
**T3 Assembly Instructions**

1. Side plates to be plugged into each other

2. Clip-on "interior separation clips"

3. System T3 enables quick installation times. The side plates can be simply plugged in

4. Can be shortened or lengthened easily

---

**T3 Technical Data**

- **FLG** with straight upper run
- **FLB** with permitted sag

<table>
<thead>
<tr>
<th>FLG</th>
<th>FLB</th>
</tr>
</thead>
<tbody>
<tr>
<td>max. 20 [m/s] / max. 200 [m/s²]</td>
<td>max. 3 [m/s] / max. 6 [m/s²]</td>
</tr>
</tbody>
</table>

**Material of lid - permitted temperature °C**

-40° up to +70° C

**Flammability class**

VDE 0304 IIC UL94-HB

---

**T3 e-chains® and modules for circular movement**

**T3 e-chains® for reverse bending radii (RBR)**

- Several reverse bending radii
- Quiet
- Low wear
- Several mounting positions
- Complete program of interior separation of Series T3.29
- RBR: 55, 75, 100, 150
- Part No. T3.29.050.38/55, T3.29.050.38/75, T3.29.050.38/100, T3.29.050.38/150
- Delivery time upon request

More information at www.igus.eu/eu/circularmovement

---

**T3 RBR-module for reverse bending radii**

Consists of 4 elements: T3 RBR e-chain®, guiding system, chainflex® cables, iglidur® PRT slewing ring bearing

- Compact guiding module
- Turnable in inner and outer radius
- For high speeds, quiet
- Compact dimensions
- Several mounting positions

Part No. T3.29.070.038/055. Delivery time upon request.

More information at www.igus.eu/eu/T3_assembly

---

**T3 Selection Table**

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width</th>
<th>Outer height</th>
<th>Bending radius length max.</th>
<th>Unsupported page</th>
</tr>
</thead>
<tbody>
<tr>
<td>T3.29</td>
<td>29</td>
<td>30 - 140</td>
<td>55 - 165</td>
<td>35</td>
<td>038</td>
<td>≈ 1.45</td>
</tr>
</tbody>
</table>

**System T3 - 3-piece e-chains®**

**T-shaped band e-chains®**

---

**Available from stock. Delivery time in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

Assembly video available online at www.igus.eu/eu/T3_assembly

---
**Configuration options and order key**

<table>
<thead>
<tr>
<th>Standard</th>
<th>NC-Version - (no camber) without pretension</th>
<th>Reverse bending radius for circular movements</th>
<th>ATEX/ESD classified e-chains® - II 2 GD</th>
</tr>
</thead>
<tbody>
<tr>
<td>T3.29.100.R.0</td>
<td>T3.29.100.R.0.NC</td>
<td>T3.29.100.R.0/R2.0</td>
<td>T3.29.100.R.0.ESD</td>
</tr>
</tbody>
</table>

**Delivery time**

*Delivery time means time until shipping of goods (after technical release)*

**Order example | Order key and color options**

**Order example for complete e-chain® (1,0 m), color black, mounting brackets and interior separation**

**e-chain® (1,0 m)**
Please indicate e-chain® length or number of links: 1,0 m or 67 links

**Order key** T3.29.100.038.0

**+ Mounting brackets** 1 set (+ tie-wrap plates) T3.100.12

**+ Interior separation** with 2 separators assembled every 2nd link 2 x 29.1.1

Order text: 1,0 m T3.29.100.038.0 + T3.100.12 + 2 x 29.1.1

**Color options for e-chains® and e-tubes**

<table>
<thead>
<tr>
<th>Color</th>
<th>Order index</th>
<th>Color</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black, standard</td>
<td>0.0</td>
<td>White, special color</td>
<td>0.1</td>
</tr>
<tr>
<td>Slate grey, only ESD material</td>
<td>ESD</td>
<td>Gray, standard</td>
<td>.15</td>
</tr>
<tr>
<td>Gray brown, only HT material</td>
<td>HT</td>
<td>Orange, special color</td>
<td>.2</td>
</tr>
<tr>
<td>Gray, special color only e-chains®</td>
<td>.3</td>
<td>Yellow, special color</td>
<td>.4</td>
</tr>
<tr>
<td>Dusty grey, special color only e-tubes</td>
<td>.31</td>
<td>Light grey, special color</td>
<td>.14</td>
</tr>
</tbody>
</table>

Black e-chains® available from stock!

**Delivery time** for special colors: from 5 work days

**Application**

Perfect match. Cleanroom-suitable igus® chainflex® cables are safely guided in the T3 e-chain®

Order text: 1,0 m T3.29.100.038.0 + T3.100.12 + 2 x 29.1.1

*

**Available from stock. Delivery time** in 24h or today!

*Delivery time means time until shipping of goods (after technical release)*

**igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu**
**T3.29 Series**

**Introduction**

**Universal**
- Mounting angles and strain relief option

**Low-noise 33dB(A)**
- Extremely low noise and low vibration due to small pitch

**Modular design**
- T-band in one piece of 8 chain links

**Flexible**
- Easy shortening and lengthening

**Cleanroom ISO Class 2**
- Virtually no wear or abrasion

**Easy to use**
- Clip-on “interior separation clips”

**Dynamic**
- For high speed and high accelerations

**Efficient**
- Very low weight

---

**Highly flexible, low-vibration, T-shaped band e-chain**

**When to use Series T3.29:***

- If a particularly low weight, cost-effective e-chain with an inner height of 29 mm is required
- Inner widths up to 140 mm
- For unsupported lengths up to 1,45 m and fill weights up to 1,0 kg/m
- At very high speeds and accelerations
- Hardly any polygon effect
- For small bending radii and small spaces
- If easy filling and assembly is required
- Minimal abrasion (e.g. cleanroom applications)

**When to use a different igus® Series:**

- If an e-chain for more fill weight is required  
  - Series E61.29, page 1002
- If an enclosed e-chain for low noise operation is required  
  - Series R6.29, page 928

---

**Supported**

**Available from stock. Delivery time in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

**3D-CAD files, configurators, PDF**  
www.igus.eu/eu/T3.29

---

**Dimensions**

**Unsupported**

<table>
<thead>
<tr>
<th>R (min.)</th>
<th>0.38</th>
</tr>
</thead>
<tbody>
<tr>
<td>H (min.)</td>
<td>216</td>
</tr>
<tr>
<td>D</td>
<td>111</td>
</tr>
<tr>
<td>K</td>
<td>210</td>
</tr>
</tbody>
</table>

The required clearance height: 

\[ H_f = H + 40 \text{ mm} \] with 1.0 kg/m fill weight

---

**Technical Data**

- Speed, material, temperature and flammability class: page 884

---

**PITCH**  
= 15 mm/link

**Links/m**  
= 67 (1005 mm)

**Chain length**  
= \( \frac{S}{2} + K \)
**Series T3.29 | T-shaped band e-chain® | Operable along inner and outer radius**

<table>
<thead>
<tr>
<th>e-chain® operable along outer radius Bi [mm]</th>
<th>Bb [mm]</th>
<th>R Bending radii [mm]</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>T3.29.030.R.0</td>
<td>30</td>
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<tr>
<td>T3.29.040.R.0</td>
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<td>T3.29.060.R.0</td>
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<td>T3.29.070.R.0</td>
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<td>T3.29.140.R.0</td>
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<td>165</td>
<td>0.59</td>
</tr>
</tbody>
</table>

Supplement Part No. with required radius (R), example: T3.29.100.038.0

**Order key**

| T3.29.100.038.0 e-chain® |

- Standard color black
- Bending radius R
- Weight index depends on Bi
- Configuration options and order keys, overview ➤ page 886
- Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

---

**New generation interior separation**

**Standard - for all applications**

Separator with a wide base for maximum locking strength and safe standing in e-chains®.

**For even faster installation**

Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (light grip).

**Locks safely in 2 mm increments**

Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

**Horizontal separation**

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.

**Lockable full-width shelves - for the standard interior separation**

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
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<tr>
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<td>231.080</td>
<td>125</td>
<td>230.125</td>
<td>231.125</td>
</tr>
</tbody>
</table>

**Interior separation with single-part order. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)
**Interior Separation with Single-Part Order**

Delivered in 24h or today!

*Delivery time means time until shipping of goods (after technical release)*

---

**Options**

**Previous Interior Separation**

All elements of the previous interior separation can still be ordered at www.igus.eu/eu/T3.29

---

**Note:** Please observe a lateral spacing of 1 mm to the side links.

In the standard configuration separators are assembled every 2nd e-chain link!

---

**Series T3.29**

**Interior Separation**

**Options**

---

**Previous Interior Separation**

All elements of the previous interior separation can still be ordered at www.igus.eu/eu/T3.29

---

**Note:** Please observe a lateral spacing of 1 mm to the side links.

In the standard configuration separators are assembled every 2nd e-chain link!

---

**Series T3.29**

**Interior Separation**

**Options**

---
Moving end Fixed end
T3.29...2 T3.29...1

Plastic fastener | Mounting angle

<table>
<thead>
<tr>
<th>For width index</th>
<th>Part No. full set with tiewrap plate</th>
<th>Part No. full set without tiewrap plate</th>
<th>Bi [mm]</th>
<th>Dim. B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>030.</td>
<td>T3.29.030.12PZ</td>
<td>T3.29.030.12</td>
<td>30</td>
<td>15</td>
<td>3</td>
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<tr>
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<td>15+20</td>
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<td>T3.29.090.12PZ</td>
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<tr>
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<td>40+40</td>
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<tr>
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<td>T3.29.140.12PZ</td>
<td>T3.29.140.12</td>
<td>140</td>
<td>60+40</td>
<td>14</td>
</tr>
</tbody>
</table>

Strain relief, e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148
Highly dynamic & cleanroom suitable
Highly dynamic and cleanroom compatible - System E3

E3 combines small pitch, smooth running, low noise, easy assembly and cost efficiency all in one. The spring connector element replaces the pin and bore principle and avoids relative movements between the joints. This means virtually no wear or abrasion. To reduce production and assembling costs, the spring connector is not mounted individually, but on a length of ten e-chain® links. Another E3 option is safe performance. A modified spring element made of electrically conductive material, which connects the e-chain® links mechanically and electrically, permanently guarantees constant electrical conductance, 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

Long-term tests in our acoustics laboratory at a speed of 1.8 m/s and an acceleration of 3 m/s² showed reductions of 19-20 dB(A) compared to conventional e-chains®.

During long-term tests the System E3 with the spring band connector easily passes 15 million cycles at a bending radius of 44 mm and an acceleration of 4 g.

Content overview, selection table and assembly instructions next page.
**E3 | Contents | Selection Table**

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height (hi [mm])</th>
<th>Inner width (Bi [mm])</th>
<th>Outer width (Ba [mm])</th>
<th>Outer height (ha [mm])</th>
<th>Bending radius (R [mm])</th>
<th>Unsupported length max. (m)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>E3.10</td>
<td>10</td>
<td>20 - 60</td>
<td>32 - 72</td>
<td>15</td>
<td>15 - 48</td>
<td>≈ 0.70</td>
<td>904</td>
</tr>
<tr>
<td>E3.15</td>
<td>15</td>
<td>20 - 60</td>
<td>32 - 72</td>
<td>20</td>
<td>32 - 75</td>
<td>≈ 0.90</td>
<td>908</td>
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<tr>
<td>E3.22</td>
<td>22</td>
<td>20 - 60</td>
<td>32 - 72</td>
<td>27</td>
<td>44 - 75</td>
<td>≈ 1.20</td>
<td>912</td>
</tr>
</tbody>
</table>

**E3 | Assembly Instructions**

1. Rip open the opening strip
2. Separate connector strip at any point or separate at the parting of the strip (approximately every 10th link) of the e-chain®
3. Turn the e-chain® apart, so that the interlocking of the chain links detaches
4. Separated e-chain® can be shortened or lengthened

**E3 | Technical Data | Overview**

- **FLG**
  - Speed / acceleration FLGmax.
    - FLGmax = with straight upper run
  - FLGmax = with permitted sag

- **FLB**
  - Speed / acceleration FLBmax.
    - FLBmax = with straight upper run
  - FLBmax = with permitted sag

- Material lidl - permitted temperature °C
  - -40° up to +70° C

- Flammability class
  - VDE 0304 IIC UL94-HB

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

Assembly video available online at [www.igus.eu/eu/E3_assembly](http://www.igus.eu/eu/E3_assembly)
**Configuration options and order key** (based on Series E3.15)

| Standard | NC-Version - (no camber) without pretension | ATEX/ESD classified e-chains*
| --- | --- | ---

<table>
<thead>
<tr>
<th>Part No. Standard</th>
<th>Part No. NC-Version</th>
<th>Part No. ESD-Material</th>
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</thead>
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<tr>
<td>E3.15.060.R.0</td>
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<td>E3.15.060.R.0.ESD</td>
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</tbody>
</table>

**Delivery time**
- **24h or today!**
- **2-5 work days**
- **10 work days**

*Delivery time means time until shipping of goods (after technical release)*

**Order example**

**Order example for complete e-chain® Series E3.15 (1.0 m), color black, mounting brackets and interior separation**

- **e-chain® (1.0 m)** Please indicate e-chain® length or number of links: 1.0 m or 60 links: E3.15.060.032.0
- **+ Mounting brackets** 1 set (+tiewrap plates): E3.060.12
- **+ Interior separation** with 2 separators assembled every 2nd link: 2 x E3.15.11

**Order text:**
1.0 m E3.15.060.038.0 + E3.060.12 + 2 x E3.15.11

**Order key**

<table>
<thead>
<tr>
<th>E3.15.060.038.0</th>
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</thead>
</table>

**Color options for e-chains® and e-tubes**

<table>
<thead>
<tr>
<th>Color</th>
<th>Order index</th>
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</thead>
<tbody>
<tr>
<td>Black</td>
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<tr>
<td>Slate grey</td>
<td>.1</td>
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<tr>
<td>Gray brown</td>
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</tr>
<tr>
<td>Gray special color e-chains*</td>
<td>.3</td>
</tr>
<tr>
<td>Dusty grey special color e-tubes</td>
<td>.4</td>
</tr>
<tr>
<td>Light grey special color</td>
<td>.14</td>
</tr>
<tr>
<td>White special color</td>
<td>.15</td>
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<td>Gray white special color</td>
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<td>Orange special color</td>
<td>.15</td>
</tr>
<tr>
<td>Yellow special color</td>
<td>.15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Color</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
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<tr>
<td>Slate grey</td>
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<td>Light grey special color</td>
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<td>White special color</td>
<td>.15</td>
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<td>Gray white special color</td>
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</tr>
<tr>
<td>Orange special color</td>
<td>.15</td>
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<tr>
<td>Yellow special color</td>
<td>.15</td>
</tr>
</tbody>
</table>

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

---

**Application**

igus® Series E3.15 side-mounted in a flat-bed scanner
**E3 | e-chains® | Series E3.10 | Introduction**

*Highly dynamic and cleanroom suitable*

**When to use Series E3.10:**
- If an e-chain® with an inner height of 10 mm is required
- Inner widths up to 60 mm
- For unsupported lengths up to 0.70 m and fill weights up to 0.3 kg/m
- At very high speeds and/or accelerations
- Small pitch for smooth running
- If easy filling and assembly is required
- Minimal abrasion (e.g. cleanroom applications)

**When to use a different igus® Series:**
- If a particularly cost-effective, snap-open solution is required
  - Series E/Z06 easy chain®, page 168
- If a simple, non-snap-open e-chain® is required
  - Series 05 E2 micro, page 314

**Technical Data**

**Dimensions**

<table>
<thead>
<tr>
<th>Pitch = 16.7 mm/link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Links/m = 60 (1002 mm)</td>
</tr>
<tr>
<td>Chain length = 0.5 S + K</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>R</th>
<th>015</th>
<th>028</th>
<th>038</th>
<th>048</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>60</td>
<td>86</td>
<td>106</td>
<td>126</td>
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<tr>
<td>D</td>
<td>50</td>
<td>63</td>
<td>73</td>
<td>83</td>
</tr>
<tr>
<td>K</td>
<td>85</td>
<td>125</td>
<td>155</td>
<td>185</td>
</tr>
</tbody>
</table>

The required clearance height: \( H_p = H + 50 \) mm (with 0.1 kg/m fill weight)

**Available from stock. Delivery time® in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

**3D-CAD files, configurators, PDF** [www.igus.eu/eu/E3.10](http://www.igus.eu/eu/E3.10)

** Unsupported applications**

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height \( H \). Please consult igus® if space is particularly restricted. More information [Design, page 95](http://www.igus.eu/eu/E3.10)

igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu
e-chain® | Series E3.10 | Zip-open along outer radius

<table>
<thead>
<tr>
<th>e-chain® zip-open along outer radius</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R [mm]</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E3.10.020.R.0</td>
<td>20</td>
<td>32</td>
<td>015</td>
<td>= 0.12</td>
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<tr>
<td>E3.10.040.R.0</td>
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<td>52</td>
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<td>= 0.15</td>
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<tr>
<td>E3.10.060.R.0</td>
<td>60</td>
<td>72</td>
<td>015</td>
<td>= 0.20</td>
</tr>
</tbody>
</table>

*Radius available upon request, please consult igus® for delivery time.
Supplement Part No. with required radius (R), example: E3.10.060.015.0

**Order key**
E3.10 | 060 | 015 | 0 e-chain®

Standard color black
Bending radius R
Width index (depends on Bi)
Series / Type

**Configuration options and order keys, overview ➤ page 902**

**Available from stock. Delivery time* in 24h or today!**
*Delivery time means time until shipping of goods (after technical release)

---

**KMA mounting bracket | Optional: Polymer mounting angle**
For unsupported applications

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
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<tbody>
<tr>
<td>.020</td>
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<td>KMA mounting bracket</td>
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<td>56</td>
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<tr>
<td>.060</td>
<td>E3.100.060.12</td>
<td></td>
<td>68</td>
<td>76</td>
</tr>
</tbody>
</table>

For both sides:
Part No. full set strain relief for both sides + 2 mounting angles

<table>
<thead>
<tr>
<th>Part No.</th>
<th>E3.100.020.12</th>
<th>E3.100.040.12</th>
<th>E3.100.060.12</th>
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</thead>
<tbody>
<tr>
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<td>E3.10.040.12</td>
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<td>E3.10.040.12</td>
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<td>E3.10.060.12</td>
<td>E3.10.060.12</td>
<td>E3.10.060.12</td>
</tr>
</tbody>
</table>

**Slotted separator E3.10.01**
Vertical separators are used if a vertical subdivision of the e-chain® interior is required.
**E3 | e-chains® | Series E3.15 | Introduction**

**Highly dynamic and cleanroom suitable**

When to use Series E3.15:
- If an e-chain® with an inner height of 10 mm is required
- Inner widths up to 60 mm
- For unsupported lengths up to 0.90 m and fill weights up to 0.7 kg/m
- At very high speeds and/or accelerations
- Small pitch for smooth running
- If easy filling and assembly is required
- Minimal abrasion (e.g. cleanroom applications)

When to use a different igus® Series:
- If a particularly cost-effective, snap-open solution is required
  - Series E/206 easy chain®, page 168
- If a simple, non-snap-open e-chain® is required
  - Series 05 E2 micro, page 314

**Universal:**
- KMA all-sides attachment or mounting angle

**Low-noise 38dB(A):**
- Small pitch for smooth running

**Flexible:**
- Easy shortening and lengthening

**Fast opening:**
- Zip-open mechanism along outer radius

**Modular design:**
- Crossbars, interior separation and links all in one band

**Dynamic:**
- For high speeds and high accelerations

**Cleanroom ISO Class 1:**
- Virtually no wear or abrasion

---

**Dimensions | Unsupported**

**E3 | e-chains® | Series E3.15 | Dimensions | Unsupported**

**Example**
- Fill weight = 0.30 [kg/m]
- Unsupported length FLG = 0.81 m
- Length of travel S = 1.62 m

**Pitch** = 16.7 mm/link

**Links/m** = 60 (1002 mm)

**Chain length** = \( S/2 + K \)

**R**

<table>
<thead>
<tr>
<th>032</th>
<th>038</th>
<th>048</th>
<th>075</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>99</td>
<td>111</td>
<td>131</td>
</tr>
<tr>
<td>D</td>
<td>67</td>
<td>73</td>
<td>83</td>
</tr>
<tr>
<td>K</td>
<td>135</td>
<td>155</td>
<td>185</td>
</tr>
</tbody>
</table>

The required clearance height: \( H_F = H + 50 \) mm (with 0.2 kg/m fill weight)

---

**Available from stock. Delivery time® in 24h or today!**

**Technical Data**

- Speed, material, temperature and flammability class | page 900
- Universal: KMA all-sides attachment or mounting angle
- Dynamic: For high speeds and high accelerations
- Cleanroom ISO Class 1: Virtually no wear or abrasion

---

**Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height \( H_F \). Please consult igus® if space is particularly restricted. More information ➤ Design, page 95**

---

**Series E3.15 and e-chains®**

- Universal: KMA all-sides attachment or mounting angle
- Low-noise 38dB(A): Small pitch for smooth running
- Flexible: Easy shortening and lengthening
- Fast opening: Zip-open mechanism along outer radius
- Modular design: Crossbars, interior separation and links all in one band
- Dynamic: For high speeds and high accelerations
- Cleanroom ISO Class 1: Virtually no wear or abrasion

---

**Universal: KMA all-sides attachment or mounting angle**

**Low-noise 38dB(A):**
- Small pitch for smooth running

**Flexible:**
- Easy shortening and lengthening

**Fast opening:**
- Zip-open mechanism along outer radius

**Modular design:**
- Crossbars, interior separation and links all in one band

**Dynamic:**
- For high speeds and high accelerations

**Cleanroom ISO Class 1:**
- Virtually no wear or abrasion

---

**Available from stock. Delivery time® in 24h or today!**

**3D-CAD files, configurators, PDF ➤ www.igus.eu/eu/E3.15**

---

**igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu**
**E3 | e-chains® | Series E3.15 | Product Range | Standard**

### e-chain® | Series E3.15 | Zip-open along outer radius

<table>
<thead>
<tr>
<th>e-chain® zip-open along outer radius</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Bending radii [mm]</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E3.15.020.R.0</td>
<td>20</td>
<td>32</td>
<td>032</td>
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<td>E3.15.040.R.0</td>
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<td>032</td>
<td>038</td>
</tr>
<tr>
<td>E3.15.060.R.0</td>
<td>60</td>
<td>72</td>
<td>032</td>
<td>038</td>
</tr>
</tbody>
</table>

*Radius available upon request, please consult igus® for delivery time.

Supplement Part No. with required radius (R), example: E3.15.060.032.0

### Order key

- E3.15. 060. 032. 0 e-chain®

Standard color black
Bending radius R
Width index depends on Bi
Series / Type

### Configuration options and order keys, overview page 902

*Delivery time means time until shipping of goods (after technical release)

**E3.15 | e-chains® | Series E3.15 | Mounting brackets**

#### KMA mounting bracket or mounting angle

**Moving end**

**Fixed end**

**KMA mounting bracket | Optional: Polymer mounting angle**

For unsupported applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. New in this catalog</th>
<th>Dim. A [mm]</th>
<th>Dim. B [mm]</th>
<th>Part No. KMA mounting bracket</th>
<th>Part No. strain relief for both sides</th>
<th>Part No. full set strain relief for both sides</th>
</tr>
</thead>
<tbody>
<tr>
<td>020</td>
<td>E3.15.020.12</td>
<td>28</td>
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<td>E3.15.00</td>
<td>E3.060.12</td>
<td>E3.15.060.12</td>
</tr>
</tbody>
</table>

**E3.15.000.12**

- E3 with strain relief for both sides and mounting angles

**E3.15.00**

- Strain relief for both sides as single parts

**E3.15.01**

- Vertical separators are used if a vertical subdivision of the e-chain® interior is required.

**E3.15.01.10**

- Five vertical separators altogether on one strip over ten e-chain® links are mounted on the opening crossbars. In this way separate chambers are formed, protecting the cables. Dimensions same as E3.15.01.

**E3.150.XXX.12**

- Space-saving allround KMA mounting bracket

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910 3D-CAD files, configurators, PDF, applications → www.igus.eu/eu/E3.15

igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu 911
Highly dynamic and cleanroom suitable

When to use Series E3.22:
- If an e-chain® with an inner height of 10 mm is required
- Inner widths up to 60 mm
- For unsupported lengths up to 1.20 m and fill weights up to 0.9 kg/m
- At very high speeds and/or accelerations
- Small pitch for smooth running
- If easy filling and assembly is required
- Minimal abrasion (e.g. cleanroom applications)

When to use a different igus® Series:
- If a particularly cost-effective, snap-open solution is required
  - Series E/Z06 easy chain®, page 168
- If a simple, non-snap-open e-chain® is required
  - Series 05 E2 micro, page 314

 Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height HF. Please consult igus® if space is particularly restricted. More information ▶ Design, page 95

Pitch = 16.7 mm/link
Links/m = 60 (1002 mm)
Chain length = \( \frac{S}{2} + K \)

The required clearance height: \( H_F = H + 50 \text{ mm} \) (with 0.3 kg/m fill weight)
**e-chains® Series E3.22 | Product Range | Standard**

**e-chain® Series E3.22 | Zip-open along outer radius**

<table>
<thead>
<tr>
<th>e-chain®</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Bending radii [mm]</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E3.22.020.R.0</td>
<td>20</td>
<td>32</td>
<td>044</td>
<td>050</td>
</tr>
<tr>
<td>E3.22.040.R.0</td>
<td>40</td>
<td>52</td>
<td>044</td>
<td>050</td>
</tr>
<tr>
<td>E3.22.060.R.0</td>
<td>60</td>
<td>72</td>
<td>044</td>
<td>-</td>
</tr>
</tbody>
</table>

Supplement Part No. with required radius (R), example: E3.22.060.044.0

**Order key**

E3.22. 060. 044. 0 e-chain®

- Standard color black
- Bending radius R
- Width index depends on Bi
- Series / Type

**Configuration options and order keys, overview ➤ page 902**

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

**E3.22 | e-chains® Series E3.22 | Mounting brackets**

**KMA mounting bracket or mounting angle**

**Fixed end**

E3.22....2

**Moving end**

E3.22...1

**KMA mounting bracket | Optional: Polymer mounting angle**

For unsupported applications

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>.020.</td>
<td>E3.220.020.12</td>
<td>28</td>
<td>36</td>
</tr>
<tr>
<td>.040.</td>
<td>E3.220.040.12</td>
<td>48</td>
<td>56</td>
</tr>
<tr>
<td>.060.</td>
<td>E3.220.060.12</td>
<td>68</td>
<td>76</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part No. mounting angle</th>
<th>Part No. strain relief for both sides</th>
<th>Part No. full set strain relief for both sides</th>
</tr>
</thead>
<tbody>
<tr>
<td>E3.22.00</td>
<td>E3.020.12</td>
<td>E3.22.020.12</td>
</tr>
<tr>
<td>E3.22.040</td>
<td>E3.040.12</td>
<td>E3.22.040.12</td>
</tr>
<tr>
<td>E3.22.060</td>
<td>E3.060.12</td>
<td>E3.22.060.12</td>
</tr>
</tbody>
</table>

**E3.22.XXX.12 - Space-saving allround KMA mounting bracket**

**View KMA mounting bracket**

**View mounting angle**

**Fixed end**

**E3.22.XXX.12 - Space-saving allround KMA mounting bracket**

**E3.00.020 - Strain relief for both sides as single parts**

**E3.22.00 - Mounting angle**

**Slotted separator E3.22.01**

Vertical separators are used if a vertical subdivision of the e-chain® interior is required.

**Slotted separator for e-chains® unassembled E3.22.01 assembled E3.22.11**

**Slotted separator E3.22.01**

Vertical separators are used if a vertical subdivision of the e-chain® interior is required.

**E3.22.00 - Mounting angle**

**E3.22.00 - Moving end**

**E3.22.00 - Fixed end**

**E3.020.12**

**E3.040.12**

**E3.060.12**

**E3.22.020.12**

**E3.22.040.12**

**E3.22.060.12**

**View mounting angle**

**View KMA mounting bracket**

**Fixed end**

**Moving end**

**E3.220.XXX.12 - Space-saving allround KMA mounting bracket**

**E3.00.020 - Strain relief for both sides as single parts**

**E3.22.00 - Mounting angle**

**Slotted separator E3.22.01**

Vertical separators are used if a vertical subdivision of the e-chain® interior is required.

**Slotted separator for e-chains® unassembled E3.22.01 assembled E3.22.11**

**Slotted separator E3.22.01**

Vertical separators are used if a vertical subdivision of the e-chain® interior is required.

**E3.22.00 - Moving end**

**E3.22.00 - Fixed end**

**E3.020.12**

**E3.040.12**

**E3.060.12**

**E3.22.020.12**

**E3.22.040.12**

**E3.22.060.12**

**View mounting angle**

**View KMA mounting bracket**

**Fixed end**

**Moving end**

**E3.220.XXX.12 - Space-saving allround KMA mounting bracket**

**E3.00.020 - Strain relief for both sides as single parts**

**E3.22.00 - Mounting angle**

**Slotted separator E3.22.01**

Vertical separators are used if a vertical subdivision of the e-chain® interior is required.

**Slotted separator for e-chains® unassembled E3.22.01 assembled E3.22.11**

**Slotted separator E3.22.01**

Vertical separators are used if a vertical subdivision of the e-chain® interior is required.

**E3.22.00 - Moving end**

**E3.22.00 - Fixed end**

**E3.020.12**

**E3.040.12**

**E3.060.12**

**E3.22.020.12**

**E3.22.040.12**

**E3.22.060.12**

**View mounting angle**

**View KMA mounting bracket**

**Fixed end**

**Moving end**

**E3.220.XXX.12 - Space-saving allround KMA mounting bracket**

**E3.00.020 - Strain relief for both sides as single parts**

**E3.22.00 - Mounting angle**

**Slotted separator E3.22.01**

Vertical separators are used if a vertical subdivision of the e-chain® interior is required.

**Slotted separator for e-chains® unassembled E3.22.01 assembled E3.22.11**

**Slotted separator E3.22.01**

Vertical separators are used if a vertical subdivision of the e-chain® interior is required.

**E3.22.00 - Moving end**

**E3.22.00 - Fixed end**

**E3.020.12**

**E3.040.12**

**E3.060.12**

**E3.22.020.12**

**E3.22.040.12**

**E3.22.060.12**

**View mounting angle**

**View KMA mounting bracket**

**Fixed end**

**Moving end**

**E3.220.XXX.12 - Space-saving allround KMA mounting bracket**

**E3.00.020 - Strain relief for both sides as single parts**

**E3.22.00 - Mounting angle**

**Slotted separator E3.22.01**

Vertical separators are used if a vertical subdivision of the e-chain® interior is required.

**Slotted separator for e-chains® unassembled E3.22.01 assembled E3.22.11**

**Slotted separator E3.22.01**

Vertical separators are used if a vertical subdivision of the e-chain® interior is required.

**E3.22.00 - Moving end**

**E3.22.00 - Fixed end**

**E3.020.12**

**E3.040.12**

**E3.060.12**

**E3.22.020.12**

**E3.22.040.12**

**E3.22.060.12**

**View mounting angle**

**View KMA mounting bracket**

**Fixed end**

**Moving end**

**E3.220.XXX.12 - Space-saving allround KMA mounting bracket**

**E3.00.020 - Strain relief for both sides as single parts**

**E3.22.00 - Mounting angle**

**Slotted separator E3.22.01**

Vertical separators are used if a vertical subdivision of the e-chain® interior is required.

**Slotted separator for e-chains® unassembled E3.22.01 assembled E3.22.11**

**Slotted separator E3.22.01**

Vertical separators are used if a vertical subdivision of the e-chain® interior is required.

**E3.22.00 - Moving end**

**E3.22.00 - Fixed end**

**E3.020.12**

**E3.040.12**

**E3.060.12**

**E3.22.020.12**

**E3.22.040.12**

**E3.22.060.12**

**View mounting angle**

**View KMA mounting bracket**

**Fixed end**

**Moving end**

**E3.220.XXX.12 - Space-saving allround KMA mounting bracket**

**E3.00.020 - Strain relief for both sides as single parts**

**E3.22.00 - Mounting angle**

**Slotted separator E3.22.01**

Vertical separators are used if a vertical subdivision of the e-chain® interior is required.
System E6
extremely low-noise, minimum vibration and abrasion, cleanroom suitable
Extremely low-noise, minimum vibration and abrasion, clean room suitable - System E6

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

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.
**Cleanroom qualification of E6 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 environments demand very high wear resistance of moving parts. e-chains, for example, must be very wear resistant, in order to meet normal requirements for such a sensitive environment.

IPA Qualification Certificate - Report IG 0704-400:
- Special material “cleanroom” - ISO Class 1, according to DIN EN ISO 14644-1 for Series E6.29.060.150.0 at v = 0.5 m/s, 2.0 m/s
- Standard material - ISO Class 3, according to DIN EN ISO 14644-1 for Series E6.29.060.150.0 at v = 0.5 m/s and Series E6.29.050.055.0 with inserted cables CF34.15.04, CF9.05.12, CF11.02.01.02.PBA.LC.D

**Noise test in the igus® laboratory 40dB(A) E6.29.100.100.0 series for long travel paths, v = 2 m/s**

Selected noise tests - External noise corrected measurement values

<table>
<thead>
<tr>
<th>e-chain Series</th>
<th>Averaging of the corrected sound pressure levels</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>igus® Series E6.29*</td>
<td>≈ 37 dB(A)</td>
<td>unsupported v = 1,0 m/s</td>
</tr>
<tr>
<td>igus® Series E6.52*</td>
<td>= 41 dB(A)</td>
<td>unsupported, side mounted v = 0,5 m/s</td>
</tr>
<tr>
<td>igus® Series E6.52</td>
<td>≈ 46 dB(A)</td>
<td>unsupported v = 2,0 m/s</td>
</tr>
<tr>
<td>Chain 1 Third-party product</td>
<td>≈ 77 dB(A)</td>
<td>unsupported v = 2,0 m/s</td>
</tr>
<tr>
<td>Chain 2 Third-party product</td>
<td>≈ 68 dB(A)</td>
<td>unsupported v = 2,0 m/s</td>
</tr>
<tr>
<td>Chain 3 Third-party product</td>
<td>≈ 73 dB(A)</td>
<td>unsupported v = 2,0 m/s</td>
</tr>
</tbody>
</table>

Noise level ≤ 37 dB(A) - A measurement conducted by the Rheinland Technical Inspection Authority (TÜV Rheinland) in May 2002 indicates a value of ≤ 46 dB(A) at 2 m/s and with an unsupported length of 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 Rheinland Technical Inspection Authority (TÜV Rheinland Berlin Brandenburg) and we are happy to provide you with a copy upon request. A measurement in the igus® laboratory gave a value of 37 dB(A) for series E6.29.080.075.0 at v = 1.0 m/s unsupported.

IPA Qualification Certificate - Report IG 0704-400:
- Special material “cleanroom” - ISO Class 1, according to DIN EN ISO 14644-1 for Series E6.29.060.150.0.CR at v = 0.5 m/s, 2.0 m/s
- Standard material - ISO Class 3, according to DIN EN ISO 14644-1 for Series E6.29.060.150.0 at v = 0.5 m/s, 2.0 m/s and Series E6.29.050.055.0 with inserted cables CF34.15.04, CF9.05.12, CF11.02.01.02.PBA.LC.D

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 environments demand very high wear resistance of moving parts. e-chains, for example, must be very wear resistant, in order to meet normal requirements for such a sensitive environment.

By eliminating the pin-hole connection, the unsupported E6 has very low abrasion and is suitable for cleanrooms.
Crossbars every 2nd link - the E6 e-chain® standard
Crossbars removable along both radii

<table>
<thead>
<tr>
<th>Series</th>
<th>hi [mm]</th>
<th>Bi [mm]</th>
<th>aj [mm]</th>
<th>ha [mm]</th>
<th>R [mm]</th>
<th>Unsupported length max. [m]</th>
<th>page</th>
</tr>
</thead>
<tbody>
<tr>
<td>E6.29</td>
<td>29</td>
<td>30 - 140</td>
<td>46 - 156</td>
<td>35</td>
<td>55 - 150</td>
<td>≈ 1,75</td>
<td>928</td>
</tr>
<tr>
<td>E6.35</td>
<td>35</td>
<td>30 - 140</td>
<td>50 - 160</td>
<td>42</td>
<td>55 - 100</td>
<td>≈ 1,90</td>
<td>938</td>
</tr>
<tr>
<td>E6.40</td>
<td>40</td>
<td>40 - 300</td>
<td>60 - 320</td>
<td>54</td>
<td>63 - 200</td>
<td>≈ 2,75</td>
<td>946</td>
</tr>
<tr>
<td>E6.52</td>
<td>52</td>
<td>40 - 300</td>
<td>64 - 324</td>
<td>65</td>
<td>75 - 250</td>
<td>≈ 3,00</td>
<td>956</td>
</tr>
<tr>
<td>E6.62</td>
<td>62</td>
<td>50 - 400</td>
<td>86 - 436</td>
<td>84</td>
<td>115 - 350</td>
<td>≈ 4,00</td>
<td>966</td>
</tr>
<tr>
<td>E6.80L</td>
<td>80</td>
<td>87 - 550</td>
<td>115 - 578</td>
<td>108</td>
<td>175</td>
<td>≈ 2,50</td>
<td>976</td>
</tr>
<tr>
<td>E6.80</td>
<td>80</td>
<td>50 - 600</td>
<td>100 - 650</td>
<td>108</td>
<td>150 - 450</td>
<td>≈ 5,25</td>
<td>984</td>
</tr>
</tbody>
</table>

Fully enclosed e-tubes
Enclosed design protects from light debris, weld splatter and compromising environmental influences

Position side links, gently twist and snap in. Gently reinsert connector by using hammer
Lever crossbars with screwdriver. Tap gently to remove connectors...
...twist and separate side links

Technical Data, overview ► page 924
e-chain® links as single parts, overview ► page 925
Configuration options and order keys, overview ► page 926

Assembly video available online at ► www.igus.eu/eu/E6_assembly
Technical Data - E6

Girling speed / acceleration (maximum) upon request

Speed / acceleration FLG, max. max. 20 [m/s] / max. 200 [m/s²]

Speed / acceleration FLB, max. max. 3 [m/s] / max. 6 [m/s²]

Material - permitted temperature °C -40° up to +70° C

Flammability class VDE 0304 IIC UL94-HB

FLG = with straight upper run

FLB = with permitted sag

1) Gliding application is also possible, please consult igus®.

Installation methods overview, maximum travels - E6

<table>
<thead>
<tr>
<th>e-chain® Series</th>
<th>Unsupported application</th>
<th>Giriling application</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
</tr>
</thead>
<tbody>
<tr>
<td>E6.29 / R6.29</td>
<td>≤ 1,75 m</td>
<td>upon request</td>
<td>≤ 30 m</td>
<td>≤ 2,0 m</td>
<td>upon request</td>
</tr>
<tr>
<td>E6.35</td>
<td>≤ 1,90 m</td>
<td>upon request</td>
<td>≤ 30 m</td>
<td>≤ 2,0 m</td>
<td>upon request</td>
</tr>
<tr>
<td>E6.40 / R6.40</td>
<td>≤ 2,75 m</td>
<td>upon request</td>
<td>≤ 30 m</td>
<td>≤ 2,0 m</td>
<td>upon request</td>
</tr>
<tr>
<td>E6.52 / R6.52</td>
<td>≤ 3,00 m</td>
<td>upon request</td>
<td>≤ 50 m</td>
<td>≤ 2,0 m</td>
<td>upon request</td>
</tr>
<tr>
<td>E6.62</td>
<td>≤ 4,00 m</td>
<td>upon request</td>
<td>≤ 60 m</td>
<td>≤ 3,0 m</td>
<td>upon request</td>
</tr>
<tr>
<td>E6.80L</td>
<td>≤ 2,50 m</td>
<td>upon request</td>
<td>≤ 60 m</td>
<td>≤ 4,0 m</td>
<td>upon request</td>
</tr>
<tr>
<td>E6.80</td>
<td>≤ 5,25 m</td>
<td>upon request</td>
<td>≤ 60 m</td>
<td>≤ 4,0 m</td>
<td>upon request</td>
</tr>
</tbody>
</table>

1) In special cases, giriling applications are also possible, please consult igus®.

E-chain® links as single parts - E6

Part No. 6-piece e-chain® links as single parts - E6

Crossbar e-chain®

Left side link

Right side link

Polymer spring as single part

<table>
<thead>
<tr>
<th>Series</th>
<th>Crossbar</th>
<th>Lid</th>
<th>Bottom</th>
<th>Side link</th>
<th>Side link right</th>
<th>Polymer spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>E6.35</td>
<td>E6.35.Bi</td>
<td>–</td>
<td>–</td>
<td>E6.35.01.R</td>
<td>E6.35.02.R</td>
<td>E6.35.150</td>
</tr>
</tbody>
</table>

1) Crossbar / lid / bottom - supplement Part No. with required width index (Bi), example: 450.150
2) Side link - supplement Part No. with required radius (R), example: E6.50.150

Gliding speed / acceleration (maximum) upon request

FLGmax. max. 20 [m/s] / max. 200 [m/s²]

FLBmax. max. 3 [m/s] / max. 6 [m/s²]

Material - permitted temperature °C -40° up to +70° C

Flammability class VDE 0304 IIC UL94-HB

Technical Data - E6

Technical Data - E6

Technical Data - E6

Technical Data - E6

Technical Data - E6

Technical Data - E6

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Techni
**Configuration options and order key** (based on Series E6.62)

<table>
<thead>
<tr>
<th>Standard</th>
<th>QuickLock crossbar (^{1)}) - bis reduce assembly time up to 25% (1^\text{st} ) not for Series E6.29 / E6.35 / E6.40 / E6.52</th>
<th>NC-Version - (no camber) without pretension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No.</td>
<td>QuickLock crossbar (^{1)}) for inner radius</td>
<td>Part No. QuickLock crossbar (^{1)}) for outer radius</td>
</tr>
<tr>
<td>Standard</td>
<td>for both radii</td>
<td>Part No.</td>
</tr>
<tr>
<td>E6.62.100.R.0</td>
<td>Crossbar every 2(^{nd}) link</td>
<td>E6.62.100.R.0 NC</td>
</tr>
<tr>
<td>Delivery time*</td>
<td>24h or today!</td>
<td>Delivery time*</td>
</tr>
<tr>
<td>Delivery time*</td>
<td>3-5 work days</td>
<td>Delivery time*</td>
</tr>
<tr>
<td>Delivery time*</td>
<td>2-5 work days</td>
<td>Delivery time*</td>
</tr>
</tbody>
</table>

\(1\) Delivery time means time until shipping of goods (after technical release)

**Order example | Order key and color options**

E6.62.10.250.0

- e-chain\(^{®}\) \(1,0\) m, with crossbars every 2\(^{nd}\) link, color black, mounting brackets and interior separation:
  - Order example for complete e-chain\(^{®}\) Series E6.62 \((1,0\) m, with crossbars every 2\(^{nd}\) link).

- **Order key**
  - E6.62.10.250.0

- **Color options for e-chains\(^{®}\) and e-tubes**
  - Color | Order index | Color | Order index
  - Black, Standard, from stock \(0\) | White, special color \(1\)
  - Slate grey, only ESD material \(0.0\) | Grey, special color \(0.15\)
  - Gray brown, only HT material \(0.15\) | Orange, special color \(0.2\)
  - Gray, special color only e-chains \(0.3\) | Yellow, special color \(0.4\)
  - Dusty grey, special color only e-tubes \(0.31\) | Light grey, special color \(0.34\)

- **Support tray tool kit**
  - For support of the lower run. Simple one-piece support trays according to your requirements and specification \(\text{from page } 1258\)

**Strain relief system**

Clamps, tie-wrap plates, nuggets and plug-in clips. The complete chainfix range with many order options \(\text{from page } 1148\)

**Application**

E6 without classical pin-hole connection. At present, the solution with the lowest noise and vibration in the igus\(^{®}\) e-chains range.

**Strain relief system**

Clamps, tie-wrap plates, nuggets and plug-in clips. The complete chainfix range with many order options \(\text{from page } 1148\)

**Support tray tool kit**

For support of the lower run. Simple one-piece support trays according to your requirements and specification \(\text{from page } 1258\)
Extremely low-noise, low vibration, high stability

When to use Series E6.29-R6.29:

- If a particularly low noise, low vibration e-chain® with an inner height of 29 mm (e-tube 28 mm) is required
- At very high speeds and/or accelerations
- Inner widths up to 140 mm
- For unsupported lengths up to 1.75 m and fill weights up to 3.6 kg/m
- For enlarged thrusts and tensile forces
- For small bending radii
- Minimal abrasion (e.g. cleanroom applications)

When to use a different igus® Series:

- Limited in side-mounted applications
  - Series 2400/2500 E2/000, page 426
- No use with RBR (reverse bending radius)
  - Series 2400/2500 E2/000, page 426
- No use with high additional fill weights
  - Series 2400/2500 E2/000, page 426
- No use in dirty environments
  - Series 2480 E2/000, page 426
- For still less vibration and noise generation or even higher dynamics
  - Series E61.29 System E6.1, page 1002

In special cases, gliding applications are also possible, please consult igus®.
**e-chains® | Series E6.29 Crossbars every 2" link | Removable along both radii**

**Part No.**

<table>
<thead>
<tr>
<th>E6.29.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>E6.29 [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E6.29. 030.</td>
<td>50</td>
<td>66</td>
<td>0.78</td>
</tr>
<tr>
<td>E6.29. 040.</td>
<td>60</td>
<td>76</td>
<td>0.80</td>
</tr>
<tr>
<td>E6.29. 050.</td>
<td>70</td>
<td>86</td>
<td>0.83</td>
</tr>
<tr>
<td>E6.29. 060.</td>
<td>80</td>
<td>96</td>
<td>0.85</td>
</tr>
</tbody>
</table>

**Available bending radii R [mm]: 055 | 075 | 100 | 150**

Supplement Part No. with required radius (R), example: E6.29.050.100.0

---

**e-tubes | Series R6.29 fully enclosed | Crossbars removable along both radii**

**Part No.**

<table>
<thead>
<tr>
<th>R6.29.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R6.29 [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>R6.29. 030.</td>
<td>50</td>
<td>66</td>
<td>0.89</td>
</tr>
<tr>
<td>R6.29. 040.</td>
<td>60</td>
<td>76</td>
<td>0.94</td>
</tr>
<tr>
<td>R6.29. 050.</td>
<td>70</td>
<td>86</td>
<td>0.97</td>
</tr>
<tr>
<td>R6.29. 060.</td>
<td>80</td>
<td>96</td>
<td>1.03</td>
</tr>
</tbody>
</table>

**Available bending radii R [mm]: 055 | 075 | 100 | 150**

Supplement Part No. with required radius (R), example: R6.29.050.100.0

---

**Order key**

E6.29.050.100.0 Crossbars every 2" link Fully enclosed e-tube

**Dimensioning**

---

**e-chain' links as single parts, overview ► page 925**

Configuration options and order keys, overview ► page 926

Available from stock. Delivery time in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
New generation interior separation - for e-chains®

**Standard - for all applications**
Separator with a wide base for maximum locking strength and safe standing in e-chains®.

**For even faster installation**
Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip).

**Locks safely in 2 mm increments**
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

**Horizontal separation**
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.

**Vertical separator R6.29.01**
For e-tubes R6.29. The notches on this separator mark the side that fixes to the lid.

**Separator with integrated strain relief**
Strain relief separators Part No. E6.29.02.Z (for e-chains®) and R6.29.02.Z (for e-tubes) 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. Easy to assemble without any screws. More information from page 1170.

**Interior separation with single-part order. Delivery time* in 24h or today!**
*Delivery time means time until shipping of goods (after technical release)
Series E6.29 e-chains® Interior separation | Options

Previous interior separation - for e-chains®

All elements of the previous interior separation can still be ordered. For more information, visit www.igus.eu/E6.29

Note: Please observe a lateral spacing of 1 mm to the side links. In the standard configuration, separators are assembled every 2nd e-chain® link!

Slotted separator E6.29.01

- Used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.
  - Assembled: E6.29.11
  - Unassembled: E6.29.01

Notch separator, slotted E6.29.01.R

- Locks safely in 2 mm increments. Notch separator for exact positioning in e-chains®. Slipping of the separator during operation is therefore impossible.
  - Assembled: E6.29.11.R
  - Unassembled: E6.29.01.R

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 5 mm increments).
  - Unassembled: 110.X
  - Assembled: 111.X

Full-width shelves

- Width X [mm] unassembled assembled
  - 030: 110.30 111.30
  - 040: 110.40 111.40
  - 050: 110.50 111.50
  - 060: 110.60 111.60

- Width X [mm] unassembled assembled
  - 070: 110.70 111.70
  - 080: 110.80 111.80
  - 090: 110.90 111.90
  - 100: 110.10 111.100

- Width X [mm] unassembled assembled
  - 110: 110.110 111.110
  - 120: 110.120 111.120

- Width X [mm] unassembled assembled
  - 018: 2200.18 2210.18
  - 023: 2200.23 2210.23
  - 028: 2200.28 2210.28
  - 033: 2200.33 2210.33
  - 038: 2200.38 2210.38

- Width X [mm] unassembled assembled
  - 043: 2200.43 2210.43
  - 048: 2200.48 2210.48
  - 058: 2200.58 2210.58
  - 068: 2200.68 2210.68
  - 073: 2200.73 2210.73

- Width X [mm] unassembled assembled
  - 076: 2200.76 2210.76
  - 088: 2200.88 2210.88
  - 099: 2200.99 2210.99

Shelves

- Width X [mm] unassembled assembled
  - 043: 2200.43 2210.43
  - 048: 2200.48 2210.48
  - 058: 2200.58 2210.58
  - 068: 2200.68 2210.68
  - 073: 2200.73 2210.73

- Width X [mm] unassembled assembled
  - 076: 2200.76 2210.76
  - 088: 2200.88 2210.88
  - 099: 2200.99 2210.99

Middle plate E6.29.12

- To achieve a modular shelving, the shelf 2200.X can be arranged at 5 different heights (in 5 mm increments).
  - Assembled: E6.29.12
  - Unassembled: E6.29.02

Side plate E6.29.03

- Works like middle plate. Allows modular shelving close to the side links. No lateral spacing necessary!

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 5 mm increments).

Options

- Interior separation with single-part order. Delivery time® in 24h or today!
- Interior separation with single-part order. Delivery time® in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
**KMA pivoting | All-sides attachment | Recommended for unsupported applications**

<table>
<thead>
<tr>
<th>Width [mm]</th>
<th>Part No. Full set</th>
<th>A [mm]</th>
<th>Bi [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>090</td>
<td>E6.290.060</td>
<td>0</td>
<td>90</td>
</tr>
<tr>
<td>100</td>
<td>E6.290.060</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>110</td>
<td>E6.290.060</td>
<td>0</td>
<td>110</td>
</tr>
</tbody>
</table>

**Order example:** Length of travel 30 m - Center mounted for Series E6.29, 060,100,0 with Bi = 80

Guide trough set without glide bar (set of 2 trough side parts, incl. glide strips)

Order text: 16 m guide trough without glide bar (8 x 2 m sections)

Part No. 971.30.50.L

Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips)

Order text: 16 m guide trough with glide bar (8 x 2 m sections)

Part No. 971.31.50.L

Installation set “Basic” complete (guide trough sets + 1)

Order text: 17 installation sets

Part No. 960.30.150

**Option:** For an additional noise dampening with silencer profile, please add index A - Example: Part No. 971.30.50.LA

---

**Strain relief, e.g., clamps, tie wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options ➤ from page 1148**
Extremely low-noise, low vibration, high stability

When to use Series E6.35:
- If a particularly low noise, low vibration e-chain with an inner height of 35 mm is required
- At very high speeds and/or accelerations
- Inner widths up to 140 mm
- For unsupported lengths up to 1.9 m and fill weights up to 6 kg/m
- For enlarged thrusts and tensile forces
- For small bending radii
- Minimal abrasion (e.g. cleanroom applications)

When to use a different igus® Series:
- Limited in side-mounted applications
  - Series E4.32 System E4.1, page 646
- No use with RBR (reverse bending radius)
  - Series E4.32 System E4.1, page 646
- No use in dirty environments
  - Series R4.32 System E4.1, page 646
- If a fully enclosed e-tube is required
  - Series R58 E2 e-tubes, page 550

Low-noise 37dB(A):
Small pitch for smooth running

Cleanroom:
- Virtually no wear or abrasion

Fast assembly:
- Openable along inner and outer radius

Modular design:
- Can be shortened and lengthened

High stability:
- For unsupported applications

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)

3D-CAD files, configurators, PDF → www.igus.eu/eu/E6.35
### e-chains® Series E6.35 Crossbars every 2nd link

**Removable along both radii**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>E6.35 [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E6.35.030.R0</td>
<td>30</td>
<td>50</td>
<td>0.88</td>
</tr>
<tr>
<td>E6.35.040.R0</td>
<td>40</td>
<td>60</td>
<td>0.90</td>
</tr>
<tr>
<td>E6.35.050.R0</td>
<td>50</td>
<td>70</td>
<td>0.92</td>
</tr>
<tr>
<td>E6.35.060.R0</td>
<td>60</td>
<td>80</td>
<td>0.94</td>
</tr>
<tr>
<td>E6.35.070.R0</td>
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<td>0.96</td>
</tr>
<tr>
<td>E6.35.080.R0</td>
<td>80</td>
<td>100</td>
<td>0.99</td>
</tr>
</tbody>
</table>

*Available bending radii R [mm]: 055, 075, 100, 125, 150*

Supplement Part No. with required radius (R), example: E6.35.080.100.0

### Crossbars every 2nd link

**Standard color black**

**Bending radius R [mm]**

**Width index (depends on Bi)**

**Inner height**

**Series / Type**

### Order key

**E6.35.080.100.0 Crossbar every 2nd link**

**Standard color black**

**Bending radius R [mm]**

**Width index (depends on Bi)**

**Inner height**

**Series / Type**

### Configuration options and order keys

**Configuration options and order keys, overview → page 926**

###e-chain® links as single parts, overview → page 925

**Available from stock. Delivery time® in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)"

### Available bending radii R [mm]: 055, 075, 100, 125, 150

### Available from stock. Delivery time® in 24h or today!

### Interior separation with single-part order. Delivery time® in 24h or today!

*Delivery time means time until shipping of goods (after technical release)"

### 3D-CAD files, configurators, PDF, applications → www.igus.eu/eu/E6.35

---

**Note:** Please observe a lateral spacing of 1 mm to the side links.

In the standard configuration separators are assembled every 2nd e-chain® link!

**Standard separator, wide base**

**unassembled**

**assembled**

**Supplement Part No. with required radius (R), example:**

E6.35.080.100.0

### Standard - for all applications

Separator with a wide base for maximum locking strength and safe standing in e-chains®

**For even faster installation**

Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (light grip).

**Locks safely in 2 mm increments**

Notch separator for exact positioning in e-chains®.

Recommended for side-mounted applications.

*Available upon request, please consult igus® for delivery time*

### Horizontal separation

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.

### Lockable full-width shelves - for the standard interior separation

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>015</td>
<td>230.015</td>
<td>231.015</td>
</tr>
<tr>
<td>025</td>
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<td>231.025</td>
</tr>
<tr>
<td>035</td>
<td>230.035</td>
<td>231.035</td>
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<tr>
<td>045</td>
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<td>231.045</td>
</tr>
<tr>
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</tr>
<tr>
<td>125</td>
<td>230.125</td>
<td>231.125</td>
</tr>
</tbody>
</table>

**Interior separation with single-part order. Delivery time® in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)"
**E6 Series E6.35 e-chains® Interior separation Options**

**Previous interior separation - for e-chains®**

All elements of the previous interior separation can still be ordered [www.igus.eu/E6.35](http://www.igus.eu/E6.35).

---

**Vertical separator E6.35.01**

Vertical separators are used if a vertical subdivision of the e-chain® interior is required. For combinations with full-width shelves.

---

**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 5 mm increments).

---

**Full-width shelves 110.X**

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>030</td>
<td>110.30</td>
<td>111.30</td>
</tr>
<tr>
<td>040</td>
<td>110.40</td>
<td>111.40</td>
</tr>
<tr>
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</tr>
<tr>
<td>100</td>
<td>110.100</td>
<td>111.100</td>
</tr>
</tbody>
</table>

---

**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 • For the use in the first or last chain link • Easy to assemble without any screws. More information from page 1170.

---

**Middle plate E6.35.12**

To achieve a modular shelving the shelf 2200.X can be arranged at 5 different heights (in 5 mm increments).

---

**Side plate E6.35.03**

Works like middle plate. Allows modular shelving close to the side links. No lateral spacing necessary!

---

**Shelf 2200.X**

For applications involving many cables with different diameters, shelves can be arranged at 5 different heights (in 5 mm increments).

---

**Shelving options**

- **Vertical separator E6.35.01**
- **Full-width shelf 110.X**
- **Middle plate E6.35.12**
- **Side plate E6.35.03**
- **Shelf 2200.X**

---

**Interior separation with single-part order. Delivery time® in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

---

**igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu**
### KMA pivoting | All-sides attachment | Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. Full set</th>
<th>A</th>
<th>B</th>
<th>Bi</th>
</tr>
</thead>
<tbody>
<tr>
<td>030</td>
<td>960.30.090.12</td>
<td>42</td>
<td>54</td>
<td>30</td>
</tr>
<tr>
<td>040</td>
<td>960.30.090.12</td>
<td>52</td>
<td>64</td>
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<tr>
<td>050</td>
<td>960.30.090.12</td>
<td>62</td>
<td>74</td>
<td>50</td>
</tr>
<tr>
<td>060</td>
<td>960.30.090.12</td>
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<td>60</td>
</tr>
<tr>
<td>070</td>
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<tr>
<td>080</td>
<td>960.30.090.12</td>
<td>92</td>
<td>104</td>
<td>80</td>
</tr>
</tbody>
</table>

**Note:** These attachment types are set automatically in the choice of the KMA mounting bracket. For the preassembled mode please add index A: e.g. 960.30.XXX.

### Principle sketch: Number of installation sets to be installed = Number of trough sections + 1

- **Components, trough “Basic”:** Trough side parts, aluminum, 2 m Glide bar, plastic, 2 m Glide strips, plastic, 2 m without glide strips on request. Optional: Corrosion resistant, rubber.
- **Components, installation set “Basic”:** Bottom clamp, aluminum, C-profile, galvanized steel, table.
- **Components, installation set “Heavy-Duty”:** Bottom clamp.

### 3D-CAD files, configurators, PDF, applications
- [www.igus.eu/eu/E6.35](http://www.igus.eu/eu/E6.35)
**Extremely low-noise, low vibration, high stability**

When to use Series E6.40-R6.40:
- If a particularly low noise, low vibration e-chain with an inner height of 40 mm is required
- At very high speeds and/or accelerations
- Inner widths up to 300 mm
- For unsupported lengths up to 2.75 m and fill weights up to 11 kg/m
- For enlarged thrusts and tensile forces
- For small bending radii

Minimal abrasion (e.g. cleanroom applications)

When to use a different igus® Series:
- Limited in side-mounted applications
  - Series E4.42 System E4.1, page 662
- No use with RBR (reverse bending radius)
  - Series E4.42 System E4.1, page 662
- No use with high additional fill weights
  - Series E4.42 System E4.1, page 662

**Technical Data**

- **Pitch** = 27.8 mm/link
- **Links/m** = 36 (1001 mm)
- **Chain length** = \( S/2 + K \)

### Supported applications
- Feature positive camber over short travels. This must be accounted for when specifying the clearance height \( H_F \). Please consult igus® if space is particularly restricted. More information on Design, page 95.

In special cases, gliding applications are also possible, please consult igus®.

### Dimensions

<table>
<thead>
<tr>
<th>R</th>
<th>063</th>
<th>075</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>200</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>224</td>
<td>248</td>
<td>298</td>
<td>348</td>
<td>398</td>
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</tr>
<tr>
<td>D</td>
<td>134</td>
<td>146</td>
<td>171</td>
<td>196</td>
<td>221</td>
<td>271</td>
</tr>
<tr>
<td>K</td>
<td>255</td>
<td>295</td>
<td>370</td>
<td>450</td>
<td>530</td>
<td>685</td>
</tr>
</tbody>
</table>

The required clearance height: \( H_F = H + 40 \text{ mm} \) (with 2.0 kg/m fill weight).
### e-chains® | Series E6.40 Crossbars every 2nd link | Removable along both radii

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>E6.40</th>
</tr>
</thead>
<tbody>
<tr>
<td>E6.40, 040, R.0</td>
<td>40</td>
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<td>70</td>
<td>1.33</td>
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<tr>
<td>E6.40, 062, R.0</td>
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<td>82</td>
<td>1.38</td>
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<tr>
<td>E6.40, 070, R.0</td>
<td>70</td>
<td>90</td>
<td>1.41</td>
</tr>
<tr>
<td>E6.40, 075, R.0</td>
<td>75</td>
<td>95</td>
<td>1.43</td>
</tr>
<tr>
<td>E6.40, 100, R.0</td>
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<td>120</td>
<td>1.53</td>
</tr>
<tr>
<td>E6.40, 125, R.0</td>
<td>125</td>
<td>145</td>
<td>1.63</td>
</tr>
</tbody>
</table>

Available bending radii R [mm]: 063 | 075 | 100 | 125 | 150 | 200

Supplement Part No. with required radius (R), example: E6.40.100.100.0

### e-tubes | Series R6.40 fully enclosed | Crossbars removable along both radii

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>E6.40</th>
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<td>R6.40, 075, R.0</td>
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<tr>
<td>R6.40, 100, R.0</td>
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<tr>
<td>R6.40, 125, R.0</td>
<td>125</td>
<td>145</td>
<td>-</td>
</tr>
</tbody>
</table>

Available bending radii R [mm]: 063 | 075 | 100 | 125 | 150 | 200

Supplement Part No. with required radius (R), example: R6.40.100.100.0

### Order key

**E6.40.100.100.0** Crossbar every 2nd link

**R6.40.100.100.0** Fully enclosed e-tube

### Dimensioning

**Standard color black**

**Bending radius R**

**Width index (depends on Bi)**

**Inner height**

**Series / Type**

<table>
<thead>
<tr>
<th>36</th>
<th>40</th>
</tr>
</thead>
<tbody>
<tr>
<td>54</td>
<td></td>
</tr>
</tbody>
</table>

### 3D-CAD files, configurators, PDF, applications


Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
**E6 | E6.40 | e-chains® Interior separation | New** in this catalog

**New generation interior separation - for e-chains®**

No lateral spacing to side links necessary.
In the standard configuration separators are assembled every 2nd e-chain link.

---

**E6 | Series R6.40 | e-tubes Interior separation**

**Previous interior separation - for e-tubes**

**Note:** Please observe a lateral spacing of 20 mm to the side links.
In the standard configuration separators are assembled every 2nd e-chain link.

---

**Standard - for all applications**
Separator with wide base for maximum locking strength and safe standing in e-chains®.

**For even faster installation**
Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (light grip).

---

**Horizontal separation**
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.

---

**Full-width shelves**

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>050</td>
<td>110.50</td>
<td>111.50</td>
</tr>
</tbody>
</table>

---

**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. For the use in the first or last chain link. Easy to assemble without any screws. More information from page 1170.

---

**Interior separation with single-part order. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)
Previous interior separation - for e-chains®

All elements of the previous interior separation can still be ordered - www.igus.eu/E6.40

Vertical separator 28221
Vertical separators are used if a vertical subdivision of the e-chain® interior is required. For combinations with full-width shelves.

Separator, asymmetrical E6.40.08
Asymmetrical separator, for defined distance. No additional spacers necessary. For side-mounted applications.

Full-width shelf 220.X
This option makes sense in applications with many thin cables with similar diameters. Full-width shelves can be arranged at 7 different heights (in 5 mm increments).

Shelves 220.X

Width [mm] | unassembled | assembled
---|---|---
040 | 220.40 | 221.40
050 | 220.50 | 221.50
062 | 220.62 | 221.62
070 | 220.70 | 221.70
087 | 220.87 | 221.87
100 | 220.100 | 221.100
125 | 220.125 | 221.125
150 | 220.150 | 221.150
175 | 220.175 | 221.175
200 | 220.200 | 221.200

Interior separation with single-part order. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)
**E6 | Series E6.40/R6.40 | KMA mounting brackets**

For tight installation conditions, all-sides attachment

---

**KMA pivoting | All-sides attachment | Recommended for unsupported applications**

<table>
<thead>
<tr>
<th>Width</th>
<th>Part No.</th>
<th>Full set</th>
<th>A</th>
<th>Bi</th>
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</thead>
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<td>54</td>
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<td>E6.400, R6.400</td>
<td>050.12.C</td>
<td>50</td>
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</tr>
<tr>
<td>062</td>
<td>E6.400, R6.400</td>
<td>062.12.C</td>
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<td>E6.400, R6.400</td>
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<tr>
<td>087</td>
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<td>087.12.C</td>
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<tr>
<td>100</td>
<td>E6.400, R6.400</td>
<td>100.12.C</td>
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<td>114</td>
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<tr>
<td>125</td>
<td>E6.400, R6.400</td>
<td>125.12.C</td>
<td>125</td>
<td>139</td>
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</tbody>
</table>

Part No. Full set | A | Bi
---|---|---|---|
040.12.C | 40 | 54 |
050.12.C | 50 | 64 |
062.12.C | 62 | 76 |
070.12.C | 70 | 84 |
075.12.C | 75 | 90 |
087.12.C | 87 | 101 |
100.12.C | 100 | 114 |
125.12.C | 125 | 139 |

These attachment types are set automatically in the choice of the KMA mounting bracket. For the preassembled mode please add index A (e.g. E6.400.100.12.CA)

---

**Aluminum SuperTrough | Basic Version**

Part No. 972.30.SL | 972.31.SL | Trough height: 117 mm

---

**Installation set “Basic” with C-Profile**

Bottom clamp optionally attached inwards or outwards

<table>
<thead>
<tr>
<th>Width</th>
<th>Part No.</th>
<th>Full set</th>
<th>A</th>
<th>Bi</th>
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</tr>
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<tr>
<td>070</td>
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<td>960.30.125</td>
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<td>075</td>
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<tr>
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<td>249</td>
<td>960.30.315</td>
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<tr>
<td>250</td>
<td>274</td>
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<td>275</td>
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<tr>
<td>300</td>
<td>324</td>
<td>960.30.500</td>
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</tr>
</tbody>
</table>

---

**Components, trough “Basic”:**

- Trough side parts, aluminum, 2 m
- Glide bar, plastic, 2 m (without glide strips on request)
- Optional: Silencer profile rubber
- Components, installation set “Basic”: Bottom clamp, aluminum, C-profile, galvanized steel

- Guide trough set
- Components, installation set “Heavy-Duty”: Insert for the installation set “Heavy-Duty” (KMA = Polymer Metal Mounting Bracket)

**Order example:** Length of travel 30 m - Center mounted for Series E6.40.100.100.0 with Bi = 124

Guide trough set without glide bar (set of 2 trough side parts, incl. glide strips)

**Order example:** 16 Guide trough without glide bar (set of 2 m sections)

**Order example:** 16 Guide trough with glide bar (set of 2 m sections)

**Order example:** 17 Installation sets

---

**Strain relief, e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148**

---

**igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu**
Extremely low-noise, low vibration, high stability

When to use Series E6.52-R6.52:
- If a particularly low noise, low vibration e-chain® with an inner height of 52 mm is required
- At very high speeds and/or accelerations
- Inner widths up to 300 mm
- For unsupported lengths up to 3.0 m and fill weights up to 15 kg/m
- For enlarged thrusts and tensile forces
- For small bending radii
- Minimal abrasion (e.g. cleanroom applications)

When to use a different igus® Series:
- Limited in side-mounted applications
  - Series E4.56 System E4.1, page 678
  - No use with RBR (reverse bending radius)
  - Series E4.56 System E4.1, page 678
  - No use with high additional fill weights
  - Series E4.56 System E4.1, page 678
- No use in dirty environments
  - Series E4.56 System E4.1, page 678
- For still less vibration and noise generation or even higher dynamics
  - Series E61.52 System E6.1, page 1008

In special cases, gliding applications are also possible, please consult igus® if space is particularly restricted. More information Design, page 95

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)

3D-CAD files, configurators, PDF | www.igus.eu/eu/E6.52

igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu
### e-chains® | Series E6.52 Crossbars every 2nd link | Removable along both radii

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>E6.52 [kg/m³]</th>
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<td>1.80</td>
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<tr>
<td>E6.52.062.0</td>
<td>62</td>
<td>86</td>
<td>1.84</td>
</tr>
<tr>
<td>E6.52.070.0</td>
<td>70</td>
<td>94</td>
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<tr>
<td>E6.52.075.0</td>
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<td>E6.52.125.0</td>
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</tbody>
</table>

**Available bending radii R [mm]: 075 | 100 | 150 | 200 | 250**

Supplement Part No. with required radius (R), example: E6.52.100.100.0

### e-tubes | Series R6.52 fully enclosed | Crossbars removable along both radii

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>E6.52 [kg/m³]</th>
</tr>
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<tbody>
<tr>
<td>R6.52.040.0</td>
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</table>

**Available bending radii R [mm]: 075 | 100 | 150 | 200 | 250**

Supplement Part No. with required radius (R), example: R6.52.100.100.0

---

**Order key**

- **E6.52.100.100.0** Crossbar every 2nd link
- **R6.52.100.100.0** Fully enclosed e-tube

**Dimensioning**

- **Standard color black**
- **Bending radius R**
- **Width index (depends on Bi)**
- **Inner height**
- **Series / Type**

---

**e-chain’ links as single parts, overview ▶ page 925**

**Configuration options and order keys, overview ▶ page 926**

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)
**E6.52 e-chains Interior separation**

New generation interior separation - for e-chains

**New in this catalog**

No lateral spacing to side links necessary. In the standard configuration separators are assembled every 2nd e-chain link.

**Standard - for all applications**
Separator with wide base for maximum locking strength and safe standing in e-chains.

**For even faster installation**
Firm hold to one side with a wide base, narrow on opposite side for easy cable assembly (slight grip).

**Horizontal separation**
Shell 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.

**Full-width shelf, lockable**
Unasembled: 2300.X
Assembled: 2310.X

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>Unassembled</th>
<th>Assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>015</td>
<td>2300.015</td>
<td>2310.015</td>
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<tr>
<td>020</td>
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</tbody>
</table>

**Interior separation with single-part order. Delivery time in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

**E6 Series R6.52 e-tubes Interior separation**

Previous interior separation - for e-tubes

**Vertical separator R6.52.01**
For e-tubes R6.52. The notches on this separator mark the side that fixes to the lid.

**Note:** Please observe a lateral spacing of 20 mm to the side links. In the standard configuration separators are assembled every 2nd e-chain link.

**Separator**
For e-tubes. The notches on this separator mark the side that fixes to the lid.

**Standard - for all applications**
Separator with wide base for maximum locking strength and safe standing in e-chains.

**For even faster installation**
Firm hold to one side with a wide base, narrow on opposite side for easy cable assembly (slight grip).

**Horizontal separation**
Shell 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.

**Full-width shelf, lockable**
Unasembled: 2300.X
Assembled: 2310.X

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>Unassembled</th>
<th>Assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>015</td>
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<td>2310.015</td>
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</table>

**Interior separation with single-part order. Delivery time in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)
**E6 | Series E6.52 | e-chains® Interior separation | Options**

**Previous interior separation - for e-chains**

All elements of the previous interior separation can still be ordered [www.igus.eu/E6.52](http://www.igus.eu/E6.52)

---

**No lateral spacing to side links necessary.**

In the standard configuration separators are assembled every 2nd e-chain link.

---

**Vertical separator 382212**

Vertical separators are used if a vertical subdivision of the e-chain interior is required.

**Spacer 205.09**

Separators can be fixed in position by spacers. The available interior height is reduced by 2 mm per spacer (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).

---

**Slotted separator 38225**

is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelf mounting arrangements.

**Locking separator 38228**

Locks with extra retention force. Tip: one locking separator per e-chain link for better mounting.

---

**Full-width shelf 320.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 10 mm increments).

---

**Shelves 2200.X**

For applications involving many cables with different diameters, shelves can be arranged at alternate heights. They can be arranged at 9 different heights (in 5 mm increments).

---

**Interior separation with single-part order. Delivery time® in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

---

**Options**

Series E6.52 e-chains

---

**Middle plate 38221**

To achieve a modular shelving the shelf 2200.X can be arranged at 9 different heights (in 5 mm increments).

**Locking separator 382214**

Locks with extra retention force. Tip: one locking separator per e-chain link for better mounting.

**Side plate 38223**

Works like middle plate. Allows modular shelving close to the side links. No lateral spacing necessary!

**Shelf 2200.X**

For applications involving many cables with different diameters, shelves can be arranged at alternate heights. They can be arranged at 9 different heights (in 5 mm increments).

---

**Interior separation with single-part order. Delivery time® in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

---

**Previous interior separation - for e-chains**

All elements of the previous interior separation can still be ordered [www.igus.eu/E6.52](http://www.igus.eu/E6.52)
KMA pivoting | All-sides attachment | Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Width</th>
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<th>A</th>
<th>Bi</th>
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</table>

Width available upon request.

These attachment types are set automatically in the choice of the KMA mounting bracket. For the preassembled mode please add index A (e.g. E6.520.100.12.C/A).

Strain relief, e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148.

Components, trough “Basic”:
- Trough side parts: aluminum, 2 m
- Glide bar: plastic, 2 m
- Glide strips, plastic, 2 m (without glide strips upon request)
- Optional: Silencer profile, rubber
- Components, installation set “Basic”:
  - Bottom clamp, aluminum
  - C-profile, galvanized steel
  - Screw M8 x 20
  - Sliding nut M8
  - Interface connector, plastic

Components, installation set “Heavy-Duty”:
- Bottom clamp optionally attached inwards or outwards

Order example: Length of travel 30 m - Center mounted for Series E6.52.100.300.0 with Bi = 128

Guide trough set without glide bar (set of 2 trough side parts, incl. glide strips)

Order list: 16 m guide trough without glide bar (8 x 2 m sections) Part No. 973.30.35

Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips)

Order list: 16 m guide trough with glide bar (8 x 2 m sections) Part No. 973.31.35

Installation set “Basic” complete (guide trough sets + 1)

Order list: 17 installation sets Part No. 960.40.175

Module for the fixed end

Order list: 1 set Part No. 973.81

Option: For an additional noise dampening with silencer profile, please add index A - Example: Part No. 973.30.35.A

Principle sketch: Number of installation sets to be installed = Number of trough sections + 1

Aluminum SuperTrough “Basic” in detail and the “Heavy-Duty” version for heavy machinery from page 1202.

For tight installation conditions, all-sides attachment with preassembled configurations.

For tight installation conditions, option: integrated chainfix strain relief with C-profile

For tight installation conditions, option: thread sockets upon request

Recommended for unsupported applications

All-sides attachment

<table>
<thead>
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<th>Part No.</th>
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<td>E6.520</td>
<td>125.12.C</td>
<td>141</td>
<td>125</td>
</tr>
</tbody>
</table>

Width available upon request.

Trough set
- C-profile
- Installation set: Bar = Outer width + chains
- Glide bar: Inner width + chains
- Bi = Inner trough width
- Ha = Outer trough height
- nRi = Number of trough sections
- nMon = Number of installation sets

Please consult igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu
### Extremely low-noise, low vibration, high stability

**When to use Series E6.62:**
- If a particularly low noise, low vibration e-chain® with an inner height of 62 mm is required
- At very high speeds and/or accelerations
- Inner widths up to 400 mm
- For unsupported lengths up to 4.0 m and fill weights up to 45 kg/m³
- For enlarged thrusts and tensile forces
- For small bending radii
- Minimal abrasion (e.g. cleanroom applications)

1. Low-noise - tested series, more details [page 878]
2. Cleanroom - tested series, more details [page 879]

**When to use a different igus® Series:**
- Limited in side-mounted applications
- Series E4.56 System E4.1, page 678
- No use with RBR (reverse bending radius)
- Series E4.56 System E4.1, page 678
- No use with high additional fill weights
- Series E4.56 System E4.1, page 678
- No use in dirty environments
- Series R4.56 System E4.1, page 678

---

### Universal:
- All-sides attachment
- Low-noise 46 dB(A)¹:
  - Small pitch for smooth running
- Long service life:
  - Minimum vibration, high stability and tensile strength

### Dynamic:
- For high speeds and high accelerations
- Fast assembly:
  - Openable along inner and outer radius
- Cleanroom²:
  - Virtually no wear or abrasion

### Modular design:
- Can be shortened and lengthened

### High stability:
- For unsupported applications

---

**Available from stock. Delivery time in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

Crossbars every 2nd link

**e-chains® | Series E6.62 Crossbars every 2nd link** | Removable along both radii

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Available bending radii R [mm]: 115 | 150 | 200 | 250 | 300 | 350

Supplement Part No. with required radius (R), example: E6.62.10.250.0

- Available as single parts, overview ➤ page 925
- Configuration options and order keys, overview ➤ page 926
- Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

---

**Order key**

E6.62-10.250.0 Crossbar every 2nd link

- Standard color black
- Bending radius R
- Width index depends on Bi
- Inner height
- Series / Type

**Dimensioning**

- Bi
- Ba

---

igus® System E6 on a linear drive for high speeds

---

3D-CAD files, configurators, PDF, applications ➤ www.igus.eu/eu/E6.62

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No lateral spacing to side links necessary. In the standard configuration separators are assembled every 2nd e-chain link.

Standard - for all applications
Separator with wide base for maximum locking strength and safe standing in e-chains.

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 (tight grips).

Locks safely in 5 mm increments
Notch separator for exact positioning in e-chains. Recommended for side mounted applications.

New generation interior separation - for e-chains

Vertical separator 407
For a vertical subdividing, offers safe stability due to its wide base design, also when used with thick cables or hoses.

Spacer 381.XX
Separators can be fixed in position by spacers. The available interior height is reduced by 2 mm per spacer (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). XX = width of the spacer (please choose between 10, 15, 20 mm).

Slotted separator E6.62.01
is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Full-width shelf 320.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 15 mm increments).

Lockable full-width shelves

Full-width shelves 320.X

Interior separation with single-part order. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
**E6 Series E6.62 e-chains® Interior separation | Options**

**Previous interior separation - for e-chains®**

All elements of the previous interior separation can still be ordered [www.igus.eu/eu/E6.62](http://www.igus.eu/eu/E6.62).

---

**Middle plate 148**

To achieve a modular shelving the shelf 386.X (table left page) can be arranged at 7 different heights (in 7 mm increments).

**Slotted separator 1407**

For very fine subdivisions. However, they cannot be retrofitted into an existing separation system without dismantling the interior separators first.

**Side plate 146**

Works like middle plate. Allows modular shelving close to the side links.

**Shelf 386.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 7 mm increments).

---

**Shelves**

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<th>assembled</th>
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<tr>
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**KMA mounting brackets**

For tight installation conditions, all-sides attachment

**Part No. structure**

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**Moving end**

E6.62...2

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**Fixed end**

E6.62...1

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**KMA pivoting | All-sides attachment | Recommended for unsupported applications**

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</table>

---

**Options**

- Standard
- For tight installation conditions
- Option: integrated chainfix strain relief with C-profile
- Corrosion resistant
- Option: threaded sockets upon request

---

**Part No.**

E6.620.10.12.C

<table>
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</table>

**Strain relief, e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options is on page 1148.**

---

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---

**Interior separation with single-part-order. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)"
Aluminum SuperTrough | Basic Version
Part No. 974.30.SL | 974.31.SL | Trough height: 184 mm

Components, trough "Basic":
1. Trough side parts, aluminum, 2 m
2. Glide bar, plastic, 2 m
3. Glide strips, plastic, 2 m (without glide strips on request)
4. Optional: Silencer profile, rubber

Components, installation set "Basic":
1. Bottom clamp, aluminum
2. C-profile, galvanized steel
3. Screw M8 x 20
4. Sliding nut M8

C-profile

Insert for the installation set "Heavy-Duty":
974.50.XXX instead of 960.50.XXX on the right column "attached outwards"

Length of the C-profile according to dimension BRi (see table)

Length example: Length of travel 30 m - Center mounted for Series E6.62.10.250.0 with BRi = 140

Guide trough set without glide bar (set of 2 trough side parts, incl. glide strips)

Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips)

Installation set "Basic" complete (guide trough sets + 1)

Order text: 17 installation sets

Module for the fixed end

Order text: 1 set

Option: For an additional noise damping with silencer profile, please add Index

Principle sketch: Number of installation sets to be installed = Number of trough sections + 1

Preassembled energy supply systems reduce throughput and assembly times significantly. Because in this positioning system, cleanroom compatibility is required, each preassembled e-chainsystem is attached with a cleaning protocol.
**Series E6.80L**

**Introduction**

### Extremely low-noise, low vibration, high stability

When to use Series E6.80L:
- If a particularly low noise, low vibration e-chain™ with an inner height of 80 mm is required
- At very high speeds and/or accelerations
- Inner widths up to 550 mm
- For unsupported lengths up to 2,5 m and fill weights up to 26 kg/m
- For enlarged thrusts and tensile forces
- For small bending radii
- Minimal abrasion (e.g. cleanroom applications)

When to use a different igus® Series:
- Limited in side-mounted applications
  - Series 15050 System E4/light, page 830
  - No use with RBR (reverse bending radius)
  - Series 15050 System E4/light, page 830
  - No use with high additional fill weights
  - Series 15050 System E4/light, page 830
  - No use in dirty environments
  - Series 19850 System E4/light, page 830

---

**Dimensions**

- **Pitch** = 65 mm/link
- **Links/m** = 16 (1040 mm)
- **Chain length** = \( \frac{S}{2} + K \)

**Technical Data**

- Speed, material, temperature and flammability class | page 924
- Universal: All-sides attachment
- Low-noise 46dB(A)\(^1\): Small pitch for smooth running
- Long service life: Minimum vibration, high stability and tensile strength
- Dynamic: For high speeds and high accelerations
- Fast assembly: Openable along inner and outer radius
- Cleanroom²: Virtually no wear or abrasion
- Modular design: Can be shortened and lengthened
- High stability: For unsupported applications

---

**Unsupported applications**

Unsupported e-chains™ feature positive camber over short travels. This must be accounted for when specifying the clearance height \( H_F \). Please consult igus® if space is particularly restricted. More information | Design, page 95

---

**Available from stock. Delivery time\(^*\) in 24h or today!**

\(^*\)Delivery time means time until shipping of goods (after technical release)
Crossbars every 2nd link

Part No.  | Bi (mm) | Ba (mm) | E6.80L (kg/m)
--- | --- | --- | ---
E6.80L 08. R.0 | 87 | 101 | 3.28
E6.80L 10. R.0 | 100 | 114 | 3.33
E6.80L 11. R.0 | 112 | 126 | 3.38
E6.80L 12. R.0 | 125 | 139 | 3.43
E6.80L 13. R.0 | 137 | 151 | 3.49
E6.80L 15. R.0 | 150 | 164 | 3.55
E6.80L 16. R.0 | 162 | 176 | 3.61
E6.80L 17. R.0 | 175 | 189 | 3.67
E6.80L 18. R.0 | 187 | 201 | 3.73
E6.80L 20. R.0 | 200 | 214 | 3.79
E6.80L 21. R.0 | 212 | 226 | 3.85
E6.80L 22. R.0 | 225 | 239 | 3.91
E6.80L 23. R.0 | 237 | 251 | 3.97
E6.80L 25. R.0 | 250 | 264 | 4.02
E6.80L 26. R.0 | 262 | 276 | 4.08
E6.80L 27. R.0 | 275 | 289 | 4.14
E6.80L 28. R.0 | 287 | 301 | 4.20
E6.80L 30. R.0 | 300 | 314 | 4.26
E6.80L 31. R.0 | 312 | 326 | 4.32

Part No.  | Bi (mm) | Ba (mm) | E6.80L (kg/m)
--- | --- | --- | ---
E6.80L 32. R.0 | 325 | 339 | 4.38
E6.80L 33. R.0 | 337 | 351 | 4.44
E6.80L 35. R.0 | 350 | 364 | 4.50
E6.80L 36. R.0 | 362 | 376 | 4.56
E6.80L 37. R.0 | 375 | 389 | 4.62
E6.80L 38. R.0 | 387 | 401 | 4.68
E6.80L 40. R.0 | 400 | 414 | 4.74
E6.80L 41. R.0 | 412 | 426 | 4.80
E6.80L 42. R.0 | 425 | 439 | 4.85
E6.80L 43. R.0 | 437 | 451 | 4.92
E6.80L 45. R.0 | 450 | 464 | 5.03
E6.80L 46. R.0 | 462 | 476 | 5.09
E6.80L 47. R.0 | 475 | 489 | 5.15
E6.80L 48. R.0 | 487 | 501 | 5.21
E6.80L 50. R.0 | 500 | 514 | 5.27
E6.80L 51. R.0 | 512 | 526 | 5.33
E6.80L 52. R.0 | 525 | 539 | 5.39
E6.80L 53. R.0 | 537 | 551 | 5.45
E6.80L 55. R.0 | 550 | 564 | 5.51

Available bending radii\(R\) (mm) 
- 100*
- 150*
- 175
- 200*
- 250*
- 300*

Supplement Part No. with required radius (R), example: E6.80L.10.175.0

Order key

E6.80L.10.175.0 Crossbars every 2nd link

Standard color black
Bending radius\(R\)
Width index (depends on Bi)
Inner height
Series / Type

Dimensioning

Configuration options and order keys, overview ▶ page 925
Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
E6 | Series E6.80L | Interior separation | New in this catalog

New generation interior separation - for e-chains®

**Standard - for all applications**
Separator with wide base for maximum locking strength and safe standing in e-chains®.

**For even faster installation**
Separator for igus® QuickLock crossbar 450.X.Q. Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (tight grip).

**For many thin cables**
Separator with a narrow base for a large number of thin cables side by side. Saves space in e-chains®.

**For side-mounted applications**
Asymmetrical separator, for defined distance. No additional spacers necessary.

**Locks safely in 5 mm increments**
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

**Horizontal separation**
Full-width 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.

*Note: Please observe a lateral spacing of 16 mm to the side links.*

In the standard configuration separators are assembled every 2nd e-chain link.

**Vertical separator 501**
Offers safe stability, also when used with thick cables or hoses.

**Locking separator 504**
Locks with extra retention force. Tip: one locking separator per e-chain link for better mounting.

**Locking separator 508**
For applications exposed to very high humidity (> 85%).

**Extra retention force** by asymmetrical claws. Ensure proper alignment. Tip: one locking vertical separator per e-chain link for better mounting.

**Separator, asymmetrical 501A**
With 18 mm base, for the combination of spacers and separators with different widths, e.g. for side-mounted applications.

**Spacer 405.XX**
Separators can be fixed in position by spacers. The available interior height is reduced by 2 mm per spacer (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). \(XX = \text{width of the spacer}\) (please choose between 10, 15, 20, 30, 40 mm).

**Shelves - for interior separation options**

<table>
<thead>
<tr>
<th>Width X [mm]</th>
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<th>assembled</th>
<th>Width X [mm]</th>
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<th>assembled</th>
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<td>420.125</td>
<td>421.125</td>
</tr>
</tbody>
</table>

igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu
### E6 Series E6.80L e-chains® Interior separation | Options

**Previous interior separation - for e-chains**

All elements of the previous interior separation can still be ordered. [www.igus.eu/eu/E6.80L](www.igus.eu/eu/E6.80L)

---

**Options**

- **Locking vertical separator 510 (e-chains® only)**
  - Works like middle plate, for applications exposed to very high humidity (>85%).

- **Locking separator 507**
  - Extra retention force by asymmetric claws. Ensure proper alignment. Tip: one locking vertical separator per e-chain line for better mounting.

- **Middle plate 503**
  - To achieve a modular shelving the shelf 420.X (table left page) can be arranged at 11 different heights (in 7 mm increments).

- **Slotted separator 505**
  - For very fine subdivisions. However, they cannot be retrofitted into an existing separation system without dismantling the interior separators first.

- **Open, slotted separator 509 (unilateral open)**
  - Fast assembly - can be retrofitted into an existing separation system without a need for dismantling the interior separators. During an installation of open slotted separators, the top and bottom notches cannot be occupied by shelves.

- **Side plate E6.80.13 and E6.80.14**
  - Note on side plates: For the side part E6.80.01.XX of the e-chain, please use the side plate E6.80.13, and for the side part E6.80.02.XX, the side plate E6.80.14! Allows a rack-like division up to the side links. No lateral spacing necessary!

- **Shelf 420.X**
  - For applications involving many cables with different diameters, shelves can be arranged at alternate heights. They can be arranged at 11 different heights (in 7 mm increments). (not for 504, 508).

---

**KMA mounting brackets pivoting**

For tight installation conditions, all-sides attachment

---

**Part No. structure**

- E6.800L
- Moving end
- Fixed end

**All-sides attachment**

- **Recommended for unsupported applications**

---

**Options**

- **A =...2 E6.800L...1**
  - These attachment types are set automatically in the choice of the KMA mounting bracket.
  - For the preassembled mode please add index A

- **C-profile option**
  - Full set

---

**Part No. structure**

- **E6.800L 10.12.CA**
  - Mounting bracket: Moving end

- **E6.800L 10.12.A**
  - Mounting bracket: Fixed end

---

**Strain relief**, e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148.
**Extremely low-noise, low vibration, high stability**

When to use Series E6.80:
1. If a particularly low noise, low vibration e-chain with an inner height of 80 mm is required
2. At very high speeds and/or accelerations
3. Inner widths up to 600 mm
4. For unsupported lengths up to 5.25 m and fill weights up to 56 kg/m
5. For enlarged thrusts and tensile forces
6. For small bending radii
7. Minimal abrasion (e.g., cleanroom applications)

When to use a different igus® Series:
1. Limited in side-mounted applications
   - Series E4.80 System E4.1, page 694
2. No use with RBR (reverse bending radius)
   - Series E4.80 System E4.1, page 694
3. No use with high additional fill weights
   - Series E4.80 System E4.1, page 694
4. No use in dirty environments
   - Series E4.80 System E4.1, page 694
5. Series R4.80 System E4.1, page 694

Universal:
- All-sides attachment
- Low-noise 46dB(A)
  - Small pitch for smooth running
- Long service life:
  - Minimum vibration, high stability and tensile strength
- Dynamic:
  - For high speeds and high accelerations
- Fast assembly:
  - Openable along inner and outer radius
- Cleanroom:
  - Virtually no wear or abrasion
- Modular design:
  - Can be shortened and lengthened
- High stability:
  - For unsupported applications

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

**Technical Data**

- Speed, material, temperature and flammability class ▶ page 924

- **Pitch** = 65 mm/link
- **Links/m** = 16 (1040 mm)
- **Chain length** = \( \frac{S}{2} + K \)

<table>
<thead>
<tr>
<th>R</th>
<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
<th>400</th>
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<td>716</td>
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<td>1016</td>
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<td>760</td>
<td>920</td>
<td>1075</td>
<td>1230</td>
<td>1390</td>
<td>1545</td>
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</tbody>
</table>

The required clearance height: \( H_f = H + 100 \) mm (with 5.0 kg/m fill weight)
### Crossbars every 2nd link | Removable along both radii

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>E6.80 [kg/m]</th>
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</tbody>
</table>

Available bending radii R [mm]: 150 | 200 | 250 | 300 | 350 | 400 | 450

Supplement Part No. with required radius (R), example: E6.80.10.300.0

---

**Configuration options and order keys, overview**

- *Delivery time means time until shipping of goods (after technical release)*
- **Delivery time* in 24h or today!**
- e-chain® links as single parts, overview ► page 925
- Available from stock, Delivery time® in 24h or today!
- Configuration options and order keys, overview ► page 926

---

### Application | Long travel and side mounted installation with the vibration-free and low noise Series E6.29 in this camera application
### Interior Separation Options

#### Vertical Separator 501
- Offers safe stability, also when used with thick cables or hoses.

#### Locking Separator 504
- Locks with extra retention force. Tip: one locking separator per e-chain link for better mounting.

#### Locking Separator 508
- Extra retention force by asymmetric claws. Ensure proper alignment. Tip: one locking vertical separator per e-chain link for better mounting.

#### Separator, Asymmetrical 501A
- With 18 mm base, for the combination of spacers and separators with different widths, e.g. for side-mounted applications.

#### Spacer 405.XX
- Separators can be fixed in position by spacers. The available interior height is reduced by 2 mm per spacer (3 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). XX = width of the spacer (please choose between 10, 15, 20, 30, 40 mm).

#### Shelving - for Interior Separation Options

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
<th>Width X [mm]</th>
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<td>421.43</td>
<td>125</td>
<td>420.125</td>
<td>421.125</td>
</tr>
</tbody>
</table>

---

**Note:** Please observe a lateral spacing of 16 mm to the side links.

In the standard configuration separators are assembled every 2nd e-chain link.
**E6 | Series E6.80 | e-chains® Interior separation | Options**

**Previous interior separation - for e-chains**

All elements of the previous interior separation can still be ordered → www.igus.eu/E6.80.

---

**KMA pivoting**

For tight installation conditions, all-sides attachment

---

**Moving end**

<table>
<thead>
<tr>
<th>Width</th>
<th>Part No. Full set</th>
<th>A [mm]</th>
<th>Bi [mm]</th>
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**Part No. structure**

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<th>Single-part order</th>
<th>Mounting bracket</th>
<th>Moving end</th>
<th>Fixed end</th>
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<td>C-profile option</td>
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<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
</tbody>
</table>

---

**Strain relief**, e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options → from page 1148.
**Aluminum SuperTrough Basic Version**

Part No. 975.30.SL | 975.31.SL | Trough height: 236 mm

### Installation set “Basic” with C-Profile

Bottom clamp optionally attached inwards or outwards

For Width Index \( B_{ai} \) of Part No. attached inwards

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<td>59</td>
<td>655</td>
</tr>
<tr>
<td>60</td>
<td>668</td>
</tr>
</tbody>
</table>

### Guide trough set

Without glide bar (set of 2 trough side parts, incl. glide strips)

**Order example:** Length of travel 30 m - Center mounted for Series E6.80.10.300.0 with \( B_{ai} = 154 \)

- **Guide trough set without glide bar** (set of 2 trough side parts, incl. glide strips)
  - **Order text:** 16 m guide trough without glide bar (8 x 2 m sections) Part No. 975.30.SL
  - **Order text:** 16 m guide trough with glide bar (8 x 2 m sections) Part No. 975.31.SL

- **Installation set “Basic” complete** (guide trough sets + 1)
  - **Order text:** 17 installation sets Part No. 960.50.225

- **Module for the fixed end**
  - **Order text:** 1 set Part No. 975.80

- **Option:** For an additional noise dampening with silencer profile, please add Index A - Example: Part No. 975.30.51SLA

### Principle sketch:

Number of installation sets to be installed = Number of trough sections + 1

- **Aluminum SuperTrough “Basic” in detail and the “Heavy-Duty” version for heavy machinery**

---

**igus® GmbH Germany** | **Phone +49 2203 9649-800** | **Fax -222** | **info@igus.de** | **www.igus.eu**
igus®
E6.1
New Generation.
less weight,
smoother operation
more dynamics
New in this catalog

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

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 are openable on both sides (Series E61.29) and removable in 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

Typical industries and applications
- Semiconductor industry
- Printer industry
- Applications with highest accelerations and where noise minimization and low abrasion are important

To underline the suitability for cleanrooms and increase the service life of cables and hoses further, the interior of the new E6.1 has been designed extremely “cable friendly”. Crossbars are very smooth and rounded, as is the transition from chain link to crossbar, moreover all the moulding and marker points have been placed outside the chain cross-section.

System E6.1 internal tests in the igus® lab

The new 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 E6.29 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

IPA Qualification Certificate - Report IG 1303-640-1:
ISO Class 1, according to DIN EN ISO 14644-1
for System E6.1, Series E6.29.50.075.0 and E6.29.50.075.0.CR at v = 0.5 m/s, 1 m/s, 2 m/s

IPA Qualification Certificate - Report IG 1303-640-1:
ISO Class 1, according to DIN EN ISO 14644-1
for System E6.1, Series E6.29.50.075.0 and E6.29.50.075.0.CR at v = 0.5 m/s, 1 m/s, 2 m/s
Cleanroom qualification of E6.1 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 environments demand very high wear resistance of moving parts. e-chains, for example, must be very wear resistant, in order to meet normal requirements for such a sensitive environment.

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 = 0.5 m/s, 1 m/s, 2 m/s

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)

Assembly video available online at www.igus.eu/eu/E61_assembly
### E6.1 | Technical Data | e-chain® links as single parts | Overview

#### Technical Data - E6.1

- **Speed / acceleration FLG**
  - max. 20 [m/s²] / max. 200 [m/s²]
- **Speed / acceleration FLB**
  - max. 3 [m/s] / max. 6 [m/s]
- **Material - permitted temperature °C**
  - -40° up to +70° C
- **Flammability class**
  - VDE 0304 IIC UL94-HB

#### Installation methods overview, maximum travels - E6.1

<table>
<thead>
<tr>
<th>e-chain® Series</th>
<th>Unsupported application</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
</tr>
</thead>
<tbody>
<tr>
<td>E6.129</td>
<td>≤ 1,5 m</td>
<td>≤ 25 m</td>
<td>≤ 2,0 m</td>
</tr>
<tr>
<td>E6.152</td>
<td>≤ 2,5 m</td>
<td>≤ 40 m</td>
<td>≤ 2,0 m</td>
</tr>
</tbody>
</table>

#### Part No. 6-piece e-chain® links as single parts - E6.1

- **Crossbar e-chain®**
- **Polymer spring as single part**

<table>
<thead>
<tr>
<th>Series</th>
<th>Crossbar® e-chain®</th>
<th>Inner side link</th>
<th>Outer side link</th>
<th>Polymer spring e-chain®</th>
</tr>
</thead>
<tbody>
<tr>
<td>E6.129</td>
<td>2105.Bi</td>
<td>E6.129.01</td>
<td>E6.129.02.R.0</td>
<td>E6.129.155</td>
</tr>
</tbody>
</table>

1) Crossbar / lid / bottom - supplement Part No. with required width index (Bi), example: 2105.030
2) Outer side link - supplement Part No. with required radius (R), example: E6.129.02.100.0

### E6.1 | Configuration options and order key (based on Series E6.1.52)

#### Standard

- **NC-Version**
  - (no camber)
  - without pretension

- **Part No.**
  - Standard

#### Delivery time

- 24h or today!

*Delivery time means time until shipping of goods (after technical release)

#### Color options for e-chains® and e-tubes

<table>
<thead>
<tr>
<th>Color</th>
<th>Order index</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard color black</td>
<td>.0</td>
<td>.1</td>
</tr>
<tr>
<td>Slate grey only ESD material</td>
<td>.15</td>
<td>.15</td>
</tr>
<tr>
<td>Gray brown only HT material</td>
<td>.3</td>
<td>.3</td>
</tr>
<tr>
<td>Orange special color</td>
<td>.2</td>
<td>.2</td>
</tr>
<tr>
<td>Yellow special color</td>
<td>.4</td>
<td>.4</td>
</tr>
<tr>
<td>Dusty grey special color only e-chains®</td>
<td>.31</td>
<td>.31</td>
</tr>
<tr>
<td>Light grey special color</td>
<td>.34</td>
<td>.34</td>
</tr>
</tbody>
</table>

#### Order key

**E6.1.52.100.R.0**

- **E6.1.52.100.R.0.NC**

#### Delivery time

- 24h or today!

#### Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

1000 3D-CAD files, configurators, PDF, applications | www.igus.eu/en/E6.1
**Series E61.29**

**Introduction**

**Extremely low-noise, low vibration, small size**

When to use Series E61.29:
- If a particularly low noise, low vibration e-chain® with an inner height of 29 mm is required
- At very high speeds and/or accelerations
- Inner widths up to 140 mm
- For unsupported lengths up to 1.5 m and fill weights up to 3.5 kg/m
- Optimized interior-exterior dimensions ratio due to narrow outer links
- For enlarged thrusts and tensile forces
- For small bending radii
- Minimal abrasion (e.g. cleanroom applications)

### Diagram values provisionally!

Please consult igus®.

When to use a different igus® Series:
- Limited in side-mounted applications
  - Series 2400/2500 E2/000, page 426
  - No use with RBR (reverse bending radius)
  - Series 2400/2500 E2/000, page 426
- No use with high additional fill weights
  - Series 2400/2500 E2/000, page 426
  - No use in dirty environments
  - Series 2480 E2/000, page 426
- No use in case of enlarged unsupported travels
  - Series E6.29 System E6, page 928

### Supported applications

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height HF. Please consult igus® if space is particularly restricted. More information [Design, page 99](#).

---

**Dimensions**

**Unsupported**

### Pitch

- = 22 mm/link

### Links/m

- = 46 (1012 mm)

### Chain length

- \( \frac{S}{2} + K \)

### Technical Data

- Speed, material, temperature and flammability class [page 1001](#)

### Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
**E61.29**

**Series E61.29 | Openable along inner and outer radius**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E61.29. 030 R.0</td>
<td>30</td>
<td>44</td>
<td>0.558</td>
</tr>
<tr>
<td>E61.29. 040 R.0</td>
<td>40</td>
<td>54</td>
<td>0.583</td>
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<tr>
<td>E61.29. 050 R.0</td>
<td>50</td>
<td>64</td>
<td>0.608</td>
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<tr>
<td>E61.29. 060 R.0</td>
<td>60</td>
<td>74</td>
<td>0.633</td>
</tr>
<tr>
<td>E61.29. 070 R.0</td>
<td>70</td>
<td>84</td>
<td>0.657</td>
</tr>
<tr>
<td>E61.29. 080 R.0</td>
<td>80</td>
<td>94</td>
<td>0.682</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>Weight [kg/m]</th>
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<td>0.707</td>
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<td>E61.29. 100 R.0</td>
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<td>E61.29. 110 R.0</td>
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<td>124</td>
<td>0.757</td>
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<tr>
<td>E61.29. 120 R.0</td>
<td>120</td>
<td>134</td>
<td>0.782</td>
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<tr>
<td>E61.29. 140 R.0</td>
<td>140</td>
<td>144</td>
<td>0.807</td>
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</table>

**Available bending radii R [mm]:** 005 | 075 | 100 | 150

Supplement Part No. with required radius (R), example: E61.29.050.100.0

**Order key**

E61.29. 050.100.0

- Standard color black
- Bending radius R
- Width index (depends on Bi)

**Series / Type**

- Standard color black
- Bending radius R
- Width index (depends on Bi)

**e-chains® | Series E61.29 | Openable along inner and outer radius**

**Part No.**

- E61.29. 030 R.0
- E61.29. 040 R.0
- E61.29. 050 R.0
- E61.29. 060 R.0
- E61.29. 070 R.0
- E61.29. 080 R.0

**Bi (mm)**

- 30
- 40
- 50
- 60
- 70
- 80

**Ba (mm)**

- 44
- 54
- 64
- 74
- 84
- 94

**Weight (kg/m)**

- 0.558
- 0.583
- 0.608
- 0.633
- 0.657
- 0.682

**Note:** Please observe a lateral spacing of 1 mm to the side links.

In the standard configuration separators are assembled every 2nd e-chain link!

**Available from stock. Delivery time in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)
**E6.1 | Series E61.29 | KMA mounting brackets pivoting**

For tight installation conditions, all-sides attachment

---

**KMA pivoting | All-sides attachment | Recommended for unsupported applications**

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. Full set</th>
<th>A [mm]</th>
<th>B [mm]</th>
</tr>
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<tbody>
<tr>
<td>030</td>
<td>E61.290.030.12</td>
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<td>040</td>
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<tr>
<td>050</td>
<td>E61.290.050.12</td>
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<tr>
<td>060</td>
<td>E61.290.060.12</td>
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<td>60</td>
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<tr>
<td>070</td>
<td>E61.290.070.12</td>
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<td>080</td>
<td>E61.290.080.12</td>
<td>90</td>
<td>80</td>
</tr>
</tbody>
</table>

(KMA = Polymer Metal Mounting Bracket)

---

**Part No. structure**

- Single-part order:
  - Mounting bracket Moving end: E61.290.050.12A
  - Mounting bracket Fixed end: E61.290.050.12A

---

**Strain relief**

E.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options is available from page 1148.

---

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---

1006 3D-CAD files, configurators, PDF, applications † www.igus.eu/eu/E61.29
### Extremely low-noise, low vibration, medium size

When to use Series E61.52:
- If a particularly low noise, low vibration e-chain® with an inner height of 52 mm is required
- At very high speeds and/or accelerations
- Inner widths up to 300 mm
- For unsupported lengths up to 1.75 m and fill weights up to 11 kg/m
- Optimized interior-exterior dimensions ratio due to narrow outer links
- For enlarged thrusts and tensile forces
- For small bending radii
- Minimal abrasion (e.g. cleanroom applications)

When to use a different igus® Series:
- Limited in side-mounted applications
  - Series E4.56 System E4.1, page 678
- No use with RBR (reverse bending radius)
  - Series E4.56 System E4.1, page 678
- No use with high additional fill weights
  - Series E4.56 System E4.1, page 678
- No use in dirty environments
  - Series E4.56 System E4.1, page 678
- No use in case of enlarged unsupported travels
  - Series E6.52 System E6.1, page 956

### Unsupported applications

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height \( H_F \). Please consult igus® if space is particularly restricted. More information ▶ Design, page 95

### Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

### Technical Data

- Speed, material, temperature and flammability class ▶ page 1001
- Pitch = 30 mm/link
- Links/m = 34 (1020 mm)
- Chain length = \( S/2 + K \)

### Dimensions

- Unsupported length \( FL_u \): Fill weight = 1.0 kg/m
- Length of travel \( S \): Length of travel = 3.2 m

### Example

- Fill weight = 1.0 kg/m
- Unsupported length \( FL_u \): 1.6 m
- Length of travel \( S \): 3.2 m

### Moving end

- \( FL_u \) = with straight upper run
- \( FL_b \) = with permitted sag
- Fill weight = 1.0 kg/m
- Unsupported length \( FL_u \): 1.6 m
- Length of travel \( S \): 3.2 m

### Diagram values provisionally!

Please consult igus®.

### Notes

- Available from stock.
- Delivery time* in 24h or today!
- Speed available upon request, please consult igus® for delivery time
- Radius available upon request, please consult igus® for delivery time
- Radius available upon request, please consult igus® for delivery time
**E6.1 | Series E61.52 | Product Range | Standard**

---

**e-chains® | Series E61.52 | Operable along inner and outer radius**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E61.52.040.R0</td>
<td>40</td>
<td>64</td>
<td>1.68</td>
</tr>
<tr>
<td>E61.52.050.R0</td>
<td>50</td>
<td>74</td>
<td>1.72</td>
</tr>
<tr>
<td>E61.52.052.R0</td>
<td>52</td>
<td>76</td>
<td>1.73</td>
</tr>
<tr>
<td>E61.52.062.R0</td>
<td>62.5</td>
<td>86.5</td>
<td>1.78</td>
</tr>
<tr>
<td>E61.52.070.R0</td>
<td>70</td>
<td>94</td>
<td>1.81</td>
</tr>
<tr>
<td>E61.52.075.R0</td>
<td>75</td>
<td>99</td>
<td>1.84</td>
</tr>
<tr>
<td>E61.52.087.R0</td>
<td>87.5</td>
<td>111.5</td>
<td>1.89</td>
</tr>
<tr>
<td>E61.52.100.R0</td>
<td>100</td>
<td>124</td>
<td>1.95</td>
</tr>
<tr>
<td>E61.52.125.R0</td>
<td>125</td>
<td>149</td>
<td>2.06</td>
</tr>
</tbody>
</table>

---

**Order key**

**E61.52.100.075.0**

- Standard color black
- Bending radius R
- Width index depends on Bi

---

**Configuration options and order keys, overview ➤ page 1001**

---

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

---

**e-chain® links as single parts, overview ➤ page 1000**

---

**Part No. | Bi [mm] | Ba [mm] | Weight [kg/m]**

| E61.52.150.R0 | 150 | 174 | 2.17 |
| E61.52.175.R0 | 175 | 199 | 2.28 |
| E61.52.200.R0 | 200 | 224 | 2.40 |
| E61.52.225.R0 | 225 | 249 | 2.50 |
| E61.52.250.R0 | 250 | 274 | 2.62 |
| E61.52.262.R0 | 262.5 | 286.5 | 2.68 |
| E61.52.275.R0 | 275 | 299 | 2.73 |
| E61.52.300.R0 | 300 | 324 | 2.84 |

---

**Part No. | Bi [mm] | Ba [mm] | Weight [kg/m]**

---

**Weight [kg/m]**

---

**Separator, narrow head unassembled**

---

**Standard separator, wide base unassembled**

---

**New generation interior separation - for e-chains®**

---

**No lateral spacing to side links necessary. In the standard configuration separators are assembled every 2nd e-chain link.**

---

**Standard - for all applications**

- Separator with wide base for maximum locking strength and safe standing in e-chains®.

---

**For even faster installation**

- Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (light grip).

---

**Horizontal separation**

- 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.

---

**Lockable full-width shelves - for the standard interior separation**

---

**Interior separation with single-part order. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)
**E6.1 | Series E61.52 | KMA mounting brackets**

For tight installation conditions, all-sides attachment

---

### KMA pivoting | All-sides attachment | Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. Full set</th>
<th>A [mm]</th>
<th>Bi [mm]</th>
<th>Width index</th>
<th>Part No. Full set</th>
<th>A [mm]</th>
<th>Bi [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>E6.520.100.12.C</td>
<td>155</td>
<td>300</td>
<td></td>
<td>E6.520.100.12.C</td>
<td>155</td>
<td>300</td>
</tr>
</tbody>
</table>

*Note:*
- Standard
- For tight installation conditions
- Option: integrated chainfix strain relief with C-profile
- Corrosion resistant
- Option threaded sockets upon request

*KMA = Polymer Metal Mounting Bracket*

**Part No. structure**

- E6.520.100.12.C A
  - C-profile option
  - Width index
  - Full set
  - Series

**Single part order:**
- Mounting bracket Moving end
- E6.520.100.1A
- Mounting bracket Fixed end
- E6.520.100.1A

---

**Strain relief, e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148**
igus® 3D e-chains®

robotic and circular movements
**triflex® R | easy triflex® | triflex®**

Robotic- and 3D-applications

**robotic e-chains® - triflex® R**
- The first choice for multiaxis-robots
- Available in 4 Versions - from stock
- Torsion ca. ±10° per link possible
- High torsional stability (TRC/TRE)
- Easy shortening and lengthening
- Small bending radius, small pitch

[from page 1018](http://www.igus.eu/eu/triflexR)

**from page 1018**

**For simple 3D-applications - easy triflex®**
- 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

[from page 1052](http://www.igus.eu/eu/easytriflex)

**Enclosed 3D- e-chains® - triflex®**
- 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

[from page 1066](http://www.igus.eu/eu/triflex)

**twisterchain® new/classic | twisterband | e-spool**

For circular movements and rotary motions in a small spaces

**Higher loads - twisterchain® new**
- Rotary/Spiral movements up to 540° possible
- Sturdier through intermediate link heavier loads possible
- Highly dynamic and smoother running (with a new guide trough)
- Cable-friendly, smooth interior
- Crossbars snap-open along inner radius
- Rotary speeds up to 2 m/s and more

[from page 1082](http://www.igus.eu/eu/twisterchain)

**for circular motions up to 540° (with special attachments)**

[from page 1108](http://www.igus.eu/eu/twisterchainClassic)

**First generation - twisterchain® classic**
- For new designs we recommend:
  - TC32, TC42, TC56 from page 1082
- Fast cable change
- Modular design - variable widths
- Crossbars can be opened on both sides
- For circular motions up to 540°

[from page 1082](http://www.igus.eu/eu/twisterchainClassic)

**Rotary motions - twisterband**
- Rotary motions in a small spaces up to 7000°
- 4 sizes available
- 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

[from page 1130](http://www.igus.eu/eu/twisterband)

**e-spool New in this catalog**
- The alternative to the cable drums
- Cable-friendly and guides various media safely
- No tensile stress on the cables
- Different media and diameters in the same drum are feasible
- Energy supply in all directions is possible
- Space-saving, no "chain junction"

[from page 1142](http://www.igus.eu/eu/e-spool)
 Movements in 3-axes, inter alia, for robots triflex® R

triflex® R (R for "round") is the third generation of multi-axis e-chains®. Design features include:
● Approximately ±10° twist per e-chain® link
● High tensile strength of the ball-and-socket joint
● Optional fibre rod for spring loading of the triflex® R
● Easy assembly and modification due to single moulded link design
● No support elements e.g. steel cables, spring suspensions etc. are necessary

These design features guide this product to success in the robot industry. A useful range of accessories is available and is constantly being developed.

Available in 4 Versions - from stock:
● TRC - closed design with smooth and robust exterior
● "easy"-design, easy to fill from outside
● TRL - light weight, with "easy"-design
● TRLF - Light-variant with snap lock mechanism

Typical industries and applications
● The first choice for multi-axis-robots
● Machine tools
● Handling machines - 6-axis
● Fördertechnik
● Packaging machines
● General mechanical engineering, etc.

ul94-v2 classification

Esd/Atex version upon request

Contents, selection table next page
### Contents

#### Selection Table

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner Height</th>
<th>max. cable ø</th>
<th>Outer Width</th>
<th>Bending Radii</th>
<th>Pitch</th>
<th>Links</th>
<th>Page</th>
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<tbody>
<tr>
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<td>Bi2</td>
<td>d1</td>
<td>d2</td>
<td>Ba [mm]</td>
<td>R [mm]</td>
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<td>Bi2</td>
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</table>

#### Series “TRC” - closed design
- dirt-resistant, smooth and robust exterior

<table>
<thead>
<tr>
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<th>12</th>
<th>10</th>
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<th>34,5</th>
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<tr>
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1) TRC.125 - max. cable diameter Ø 41 mm. Max. cable diameter changes to Ø 36 mm only, if shortening/lengthening of a filled triflex® R is required.
3) only with 2-chamber system

#### Series “TRL” - 3-chamber system
- The “light” variant of the “easy”-design simply press cables in

<table>
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<tr>
<th>TRL.30</th>
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<th>11</th>
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<td>108</td>
<td>145</td>
<td>34,5</td>
<td>29</td>
<td>1032</td>
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</tbody>
</table>

1) For quick and easy insertion/ removal of cables using the “easy”-design, we recommend a maximum cable diameter of 70% of the specified value.
3) only with 2-chamber system

#### Series “TRLF” - Light-variant with snap lock mechanism
- light and cost-effective

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<tr>
<th>TRLF.65</th>
<th>New*</th>
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<th>22</th>
<th>70,2</th>
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<td>29</td>
<td>1036</td>
</tr>
</tbody>
</table>

*New* in this catalog
triflex® R | Series TRC

**Introduction**

**3D for robotic applications, closed, chip-resistant**

When to use Series TRC:
- If a secure, closed and chip-resistant energy supply is required for multi-dimensional (3D) movements
- If high torsional stability is required
- If the system has to be shortened or lengthened easily
- If small bending radii are required
- If high tensile strength is important
- If a smooth and robust exterior against interfering edges is required

When to use a different igus® Series:
- For circular movements with high loads
- System twistchain®, new, from page 1082
- When a rugged, easy to fill variant is needed
- triflex® R - TRE, page 1028
- If a more simple and cost-effective 3D-solution is required
- triflex® R - TRL, page 1032
- If a light-variant with snap lock mechanism is required
- triflex® R - TRLF, page 1036

Available from stock. Delivery time* in 24h or today!

---

**Technical Data**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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<tr>
<td>Speed / acceleration</td>
<td>upon request</td>
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<tr>
<td>Material - permitted temperature</td>
<td>°C, igumid NB, -40° up to +80°C</td>
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<tr>
<td>Flammability class, igumid NB</td>
<td>VDE 0304 IIC UL94-V2</td>
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</table>

**Order example | Order key and color options**

Order example for complete e-chain® (1,0 m), color black, with mounting brackets and intermediate links:

- e-chain® (1,0 m) Please indicate e-chain® length or number of links: 1,0 m or 72 links
- + Mounting brackets: 1 mounting bracket with strain relief TR.40.01
- + 2 Intermediate links TR.40.02

Order text: 1,0 m TRC.40.058.0 + TR.40.01 + TR.40.02

**Order key**

Series / Closed design
- Width index Ø
- Bending radius R
- Standard color black

TRC.40.058.0

TRC - Closed design, dirt-resistant, with Bi 15/13 mm inner width and R 058 mm radius, color black = Part No. TRC.40.058.0

**All triflex® R accessories like:**
- Swivel bearings for smooth motion
- Protectors
- Gliding feed-throughs
- Strain relief systems: Quick exchange kit, Pivot bracket, triflex® R connection, TRE.LOCK clips
- Back pull systems: RS triflex® R-Set the universal module and RSP the intelligent retraction system
- Fiber rod module & Installation kit
- Protective jackets.

---

igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu
triflex® R | Series TRC | Product range
Robotic applications, closed, chip-resistant

triflex® R | Series TRC | Closed design, dirt-resistant

<table>
<thead>
<tr>
<th>Series TRC</th>
<th>Bi 1 [mm]</th>
<th>Bi 2 [mm]</th>
<th>Ba [mm]</th>
<th>R [mm]</th>
<th>d1 [mm]</th>
<th>d2 [mm]</th>
<th>Pitch [mm]</th>
<th>Links/m</th>
<th>Weight [kg/m]</th>
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<tbody>
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<td>41</td>
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<td>4.0</td>
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</table>

1) Available as ESD-Version from stock
2) Max. cable diameter Ø 41 mm. Max. cable diameter changes to Ø 36 mm only, if shortening/lengthening of a filled triflex® R is required
3) TRC.125: C-version is standard!

Dimensions

ESD/ATEX 1) permanently conductive e-chains® - TRC several widths with delivery from stock:
Outer widths Ba 43 - 135 mm, radii R 058 - 182 mm. Full ESD product range ▶ www.igus.eu/ESD

With strain relief
TRC.XX.01

Intermediate link
TRC.XX.02

Without strain relief
TRC.XX.02

Standard | Quick and easy fixing onto the robot/machine
(Light-mounting brackets ▶ from page 1035)

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. with strain relief</th>
<th>Part No. as intermediate link</th>
<th>Dim. A [mm]</th>
<th>B [mm]</th>
<th>C [mm]</th>
<th>D [mm]</th>
<th>E [mm]</th>
<th>F [mm]</th>
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<tbody>
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<td>TRC.40. 058.0</td>
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<td>TRC.60. 067.0</td>
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1) Available as ESD-Version from stock

ESD/ATEX 2) permanently conductive e-chains® - TRC several widths with delivery from stock:
Outer widths Ba 43 - 135 mm, radii R 058 - 182 mm. Full ESD product range ▶ www.igus.eu/ESD

1) Available as ESD-Version from stock
2) Max. cable diameter Ø 41 mm. Max. cable diameter changes to Ø 36 mm only, if shortening/lengthening of a filled triflex® R is required
3) TRC.125: C-version is standard!

Standard | Quick and easy fixing onto the robot/machine
(Light-mounting brackets ▶ from page 1035)

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. with strain relief</th>
<th>Part No. as intermediate link</th>
<th>Dim. A [mm]</th>
<th>B [mm]</th>
<th>C [mm]</th>
<th>D [mm]</th>
<th>E [mm]</th>
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<td>153</td>
<td>9</td>
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</tbody>
</table>
3D for robotic applications, easy filling

When to use Series TRE:
- If an easy to fill energy supply is required for multi-dimensional (3D) movements
- If high torsional stability is required
- If the system has to be shortened or lengthened easily
- If small bending radii are required
- If high tensile strength is important
- If an easy opening mechanism for easy filling with cable and hose packages is needed

When to use a different igus® Series:
- For circular movements with high loads
  - System twistechain® new, from page 1082
- If a more simple and cost-effective 3D-solution is required
  - triflex® R - TRL, page 1032
- If a light-variant with snap lock mechanism is required
  - triflex® R - TRLF, page 1036

Order example | Order key and color options

Order example for complete e-chain® (1.0 m), color black, with mounting brackets and intermediate links:
- e-chain® (1.0 m) Please indicate e-chain® length or number of links: 1.0 m or 72 links
  - TRE.4058.0
- + Mounting brackets 1 mounting bracket with strain relief
  - TR.40.01
- + 1 Intermediate link
  - TR.40.02

Order text:
1.0 m TRE.40.058.0 + TR.40.01 + TR.40.02

Order key

TRE.4058.0.B

Series / “easy”-design
Width index Ø
Bending radius R
Standard color black
Optional B/-C-version

TRE - Series “TRE” - “easy”-design
with Bi 15/13 mm inner width and R 058 mm radius, color black = Part No. TRE.4058.0

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods after technical release!
...TRE simply press cables in...

triflex® R | Series TRE | "easy"-design, simply press cables in...

Spherical Bearing for non-slip traction
®
increased up to 4,000 N
Up to 4 times stronger and improved bending radius strength
C-version drastically reduces installation time
Stronger lock for torsion limitation
igubal
Now available with proven bolt connection for even faster assembly and disassembly
Linear pull force capacity
Quick assembly, 50% higher forces

C-version | Quick assembly, 50% higher forces

Now available with proven bolt connection for even faster assembly and disassembly
Linear pull force capacity increased up to 4,000 N
Up to 4 times stronger and improved bending radius strength
C-version drastically reduces installation time
Stronger lock for torsion limitation
Spherical Bearing for non-slip traction

B-version | 4 x higher torsion forces

The advanced ball and socket connection now uses an additional arrester for even higher stability.
Especially designed for Heavy-Duty applications and all back pull systems (RS and RSP) with high accelerations and top speeds.
Up to 4 times stronger with improved bending radius strength
Able to handle even higher torsion forces
Made of only one single part per e-chain® link

1) For quick and easy insertion/removal of cables using the “easy”-design, we recommend a maximum cable diameter of 70% of the specified value.
2) Max. cable diameter Ø 41 mm. Max. cable diameter changes to Ø 36 mm only if shortening/lengthening of a filled triflex® R is required.
3) TRE 125: C-version is standard!
triflex® R | Series TRL | Introduction

3D for robotic applications, light and cost-effective

When to use Series TRL:
- When an easy to fill, economical 3D e-chain® is needed
- When 3D e-chain® for easily manageable operating conditions is needed
- If the system has to be shortened or lengthened easily
- If small bending radii are required
- If an easy opening mechanism for easy filling with cable and hose packages is needed

When to use a different igus® Series:
- For circular movements with high loads
- System twisterchain® new, from page 1082
- With System twisterchain® new, page 1082
- When a rugged, easy to fill variant is needed
- triflex® R - TRL, page 1036
- When a rugged, easy to fill variant is needed
- triflex® R - TRC, page 1024
- When a rugged, easy to fill variant is needed
- triflex® R - TRE, page 1028
- When a rugged, easy to fill variant is needed
- triflex® R - TRLF, page 1036

Order example for complete e-chain® (1,0 m), color black, with mounting brackets:

| e-chain® (1,0 m) | Please indicate e-chain® length or number of links: 1,0 m or 72 links | TRL.40.058.0 |
| | | |
| + Light-mounting brackets | 1 mounting bracket with strain relief | TRL.40.01.Z1 |

Order text: 1,0 m TRL.40.058.0+ TL.40.01.Z1

Order key

Series / "easy"-design
| Width index Ø |
| Bending radius R |
| Standard color black |

TRL - The "light" variant of the "easy"-design with Bi 15 mm inner width and R 058 mm radius, color black = Part No. TRL.40.058.0

Technical Data

- Speed / acceleration: upon request
- Material - permitted temperature °C, igumid NB: -40° up to +80°C
- Flammability class, igumid NB: VDE 0304 IIIC UL94-V2

Order example | Order key and color options

Order example for complete e-chain® (1,0 m), color black, with mounting brackets:

| e-chain® (1,0 m) | Please indicate e-chain® length or number of links: 1,0 m or 72 links | TRL.40.058.0 |
| | | |
| + Light-mounting brackets | 1 mounting bracket with strain relief | TRL.40.01.Z1 |

Order text: 1,0 m TRL.40.058.0+ TL.40.01.Z1

Order key

Series / "easy"-design
| Width index Ø |
| Bending radius R |
| Standard color black |

TRL - The "light" variant of the "easy"-design with Bi 15 mm inner width and R 058 mm radius, color black = Part No. TRL.40.058.0

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**triflex® R | Series TRL | Product range**

Robotic applications, light and economical

![Image of triflex® R Series TRL Light alternative with "easy"-design](image)

**triflex® R | Series TRL | Light alternative with "easy"-design**

<table>
<thead>
<tr>
<th>Series TRL</th>
<th>Bi</th>
<th>Bi</th>
<th>Ba</th>
<th>R</th>
<th>d1</th>
<th>d2</th>
<th>Pitch</th>
<th>Links/m</th>
<th>Weight [kg/m]</th>
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<tbody>
<tr>
<td>TRL 30.050</td>
<td>12,5</td>
<td>11</td>
<td>34,5</td>
<td>050</td>
<td>10</td>
<td>8</td>
<td>11,3</td>
<td>89</td>
<td>0,15</td>
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<td>TRL 40.050</td>
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<td>-</td>
<td>45</td>
<td>058</td>
<td>13</td>
<td>-</td>
<td>13,9</td>
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<td>0,20</td>
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<td>TRL 60.087</td>
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<td>-</td>
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<td>087</td>
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<td>81</td>
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<td>-</td>
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<td>39</td>
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<td>TRL 100.145</td>
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<td>35,5</td>
<td>-</td>
<td>34,5</td>
<td>29</td>
<td>1,20</td>
</tr>
</tbody>
</table>

1) For quick and easy insertion / removal of cables using the "easy"-design, we recommend a maximum cable diameter of 70% of the specified value.

2) only with 2-chamber system

---

**Accessories**

Light-mounting bracket

- Standard for TRL/TRLF, also compatible with TRC/TRE
- Light mounting bracket with strain relief and available as intermediate link
- Standard mounting bracket also available ➤ page 1027

Light | Quick and easy fixing onto the robot/machine

(Standard-mounting brackets ➤ from page 1027)

<table>
<thead>
<tr>
<th></th>
<th></th>
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<td>TL 40.01 .Z2</td>
<td>TL 40.01 .Z0</td>
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<td>TL 60.01 .Z1</td>
<td>TL 60.01 .Z2</td>
<td>TL 60.01 .Z0</td>
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<td>17</td>
<td>27</td>
<td>48</td>
<td>5,8</td>
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<tr>
<td>70.</td>
<td>TL 70.01 .Z1</td>
<td>TL 70.01 .Z2</td>
<td>TL 70.01 .Z0</td>
<td>27</td>
<td>17,5</td>
<td>27,5</td>
<td>64</td>
<td>6,5</td>
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<td>100.</td>
<td>TL 100.01 .Z1</td>
<td>TL 100.01 .Z2</td>
<td>TL 100.01 .Z0</td>
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<td>22,5</td>
<td>42,5</td>
<td>64</td>
<td>6,5</td>
</tr>
</tbody>
</table>

*For moving end (ball) suitable only Series TRL/TRLF

---

**Dimensions**

- **Dim. A**: Width
- **Dim. B**: Weight
- **Dim. C**: Weight
- **Dim. D**: Weight
- **Dim. E**: Weight

---

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Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)

3D-CAD files, configurators, PDF ➤ www.igus.eu/eu/TRLF

if product design award
2013 igus® Series TRLF

3D for robotic applications, light, snap lock mechanism

When to use Series TRLF:
- When an easy to fill, economical 3D e-chain® is needed
- Snap lock mechanism to open by hand or screwdriver
- For thick, stiff hoses and/or many cables
- When 3D e-chain® for easily manageable operating conditions is needed
- If the system has to be shortened or lengthened easily
- If an easy opening mechanism for easy filling with cable and hose packages is needed

When to use a different igus® Series:
- For circular movements with high loads
- System twisterchain® new, from page 1082
- If a fully enclosed solution is required
- triflex® R - TRC, page 1024
- When a rugged, easy to fill variant is needed
- triflex® R - TRE, page 1028
- If a more simple and cost-effective 3D-solution is required
- triflex® R - TRL, page 1032

For circular movements with high loads.
System twisterchain® new, from page 1082
If a fully enclosed solution is required.
When a rugged, easy to fill variant is needed.
If a more simple and cost-effective 3D-solution is required.
TRLF - light and cost-effective with snap lock mechanism

Able to move multi-dimensionally - Twist up to approx. ±10° per link possible in longitudinal axis

High tensile strength thanks to special ball-and-socket principle

Simply snap-open for thick, stiff hoses and/or many cables

Easy assembly and dismantling

Extremely light due to one-piece design

3-chamber principle for interior separation

Small bending radii and short pitch

Economical and light mounting bracket with strain relief or intermediate link

igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu
**Quickly filled 3D robot chain, now enclosed. triflex® TRCF**

- E-chain links are easily snapped open to insert large filling diameters
- Enclosed version, also for direct use with dirt and chip exposure
- Torsion of approx. ±10°/chain link possible
- 3 chamber design for ideal cable distribution and media separation
- Can be shortened and extended as needed
- Opened with a screw driver. More information [www.igus.eu/eu/TRCF](http://www.igus.eu/eu/TRCF)

---

**Dimensions**

**Triflex® R | Series TRLF | Light-variant with snap lock mechanism**

<table>
<thead>
<tr>
<th>Series TRLF</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R [mm]</th>
<th>d1</th>
<th>Pitch [mm]</th>
<th>Links/m</th>
<th>Weight [g/m]</th>
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<tbody>
<tr>
<td>TRLF.65.100.0</td>
<td>24.4</td>
<td>70.2</td>
<td>100</td>
<td>22</td>
<td>23.1</td>
<td>44</td>
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<tr>
<td>TRLF.85.135.0</td>
<td>32.8</td>
<td>94.5</td>
<td>135</td>
<td>30</td>
<td>31</td>
<td>33</td>
<td>≈ 1.45</td>
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<tr>
<td>TRLF.100.145.0</td>
<td>37.5</td>
<td>108</td>
<td>145</td>
<td>35.5</td>
<td>34.5</td>
<td>29</td>
<td>≈ 1.90</td>
</tr>
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</table>

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**Light | Quick and easy fixing onto the robot/machine**

(Standard-mounting brackets [from page 1027])

<table>
<thead>
<tr>
<th></th>
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<td>64</td>
<td>6.5</td>
</tr>
</tbody>
</table>

**TL.65 TL.100 TL.85**

---

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---

**igus® | TRLF | New in this catalog | Product range**

Robotic applications, faster filling of even thicker hoses and cables

---

**Triflex® R | Series TRLF | Light-mounting bracket**

- Light with snap lock mechanism

**Dimensions**

**Triflex® R | Series TRLF | Light-variant with snap lock mechanism**

<table>
<thead>
<tr>
<th>Series TRLF</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R [mm]</th>
<th>d1</th>
<th>Pitch [mm]</th>
<th>Links/m</th>
<th>Weight [g/m]</th>
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<tbody>
<tr>
<td>TRLF.65.100.0</td>
<td>24.4</td>
<td>70.2</td>
<td>100</td>
<td>22</td>
<td>23.1</td>
<td>44</td>
<td>≈ 0.79</td>
</tr>
<tr>
<td>TRLF.85.135.0</td>
<td>32.8</td>
<td>94.5</td>
<td>135</td>
<td>30</td>
<td>31</td>
<td>33</td>
<td>≈ 1.45</td>
</tr>
<tr>
<td>TRLF.100.145.0</td>
<td>37.5</td>
<td>108</td>
<td>145</td>
<td>35.5</td>
<td>34.5</td>
<td>29</td>
<td>≈ 1.90</td>
</tr>
</tbody>
</table>

---

**Quickly filled 3D robot chain, now enclosed. triflex® TRCF**

- E-chain links are easily snapped open to insert large filling diameters
- Enclosed version, also for direct use with dirt and chip exposure
- Torsion of approx. ±10°/chain link possible
- 3 chamber design for ideal cable distribution and media separation
- Can be shortened and extended as needed
- Opened with a screw driver. More information [www.igus.eu/eu/TRCF](http://www.igus.eu/eu/TRCF)
triflex® R | Series TRC/TRE/TRL/TRLF | Accessories
Swivel bearing, for smooth motion | Protectors

With strain relief
TR.XX.04
Without strain relief
TR.XX.03

- Gentle motion sequence for extreme alternating torsion and bending stress
- With extremely sensitive bending radius
- Protected bearing with a maintenance-free igubal ball-and-socket joint

Swivel bearing | Smooth motion for extreme alternating torsion stress | for TRC/TRE/TRL/TRLF

<table>
<thead>
<tr>
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<tr>
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<td>10.5</td>
<td>5.5</td>
<td>87.5</td>
<td>88</td>
</tr>
</tbody>
</table>

*Only TR.XX.03
**Width 85. not for Series TRL

Protectors | High safety under extreme operating conditions | for TRC/TRE

- To achieve long life cycles under heavy loads resulting from impact or friction on the robot’s e-chains, optional protectors can be fitted at the contact points
- Easy assembly and quick replacement
- Abrasion-resistant TPU material
- Shock-resistant
- Light
- Easy gliding over edges
- Free positioning on any e-chain link
- Protector with quick lock fastener available (Part No. TR.85.30 and TR.70.30)

Gliding feed-throughs | With swivel bearing | for TRC/TRE

<table>
<thead>
<tr>
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<td>47</td>
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<td>118</td>
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<tr>
<td>85.</td>
<td>TR.85.07</td>
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<td>118</td>
<td>100</td>
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<td>65</td>
<td>87.5</td>
<td>10.5</td>
</tr>
</tbody>
</table>

*Available upon request, please consult igus® for delivery time!

3D-CAD files, configurators, PDF | www.eu/triflexR

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**triflex® R TRE.LOCK clip | for TRE**

- The TRE.X.X.LOCK clip is used to ensure a secure fit for the mounting bracket on TRE versions.
- TRE.X.X.LOCK clips are automatically supplied with each mounting bracket - please use the following Part No. for reordering:

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<tr>
<td>125</td>
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</table>

*Please add the appropriate index Ø 30, 32, 34 mm. Example: TR.100.21.01.

**not for Series TRL/TRLF**

---

**Strain relief systems with igus® chainfix clamps | for TRC/TRE**

- Secure mounting of large cross sections with igus® chainfix clamps.
- Available in 3 options per size.
- Multiaxially adjustable, for ideal positioning.
- Suits all additional axles: Ø 30 mm, Ø 32 mm, Ø 34 mm.

**CFX - Single clamp housing, incl. bottom saddles**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Width</th>
<th>Part No.</th>
<th>Part No.</th>
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<td>TRE.30/30.LOCK</td>
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<td>58</td>
<td>125</td>
<td>TRE.125.LOCK</td>
<td>58</td>
</tr>
</tbody>
</table>

*Material stainless steel: 1.4301/AISI 304

**CFX2 x2 - Double C-profile for igus®**

- Chainfix clamps made of stainless steel can be used (see Table left).

---

**Strain relief**

- e.g., clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete strain fixe range with order options is found on page 1148.

---

**connection TR.60/70/85/100/125.2XX | for TRC/TRE**

- For cables with large cross section, e.g., welding applications or in heavy hydraulic hoses, rugged strain relief in "heavy-duty" applications.
- Secure mounting of igus® CFX clips.
- Optional mounting bracket made of stainless steel or steel can be used (see Table left).

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No.</th>
<th>Pivot bracket with strain relief</th>
<th>Part No.</th>
<th>Pivot bracket without strain relief</th>
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<td>TR.60.21.02</td>
<td>30 / 32 / 34*</td>
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<tr>
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<td>TR.70.21.01</td>
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<td>TR.100.21.02</td>
<td>30 / 32 / 34*</td>
</tr>
</tbody>
</table>

*Please add the appropriate index Ø 30, 32, 34 mm. Example: TR.100.21.01.

---

**Quick exchange kit TR.60/70/85/100/22.XX | for TRC/TRE**

- Ideal for triflex® R readychain.
- One-time-only alignment.
- No repeat alignment upon exchange of readychain.
- Exchange of the triflex® R unit incl. cables without any tools.

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No.</th>
<th>Quick exchange kit</th>
</tr>
</thead>
<tbody>
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<td>30 / 32 / 34*</td>
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<td>TR.70.22</td>
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<td>TR.85.22</td>
<td>30 / 32 / 34*</td>
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<tr>
<td>70</td>
<td>TR.100.22</td>
<td>30 / 32 / 34*</td>
</tr>
</tbody>
</table>

*Please add the appropriate index Ø 30, 32, 34 mm. Example: TR.100.22.30.

---

**Accessories**

- R TRE.LOCK clip
- Quick exchange kit
- Pivot bracket
- Connection

---

**More information**

- [www.igus.eu](http://www.igus.eu) | [info@igus.de](mailto:info@igus.de) | Phone +49 2203 9649-800 | Fax -222 | www.igus.eu 1043
Integrated retraction spring prevents loop formations

RS - Universal module for any robotic motion

triflex® RS is a very compact universal module that can be attached to the fastening points on the robot. Applications in very limited space can be realized, thanks to the small installation height and to the fact that 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.

- Standard-package for all applications for immediate installation
- Integrated spring mechanism
- The first choice for robotic applications with limited space
- Saves space - small installation height and closely routed on the robotic arm
- Outstanding service life
- Universal installation

RS with cover (barrier)

- Creates more mounting space on robots - e.g. for switch cabinets or valve terminals
- Enables the use of RS in applications with extreme movements

43 Adapter brackets from stock

- 43 adapter bracket types for many different robots
- For all RS modules
- For assembly to the side or on top
- Free download of 3D CAD files for many brackets

www.igus.eu/eu/triflexbrackets

43 Adapter brackets from stock

- 43 adapter bracket types for many different robots
- For all RS modules
- For assembly to the side or on top
- Free download of 3D CAD files for many brackets

www.igus.eu/eu/triflexbrackets

triflex® R fixation to 6-axis

- One axis diameter (Ø30 mm) for all robots
- Easy and fast assembly
- For triflex® R mounting bracket with CFX clamps and tiewrap plates

Further accessories
RSP - Intelligent retraction system

Prevent creation of loops on robot head - now with continuously adjustable retraction forces: triflex® RSP

Intelligent retraction system for multi-axial robot applications. Expansion lengths of 600 mm enable a secure guidance of the cables and hoses, even with large arm diameters and very complex movements. The retraction forces can be adjusted with the help of a pneumatic cylinder. Whether light or heavy fillings, long or short robot arms - with the igus® RSP retraction system the retraction force can always be adjusted to the individual application.

- Adjustable, variable retraction force with a pressure control valve
- Almost constant forth path over the complete travel, even with heavy fillings
- The end position can be monitored and thereby greater damages can be prevented in case of error
- Greater retraction forces than RS system
- Mounting options for numerous robot types and manufacturers
- 3-6 axis on industrial robots

RSP system mounted on a 6-axis robot

Product range - RSP pneumatic retraction system

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<td>226</td>
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</table>

*RSP without triflex® R e-chains®

Product range - e-chain® for RSP

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. TR Closed design</th>
<th>Part No. TRE &quot;easy&quot;-design</th>
<th>e-chain® standard-length*</th>
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*Standard lengths (exceeded length from glide lead-through - outside of the system)

Please add the standard-length (measured from the glide lead-through). Example: TR.RSP60.087.500.0
Fiber rod module | for TRC/TRE
Fiber rod module, for applications where too much flexibility is not desired, intelligent problem solution through directed pretension

Universal installation kit | for TRC/TRE
Universal installation kit allows the attachment of fiber rod modules in any given position, relative to the robotic arm, easy engineering

Product range - Fiber rods

<table>
<thead>
<tr>
<th>Part No. TRC/TRE with mounted fiber rods</th>
<th>Length ca. [mm]</th>
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Product range - Universal installation kit

<table>
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<th>Part No.</th>
<th>Standard lengths**</th>
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<td>.12</td>
<td>TR.125.16</td>
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</table>

*Recommended lengths of the fiber rods

Please add the jacket length. Example: TR.60.16.500

Heat shield protective jacket | TR.XX.18 | for TRC/TRE/TRL/TRLF

- Made from heat resistant, abrasion resistant Kevlar weave
- With aluminum laminate
- With zip-closure
- Velcro fasteners at the beginning and end
- Heavy-duty (thick) design
- Protects from perspiration and metal splatter briefly up to 540°C
- Easy to exchange or retrofit
- Silicone-free
- Asbestos-free
- Standard lengths from stock
- High abrasion resistance
- Very tight
- For heavy-duty environments

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>.12</td>
<td>TR.125.18</td>
<td>500 1000 1500 2000</td>
</tr>
</tbody>
</table>

*Special lengths upon request

Please add the jacket length. Example: TR.60.18.500

Wear-resistant shield | TR.XX.19 | for TRC/TRE/TRL/TRLF

- Black leather material with zip-closure
- Velcro fasteners at the beginning and end
- Extremely high abrasion resistance
- For use in temperatures from -40°C to +100°C
- Silicone-free
- Asbestos-free
- Standard lengths from stock
- Very flexible
- Easy to exchange or retrofit

<table>
<thead>
<tr>
<th>Width</th>
<th>Part No.</th>
<th>Standard lengths**</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>.12</td>
<td>TR.125.19</td>
<td>500 1000 1500 2000</td>
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</tbody>
</table>

*Special lengths upon request

Please add the jacket length. Example: TR.60.19.500

iN 3D-CAD files, configurators, PDF | www.eu/igus/3D-CAD
triflex® R | Series TRC/TRE/TRL/TRLF | Filling

Interior separation configurator

1. Select cables, hoses and lengths

2. Select e-chain® and size

3. Filling of the e-chain® with cables and hoses

4. Result: Order list, price and drawings

triflex® R interior separations
Configure e-chains® easily

Easy and quick creation of interior separations for the triflex® R systems. After selecting the cables, they can be added by drag & drop to the chain cross section. The shelving configurator creates a parts list of the e-chain® and the cables contained in the configuration. The configurations can be saved and reloaded. The entire configuration can be transferred to the shopping cart by a click.

- Quick and easy shelving configuration
- Consideration of the max. filling cross sections and cable diameter
- Creation of parts lists
- Easy enquiry and ordering

Customer-specific special cable for robotic and torsion applications

<table>
<thead>
<tr>
<th>Cable Type</th>
<th>Description</th>
<th>Application</th>
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</thead>
<tbody>
<tr>
<td>CF77.UL.D</td>
<td>PUR control cable, ±180° twistable</td>
<td></td>
</tr>
</tbody>
</table>

chainflex® robotic cables CFROBOT - twistable cables for robots available from stock

The proven CFROBOT cable family that is available from stock is now UL and CSA certified. All deliveries from 05/2011 are manufactured with the approvals.

- From 1 m, no minimum requirements
- ±180° on 1 m
- 3,000,000 cycles tested

More information: www.igus.eu/eu/chainflex

CF77.UL.D - chainflex® PUR control cable, ±180° twistable

- For twistable load requirements

More information: www.igus.eu/eu/chainflex

triflex® R | Series TRC/TRE/TRL/TRLF | Cables

Special cables for robotic and torsion applications

- Control, motor, servo, bus and data cables
- Shielded and unshielded
- Outer jacket material: PVC, PUR, TPE
- Special cables from 500 m
- 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 constructions 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.

triflex® R readychain® cable packages for robots

High component holding times and low downtimes are of the highest priority in manufacturing plants. With a triflex® R readychain® we design and develop a customized readychain® system for you, consisting of the “construction kits” triflex® R, chainflex® and igus® connectors. An installation can of course be executed by our triflex® R installation engineers on your site.

Your advantages:
- Reduces your storage costs to zero for cables, e-chain® and connectors
- Cuts your running time by half
- Responds flexibly to order variations
- Minimizes machine downtimes
- Reduces the number of suppliers and orders by 75%
igus®
easy triflex®
e-chains® for simple 3D-applications
e-chains® for simple 3D-applications - easy triflex®

The easy triflex® Series was developed to realize safe energy supply in the case of multidimensional movements. In doing so the flexibility of a hose was combined with the stability of an e-chain® and its defined radii. With the easy triflex® the installation of cables, wires and hoses is very easy. In case of flexible cross-bars the cables are now simply pushed into the e-chain® from above or below. The unique modular program allows you to follow very complex movements. For Example: Combine 1-axis, 2-axis and 3-axis movement links in one e-chain®.

Typical industries and applications
- Machine tools
- Robots
- Handling equipment
- Material handling
- Plastics machinery
- Construction machines
- Vehicles
- Machinery of all kinds
- Medical equipment
- Office furniture

Robots with igus® easy triflex® e-chains® on an assembly line

Contents, selection table and assembly instructions next page
## Contents

### Selection Table

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width/height</th>
<th>Bending radii</th>
<th>Pitch</th>
<th>Page</th>
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</thead>
<tbody>
<tr>
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<td>Bi 3</td>
<td>B1 [mm]</td>
<td>B2 [mm]</td>
<td>R [mm]</td>
<td>[mm]</td>
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### Single-axis movement
For 3D-applications, easy filling from 2 sides

### Double-axis movement
For 3D-applications, easy filling from 2 sides

### Triple-axis movement
For 3D-applications, easy filling from 2 sides

---

**Assembly Instructions**

1. **Joining** is accomplished by simply joining the e-chain® links and clicking the pins in place.

2. Very easy filling. Simply press cable in - to remove the filling ust pull out the cable.

3. Separate easily by levering open the triflex® e-chains® side plate with a screwdriver.

4. Shorten and lengthen at any given point.

---

**Available from stock. Delivery time in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

1056 3D-CAD files, configurators, PDF | [www.igus.eu/eu/easytriflex](http://www.igus.eu/eu/easytriflex)

igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | [www.igus.eu](http://www.igus.eu)
**easy triflex® Series E332·E333**

**Introduction**

- **Flexible:**
  - Shorten and lengthen at any given point
- **Robust:**
  - Patented “push-button-principle”
- **Simple:**
  - Easy filling from 2 sides with “easy”-design
- **Easy:**
  - Simply press in cable along the inner or outer radius
- **Customizable:**
  - Different bending radii and directions can be combined
- **Movable:**
  - 3-Axis motions in machinery of all kinds

**When to use Series E332/E333:**
- If complex robotics applications are required
- If easy filling from both sides is required
- For repair and supplementation of existing triflex® Systems

**Order example**

**Order key and color options**

- **Order key**
  - **Series**
  - **Width index**
  - **Bending radius**
  - **Standard color**

**Order example for complete e-chain® (1,0 m), color black, with mounting brackets:**

1. e-chain® (1,0 m) Please indicate e-chain® length or number of links: 1,0 m or 27 links
2. + Mounting brackets 1 set mounting bracket with strain relief
3. **Order text:** 1,0 m E333.75.200/200.0 + 333.75.12PZ

**Technical Data**

- **Speed / acceleration** upon request
- **Material - permitted temperature °C, igumid NB** -40° up to +80°C
- **Flammability class, igumid NB** VDE 0304 IIC UL94-V2

**Order example**

**Single-axis movement**

- **Series E332 for easy filling from 2 sides with Bi 75 mm inner width and R 200 mm radius, color black**
- **Order key**
  - **Series**
  - **Width index**
  - **Bending radius**
  - **Standard color**

**Double-axis movement**

- **Series E332 for easy filling from 2 sides with Bi 75 mm inner width and R 200 mm radius, RBR 200 mm, color black**
- **Order key**
  - **Series**
  - **Width index**
  - **Bending radius**
  - **Standard color**

**Triple-axis movement**

- **Series E333 for easy filling from 2 sides with Bi 75 mm inner width and R 200 mm radius, RBR 200 mm, color black**
- **Order key**
  - **Series**
  - **Width index**
  - **Bending radius**
  - **Standard color**

**When to use a different igus® Series:**

- If complex robotics applications are required
- **triflex® R - TRE, from page 1028**
- For circular movements with high loads
- **System twisterchain®, from page 1062**
- If chip protection is necessary
- **System triflex®, from page 1066**

**Available from stock. Delivery time in 24h or today!**

**Order text:**

```
Order key: E332.75.200.0
Order key: E332.75.2.200.0
Order key: E332.75.2.200/200.0
Order key: E333.75.200/200.0
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**3D-CAD files, configurators, PDF** ▶ www.igus.eu/eu/easytriflex
**Series E332 | Single-axis movement**

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Dimensions:

- **E332.25.2**: R 048 075 100 125 150 175 200
  - H: 130 185 235 285 335 385 435
  - D: 055 125 150 175 200 225 250
  - K: 195 280 360 440 515 595 675

- **E332.32.2**: R 075 100 125 150 200 250
  - H: 200 250 300 350 450 550
  - D: 130 155 180 205 255 305
  - K: 305 385 465 545 700 865

- **E332.50.2**: R 100 125 150 200 250
  - H: 270 320 375 470 570
  - D: 195 220 245 295 345
  - K: 435 520 590 750 910

- **E332.75.2**: R 140 175 200 250 300
  - H: 380 450 500 600 700
  - D: 240 275 300 350 400
  - K: 550 660 740 900 1060

**Series E332 | Double-axis movement | With RBR (Reversal Bending Radius)**

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Dimensions:

- **E332.25.2**: R 048 075 100 125 150 175 200
  - H: 130 185 235 285 335 385 435
  - D: 095 125 150 175 200 225 250
  - K: 195 280 360 440 515 595 675

- **E332.32.2**: R 075 100 125 150 200 250
  - H: 200 250 300 350 450 550
  - D: 130 155 180 205 255 305
  - K: 305 385 465 545 700 865

- **E332.50.2**: R 100 125 150 200 250
  - H: 270 320 375 470 570
  - D: 195 220 245 295 345
  - K: 435 520 590 750 910

- **E332.75.2**: R 140 175 200 250 300
  - H: 380 450 500 600 700
  - D: 240 275 300 350 400
  - K: 550 660 740 900 1060
easy tril® | Series E333 | Product range

Triple-axis movement | For 3D-applications, easy filling from 2 sides

Series E333 | Triple-axis movement | With RBR (Reversal Bending Radius)

easy filling from 2 sides

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The bending radii are doubled in the case of the Series E333!

Supplement Part No. with required radius (R) Example: E333.75/200.0

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Series E333.25

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Series E333.32

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Series E333.50

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Series E333.75

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The bending radii are doubled in the case of the Series E333!

Supplement Part No. with required radius (R) Example: E333.75/200.0

Dimensions

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Series E333.25

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Series E333.32

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Series E333.50

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Series E333.75

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KMA, one side pivoting

Width Index

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**Easy triflex® Series E332-E333 Accessories**

**Mounting brackets, flange steel | pivoting**

![Diagram of flange steel mounting bracket](image1)

### Flange steel | pivoting

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**Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock.**

The complete chainfix range with order options ➤ from page 1148

**Easy triflex® Series E332-E333 Accessories**

**Mounting brackets, angled, steel | pivoting**

![Diagram of angled steel bracket](image2)

### Angled steel bracket | pivoting

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**Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock.**

The complete chainfix range with order options ➤ from page 1148
enclosed for simple 3D-applications
triflex® - e-chain® for 3D-motion. The triflex® Series was developed to realize safe energy supply in the case of multi-dimensional movements. In doing so the flexibility of a hose was combined with the stability of an e-chain® and its defined radii. The unique modular program allows you to follow very complex movements. For example: Combine 1-axis, 2-axis and 3-axis movement links in one e-chain®.

Typical industries and applications
● Machine tools ● Robots ● Handling equipment ● Material handling ● Plastics machinery ● Construction machines ● Vehicles ● Machinery of all kinds ● Medical equipment ● Office furniture

Enclosed for simple 3D-applications - triflex®

Various triflex® e-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
triflex® | Contents | Selection Table

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<thead>
<tr>
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<th>Inner width/height Bi [mm]</th>
<th>Outer width/height Ba [mm]</th>
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Single-axis movement

For 3D-applications,
Series 332 fully enclosed - protection against dirt and chips.
*Series 352 snap-open

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Double-axis movement

For 3D-applications,
Series 332 fully enclosed - protection against dirt and chips.
*Series 352 snap-open

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<td>1077</td>
</tr>
<tr>
<td>353.50*</td>
<td>50</td>
<td>68</td>
<td>100 - 250</td>
<td>30</td>
<td>1077</td>
</tr>
</tbody>
</table>

Triple-axis movement

For 3D-applications,
Series 333 fully enclosed - protection against dirt and chips.
*Series 353 snap-open

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)

triflex® | Assembly instructions

1. Joining is accomplished by simply joining the e-chain® links and clicking the pins in place

2. Separate easily by levering open the triflex® e-chains® side plate with a screwdriver...

3. ... then twist and remove e-chain®

4. To open the snap-open 352 and 353 series - insert the screwdriver into the openings and then lever the lid out

Assembly video available online at www.igus.eu/eu/video

igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu

1070 3D-CAD files, configurators, PDF | www.igus.eu/eu/triflex
**triflex® Series 332·333·352·353**

**Introduction**

- Universal: KMA, flanged and angled mounting brackets available
- Customizable: Combinations of varying bending radii and moving axes
- Protection: Completely enclosed - protection against dirt and chips
- Modular: Combination of triple axis fully enclosed Series and snap open series possible
- Variation: Series 352 and 353 snap-open, 50 mm cross-section
- Effective: Cost-effective design for complex movements
- Flexible: Assembling and separating at any given point

**When to use Series 332/333/352/353:**
- For applications that move within two or three axes (combined rotary and circular movements)
- If chip protection is required
- Where rectangular shapes are in demand

**Simple 3D-applications, enclosed**

**Order example for complete e-chain® (1,0 m), color black, with mounting brackets:**
- e-chain® (1,0 m) Please indicate e-chain® length or number of links: 1,0 m or 28 links
- + Mounting brackets 1 set mounting bracket with strain relief
- + Interior separation with 2 separators assembled every 2nd link
- Order text: 1,0 m 333.75.200/200.0 + 333.75.12PZ + 351

**Available from stock. Delivery time® in 24h or today!**

*Delivery time means time until shipping of goods after technical release*

---

**Technical Data**

- Speed / acceleration upon request
- Material - permitted temperature °C, igumid G -40° up to +120°C
- Flammability class, igumid G VDE 0301 IIC UL94-HB

**Order example | Order key and color options**

**Order example for complete e-chain® (1,0 m), color black, with mounting brackets:**
- e-chain® (1,0 m) Please indicate e-chain® length or number of links: 1,0 m or 28 links 332.75.200/200.0
- + Mounting brackets 1 set mounting bracket with strain relief 333.75.12PZ
- + Interior separation with 2 separators assembled every 2nd link 351

**Order key**

- Single-axis movement
  - Series 332 fully enclosed with Bi 75 mm inner width and R 200 mm radius, color black = Part No. 332.75.200.0
  - Series 352 snap-open with Bi 50 mm inner width and R 200 mm radius, color black = Part No. 352.50.200.0

- Double-axis movement
  - Series 332 fully enclosed with Bi 75 mm inner width and R 200 mm radius, RBR 200 mm, color black = Part No. 333.75.200/200.0
  - Series 352 snap-open with Bi 50 mm inner width and R 200 mm radius, RBR 200 mm, color black = Part No. 353.50.200/200.0

**Order key**

- Triple-axis movement
  - Series 333 fully enclosed with Bi 75 mm inner width and R 200 mm radius, RBR 200 mm, color black = Part No. 333.75.200/200.0
  - Series 353 snap-open with Bi 50 mm inner width and R 200 mm radius, RBR 200 mm, color black = Part No. 353.50.200/200.0
triflex® Series 332-352 | Product range
Single-axis movement | 332 fully enclosed | 352 snap-open

Supplement Part No. with required radius (R): Example: 332.75.200.0

Dimensions

Series 332 | 352 | Single-axis movement

<table>
<thead>
<tr>
<th>Series 332</th>
<th>352</th>
<th>B</th>
<th>R</th>
<th>Pitch</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bi [mm]</td>
<td>Ba [mm]</td>
<td>Bending radii</td>
<td></td>
<td>(kg/m)</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>--------</td>
<td>----------------</td>
<td>---</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>332.16</td>
<td>16</td>
<td>26</td>
<td>038</td>
<td>048</td>
<td>075</td>
</tr>
<tr>
<td>332.32</td>
<td>32</td>
<td>50</td>
<td>075</td>
<td>100</td>
<td>125</td>
</tr>
<tr>
<td>332.50</td>
<td>50</td>
<td>68</td>
<td>100</td>
<td>125</td>
<td>150</td>
</tr>
<tr>
<td>332.75</td>
<td>75</td>
<td>96</td>
<td>140</td>
<td>175</td>
<td>200</td>
</tr>
</tbody>
</table>

Dimensions

Series 332.16

<table>
<thead>
<tr>
<th>Ba</th>
<th>Pitch</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>26 mm</td>
<td>13.3 mm/link</td>
<td>0.25 kg/m</td>
</tr>
</tbody>
</table>

Series 332.32

<table>
<thead>
<tr>
<th>Ba</th>
<th>Pitch</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 mm</td>
<td>25 mm/link</td>
<td>0.50 kg/m</td>
</tr>
</tbody>
</table>

Series 332.50/352.50

<table>
<thead>
<tr>
<th>Ba</th>
<th>Pitch</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>68 mm</td>
<td>30 mm/link</td>
<td>0.75 kg/m</td>
</tr>
</tbody>
</table>

Series 332.75

<table>
<thead>
<tr>
<th>Ba</th>
<th>Pitch</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>96 mm</td>
<td>36 mm/link</td>
<td>1.00 kg/m</td>
</tr>
</tbody>
</table>

Unsupported applications | Short travels - for single axis only!

Fill weight [kg/m]

Unsupported length 332.16

FLG - FLB

Unsupported length 332.32

FLG - FLB

Unsupported length 332.50/352.50

FLG - FLB

Unsupported length 332.75

FLG - FLB

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1074 3D-CAD files, configurators, PDF | www.igus.eu/eu/332 | www.igus.eu/eu/352

332 352
triflex® | **Series 332-352** | Product range

**Double-axis movement** | 332 fully enclosed | 352 snap-open

---

**Series 332 | 352** | **Double-axis movement** | With **RBR** (Reversal Bending Radius)

<table>
<thead>
<tr>
<th>Series 332</th>
<th>Full enclosed</th>
<th>Series 352</th>
<th>Snap-open</th>
<th>Bl</th>
<th>Ba</th>
<th>R</th>
<th>Bending radii</th>
<th>Pitch</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>332.16/R/L.0</td>
<td>-</td>
<td>16</td>
<td>26</td>
<td>038</td>
<td>048</td>
<td>075</td>
<td>100</td>
<td>13,3</td>
<td>0,33</td>
</tr>
<tr>
<td>332.32/R/L.0</td>
<td>-</td>
<td>32</td>
<td>50</td>
<td>075</td>
<td>100</td>
<td>125</td>
<td>150</td>
<td>200</td>
<td>250</td>
</tr>
<tr>
<td>332.50/R/L.0</td>
<td>50</td>
<td>68</td>
<td>100</td>
<td>125</td>
<td>150</td>
<td>200</td>
<td>250</td>
<td>30</td>
<td>1,40</td>
</tr>
<tr>
<td>332.75/R/L.0</td>
<td>-</td>
<td>75</td>
<td>96</td>
<td>140</td>
<td>175</td>
<td>200</td>
<td>250</td>
<td>300</td>
<td>36</td>
</tr>
</tbody>
</table>

Supplement Part No. with required radius (R) Example: 332.75/200/200.0

---

### Dimensions

![Diagram](image1)

- **Fixed end**
- **Moving end**

**332.16**
- R: 038 048 075 100
- H: 105 125 180 230
- D: 070 080 105 130
- K: 200 230 315 400

**332.32**
- R: 075 100 125 150 200 250
- H: 200 250 300 350 450 550
- D: 130 155 180 205 255 305
- K: 305 385 465 545 700 865

**332.50/352.50**
- R: 100 125 150 200 250
- H: 270 320 375 470 570
- D: 195 220 245 295 345
- K: 435 520 590 750 910

**332.75**
- R: 140 175 200 250 300
- H: 380 450 500 600 700
- D: 240 275 300 350 400
- K: 550 660 740 900 1060

---

### 3D-CAD files, configurators, PDF

- [www.igus.eu/eu/332](www.igus.eu/eu/332)
- [www.igus.eu/eu/352](www.igus.eu/eu/352)

---

triflex® | **Series 333-353** | Product range

**Triple-axis movement** | 333 fully enclosed | 353 snap-open

---

**Series 333 | 353** | **Triple-axis movement** | With **RBR** (Reversal Bending Radius)

<table>
<thead>
<tr>
<th>Series 333</th>
<th>Full enclosed</th>
<th>Series 353</th>
<th>Snap-open</th>
<th>Bl</th>
<th>Ba</th>
<th>R</th>
<th>Bending radii</th>
<th>Pitch</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>333.16/R/L.0</td>
<td>-</td>
<td>16</td>
<td>26</td>
<td>038</td>
<td>048</td>
<td>075</td>
<td>100</td>
<td>13,3</td>
<td>0,33</td>
</tr>
<tr>
<td>333.32/R/L.0</td>
<td>-</td>
<td>32</td>
<td>50</td>
<td>075</td>
<td>100</td>
<td>125</td>
<td>150</td>
<td>200</td>
<td>250</td>
</tr>
<tr>
<td>333.50/R/L.0</td>
<td>50</td>
<td>68</td>
<td>100</td>
<td>125</td>
<td>150</td>
<td>200</td>
<td>250</td>
<td>30</td>
<td>1,40</td>
</tr>
<tr>
<td>333.75/R/L.0</td>
<td>-</td>
<td>75</td>
<td>96</td>
<td>140</td>
<td>175</td>
<td>200</td>
<td>250</td>
<td>300</td>
<td>36</td>
</tr>
</tbody>
</table>

The bending radii are doubled in the case of the Series 333!

Supplement Part No. with required radius (R) Example: 333.75/200/200.0

---

### Dimensions

![Diagram](image2)

- **Fixed end**
- **Moving end**

**333.16**
- R: 038 048 075 100
- H: 180 220 330 430
- D: 105 125 180 230
- K: 320 380 550 710

**333.32**
- R: 075 100 125 150 200 250
- H: 350 450 550 650 850 1050
- D: 205 255 305 355 455 555
- K: 545 700 860 1020 1300 1605

**333.50/353.50**
- R: 100 125 150 200 250
- H: 470 570 670 870 1070
- D: 295 345 395 495 595
- K: 750 910 1070 1380 1690

**333.75**
- R: 140 175 200 250 300
- H: 660 800 900 1100 1300
- D: 380 450 500 600 700
- K: 990 1210 1400 1700 2000

---

### 3D-CAD files, configurators, PDF

- [www.igus.eu/eu/333](www.igus.eu/eu/333)
- [www.igus.eu/eu/353](www.igus.eu/eu/353)
**triflex® Series 332-333-352-353 | Accessories**

**KMA mounting brackets | All-sides attachment | one side pivoting**

**Moving end**

333...1PZ(B)

**Fixed end**

333 ...2PZ(B)

---

**KMA, one side pivoting**

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Dim A [mm]</th>
<th>Dim B [mm]</th>
<th>Dim C [mm]</th>
<th>Dim D [mm]</th>
<th>Dim E [mm]</th>
<th>Dim K [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>32. ▶</td>
<td>333.32.12PZB</td>
<td>333.32.12PZ</td>
<td>66</td>
<td>15</td>
<td>46</td>
<td>82</td>
<td>6,5</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>50. ▶</td>
<td>333.50.12PZB</td>
<td>333.50.12PZ</td>
<td>84</td>
<td>15</td>
<td>50</td>
<td>100</td>
<td>6,5</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>75. ▶</td>
<td>333.75.12PZB</td>
<td>333.75.12PZ</td>
<td>109</td>
<td>15</td>
<td>55</td>
<td>125</td>
<td>6,5</td>
<td>15</td>
<td>7</td>
</tr>
</tbody>
</table>

(KMA = Polymer Metal Mounting Bracket)

---

**Strain relief**

e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148.

---

**Flange steel, pivoting**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>16. ▶</td>
<td>330.16.12</td>
<td>35</td>
<td>53</td>
<td>21</td>
<td>57</td>
<td>1</td>
<td>10</td>
<td>45</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>32. ▶</td>
<td>330.32.12</td>
<td>66</td>
<td>84</td>
<td>44</td>
<td>88</td>
<td>2</td>
<td>20</td>
<td>7</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>50. ▶</td>
<td>330.30.12</td>
<td>84</td>
<td>102</td>
<td>62</td>
<td>106</td>
<td>2</td>
<td>25</td>
<td>7</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>75. ▶</td>
<td>330.75.12</td>
<td>109</td>
<td>127</td>
<td>90</td>
<td>131</td>
<td>2</td>
<td>25</td>
<td>7</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

---

**Part No. structure**

333.75.12 PZB A

A... must be indicated on preassembled configurations.

With assembled strain relief tiewrap plates.

Full set = 12

Mounting brackets for selected e-chain® type.

---

**Part No. structure**

333.75.12 A

A... must be indicated on preassembled configurations

Full set = 12

With

Mounting brackets for selected e-chain® type.

---

**Strain relief**

e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148.
**Possible installation conditions for assembled mounting brackets.**

For the preassembled mode please add index A1...A4.

**Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148.**
New generation

Rugged, quieter, for higher loads.
Circular and spiral movements up to 540°
Rugged, quieter; for higher loads.
Circular and spiral movements up to 540°.
twisterchain® new

Higher loads and smoother running
 resisting new generation of twisterchain®
new circular e-chains® significantly im-
proved smoothness, stability and strength. The twisterchain® new has
a modular construction for width,
height and radius and therefore
provides very flexible use in appli-
cations where rotating movements
up to 540° are required.

● Sturdier through intermediate
  link - more additional load possible
● 25% less weight than
  existing twisterchain®
● Rotary speeds up to 1 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 (03/2010)

Typical industries and applications
● Robots, handling machines
● Packaging machines
● Glass machines
● General mechanical engineering etc.

New generation twisterchain® new - over 1 million cycles tested successfully in the igus® laboratory (03/2010)

100% more additional loads with the
new generation of igus® twisterchain® new

The cable-optimized intermediate link increases the sta-
bility of twisterchain® new several times. It also serves
as interior separation and divides the filling space into
two chambers

Contents, selection table  next page
Contents
Selection Table

**twisterchain new**

for circular movements up to 540°, crossbars snap-open along inner radius

### Selection Table

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width</th>
<th>Outer height Bending Radii</th>
<th>Circular radii</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC32</td>
<td>32</td>
<td>87.5 - 150</td>
<td>108.5 - 171</td>
<td>54</td>
<td>100 - 250</td>
<td>400 - 600</td>
</tr>
<tr>
<td>TC42</td>
<td>42</td>
<td>87.5 - 200</td>
<td>110.5 - 223</td>
<td>64</td>
<td>100 - 250</td>
<td>400 - 850</td>
</tr>
<tr>
<td>TC56</td>
<td>56</td>
<td>125 - 200</td>
<td>155 - 230</td>
<td>84</td>
<td>150 - 400</td>
<td>650 - 850</td>
</tr>
</tbody>
</table>

Quickly generate complete *twisterchain* models with guide trough and accessories

[www.igus.eu/twisterconfigurator](http://www.igus.eu/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

Technical Data - System *twisterchain* new

- **Speed / acceleration** ► see page 1091
- **Material - permitted temperature °C, igumid G** -40° up to +120° C
- **Flammability class, igumid G** VDE 0304 IIC UL94-HB

Part No. of *e-chain* links as single parts - System *twisterchain* new

<table>
<thead>
<tr>
<th>Series</th>
<th>Crossbar <em>e-chain</em> (1)</th>
<th>Side parts AR outer side link (2)</th>
<th>Side parts AR inner side link (3)</th>
<th>Side parts IR Connector links</th>
<th>Intermediate link</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC32</td>
<td>385.Bi</td>
<td>E4.32.01</td>
<td>TC32.02.R.AR</td>
<td>2808.03</td>
<td>TC32.04</td>
</tr>
<tr>
<td>TC42</td>
<td>385.Bi</td>
<td>E4.42.01</td>
<td>TC42.02.R.AR</td>
<td>3808.03</td>
<td>TC42.04</td>
</tr>
<tr>
<td>TC56</td>
<td>450.Bi</td>
<td>E4.56.01</td>
<td>TC56.02.R.AR</td>
<td>4008.03</td>
<td>TC56.04</td>
</tr>
</tbody>
</table>

No linking possible in combination with QuickLock crossbars!

1) Supplement Part No. of crossbar with required width index (B) e.g. 450.15
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)

Available from stock. **Delivery time (Δ) in 24h or today!**

*Delivery time means time until shipping of goods after technical release*

Assembly video available online at ► [www.igus.eu/circleload](http://www.igus.eu/circleload)
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 1 m/s and more
- At rotatory/spiral movements up to 540°
- If a variable interior separation is desired
- If two-sided opening is desired

When to use a different igus® Series:
- For larger rotations
- igus® RBR-solutions, Design, page 118
- For rotation angles higher than 360°, please consult igus®

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)
Example: Guidance on the interpretation of 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 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
   - Ø cable of client = 22 mm (7,5xstd)
   - Estimate the dimensions of the e-chain® by means of the internal separation with filling and select the series, or verify the max. 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.)
   - Max. Ø cable twisterchain® = 25 mm | TC42 = 39 mm | TC56 = 53 mm
   - Example: max. Ø cable of client: 22 mm => Series TC32 (next larger)

2. Specify the outer radius AR
   Select the next smaller X₂ of the e-chain® from the available installation space of the outer radius.
   - From the dimension X₂ please subtract 80 mm, which results in the necessary outer radius AR.
   - Selection of the chain outer radii, see table; dimension X₂ of the corresponding series
   - Formula: AR = X₂ - 80 mm
   - Example: Available construction space outer radius 592 mm => 580 mm (X₂)
   - X₂ 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 X₁ of the e-chain®. The maximum width Bᵢ results from the selected value.
   - Selection from the table of the corresponding series
   - Formula: IR = X₁ + 25 mm
   - Example: Available installation space inner radius 311 mm + 25 mm = 336 mm => X₁ 350 mm = Bᵢ 11.08 mm

4. Specify the bending radius R
   Basically, the chain’s bending radius R is determined by the smallest bending radius of the cables.
   - Selection from the table of the corresponding series
   - Example: Ø 22 mm (7,5xstd) => 22 mm x 7,5 = 165 mm cable’s bending radius min.
   - 165 => R 175 mm (next higher selected) => results => Part No. TC32-1175/500

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 = \( \frac{X₂ - X₁}{2 \times T} + \frac{K}{2} \)
   - 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 higher odd number! 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!
**Series TC32 | Snap-open along inner radius from both sides**

<table>
<thead>
<tr>
<th>AR [mm]</th>
<th>Bi</th>
<th>Ba</th>
<th>X₂ [mm]</th>
<th>X₁ [mm]</th>
<th>R [TC32] [mm]</th>
<th>R [125] [mm]</th>
<th>R [150] [mm]</th>
<th>R [175] [mm]</th>
<th>R [200] [mm]</th>
<th>R [250] [mm]</th>
<th>Weight [kg/m]</th>
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**Note:** Outer radius AR (see drawing) determines dimension A1.

**Order key**

**TC32.10.150/400.0**

- Standard color black
- Outer radius AR
- Bending radius R
- Width index K (depends on Bi)
- Inner height

**Dimensioning**

**Series TC32 | Interior separation**

For this Series the interior separation elements of Series E4.32 may be used (except side-plates) ▶ from page 652

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)
### Series TC42 | Snap-open along inner radius from both sides

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<th>AR [mm]</th>
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<th>X₃ [mm]</th>
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<th>R125 [mm]</th>
<th>R150 [mm]</th>
<th>R175 [mm]</th>
<th>R200 [mm]</th>
<th>R250 [mm]</th>
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### Dimension A1 depending on outer radius AR

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### Order key

- **TC42.10.250.400.0** - e-chain® snap-open along inner radius from both sides
- **Bi 100 mm inner width, R 250 mm bending radius / AR 400 mm outer radius, color black**

### Series TC42 | Interior separation | Standard

- **AR** = Outer radius
- **X₀** = Inner machine construction space
- **Ba** = Outer width
- **H** = Nominal clearance height
- **A1** = Distance intermediate link
- **B** = Bending radius
- **K** = Distance between bending radius
- **X₁** = Distance intermediate link
- **T** = Pitch

### Available from stock.

Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

Igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu 1095
### Series TC56 | Snap-open along inner radius from both sides

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<th>Bi [mm]</th>
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<th>R 200 [mm]</th>
<th>R 250 [mm]</th>
<th>R 350 [mm]</th>
<th>R 400 [mm]</th>
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**Pitch**

- **Pitch T** = 91 mm/link
- **Links/m** = 11 (1001 mm)

**Order key**

<table>
<thead>
<tr>
<th>AR [mm]</th>
<th>R 150 [mm]</th>
<th>R 200 [mm]</th>
<th>R 250 [mm]</th>
<th>R 300 [mm]</th>
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</table>

**Note:** Outer radius AR (see drawing) determines dimension A1

**Dimensioning**

- Standard color black
- Outer radius AR
- Bending radius R
- Width index (depends on Bi)
- Inner height

**Series TC56 | Interior separation | Standard**

For this Series the interior separation elements of **Series E4.56** may be used (except side-plates) ★ from page 684

**Available from stock. Delivery time★ in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

1096 3D-CAD files, configurators, PDF ★ www.igus.eu/eu/TC56
steel, one-piece | recommended for unsupported and rotatory applications

<table>
<thead>
<tr>
<th>Series</th>
<th>Part No. full set</th>
<th>Part No. position 1</th>
<th>Part No. position 2</th>
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<td>TC3200.34.VS.E</td>
<td>TC3200.30.VS.E</td>
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<td>TC4200.34.VS.E</td>
<td>TC4200.30.VS.E</td>
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<td>TC5600.30.VS.E</td>
<td>TC5600.40.VS.E</td>
</tr>
</tbody>
</table>

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 1100

**Note:** Twisterchain® e-chains® must always end with an outer side link. At the moving end an outer side link always forms the first e-chain link. Please note when calculating!

Save assembly time and costs - Better guidance for circular motion - increase cycle life!

New guide trough system - Type 01

With the new twisterchain® trough, the previously complex adjustment work is clearly minimized. Assembly time is reduced from 6h to 2h. While reducing noise levels, travel speed and service life can be increased, thanks to an almost all-plastic design [www.igus.eu/eu/TCtroughnew](http://www.igus.eu/eu/TCtroughnew)

Guide trough Type 02 - continues to be available for special applications. Product range [page 1126](http://www.igus.eu/eu/TCtroughclassic) or at [www.igus.eu/eu/TCtroughclassic](http://www.igus.eu/eu/TCtroughclassic)

**Part No. structure**
- TC3200.34.VS.E
- TC3200.30.VS.E
- TC3200.40.VS.E

**Single-part order**
- Position 1
  - TC3200.30.VS.E
- Position 2
  - TC3200.40.VS.E

Note: Twisterchain® e-chains® must always end with an outer side link. At the moving end an outer side link always forms the first e-chain link. Please note when calculating!
New generation of twisterchain® guide troughs -
Save assembly time and costs - increase cycle life!

With the new twisterchain® trough type 01, the previously complex adjustment work is clearly mini-
mized. Assembly time is reduced from 6 h to 2 h. While reducing noise levels, travel speed and ser-
vice 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

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)
Guide trough machine construction space: $X_1 = \text{inner} / X_2 = \text{outer}$

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**Rotation angle for 360° | $W_2$ angle of upper run [°]**

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<td>1000</td>
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twisterchain® Guide Troughs Type 01 | Accessories

**Guide Trough options**

- **Complete troughs**: with base support, height adjustment and attachment angles
- **Upper and lower run trough**: without base support and height adjustment (special variant: customer builds base support)
- **Lower run trough**: with attachment angles (special variant: customer builds upper run trough)

**Product range** | twisterchain® guide troughs Type 01

<table>
<thead>
<tr>
<th>Part No. Series</th>
<th>Outer radius AR [mm]</th>
<th>Rotation angle from-up to α [°]</th>
<th>Part No. complete trough</th>
<th>Part No. upper/lower run trough</th>
<th>Part No. lower run trough</th>
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<td></td>
<td></td>
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<td>9XXX.30.360.400/BLR</td>
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<td></td>
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<tr>
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<tr>
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<td><strong>TC42 / TC56 / 4008</strong></td>
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<td>0 - 90°</td>
<td>9XXX.31.90 .750/BLR</td>
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<td>270° - 360°</td>
<td>9XXX.31.360.750/BLR</td>
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</tbody>
</table>

**Order key**

- **Guide trough**: R - Bending radius, please add appropriate value
- **Guide Trough**: Bi - Width index, please add appropriate value

**More order examples**

- **Complete trough**: Part No. 94008.31.180.600/12.250
- **Lower run trough only**: Part No. 94008.30.180.600/12.250
- **Upper and lower run trough without base support**: Part No. 94008.32.180.600/12.250

**Special variants**: Customer builds base support for complete trough, customer builds upper run trough for upper/lower run trough

**Accessory options**

- **Guide Troughs Type 01**: Complete troughs and attachement angles
- **Guide Troughs Type 01**: Upper run trough and attachement angles

**Supplement Part No. 900X with required Series (TC32, TC42, TC56, 2808, 3808, 4008),
value Bi and required bending radius R: 9XXX.31.180.600/06.250**

**Technical details**

- **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 (issue 04/2009)**

**Manufacturer**

- **igus® GmbH Germany**
- **Phone +49 2203 9649-800**
- **Fax -222**
- **info@igus.de**
- **www.igus.eu**

**1104 3D-CAD files, configurators, PDF: www.igus.eu/eu/TCTroughnew**
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® Series**
- TC32
- TC42
- TC56

**Existing installation space**
- X1 max
- X2 max
- H1 max

**e-chain® data**
- Outer radius AR
- Inner radius IR
- Bending radius R
- Rotation angle [°]

**Guide trough**
- yes
- no

**Part No. trough Type**
- 9TC_ _ _ _ _ _ /
- Order example 9TC32.31.180.600/06.250

**Supporting structure**
- 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!

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® new
- chairflex® high-flex cables
- Guide trough
- Preassembled

**Filling - twisterchain® new**

**Number**
- Type
- Ø [mm]
- Weight [kg/m]
- Permitted bending radius R [mm]

**Dimensions**
- X1 [mm]
- X2 [mm]
- H1 [mm]
- Rotation angle α [°]

* On machine elements which move to the left and to the right following a circular path, the rotation angle can be determined by adding the two angles

**Operating data**
- Rotations/day
- Days/year
- Speed [°/s]
- Acceleration [°/s²]

**Environment**
- Temperature [°C]
- Moisture

Please copy, complete and fax it to us or online at www.igus.eu/eu/twisterchain.
First generation twisterchain®
Circular and spiral movements up to 540°
Circular and spiral movements - twisterchain®
classic

The first generation of twisterchain® classic have proven themselves worldwide for years in many applications. They safely supply their robots in the rotary axis with energy and air. For new designs we recommend twisterchain® new from page 1082.

- 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) available from stock
- Variable interior separation
- Applicable in rotational speeds of up to 4 m/s
- With steel mounting brackets (electrically conductive)

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-V0 classifications
upon request

Two different types of guide trough systems available

Combined spiral and rotary movement - igus® twisterchain® classic

twisterchain® classic for continuous industrial operation on a buckling arm robot (rotary movement 420°)

The robust link design also allows safe work in a dirty environment.
Contents
Selection Table

For new designs we recommend: TC32, TC42, TC56 ► from page 1082

twisterchain® classic
for circular movements,
can be opened from both sides

Quickly generate complete twisterchain® models
with guide trough and accessories
► www.igus.eu/twisterconfigurator

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)

Technical Data - System twisterchain® classic

Speed / acceleration ► see page 1116

Material - permitted temperature °C, igumid G -40° up to +120° C

Flammability class, igumid G VDE 0304 IIC UL94-HB

Part No. of e-chain® links as single parts - System twisterchain® classic

Part No. of e-chain® links as single parts

Series e-chain® links as single parts - System twisterchain® classic

No linking possible in combination with QuickLock crossbars!

1) Supplement Part No. of crossbar with required width index (Bi) e.g. 450.15
2) Outer side link - Fit for each radius (not for outer radius AR)
3) Inner side link - Supplement Part No. of crossbar with required width index (Bi) and required radius (R) e.g. 4008.02.100 (only for outer radius AR)
4) Connector link - Part No. e.g. 4008.03 (only for inner radius IR)

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)
Circular movements up to 540°

When to use the system **twisterchain® classic**:
- As replacement for existing **twisterchain® classic** applications
- If you require an interior separation
- If you require cable access on both sides
- For rotational speeds up to 90°/s
- For circular motion up to 540° (with special attachments)

When to use a different igus® Series:
- If a robust, low-noise system is required, appropriate for high loads.
- **twisterchain® new**, page 1082
- In case of very small or very large diameters
- Design, page 118
- For applications using rotation angles over 400° please consult igus®

Available from stock, Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
Tips on design:
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
Specify which cables you would like to use for the e-chain®. The type of cables and the largest cable diameter determine the Series and e-chain® width selection. We recommend that you allow for a cable clearance of approx 20% of the e-chain®'s internal height and width.

2. Specify the outer and inner radius
Determine the construction space available to you (dim. Xₐ and Xᵢ). Examples: α = 220° / max. cable diameter 24 mm - Series 2808
Xₐ = 580 mm - AR = 500 mm
Xᵢ = 310 mm - IRᵢₜₐₜ = 390 mm - selection table - 392 mm

3. Specify the bending radius R
Hₛ = 460 mm ▶ H ≤ 410 mm ▶ R = H - ha / 2 = 178 mm ▶ R₁₇₅ (next smallest radius) ▶ Results: Part No.
2808.067.175/500

4. Calculate the required number of links
Number of links: n = 2x(AR - Xᵢ - K) / α
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 higher odd number!

twisterchain® classic definition:
In the case of machine elements which move both to the left and to the right following a circular path, the angle of rotation can be determined by adding the two angles!

The following clearances are absolutely essential for proper design function:
IRᵢₜₐₜ = Xᵢ + 80 mm
Xₐᵢₜₐₜ = AR + 80 mm
Hₛ = H + 50 mm

Recommendations for design without additional components

<table>
<thead>
<tr>
<th>Series</th>
<th>FZ max. = 220° [kg/m]</th>
<th>FZ max. = 360° [kg/m]</th>
<th>v = AR max. [mm]</th>
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<th>R [mm] max.</th>
<th>AR permitted [mm]</th>
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<td>600 - 700</td>
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</table>

If your calculations exceed our recommendations, please talk to us. We offer special solutions and many additional components.

For the generation of complete twisterchain® Systems please use our:
- www.igus.eu/twisterconfigurator
- info@igus.de | Phone +49 2203 9649-800 | Fax -222 | igus® GmbH Germany | www.igus.eu

<table>
<thead>
<tr>
<th>R</th>
<th>FZ max.</th>
<th>FZ max.</th>
<th>v = AR max.</th>
<th>a = AR max.</th>
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</tr>
</tbody>
</table>

For this Series the interior separation elements of Series E4.28 may be used (except side-plates) ▶ from page 640

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)
**Series 2808 | snap-open along inner and outer radius**

<table>
<thead>
<tr>
<th>R 100</th>
<th>R 125</th>
<th>R 150</th>
<th>R 175</th>
<th>R 200</th>
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<th>Bi</th>
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**Order key**

**Dimensioning**

**Series 2808 | Interior separation | Standard**

For this Series the interior separation elements of Series E4.32 may be used (except side-plates) | from page 652

- **AR** = Outer radius, e-chain
- **Ba** = Outer width, e-chain
- **Bi** = Inner radius, e-chain
- **RI** = Inner width, e-chain
- **R** = Bending radius, e-chain

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
### Series 3808 | Interior separation

**Standard**

For this Series the interior separation elements of Series E4.42 may be used (except side-plates) from page 668

- **AR** = Outer radius, e-chain®
- **Ba** = Outer width, e-chain®
- **Bi** = Inner radius, e-chain®
- **R** = Bending radius, e-chain®

**Available from stock. Delivery time in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

**Order key**

- 3808.20.200/600.0
- Standard color: black
- Outer radius: AR
- Bending radius: R
- Width index (depends on Bi)
- Series

**Dimensioning**

- Bi = Inner radius, e-chain®
- AR = Outer radius, e-chain®

**Series 3808**

For new designs we recommend: TC42 [from page 1094](#)

---

**Table:**

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<th>R 150</th>
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**Pitch T** = 67 mm/link

**Links/m** = 15 (1005 mm)

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**Notes:**

- Delivery time means time until shipping of goods (after technical release)
- Standard color: black
- Outer radius: AR
- Bending radius: R
- Width index (depends on Bi)
- Series

---

**Contact:**

- info@igus.de
- Phone: +49 2203 9649-800
- Fax: -222
- Website: www.igus.eu
### Series 4008 | snap-open along inner and outer radius

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<thead>
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<th>R 200</th>
<th>R 250</th>
<th>R 300</th>
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**Order key**

- **Ba**: Outer width, e-chain
- **Bi**: Inner width, e-chain
- **AR**: Bending radius, e-chain
- **IR**: Outer radius, e-chain

**Dimensions**

- Standard color black
- Width index (depends on Bi)
- Series

**Series 4008 | Interior separation**

For this Series the interior separation elements of Series E4.56 may be used (except side-plates) ➤ from page 684

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

**Pitch T** = 91 mm/link

**Links/m** = 11 (1001 mm)
Save assembly time and costs - Better guidance for circular motion - increase cycle life!
New guide trough system - Typ 01

With the new twisterchain® trough, the previously complex adjustment work is clearly minimized. Assembly time is reduced from 6h to 2h. While reducing noise levels, travel speed and service life can be increased, thanks to an almost all-plastic design.

www.igus.eu/eu/TCtroughnew
Guide trough Type 02 for twisterchain® classic

- Guidance of the e-chain®
- Minimal wear on the e-chain®
- Optimized running smoothness
- Rotation angle up to 400°

The modular design of the guide trough makes it possible to connect a large number of e-chains® and bending radii by using the same trough sections. If the e-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® type when ordering. For new designs, we recommend:

New guide trough system - Typ 01 from page 1100

Product range | twisterchain® classic guide trough Type 02

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Outer radius AR [mm]</th>
<th>Rotation angle min.-max. α [°]</th>
<th>Trough assembly Type 02</th>
<th>Trough assembly with bottom support</th>
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Supplement Part No. 9 XXXX with required Series (2208, 2808, 3808 or 4008), the value Bi and the corresponding value of the required bending radius R as shown by the drilling template.

* These troughs feature one support for the upper run / ** these troughs feature two supports for the upper run

9 4008.5.180.600/06.250

Order key

Guide trough Type 02

- R - Bending radius, please add appropriate value
- Bi - widths index, please add appropriate value
- Outer radius e-chain®
- Trough angle (Standard 180°, 135°, 90°, 45°)
- Trough version (5. with and 4. without bottom support)
- Guide trough - selected Series (2208, 2808, 3808, 4008)

Support for the upper run of twisterchain® classic (as of 180° rotation angle)

Installation Dimensions | twisterchain® classic guide trough Type 02

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<th>H lk [mm]</th>
<th>R st [mm]</th>
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<td>4008..300</td>
<td>4008..400</td>
<td>4008..500</td>
<td>4008..600</td>
<td>4008..700</td>
</tr>
</tbody>
</table>

Ask us, we will be pleased to help you!
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.

<table>
<thead>
<tr>
<th>twisterchain® Series</th>
<th>2208</th>
<th>2808</th>
<th>3808</th>
<th>4008</th>
</tr>
</thead>
</table>

### Existing installation space

<table>
<thead>
<tr>
<th>X1, max</th>
<th>X2, max</th>
<th>Hf, max</th>
</tr>
</thead>
</table>

### e-chain® data

<table>
<thead>
<tr>
<th>Outer radius AR</th>
<th>Inner radius IR</th>
<th>Bending radius R</th>
<th>Rotation angle [°]</th>
</tr>
</thead>
</table>

### Guide trough

- yes
- no

### Part No. trough Type

<table>
<thead>
<tr>
<th>02</th>
<th>9</th>
<th>/</th>
<th></th>
</tr>
</thead>
</table>

Order example: (9.4008.5.180.600/06.250)

### Supporting structure

- 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!

---

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
- Preassembled

### Filling - twisterchain® classic

<table>
<thead>
<tr>
<th>Number</th>
<th>Type</th>
<th>Ø [mm]</th>
<th>Weight [kg/m]</th>
<th>Permitted bending radius R [mm]</th>
</tr>
</thead>
</table>

### Dimensions

<table>
<thead>
<tr>
<th>X1 [mm]</th>
<th>X2 [mm]</th>
<th>Hf [mm]</th>
<th>Rotation angle α [°]</th>
</tr>
</thead>
</table>

* On machine elements which move to the left and to the right following a circular path, the rotation angle can be determined by adding the two angles.

### Operating data

<table>
<thead>
<tr>
<th>Rotations/day</th>
<th>Days/year</th>
<th>Speed [°/s]</th>
<th>Acceleration [°/s²]</th>
</tr>
</thead>
</table>

### Environment

<table>
<thead>
<tr>
<th>Temperature [°C]</th>
<th>Moisture</th>
</tr>
</thead>
</table>

---

Please copy, complete and fax it or online at www.igus.eu/eu/twisterchainClassic
igus®

**twisterband**

Rotary movements in small space - 20 times around its own axis
Compact, modular and cost-effective - twisterband

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 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, 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, 2/3/6 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

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

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

igus® twisterband: Minimum installation space, builds very close around the rotary axis

Compact, modular, economical - up to 7.000° rotary motions in smallest spaces

Can be reliably used in various installation positions. Limited length compensation possible.
**twisterband**

Rotary movements in minimum space - 20 times around its own axis

Installation position, vertical: up to 3.000°, horizontal: 7.000° and more possible

---

### Contents | Selection Table

#### Series | Inner height \(h\) [mm] | Inner width \(b\) [mm] | \(X_1\) [mm] | \(X_2\) [mm] | \(R\) min. [mm] | \(R\) max. [mm] | Inner separation | Opening principle | Page
--- | --- | --- | --- | --- | --- | --- | --- | --- | ---
TB12.23.09. | 9 | 23 | 40 | 140 | 24 | 35 | — | "easy"-design | 1136
TB20.44.12. | 12 | 44 | 50 | 220 | 34 | 57 | — | "easy"-design | 1136
TB20.44.18. | 18 | 44 | 50 | 220 | 34 | 57 | yes | film-hinge | 1136
TB30.75.22. | 22 | 75 | 90 | 330 | 44 | 77 | yes | film-hinge | 1136

More sizes available upon request! \(X_1\) = Inner machine construction space \(X_2\) = Outer machine construction space

---

**Available from stock. Delivery time\* in 24h or today!**

\*Delivery time means time until shipping of goods (after technical release)

---

### 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

---

Assembly video available online at [www.igus.eu/eu/twisterband](http://www.igus.eu/eu/twisterband)
**Rotary motions in smallest spaces**

When to use the twisterband:
- Rotary movements up to 7000°
- For smallest spaces
- Rotary speeds up to 360°/s possible
- 4 sizes available
- Some parts available with interior separation*
- Easy to fill with film-hinge or to be opened with “easy”-design (depending on Series)
- Limited length adjustment possible

When to use a different igus® Series:
- For higher fill weights
- System twisterchain® new, page 1082
- For 3D-movements
- triflex® R, page 1018
- RBR-versions for additional fill weights
- Design, page 318
- If a smear-and maintenance-free polymer slewing bearing for “endless” turning movements is required
- iglidur® polymer slewing bearing, www.igus.eu/eu/PRT
- Use of shielded cables
- Please ask for support

---

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

---

**Calculation**

Number of ribbons (depending on rotation angle)

(please always round up number of ribbons)

- TB12: \( \frac{\text{Rotation angle}}{360°} + 2 = \text{Example:} \frac{1200°}{360°} + 2 = \text{result:} X = 6 \text{ ribbons} \)

- TB20: \( \frac{\text{Rotation angle}}{360°} + 2 = \text{Example:} \frac{1200°}{360°} + 2 = \text{result:} X = 6 \text{ ribbons} \)

- TB30: \( \frac{\text{Rotation angle}}{180°} + 6 = \text{Example:} \frac{1200°}{180°} + 6 = \text{result:} X = 13 \text{ ribbons} \)

---

**Additional loads depending of the rotation angel**

- Bi = Inner width e-chain
- hi = Inner height e-chain
- X1 = Inner machine construction space
- X2 = Outer machine construction space
- R min. = Min. bending radius
- R max. = Max. bending radius
- d1 = Max. cable diameter
- X = Number of ribbons

---

**Product range**

- **TB12.23.09.**
  - TB20.44.12.
  - TB20.44.18.
  - TB30.75.22.

- **TB20.44.12.**
  - X1 = 44
  - X2 = 50
  - R min. = 22
  - R max. = 75
  - d1 = 14 mm
  - X = 220 mm

- **TB30.75.22.**
  - X1 = 75
  - X2 = 90
  - R min. = 22
  - R max. = 75
  - d1 = 17 mm
  - X = 330 mm

---

**Supplement Part No. with required number of ribbons (see calculation box) e.g. TB20.44.12.6.01.0**

---

**Summary**

- **Product design award**
  - 2011 igus® twisterband

---

**Contact:**

- igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu

---

**3D-CAD files, configurators, PDF** ▶ www.igus.eu/eu/twisterband
Woodworking machine - the twisterband is used for rotational movements in minimum space. It provides the energy supply of the gimbal working head. E2/000 e-chains® are installed for the other axes.

Separators are delivered unassembled. Simply push them onto the crossbar.

**Separators**

For Series TB20 with an inner height of 18 mm and Series TB30 (inner height: 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 twisterbandes 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.

Ground plate and base plate are delivered by standard. They are part of the twisterband-module!

**Dimensions - ground / base plate made of steel with strain relief for the following Series:**

- TB20.44.18 unassembled
- TB30.75.22 unassembled
- TB20.18.2 unassembled
- TB30.22.2 unassembled

**Ground- and base plate with strain relief**

Ground- and base plate made of steel with strain relief for the following Series:

- TB20.44.18
- TB30.75.22
- TB20.18.2
- TB30.22.2

**Ground plate and base plate with strain relief**

Ground plate and base plate are delivered by standard. They are part of the twisterband-module!
Tests and applications

igus® twisterband TB30 for rotational movement of 360° and E2 mini as well as E2/000 e-chains® in this loading and unloading unit.

Endurance test of a twisterband module in the igus® test laboratory.

Customer application with twisterband TB20.44.18 - consuming and expensive rotary joints could be replaced here.

Suitable igus® chainflex® cables for smallest bending radii at www.igus.eu/eu/chainflex.

Designing-Fax

<table>
<thead>
<tr>
<th>Date:</th>
<th>Phone: +49 2203 9649-800</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fax: +49 2203 9649-222</td>
</tr>
<tr>
<td>From:</td>
<td>igus® GmbH - Technical Sales</td>
</tr>
<tr>
<td></td>
<td>e-chainsystems®</td>
</tr>
<tr>
<td></td>
<td>Spicher Str. 1a</td>
</tr>
<tr>
<td></td>
<td>51147 Cologne (Porz-Lind)</td>
</tr>
<tr>
<td>To:</td>
<td></td>
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<tr>
<td>Phone:</td>
<td></td>
</tr>
<tr>
<td>Fax:</td>
<td></td>
</tr>
</tbody>
</table>

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 mm]  min. bending radius [mm]

Environment

Ambient temperature [°C]  ATEX/ESD  Cleanroom

Your data

Company
Name
Adress

Phone/Fax

E-mail

Please copy, complete and fax it or online at www.igus.eu/eu/twisterband
igus®
e-spool
The alternative to cable drum. Protect cables and conduct various media safely
The alternative to cable drum - igus® e-spool

Protect cables and conduct various media safely
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.

- No tensile load of the cables
- Different media and diameters in one drum possible
- Energy supply in all possible directions (horizontal, vertical, diagonal)
- Space-saving, no "chain junction"
- No lower run is left behind, the paths remain free
- Cable diameters up to 16 mm

Typical industries and applications
- Telescopic applications
- Light / Stage equipment
- Space-saving alternative to zigzag applications

New in this catalog

The igus® e-spool in an extendable winding system of the company Becker Electric Forklift Service in Erftstadt. Vertically extendable up to 10 meters. The e-spool supplies the motor of the facility with media and energy cables.

More information ➤ www.igus.eu/spoolcollector

The standard range consists of six different e-spool options: Three lengths equipped with one or two twisterbands.

Contents, selection table ➤ next page
**The alternative to cable drum**

**When to use the e-spool series:**
- If an uncomplicated, simple solution is desired as a cable drum
- When different media (electricity, air, liquids) should be routed together in a single system

**When not to use it:**
- Where it must be routed vertically at very high loads
  - Zigzag applications

---

**Part No. e-spool with 1 twisterband**
- SP1.600.4000.01.0
- SP1.700.7000.01.0
- SP1.850.14000.01.0

**Part No. e-spool with 2 twisterbands**
- SP2.600.4000.01.0
- SP2.700.7000.01.0
- SP2.850.14000.01.0

<table>
<thead>
<tr>
<th>Part No. e-spool with 1 twisterband</th>
<th>Part No. e-spool with 2 twisterbands</th>
<th>Maximum extension length [mm]</th>
<th>ø Drum diameter [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP1.600.4000.01.0</td>
<td>SP2.600.4000.01.0</td>
<td>4000</td>
<td>600</td>
</tr>
<tr>
<td>SP1.700.7000.01.0</td>
<td>SP2.700.7000.01.0</td>
<td>7000</td>
<td>700</td>
</tr>
<tr>
<td>SP1.850.14000.01.0</td>
<td>SP2.850.14000.01.0</td>
<td>14000</td>
<td>850</td>
</tr>
</tbody>
</table>

**Order key**

- **1 twisterband**
  - Drum diameter ø
  - Max. extension length
  - Standard color black

**System with a single twisterband**
- with 600 mm drum diameter, and 4000 mm maximum extension length

- **2 twisterbands**
  - Drum diameter ø
  - Max. extension length
  - Standard color black

**System with two twisterbands**
- with 600 mm drum diameter, and 4000 mm maximum extension length

---

**Introduction**

New in this catalog

The alternative to cable drum

When to use the e-spool series:

- If an uncomplicated, simple solution is desired as a cable drum
- When different media (electricity, air, liquids) should be routed together in a single system

When not to use it:

- Where it must be routed vertically at very high loads
  - Zigzag applications

---

**The igus® cable drum without slip ring**

Space-saving solution for a secure vertical movement. igus® e-spool with 3500 mm extension length in this handling unit.

Assembled with igus® chainflex® CF9 control and CF30 motor cables as well as CF.Robot torsion cable and CA.PU pneumatic hose.
Flexible and fast assembled.
igus® chainfix strain relief.

Strain relief from igus® specifically developed for use in e-chains® and dynamic applications. The combination of chainflex® cable materials in contact with the polymer strain relief components of igus® chainfix are designed for high durability of the cables and maximum holding power. For a wide variety of applications igus® is the best solution in terms of costs and benefits, such as the best chainfix strain relief for long travels or rough use or chainfix Nuggets, for simple and inexpensive strain relief solutions. igus® chainfix strain relief components are under practical for the use by customers around the world.

igus® chainfix strain relief | Selection Table

<table>
<thead>
<tr>
<th>Clamps and stainless steel clamps - for maximum pull forces</th>
<th>➤ from page 1156</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clamps and bottom saddle elements, chainfix Multi-Clamps</td>
<td>➤ page 1158</td>
</tr>
<tr>
<td>Single, double, triple standard clamps</td>
<td>6-42</td>
</tr>
<tr>
<td>CFXL® Single, double, triple clamps with wide base for maximum pull forces</td>
<td>6-42</td>
</tr>
<tr>
<td>Saddle elements - bottom and stacker saddles</td>
<td>6-42</td>
</tr>
<tr>
<td>chainfix Multi-Clamps*</td>
<td>6-12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C-profiles</th>
<th>➤ page 1162</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard C-profiles and C-profiles for Heavy-Duty applications</td>
<td>➤ page 1162</td>
</tr>
<tr>
<td>Standard C-profiles Part No. CF82.42. (to be integrated into KMA)</td>
<td>1162</td>
</tr>
<tr>
<td>C-profiles Part No. CF82.52. with increased pull force (mounting in front of e-chain®)</td>
<td>1162</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Tiewrap plates - for universal tiewrap, bolted or clip-on</th>
<th>➤ from page 1164</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tiewrap plates as single part “Series 2000” + cable tiewraps</td>
<td>1164</td>
</tr>
<tr>
<td>Tiewrap plates as single part “Series 3000” + cable tiewraps</td>
<td>1165</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tiewrap plates, with clip-on connection for the C-profile</th>
<th>➤ from page 1166</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tiewrap plates, with clip-on connection for the C-profile</td>
<td>1166</td>
</tr>
<tr>
<td>Integrated strain relief for E2 e-tubes - Series R</td>
<td>1166</td>
</tr>
<tr>
<td>Tiewrap plates for fixed crossbars</td>
<td>1167</td>
</tr>
<tr>
<td>Tiewrap plates for opening crossbars</td>
<td>1167</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Clips - high pull forces, plug-in</th>
<th>➤ from page 1168</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clips</td>
<td>➤ page 1168</td>
</tr>
<tr>
<td>Option 1A for all e-chains® with C-profiles and also suitable for assembly in the KMA mounting brackets</td>
<td>4-24</td>
</tr>
<tr>
<td>Option 2 Clip-on strain relief for opening crossbars</td>
<td>4-24</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Strain relief separators - with integrated teeth</th>
<th>➤ from page 1170</th>
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</thead>
<tbody>
<tr>
<td>Separator with integrated strain relief - easy strain relief with tiewrap</td>
<td>1170</td>
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</table>

<table>
<thead>
<tr>
<th>Nuggets - for top hat rail and C-profile</th>
<th>➤ page 1172</th>
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<tbody>
<tr>
<td>Nuggets</td>
<td>➤ page 1172</td>
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<tr>
<td>Option 1: complete, simple and universal cable fixation, ≤ 30 mm and Ø 30 mm</td>
<td>1172</td>
</tr>
<tr>
<td>Option 2: Fastening through clipping onto standard top hat rail, ≤ 20 mm</td>
<td>1172</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Blocks - Special strain relief for hoses</th>
<th>➤ from page 1173</th>
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<tbody>
<tr>
<td>Blocks</td>
<td>➤ page 1173</td>
</tr>
<tr>
<td>Conventional igus® blocks - strain relief for hoses</td>
<td>4-3-14</td>
</tr>
<tr>
<td>CFB polymer strain relief connector system, many cables in a very confined space</td>
<td>1174</td>
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Available from stock. Delivery time* in 24h or today!
*Delivery time means time until dispatch of goods (after technical release)
<table>
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<tr>
<th>Series</th>
<th>Clamps</th>
<th>Clip</th>
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<th>Strain relief</th>
<th>Single part</th>
<th>Single part 3000°</th>
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<th>For e2-e-tube 5°</th>
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<tr>
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**CFXL-Clamps must be assembled in front of the e-chain - Not to be integrated in KMA**

*New in this catalog*
### Parameters

<table>
<thead>
<tr>
<th>Parameters</th>
<th>CFX clamps</th>
<th>Tiewrap plates</th>
<th>Clips for C-profiles or stackable</th>
<th>Nuggets</th>
<th>Strain relief separators</th>
<th>CFB strain relief connector system</th>
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<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
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<td><strong>Recommended standard for the following e-chains</strong>:</td>
<td>E4, E6, for all KMA* with C-profile</td>
<td>easy chain*, E2/000, E2 e-tubes, E4, E6</td>
<td>E4, E6, for all KMA* with C-profile, top hat rails</td>
<td>E2/000, E2 e-tubes, E6, T3</td>
<td>E4, E6, for all KMA* with C-profile</td>
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<td><strong>When to take this igus’ strain relief systems</strong>:</td>
<td>Standard for high accelerations, loads and demanding applications. For many cables, large diameter cables, and cables on top of each other. For long travels, cranes, offshore, machine tools, high speed, hydraulic lines. If modularity is required.</td>
<td>Standard for many applications with medium acceleration. For unsupported, gliding, hanging and standing applications in general machinery and machine tools. In cables next to each other. Also available as single parts, for example for cabinets, etc.</td>
<td>Cost-effective, space-saving strain relief for many applications with medium acceleration. For cables over one another or cables with identical diameters.</td>
<td>Low cost, fast strain relief for ease of use with minimal space requirements at medium acceleration. Also available as single parts for rigid linings, such as in cabinets, etc.</td>
<td>Combination of separator and strain relief, ideal for limited space. For applications with medium acceleration. For smaller cable diameter. Ideal for tubes. For machine tools and automation.</td>
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1) Tested with igus®-chainfix® cables in the sheathing materials PVC, E7.13.12, PUR, E7.05.25, TPE, E7.10.25 and Ø 15 mm
2) Water, 60°C, 24h climate cabinet at 90% RH
3) Cables coated with oil. Oil type synthetic lubricant with Teflon.

---

**igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 info@igus.de | www.igus.eu**
**More secure, faster assembled - igus® chainfix clamps**

- Integration with KMA mounting brackets and C-profile host-option
- Easy to read the Part no. 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 C-profile
- Setscrews, tightened with Allen wrench, for easy installation
- Durability for dynamic applications through improved stacker elements: optimized stacker saddles, captive 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 (CFXL are always assembled in front of the e-chain* - Not be integrated into KMA mounting brackets with C-profile-host option!)

---

**Installation Height**

If the e-chain® glides on itself for long travels, the screw heads of the strain relief at the fixed end of the e-chain® must have a distance of at least 10 mm from the top of the e-chain®. This restriction has the consequence that the strain relief elements described may not be used at the fixed end of long e-chains®. For unsupported e-chains® strain relief elements can be safely used.

---

**Please note**

- In the ideal case the cables are attached to both ends of the e-chain®. They definitely need to be attached at the moving end of the e-chain®!
- When using chainfix clamps on C-profiles in the mounting bracket for the Series: E4.32/H4.32/R4.32, E4.38L/R4.38L a shortened bottom saddle must be used. For shortened bottom saddles supplement Part No. with index “K” = Example: Part No. CFX12.1K

---

**Available from stock. Delivery time® in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*
### Suitable C-profiles for CFX clamps Part No. CF.92.42.

| C-profiles CF.92.42.XX - Can be integrated into KMA with C-profile host-option! |

**CFX - Single clamp housing, incl. bottom saddles**

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**Steel Stainless steel**

*Material stainless steel: 1.4301/AISI 304

**CFX - Double clamp housing, incl. bottom and stacker saddles**

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<td>CFX16.2</td>
<td>14-16</td>
<td>20</td>
<td>78</td>
<td>CFX30.2</td>
<td>26-30</td>
<td>34</td>
<td>117</td>
</tr>
<tr>
<td>CFX18.2</td>
<td>16-18</td>
<td>22</td>
<td>82</td>
<td>CFX34.2</td>
<td>30-34</td>
<td>38</td>
<td>125</td>
</tr>
<tr>
<td>CFX20.2</td>
<td>18-20</td>
<td>24</td>
<td>86</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Steel Stainless steel**

*Material stainless steel: 1.4301/AISI 304

**CFX - Triple clamp housing, incl. bottom and stacker saddles**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>ø</th>
<th>B</th>
<th>H</th>
<th>Part No.</th>
<th>ø</th>
<th>B</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFX12.3</td>
<td>06-12</td>
<td>16</td>
<td>100</td>
<td>CFX18.3</td>
<td>16-18</td>
<td>22</td>
<td>108</td>
</tr>
<tr>
<td>CFX14.3</td>
<td>12-14</td>
<td>18</td>
<td>96</td>
<td>CFX20.3</td>
<td>18-20</td>
<td>24</td>
<td>114</td>
</tr>
<tr>
<td>CFX16.3</td>
<td>14-16</td>
<td>20</td>
<td>102</td>
<td>CFX22.3</td>
<td>20-22</td>
<td>26</td>
<td>120</td>
</tr>
</tbody>
</table>

*Material stainless steel: 1.4301/AISI 304

---

**Suitable C-profiles for CFXL clamps Part No. CF.92.52.**

| C-profiles CF.92.52.XX - C-profile assembled in front of KMA |

**CFX - Single clamp housing, incl. bottom saddles**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>ø</th>
<th>B</th>
<th>H</th>
<th>Part No.</th>
<th>ø</th>
<th>B</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFXL12.1</td>
<td>06-12</td>
<td>16</td>
<td>60</td>
<td>CFXL26.1</td>
<td>22-26</td>
<td>30</td>
<td>73</td>
</tr>
<tr>
<td>CFXL14.1</td>
<td>12-14</td>
<td>18</td>
<td>66</td>
<td>CFXL30.1</td>
<td>26-30</td>
<td>34</td>
<td>77</td>
</tr>
<tr>
<td>CFXL16.1</td>
<td>14-16</td>
<td>20</td>
<td>70</td>
<td>CFXL34.1</td>
<td>30-34</td>
<td>38</td>
<td>81</td>
</tr>
<tr>
<td>CFXL18.1</td>
<td>16-18</td>
<td>22</td>
<td>70</td>
<td>CFXL38.1</td>
<td>34-38</td>
<td>42</td>
<td>85</td>
</tr>
<tr>
<td>CFXL20.1</td>
<td>18-20</td>
<td>24</td>
<td>72</td>
<td>CFXL42.1</td>
<td>38-42</td>
<td>46</td>
<td>89</td>
</tr>
<tr>
<td>CFXL22.1</td>
<td>20-22</td>
<td>26</td>
<td>74</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Steel Stainless steel**

*Material stainless steel: 1.4301/AISI 304

**CFX - Double clamp housing, incl. bottom and stacker saddles**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>ø</th>
<th>B</th>
<th>H</th>
<th>Part No.</th>
<th>ø</th>
<th>B</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFXL12.2</td>
<td>06-12</td>
<td>16</td>
<td>78</td>
<td>CFXL22.2</td>
<td>20-22</td>
<td>26</td>
<td>86</td>
</tr>
<tr>
<td>CFXL14.2</td>
<td>12-14</td>
<td>18</td>
<td>80</td>
<td>CFXL26.2</td>
<td>22-26</td>
<td>30</td>
<td>109</td>
</tr>
<tr>
<td>CFXL16.2</td>
<td>14-16</td>
<td>20</td>
<td>84</td>
<td>CFXL30.2</td>
<td>26-30</td>
<td>34</td>
<td>117</td>
</tr>
<tr>
<td>CFXL18.2</td>
<td>16-18</td>
<td>22</td>
<td>86</td>
<td>CFXL34.2</td>
<td>30-34</td>
<td>38</td>
<td>125</td>
</tr>
<tr>
<td>CFXL20.2</td>
<td>18-20</td>
<td>24</td>
<td>88</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Steel Stainless steel**

*Material stainless steel: 1.4301/AISI 304

**CFX - Triple clamp housing, incl. bottom and stacker saddles**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>ø</th>
<th>B</th>
<th>H</th>
<th>Part No.</th>
<th>ø</th>
<th>B</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFXL12.3</td>
<td>06-12</td>
<td>16</td>
<td>106</td>
<td>CFXL18.3</td>
<td>16-18</td>
<td>22</td>
<td>114</td>
</tr>
<tr>
<td>CFXL14.3</td>
<td>12-14</td>
<td>18</td>
<td>106</td>
<td>CFXL20.3</td>
<td>18-20</td>
<td>24</td>
<td>120</td>
</tr>
<tr>
<td>CFXL16.3</td>
<td>14-16</td>
<td>20</td>
<td>108</td>
<td>CFXL22.3</td>
<td>20-22</td>
<td>26</td>
<td>126</td>
</tr>
</tbody>
</table>

*Material stainless steel: 1.4301/AISI 304

---

Suitable C-profiles for CFXL clamps Part No. CF.92.52.
chainfix strain relief | **Clamps** | Saddle elements

**Characteristics of igus’ chainfix clamps - stacker elements**
- Built-in ribs for security of cables in the strain relief
- Optimized stacker saddles, captivated by locking spring and with spring groove for 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 double and triple clamps as single part**

**CD.XX.C | Optimized stacker saddles for all double and triple clamps as single part**

<table>
<thead>
<tr>
<th>Part No. clamp</th>
<th>Part No. bottom saddle</th>
<th>CDXX stacker saddle</th>
<th>CD.XX.C stacker saddle</th>
<th>Cable Ø [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFX/CFX12.X CG12</td>
<td>CD12</td>
<td>CD.12.C</td>
<td>06 - 12</td>
<td></td>
</tr>
<tr>
<td>CFX/CFX18.X CG18</td>
<td>CD18</td>
<td>CD.18.C</td>
<td>18 - 18</td>
<td></td>
</tr>
<tr>
<td>CFX/CFX22.X CG22</td>
<td>CD22</td>
<td>CD.22.C</td>
<td>20 - 22</td>
<td></td>
</tr>
</tbody>
</table>

**Part No. clamp | Part No. bottom saddle | CDXX stacker saddle | CD.XX.C stacker saddle | Cable Ø [mm] |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CFX/CFX30.X CG30</td>
<td>CD30</td>
<td>CD.30.C</td>
<td>26 - 30</td>
<td></td>
</tr>
<tr>
<td>CFX/CFX34.X CG34</td>
<td>CD34</td>
<td>CD.34.C</td>
<td>30 - 34</td>
<td></td>
</tr>
<tr>
<td>CFX/CFX38.X CG38</td>
<td>CD38</td>
<td>CD.38.C</td>
<td>34 - 38</td>
<td></td>
</tr>
</tbody>
</table>

**Please note:** When using chainfix clamps on C-profile in the mounting bracket for Series E4.32/H4.32/R4.32, E4.38L/R4.38L a shortened bottom saddle has to be used. The Part No. for this is “K” = example: Part No. CFX12.1.K

---

chainfix strain relief | **Multi-Clamps**

**Characteristics of igus’ chainfix Multi-Clamps**
- Now more flexible mounting options of the proven chainfix strain relief elements with more components
- Universal strain relief - various assembly options
- Saves both time and space during installation
- Compact and modular
- For small outer diameters
- Cost-effective

**CFX12 | Multi-Clamps, universal strain relief**

**Part No. Series | Part No. stacker saddles - single parts | For cables Ø max. [mm]**
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CFX12.1.Z1</td>
<td>X (2-piece)</td>
<td>6</td>
</tr>
<tr>
<td>CFX12.2.Z1</td>
<td>X (2-piece) X (1-piece)</td>
<td>6</td>
</tr>
<tr>
<td>CFX12.2.Z2</td>
<td>X (1-piece)</td>
<td>6 + 12</td>
</tr>
<tr>
<td>CFX12.2.Z3</td>
<td>X (1-piece) X (2-piece)</td>
<td>6 + 8</td>
</tr>
<tr>
<td>CFX12.3.Z3</td>
<td>X (1-piece) X (1-piece) X (1-piece)</td>
<td>6 + 12</td>
</tr>
<tr>
<td>CFX12.3.Z4</td>
<td>X (1-piece) X (1-piece) X (2-piece)</td>
<td>6 + 10</td>
</tr>
</tbody>
</table>

Standard material: galvanized steel. For the stainless steel version (material 1.4301/AISI 304) supplement Part No. with Index “E” = example: Part No. CFX.12.3.Z1.E
chainfix strain relief | C-profiles

**Standard C-profiles Part No. CF.92.42.**
- For all igus® CFX clamps
- Standard material: galvanized steel
- Part No. CF.92.42. [XX = length in mm]
- Also available as stainless steel version (Material: 1.4301/AISI 304)
- Length tolerances of ±1 mm possible!

**Standard C-profile Part No. CF.92.42.** For conventional applications
Can be integrated into KMA with C-profile host-option!

**Optional | For Heavy-Duty applications**

**C-profiles Part No. CF.92.52.**
- For all igus® CFXL clamps
- With increased holding power - even for harsh applications
- Standard material: galvanized steel
- Part No. CF.92.52. [XX = length in mm]
- Also available as stainless steel version (Material: 1.4301/AISI 304)
- Length tolerances of ±5 mm possible!

**C-profile Part No. CF.92.52.** With increased holding power for harsh conditions
Assembly in front of KMA - NO integration into KMA!

Available from stock. Delivery time in 24h or today!

**chainfix strain relief | Testing methods**

igus® tensile strength test with CFX clamps

Igus® strain relief devices are tested under practical conditions, taking various parameters into account.
Whether under the influence of fluids like water or oil, or at different ambient temperatures. The interaction of chainfix systems with different sheath materials of cables and hoses of course plays a big role in the in-house tests. Detailed information about these tests: chainfix strain relief parameter overview ▶ page 1154

KMA compatible!
Characteristics of igus® chainfix tiewrap plate Series 2000
Option 1A: Tiewrap plate as single part
- Available as individual component
- Screwed on KMA® with C-profile (polymer metal mounting bracket)
- Can be stacked onto the mounting bracket
- Single part for the manufacturing of switchgear cabinets or for the assembly of machines
- Accessory for igus® e-chainsystems®

Characteristics of igus® chainfix tiewrap plate Series 3000
Option 1B: Tiewrap plate as single part
- Available as individual component
- Screwed on KMA® with C-profile (polymer metal mounting bracket)
- Can be stacked onto the mounting bracket
- Single part for the manufacturing of switchgear cabinets or for the assembly of machines
- Accessory for igus® e-chainsystems®

Series 2000 | Tiewrap plate as single part
---
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>2020.ZB</td>
<td>3</td>
<td>30</td>
<td>15</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>2030.ZB</td>
<td>4</td>
<td>40</td>
<td>20</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>2040.ZB</td>
<td>5</td>
<td>50</td>
<td>30</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>2050.ZB</td>
<td>6</td>
<td>60</td>
<td>40</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>2070.ZB</td>
<td>8</td>
<td>80</td>
<td>60</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>2090.ZB (= 2030.ZB + 2040.ZB)</td>
<td>9</td>
<td>90</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>2100.ZB</td>
<td>10</td>
<td>100</td>
<td>80</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>2125.ZB (= 2050.ZB + 2070.ZB)</td>
<td>12</td>
<td>120</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
</tbody>
</table>

Series 3000 | Tiewrap plate as single part
---
<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3050.ZB</td>
<td>5</td>
<td>50</td>
<td>30</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>3075.ZB</td>
<td>7</td>
<td>75</td>
<td>55</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>3100.ZB</td>
<td>10</td>
<td>100</td>
<td>80</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>3115.ZB</td>
<td>11</td>
<td>15</td>
<td>95</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>3125.ZB</td>
<td>12</td>
<td>125</td>
<td>105</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>3150.ZB</td>
<td>15</td>
<td>150</td>
<td>130</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>3175.ZB</td>
<td>17</td>
<td>175</td>
<td>155</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>3200.ZB</td>
<td>20</td>
<td>200</td>
<td>180</td>
<td>90</td>
<td>+</td>
</tr>
<tr>
<td>3225.ZB</td>
<td>22</td>
<td>225</td>
<td>205</td>
<td>102.5</td>
<td>+</td>
</tr>
<tr>
<td>3250.ZB</td>
<td>25</td>
<td>250</td>
<td>230</td>
<td>115</td>
<td>+</td>
</tr>
</tbody>
</table>

Cable tiewraps as single part
<table>
<thead>
<tr>
<th>Cable tiewraps (100-piece bag)</th>
<th>Width x length [mm]</th>
<th>Maximum Ø [mm]</th>
<th>Pull force resistance [N]</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFB.001</td>
<td>4.8 x 150</td>
<td>36</td>
<td>222</td>
</tr>
</tbody>
</table>

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)
chainfix strain relief | Tiewrap plates | Optional

**Option 2 | Tiewrap plate with clip-on connection for C-profile**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Width [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>3050.ZC</td>
<td>50</td>
<td>5</td>
</tr>
<tr>
<td>3075.ZC</td>
<td>75</td>
<td>7</td>
</tr>
</tbody>
</table>

For all mounting brackets with C-profile connectivity!

Characteristics of igus’ chainfix tiewrap plates
Option 2: With clip-on connection for the C-profile
- Can be plugged into the KMA C-profile
- Easy to assemble without any screws
- Easy to remove with screwdriver nevertheless safe stop
- Single part for the manufacturing of switchgear cabinets or for the assembly of machines
- Accessory for igus’ e-chainsystems

**Option 3 | Tiewrap plate for E2 e-tubes of Series R**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Width [mm]</th>
<th>Number of teeth</th>
<th>For Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>3050.Z*</td>
<td>50</td>
<td>5</td>
<td>R68</td>
</tr>
<tr>
<td>3075.Z</td>
<td>75</td>
<td>7</td>
<td>R68</td>
</tr>
<tr>
<td>5850.Z</td>
<td>46</td>
<td>4</td>
<td>R58</td>
</tr>
</tbody>
</table>

*only possible from e-chain width 100 mm and larger

Characteristics of igus’ chainfix tiewrap plates
Option 3: Integrated strain relief for E2 e-tubes - Series R
- Strain relief disappears completely in the e-tube
- Easy to assemble without any screws
- Single part for the manufacturing of switchgear cabinets or for the assembly of machines
- Accessory for igus’ e-chainsystems

**Option 4 | Tiewrap plate for fixed crossbars**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Width Number of teeth</th>
<th>For Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>2050.Z</td>
<td>60 6</td>
<td>E/2200, 2400/2500, 2600/2700</td>
</tr>
<tr>
<td>3050.Z</td>
<td>50 5</td>
<td>3400/3500</td>
</tr>
<tr>
<td>3075.Z</td>
<td>74 7</td>
<td>3400/3500</td>
</tr>
</tbody>
</table>

Characteristics of igus’ chainfix tiewrap plates
Option 4: for fixed crossbars
- Can be fitted to fixed and opening crossbars
- In case of many harnessed cables
- Strain relief “over two floors”
- If the KMA is too small for the C-profile
- Easy to assemble without any screws
- Accessory for igus’ e-chainsystems

**Option 5 | Tiewrap plate for opening crossbars**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Width Number of teeth</th>
<th>For Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>2050.Z</td>
<td>60 6</td>
<td>E4.28, 2650, E6.52, E61.52</td>
</tr>
<tr>
<td>3035.ZS</td>
<td>35 3</td>
<td>3400/3500</td>
</tr>
<tr>
<td>3050.ZS</td>
<td>50 5</td>
<td>3400/3500</td>
</tr>
<tr>
<td>3075.ZS</td>
<td>75 7</td>
<td>3400/3500</td>
</tr>
</tbody>
</table>

Characteristics of igus’ chainfix tiewrap plates
Option 5: For opening crossbars
- Can be fitted to fixed and opening crossbars
- In case of many harnessed cables
- Strain relief “over two floors”
- If the KMA is too small for the C-profile
- Easy to assemble without any screws
- Accessory for igus’ e-chainsystems

For the following igus’ Series see table

For the following igus’ Series see table

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)
### Characteristics of igus’ chainfix Clips -
**Option 1: Modular clip-on strain relief for the C-profile**
- Available for all igus’ e-chains with C-profiles
- Also suitable for assembly in the KMA mounting brackets
- Polymer, for cable diameters ranging from 4 mm 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

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>04 - 08 mm</td>
<td>CFC-08-M</td>
<td>14,5</td>
<td>13</td>
<td>5,5</td>
<td>7,5</td>
<td>30</td>
</tr>
<tr>
<td>08 - 12 mm</td>
<td>CFC-12-M</td>
<td>23,7</td>
<td>24</td>
<td>10</td>
<td>14</td>
<td>36</td>
</tr>
<tr>
<td>12 - 16 mm</td>
<td>CFC-16-M</td>
<td>32,4</td>
<td>32,5</td>
<td>13,6</td>
<td>18,9</td>
<td>42</td>
</tr>
<tr>
<td>16 - 20 mm</td>
<td>CFC-20-M</td>
<td>43,2</td>
<td>39,1</td>
<td>17,6</td>
<td>11,5</td>
<td>45</td>
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<tr>
<td>20 - 24 mm</td>
<td>CFC-24-M</td>
<td>54</td>
<td>49</td>
<td>22</td>
<td>27</td>
<td>50</td>
</tr>
</tbody>
</table>

**Option 2: Clip-on strain relief for opening crossbars**
- Available for all e-chains’ with opening crossbars Part No. 450.XX
- Polymer, for cable diameters ranging from 8 mm 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

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<tbody>
<tr>
<td>08 - 12 mm</td>
<td>CFC-12-B</td>
<td>23,8</td>
<td>21</td>
<td>13</td>
<td>8</td>
<td>38</td>
</tr>
</tbody>
</table>

### Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)
Characteristics of igus® strain relief separators - Separator with integrated strain relief teeth
- To be used assembled either at the first or last e-chain® link
- For restricted space conditions
- Accessory for igus® e-chainsystems®
- Easy to assemble without any screws
- The number n is depending on the selection of cable (diameter, type) and available space

For series

<table>
<thead>
<tr>
<th></th>
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<td>1400/1500</td>
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<td>4</td>
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<td>10</td>
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<td>6,5</td>
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<tr>
<td>E2/000</td>
<td>28.0</td>
<td>2</td>
<td>10</td>
<td>4</td>
<td>6</td>
<td></td>
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<tr>
<td>E2/20</td>
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<td>4</td>
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<tr>
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<td>4</td>
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<tr>
<td>R167/R168</td>
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<td>4</td>
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Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)

For the following igus® Series

- R157/R158
- R167/R168
- R48
- E4.1
- E4.21
- E4.28/R4.28
- E6
- E6.29
- E6.35
- E6.40

For Part No. strain relief separator of teeth

<table>
<thead>
<tr>
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<th></th>
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</thead>
<tbody>
<tr>
<td>21.0</td>
<td>10</td>
<td>4</td>
<td>1</td>
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</tbody>
</table>

chainfix strain relief | Clip-on solutions

Strain relief separator | with integrated teeth

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®

igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu 1171

chainfix strain relief | Clip-on solutions

Strain relief separators | Product range overview

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)
**Characteristics of igus® chainfix Nuggets**

**Option 1: C-profile and Option 2: top hat rail**

- **Option 1:** Universal cable fixation in C-profile
- **Option 2:** Clip onto a top hat rail
- Simple strain relief - harnessed cable tielwaps
- Minimum space required
- Easy to assemble without any screws and tools
- Adjustable to every e-chain® filling

### Option 1 | chainfix Nuggets for the C-profile

<table>
<thead>
<tr>
<th>For C-profiles</th>
<th>Part No.</th>
<th>ø Cable max. [mm]</th>
<th>Dim. A [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>92.42.../92.42...E</td>
<td>CFN.20</td>
<td>20</td>
<td>10.8</td>
</tr>
<tr>
<td>92.52.../92.52...E</td>
<td>CFN.30.52</td>
<td>30</td>
<td>16.4</td>
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</table>

### Option 2 | chainfix Nuggets for the top hat rail

<table>
<thead>
<tr>
<th>For top hat rail</th>
<th>Part No.</th>
<th>ø Cable max. [mm]</th>
<th>Dim. A [mm]</th>
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</thead>
<tbody>
<tr>
<td>CFN.20.N35</td>
<td></td>
<td>20</td>
<td>20.0</td>
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</tbody>
</table>

**Characteristics of special strain relief for hoses - igus® blocks**

- Modular, space-saving system
- No hose damage
- Combination of hoses and cables possible
- Hose diameters: 4.3 - 14 mm
- Easy to assemble without any screws of tools
- Adjustable to every e-chain® filling

### Block | Strain relief for hoses

<table>
<thead>
<tr>
<th>Part No. Block modules</th>
<th>Hose ø [mm]</th>
<th>Number of hoses</th>
<th>Width [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFS 4.3</td>
<td>4.3</td>
<td>4 - 12</td>
<td>27.5</td>
</tr>
<tr>
<td>CFS 6</td>
<td>6</td>
<td>3 - 6</td>
<td>27.5</td>
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<tr>
<td>CFS 9</td>
<td>9</td>
<td>2</td>
<td>27.5</td>
</tr>
<tr>
<td>CFS 55.9</td>
<td>9</td>
<td>5</td>
<td>55.0</td>
</tr>
<tr>
<td>CFS 10</td>
<td>10</td>
<td>2</td>
<td>27.5</td>
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<tr>
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<td>12</td>
<td>2</td>
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<tr>
<td>CFS 14</td>
<td>14</td>
<td>1</td>
<td>27.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part No. Base plate</th>
<th>Part No. Cover plate</th>
<th>Width [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFS U75</td>
<td>CFS P75</td>
<td>75</td>
</tr>
<tr>
<td>CFS U102.5</td>
<td>CFS P102.5</td>
<td>102.5</td>
</tr>
<tr>
<td>CFS U130</td>
<td>CFS P130</td>
<td>130</td>
</tr>
<tr>
<td>CFS U185</td>
<td>CFS P185</td>
<td>185</td>
</tr>
<tr>
<td>CFS U212</td>
<td>CFS P212</td>
<td>212.5</td>
</tr>
<tr>
<td>CFS U240</td>
<td>CFS P240</td>
<td>240</td>
</tr>
<tr>
<td>CFS U295</td>
<td>CFS PD295</td>
<td>295</td>
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</tbody>
</table>

The modules accommodate hoses from 4.3 to 14 mm, 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 27.5 mm, 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 9 mm hoses with twice the width. The base plate and cover plate are available in widths ranging from 75 to 240 mm. The height of the spacers and modules is 16 mm. Several layers can be installed directly above one another.

**Available from stock. Delivery time® in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*

**i Please contact igus® for individual designing**

**Delivery time upon request, in case of customer-specific fabrication!**
### Chainfix Strain Relief

**Strain relief connector system**

**Characteristics of the modular igus® CFB:**

- 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
- Cost-effective

#### CFB 907.881 | Polymer Strain Relief Connector System

<table>
<thead>
<tr>
<th>Parts list</th>
<th>Part No.</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Outer fixing block</td>
<td>CFB20.1</td>
<td>N x 2</td>
</tr>
<tr>
<td>2. Clamping bar</td>
<td>907.881.1.XXX</td>
<td>2</td>
</tr>
<tr>
<td>3. Threaded bolt with plate</td>
<td>907.825.2.1LL</td>
<td>2</td>
</tr>
<tr>
<td>4. Hexagon nut M8</td>
<td>MAT 0040012</td>
<td>2</td>
</tr>
<tr>
<td>5. C-profile (part of KMA)</td>
<td>92.42.XXX</td>
<td>1</td>
</tr>
<tr>
<td>6. Strain relief block</td>
<td>customer-specific</td>
<td>1</td>
</tr>
</tbody>
</table>

**Order key:**

**907.881.XXX.N**

N = Number of layers fixing blocks

XXX = Bi (mounting bracket) - 3 mm

Part No. with version 881

**CFB 907.825 | Polymer Strain Relief Connector System**

<table>
<thead>
<tr>
<th>Parts list</th>
<th>Part No.</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Outer fixing block</td>
<td>CFB20.1</td>
<td>N x 2</td>
</tr>
<tr>
<td>2. Clamping bar</td>
<td>907.825.1.XXX</td>
<td>2</td>
</tr>
<tr>
<td>3. Threaded bolt with plate</td>
<td>907.825.2.1LL</td>
<td>2</td>
</tr>
<tr>
<td>4. Hexagon nut M8</td>
<td>MAT 0040012</td>
<td>2</td>
</tr>
<tr>
<td>5. C-profile (part of KMA)</td>
<td>92.42.XXX</td>
<td>1</td>
</tr>
<tr>
<td>6. Strain relief block</td>
<td>customer-specific</td>
<td>1</td>
</tr>
<tr>
<td>7. Inner fixing block</td>
<td>CFB20.2</td>
<td>N</td>
</tr>
</tbody>
</table>

**Order key:**

**907.825.XXX.N**

N = Number of layers fixing blocks

XXX = Bi (mounting bracket) - 3 mm

Part No. with version 825

---

**Please contact igus® for individual designing**

**Parts list**

- Outer fixing block
- Clamping bar
- Threaded bolt with plate
- Hexagon nut M8
- C-profile (part of KMA)
- Strain relief block
- Inner fixing block

**Order key:**

**907.881.XXX.N**

**907.825.XXX.N**

**Delivery time upon request, in case of customer-specific fabrication!**

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**Modular plug-in elements**

**3D-CAD files, configurators, PDF**

www.igus.eu/eu/chainfix

---

**igus® GmbH Germany**

Phone +49 2203 9649-800  Fax -222  info@igus.de  www.igus.eu
guide trough systems
aluminum, steel and other troughs
**Guide Troughs | Aluminum**

**Aluminum SuperTrough - The igus® standard guide trough**
- Huge program available for almost all igus® e-chains®
- 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 c-profile
- Heavy-Duty bracket (add-on item) for high load applications
- You can configure the Heavy-Duty version at our online-catalog

The complete product range with order options ▶ from page 1184
or online ▶ www.igus.eu/eu/salun

**Aluminum SuperTrough - New, optimized fixed end modules made of plastic**
With this module for the fixed end, fast and easy mounting onto the Aluminum SuperTrough is now possible without any drilling.
Fast mounting of the e-chain® by clamping onto the alu trough
Quick relocation of the stationary end
No drilling necessary
Product range with order options ▶ from page 1208

**Guide Troughs | Steel**

**Steel guide trough - Very 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 c-profiles
- 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 (add-on item), for fast and easy mounting - without any drilling available
- Side parts will be mounted in defined distances and fixed onto the ground
- All sizes use a common C-profile on which the guide parts are assembled.
The assembly brackets used vary in height only

The complete product range with order options ▶ from page 1210
or online ▶ www.igus.eu/eu/steelguide
Guide Troughs | Long travels | Introduction

igus® Guide Troughs

Guide troughs are used for long travels. They allow to continue smooth, low-friction operation in these long-travel situations.

If the fixed end is installed in the center of the travel ("center-mounted"), the e-chains’ glide on themselves 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, steel or stainless steel. The trough type to be used depends on the application conditions and the requirements of the customer. We recommend the igus® standard Aluminum SuperTrough.

Glide bars

Glide bars made of igulen are optimally matched to the e-chain material and achieve the lowest values for friction, noise and wear. Glide bars must be used, if the fixed point is in the center of the travel. It means: Use half of the glide trough with glide bars and the other half of the guide trough without glide bars (see picture in the lower right corner).

Delivery condition

The troughs are delivered in 2 meter sections. Special lengths up to 6 m are possible. The left and right side parts are installed on location with the appropriate distance — depending on the width of the e-chain. The necessary width is shown by the dimension Ba on the guide trough pages. The e-chain sides can be linked with the base by screwing, welding or a special igus® installation set. The fixation module for the igus® Aluminum SuperTrough is a quick fix for mounting the stationary end of an e-chain with a KMA-mounting bracket. With this module a fast and easy mounting onto the Aluminum SuperTrough is possible without any drilling.

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 diagrams below show 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: \( L_k = \frac{S}{2} + K_2 \).

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

Following parameters are required for the design of a trough system:

- e-chain type (Series, width Bi, radius Ri)
- Travel and travel speed
- Fill weight
- Acceleration and/or logging
- 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: \( H_Ri = 2 \times ha \). The sides must provide a chamfered opening. The trough inner width is the same as the e-chain’s outer width, plus 4 mm (Ba = Ba + 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 levelled 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.

Environmental conditions

For example, shock, vibration, acceleration and/or lagging, Lateral accelerations, Travel and travel speed, Fill weight, Acceleration and/or logging, Lateral accelerations, Environmental conditions.

Guide Troughs | Long travels | Introduction

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Various guide trough systems are available.

igus® troughs delivered from stock.

1180 igus® Guide Troughs online | www.igus.eu/eu/guide
Guide Troughs | Long travels | C-profiles

C-profiles 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. 92.52.XX (XX - length in mm)
- C-profile available in galvanized steel.
- Optional: Stainless steel V2A, material 1.4301 (AISI 304).
- For AISI 304 please add index "E" to the Part No. 92.52.E
- Length tolerances of ±5 mm possible!

Guide Troughs | Applications

igus® has experience with all kind of installations and travels. Very long travels up to 615 m or "green systems", they helps to save energy costs, are made with igus® e-chains®, chainflex® cables and guide troughs. Thanks to compatible components, they have best lifetimes also at difficult weather conditions, environmental pollutions or impacts of dust and dirt.
Aluminum Super Trough for general use
# Aluminum SuperTrough

## Introduction

- **Huge program:**
  - Aluminum profile (Standard: 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, polymer, easy assembly
  - No tools needed
- **Wear-reducing:**
  - Polymer 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
  - C-profile, hold for bottom clamps
- **High loads:** Heavy-Duty bracket (add-on item)

## Contents Selection Table

<table>
<thead>
<tr>
<th>Series</th>
<th>Outer trough height $h_\text{t}[\text{mm}]$</th>
<th>Installation set*</th>
<th>Side part material</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>970.30.SL</td>
<td>970.31.SL</td>
<td>77</td>
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<td>975.31.SL</td>
<td>236</td>
<td>960.50</td>
<td>aluminum</td>
</tr>
</tbody>
</table>

*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.

## The igus® standard - Aluminum SuperTrough

- From a simple and cost-effective basic version to a version for ambitious plant engineering
- 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


![Aluminum SuperTrough](image-url)
Aluminum SuperTrough | Basic | Parts

Components, trough
1. Trough side parts, aluminum, 2 m
2. Glide bar, plastic, 2 m (without glide strips on request)
3. Optional: Silencer profile, rubber

Components, installation set
1. Bottom clamp, aluminum
2. C-profile (slotted), galvanized steel
3. Screw
4. Sliding nut
5. Interface connector, plastic

Aluminum SuperTrough | Basic | Configuration

Aluminum SuperTrough | Configuration 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: 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 c-profile 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.eu/eu/installation-guide-pdf

Order example | Based on Part No. 973.30.SL | 973.31.SL

Order example: Length of travel 30 m - Center mounted for Series 3500.100.200.0 with BRi = 124
Guide trough set (set of 2 trough side parts, incl. glide strips) without glide bar Part No. 973.30.SL
Guide trough set (set of 2 trough side parts, incl. glide strips) with glide bar Part No. 973.31.SL

Order text: 16 m guide trough without glide bar (8 x 2 m sections) Part No. 973.30.SL
Installation set “Basic” complete (guide trough-sets + 1) Part No. 960.40.175
Module for the fixed end 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)

igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu 1189

More information and assembly instructions www.igus.eu/eu/salun
Aluminum SuperTrough | **970.30.SL** | **970.31.SL**

**Trough height: 77 mm | Product range**

---

### Aluminum SuperTrough | Complete sets

**Trough side parts sets - consisting of part 1 / 2 / 3**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>970.30.SL</td>
<td>4.20 kg</td>
</tr>
<tr>
<td>970.31.SL</td>
<td>4.00 kg</td>
</tr>
</tbody>
</table>

**Installation sets - consisting of part 1 / 2 / 3 / 4 / 5**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>960.30</td>
<td>0.08 kg</td>
</tr>
<tr>
<td>960.30.XXX</td>
<td>Upon request</td>
</tr>
</tbody>
</table>

* Please add the C-profile length as shown on the tables on the right page. Example: 960.30.125

### Aluminum SuperTrough | Components as single parts

**Single parts, trough**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>70.11</td>
<td>2.04 kg</td>
</tr>
<tr>
<td>81.79</td>
<td>0.42 kg</td>
</tr>
<tr>
<td>75.01</td>
<td>0.06 kg</td>
</tr>
</tbody>
</table>

**Single parts, installation set**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>75.40</td>
<td>0.03 kg</td>
</tr>
<tr>
<td>92.52.XXX.E</td>
<td>0.80 kg/m</td>
</tr>
<tr>
<td>92.52.XXX.E</td>
<td>0.80 kg/m</td>
</tr>
<tr>
<td>MAT 0404059</td>
<td></td>
</tr>
<tr>
<td>MAT 0404057</td>
<td></td>
</tr>
<tr>
<td>75.60</td>
<td></td>
</tr>
</tbody>
</table>

**Additional option for simple fastening of the e-chain without drilling**

1 Set Fixed end clamp [Detailed information page 1208] 970.80

* Please add the C-profile length as shown on the tables on the right page. Example: 92.52.125.E

---

**C-profile also available in stainless steel V2A, material 1.4301 (AISI 304). Please add index "E" to the Part No.**

---

**Note:** The inner width of the guide trough and the C-profile length of the assembly kit can differ according to the bracket you choose. Please call us!

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

---

**For the following igus® Series**

- E2 mini
- 10
- B15
- zipper
- 15/R15

---

**More information and assembly instructions**

- www.igus.eu/eu/salun

---

**Contact:**

- igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu 1191
For the following igus® Series E2/000

- 1500
- E4.1
- E4.21

Aluminum SuperTrough | Complete sets

- Trough side parts - consisting of part A / B / C
  - Set of 2 trough side parts, incl. glide bars, 2 m section: 970.30.SL 4.20 kg
  - Set of 2 trough side parts, incl. glide bars, 2 m section: 970.32.SL 5.00 kg

Installation sets - consisting of part D / E / F / G / H

- 1 Installation set without C-profile: 960.30 0.06 kg
- 1 Installation set with C-profile (C-profile length according to dimension B_Ri) upon request: 960.30.XXX* upon request

* Please add the C-profile length as shown on the tables on the right page. Example: 960.30.125

Aluminum SuperTrough | Components as single parts

Single parts, trough

- 1 Trough side part, individual, 2 m section: 70.11 2.04 kg
- 1 Glide bar, plastic, individual, 2 m section: 81.79 0.42 kg
- 1 Glide strip, plastic, individual, 2 m section: 75.01 0.06 kg

Single parts, installation set

- 1 Bottom clamp, aluminum individual: 75.40 0.03 kg
- 1 C-profile, individual C-profile length according to dimension B_Ri: 92.52.XXX* 0.80 kg/m
- 1 Screw M6 x 16, individual: MAT 0040209
- 1 Slider M6, individual: MAT 0040057
- 1 Interface connector, individual: 75.60

Additional option for simple fastening of the e-chain without drilling

- 1 Set Fixed end clamp (for E4.21 Detailed information page 1208): 970.80

* Please add the C-profile length as shown on the tables on the right page. Example: 92.52.125.E

C-profile also available in stainless steel V2A, material 1.4301 (AISI 304). Please add index “E” to the Part No.

Note: The inner width of the guide through and the C-profile length of the assembly kit can differ according to the bracket you choose. Please call us!

Basic Version

- C-profile lengths (according to dim. B_Ri)

<table>
<thead>
<tr>
<th>1500 Width index</th>
<th>B_Ri</th>
<th>Part No.</th>
<th>Part No.</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>B_Ri</td>
<td>attached</td>
<td>attached</td>
<td>attached</td>
<td></td>
</tr>
<tr>
<td>0.05</td>
<td>33</td>
<td>upon request</td>
<td>960.30.125</td>
<td>0.03</td>
</tr>
<tr>
<td>0.20</td>
<td>38</td>
<td>upon request</td>
<td>960.30.125</td>
<td>0.04</td>
</tr>
<tr>
<td>0.25</td>
<td>43</td>
<td>upon request</td>
<td>960.30.125</td>
<td>0.05</td>
</tr>
<tr>
<td>0.30</td>
<td>56</td>
<td>upon request</td>
<td>960.30.125</td>
<td>0.06</td>
</tr>
<tr>
<td>0.50</td>
<td>68</td>
<td>960.30.125</td>
<td>960.30.175</td>
<td>0.07</td>
</tr>
<tr>
<td>0.68</td>
<td>86</td>
<td>960.30.125</td>
<td>960.30.175</td>
<td>0.08</td>
</tr>
<tr>
<td>0.80</td>
<td>98</td>
<td>960.30.125</td>
<td>960.30.200</td>
<td>0.09</td>
</tr>
<tr>
<td>1.00</td>
<td>118</td>
<td>960.30.175</td>
<td>960.30.225</td>
<td>1.10</td>
</tr>
<tr>
<td>1.25</td>
<td>143</td>
<td>960.30.200</td>
<td>960.30.250</td>
<td>1.30</td>
</tr>
<tr>
<td>1.50</td>
<td>183</td>
<td>960.30.225</td>
<td>960.30.250</td>
<td>1.60</td>
</tr>
</tbody>
</table>

Note: Please add the C-profile length as shown on the tables on the right page. Example: 960.30.125.

Seawater resistant Aluminum SuperTrough in a RTG-crane. Long travel with igus® E4 system.

igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu
**Aluminum SuperTrough | 971.30.SL | 971.31.SL**

Trough height: 87 mm | Product range

### Aluminum SuperTrough | Complete sets

**Trough side parts sets - consisting of part (1) / (2) / (3) / (4)**

- Set of 2 trough side parts, incl. glide strips, **without** glide bars, 2 m section
  - Part No.: 971.30.SLA
  - Weight: 5.00 kg
- Set of 2 trough side parts, incl. glide strips, **with** glide bars, 2 m section
  - Part No.: 971.31.SLA
  - Weight: 6.40 kg

**For an additional noise dampening with silencer profile, please add index “A” to the Part No. Example: 971.30.SLA**

**Installation sets - consisting of part (1) / (2) / (3) / (4)**

- 1 Installation set without C-profile
  - Part No.: 960.30
  - Weight: 0.06 kg
- 1 Installation set with C-profile **C-profile length according to dimension B_R**
  - Part No.: 960.30.XXX
  - Weight: upon request

* Please add the C-profile length as shown on the tables on the right page. Example: 960.30.150

---

**Aluminum SuperTrough | Components as single parts**

**Single parts, trough**

- 1 Trough side part, individual, 2 m section
  - Part No.: 71.11
  - Weight: 2.44 kg
- 1 Glide bar, plastic, individual, 2 m section
  - Part No.: 82.79
  - Weight: 0.6 kg
- 1 Glide strip, plastic, individual, 2 m section
  - Part No.: 75.01
  - Weight: 0.06 kg
- 1 Silencer profile, rubber, individual, 2 m section (optional for an additional noise-dampening)
  - Part No.: 75.67.H.2000
  - Weight: 0.18 kg

**Single parts, installation set**

- 1 Bottom clamp, aluminum individual
  - Part No.: 75.40
  - Weight: 0.03 kg
- 1 C-profile, individual C-profile length according to dimension B_R
  - Part No.: 92.52.10000.E
  - Weight: 0.90 kg/m
- 1 Screw M6 x 16, individual
  - Part No.: MAT 0040209
- 1 Sliding nut M6, individual
  - Part No.: MAT 0040057
- 1 Interface connector, individual
  - Part No.: 75.60

**Heavy-Duty version for high load applications**

This Aluminum SuperTrough is available for plant manufacturing as add-on item with special Heavy-Duty brackets for safe connection: **Installation set Part No. 971.50**. You can configure the Heavy-Duty version at our online-catalog with the respective e-chain you’ve chosen. More information about the Aluminum SuperTrough - www.igus.eu/eu/salun

**C-profile also available in stainless steel V2A, material 1.4301 (AISI 304). Please add index “E” to the Part No.**
Aluminum SuperTrough | 972.02.30.SL | 972.02.31.SL

Trough height: 117 mm | Product range

For the following igus® Series

<table>
<thead>
<tr>
<th>E4.28/R4.28</th>
<th>E6.35</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>125</td>
</tr>
<tr>
<td></td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>175</td>
</tr>
<tr>
<td></td>
<td>200</td>
</tr>
</tbody>
</table>

Note: The inner width of the guide trough and the C-profile length of the installation kit can differ according to the bracket you choose. Please call us!

Aluminum SuperTrough | Complete sets

Trough side parts sets - consisting of part Ø / Ø / Ø / Ø

- Set of 2 trough side parts, incl. glide strips, without glide bars, 2 m section 972.02.30.SL** = 6.00 kg
- Set of 2 trough side parts, incl. glide strips, with glide bars, 2 m section 972.02.31.SL** = 7.40 kg

**For an additional noise dampening with silencer profile, please add index "A" to the Part No. Example: 972.02.30.SL A

Installation sets - consisting of part Ø / Ø / Ø / Ø

- 1 Installation set without C-profile 960.30 = 0.06 kg
- 1 Installation set with C-profile C-profile length according to dimension BRi 960.30.XXX** upon request

* Please add the C-profile length as shown on the tables on the right page. Example: 960.30.175

Aluminum SuperTrough | Components as single parts

Single parts, trough

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>72.02.11</td>
<td>2.94 kg</td>
</tr>
<tr>
<td>82.79</td>
<td>1.30 kg</td>
</tr>
<tr>
<td>75.01</td>
<td>0.06 kg</td>
</tr>
</tbody>
</table>

Single parts, installation set

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>75.40</td>
<td>0.02 kg</td>
</tr>
</tbody>
</table>

C-profile – individual C-profile length according to dimension BRi 92.52.XXXLE* = 0.90 kg/m

Heavy-Duty version for high load applications

This Aluminum SuperTrough is also available for industrial manufacturing as an add-on item with special Heavy-Duty brackets for safe connection: Installation set Part No. 972.50. You can configure the Heavy-Duty version at our online-catalog with the respective e-chain® you’ve chosen. More information about the Aluminum SuperTrough+® at www.igus.eu/salun

972.80.4

igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu 1197

1196 More information and assembly instructions www.igus.eu/eu/salun
Aluminum SuperTrough | 972.30.SL | 972.31.SL

Trough height: 117 mm | Product range

For the following igus® Series

E4.1
- E4.32/H4.32/R4.32
- E4.38L/R4.38L

E4.1 light
- E4.38L/R4.38L

E6
- E6.40/R6.40

Bottom clamp attached optionally inwards or outwards

C-profile length according to dimension $B_{Ra}$ see ➤ right page

Aluminum SuperTrough | Complete sets

Trough side parts sets - consisting of part $O / O / O / O$

Part No. | Weight
--- | ---
972.30.SL | 6.00 kg
972.31.SL | 7.40 kg

**For an additional noise dampening with silencer profile, please add index "A" to the Part No. Example: 972.30.SLA**

Installation sets - consisting of part $O / O / O / O / O$

1 Installation set without C-profile

Part No. | Weight
--- | ---
960.30 | 0.06 kg

1 Installation set with C-profile C-profile length according to dimension $B_{Bi}$

Part No. | Weight
--- | ---
960.30.XXX | upon request

* Please add the C-profile length as shown on the tables on the right page. Example: 960.30.150

Aluminum SuperTrough | Components as single parts

Single parts, trough

Part No. | Weight
--- | ---
1 Trough side part, individual, 2 m section | 72.11 | 2.94 kg
1 Glide bar, plastic, individual, 2 m section | 82.79 | 0.66 kg
1 Glide strip, plastic, individual, 2 m section | 75.01 | 0.06 kg

Single parts, installation set

1 Bottom clamp, aluminum individual | 75.40 | 0.03 kg
1 C-profile, individual C-profile length according to dimension $B_{Bi}$ | 95.22.XXX.E | 0.90 kg/m
1 Screw M6 x 16, individual | MAT 0400209 |
1 Sliding nut M6, individual | MAT 040057 |
1 Interface connector, individual | 75.60 |

Additional option for simple fastening of the e-chain without drilling

1 Set Fixed end module (Detailed information ➤ page 1208) | 972.80.4 |

** Please add the C-profile length as shown on the tables on the right page. Example: 92.52.125.E

C-profile also available in stainless steel V2A, material 1.4301 (AISI 304). Please add index "E" to the Part No.

Heavy-Duty version for high load applications

This Aluminum SuperTrough is also available for plant manufacturing as add-on item with special Heavy-Duty brackets for safe connection: Installation set Part No. 972.50. You can configure the Heavy-Duty version at our online-catalog with the respective e-chain you've chosen. More information about the Aluminum Super-Trough ➤ www.igus.eu/eu/salun
Aluminum SuperTrough | 972.30.SL | 972.32.SL

Trough height: 117 mm | Product range

**For the following igus® Series**

- **E2/000**
  - 2700
- **E2 e-tubes**
  - R58

---

### Aluminum SuperTrough | Complete sets

**Trough side parts sets** - consisting of part Ø / Ø / Ø / Ø

- Set of 2 trough side parts, incl. glide strips, **without** glide bars, 2 m section
  - **Part No.:** 972.30.SLA***
  - **Weight:** 6.00 kg

- Set of 2 trough side parts, incl. glide strips, **with** glide bars, 2 m section
  - **Part No.:** 972.32.SLA***
  - **Weight:** 7.40 kg

**Installation sets** - consisting of part Ø / Ø / Ø / Ø

- 1 Installation set **without** C-profile
  - **Part No.:** 960.30
  - **Weight:** 0.60 kg

- 1 Installation set with C-profile (C-profile length according to dimension **BR**i)
  - **Part No.:** 960.30.xxx**
  - **Weight:** **upon request**

* Please add the C-profile length as shown on the tables on the right page. Example: 960.30.150

---

### Aluminum SuperTrough | Components as single parts

**Single parts, trough**

- 1 Trough side part, individual, 2 m section
  - **Part No.:** 72.11
  - **Weight:** 2.94 kg

- 1 Glide bar, plastic, individual, 2 m section
  - **Part No.:** 82.79
  - **Weight:** 0.60 kg

- 1 Glide strip, plastic, individual, 2 m section
  - **Part No.:** 75.01
  - **Weight:** 0.06 kg

- 1 Silencer profile, rubber, individual, 2 m section (optional for an additional noise dampening)
  - **Part No.:** 75.67.H.2000
  - **Weight:** 0.16 kg

**Single parts, installation set**

- 1 Bottom clamp, aluminum individual
  - **Part No.:** 75.40
  - **Weight:** 0.02 kg

- 1 C-profile, individual C-profile length according to dimension **BR**i
  - **Part No.:** 92.52.xxx.E*
  - **Weight:** 0.90 kg/m

- 1 Screw M6 x 16, individual
  - **Part No.:** MAT 0040209

- 1 Sliding nut M6, individual
  - **Part No.:** MAT 0040057

- 1 Interface connector, individual
  - **Part No.:** 75.60

---

**Heavy-Duty version for high load applications**

This Aluminum SuperTrough is also available for plant manufacturing as add-on item with special Heavy-Duty brackets for safe connection: **Installation set Part No. 972.50.** You can configure the Heavy-Duty version at our online-catalog with the respective e-chain you've chosen. More information about the Aluminum Super-Trough® is available at [www.igus.eu/eu/salun](http://www.igus.eu/eu/salun)

---

**C-profile also available in stainless steel V2A, material 1.4301 (AISI 304). Please add index "E" to the Part No.**

---

**Notes:**

- The inner width of the guide trough and the C-profile length of the assembly kit can differ according to the bracket you choose. Please call us!

---

**More information and assembly Instructions** ➤ [www.igus.eu/eu/salun](http://www.igus.eu/eu/salun)

---

**Stable guidance without oscillation. Crane operating speed 80 m/min.**

---

**Detailed Information** ➤ [www.igus.eu/eu/salun](http://www.igus.eu/eu/salun)

---

**Heavy-Duty version for high load applications**

This Aluminum SuperTrough is also available for plant manufacturing as add-on item with special Heavy-Duty brackets for safe connection: **Installation set Part No. 972.50.** You can configure the Heavy-Duty version at our online-catalog with the respective e-chain you've chosen. More information about the Aluminum Super-Trough® is available at [www.igus.eu/eu/salun](http://www.igus.eu/eu/salun)
### Aluminum SuperTrough | Complete sets

**Trough side parts** - consisting of part 9 / 9 / 9 / 9

- Set of 2 trough side parts, incl. glide strips, without glide bars, 2 m section
- Weight: 973.30.SL, 973.31.SL

**For an additional noise dampening with silencer profile, please add index "A" to the Part No. Example: 973.30.SL**

#### Installation sets - consisting of part 9 / 9 / 9 / 9 / 9 / 9

- 1 Installation set without C-profile: 960.40
- Weight: 0.08 kg
- 1 Installation set with C-profile C-profile length according to dimension B_{u}:
  - 960.40.100
  - Weight: upon request

### Aluminum SuperTrough | Components as single parts

#### Single parts, trough

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>73.11</td>
<td>3.94 kg</td>
</tr>
<tr>
<td>83.79</td>
<td>1.30 kg</td>
</tr>
<tr>
<td>75.01</td>
<td>0.08 kg</td>
</tr>
</tbody>
</table>

#### Single parts, installation set

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>75.50</td>
<td>0.04 kg</td>
</tr>
<tr>
<td>92.52.XXX</td>
<td>0.90 kg/mm</td>
</tr>
<tr>
<td>540.04045</td>
<td></td>
</tr>
<tr>
<td>540.04013</td>
<td></td>
</tr>
<tr>
<td>75.60</td>
<td></td>
</tr>
</tbody>
</table>

### Trough height: 144 mm

- **Note:** The inner width of the guide through and the C-profile length of the assembly list can differ according to the bracket you choose. Please call us!

#### Bottom clamp attached optionally inwards or outwards

- C-profile length according to dimension B_{u} see right page.

### Basic Version | C-profile lengths (according to dim. B_{u})

**E6.52/R6.52**

<table>
<thead>
<tr>
<th>Width index</th>
<th>C-profile length</th>
<th>Part No.</th>
<th>Part No. attached inwards</th>
</tr>
</thead>
<tbody>
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<td>74</td>
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<td>80</td>
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<td></td>
</tr>
<tr>
<td>100</td>
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<tr>
<td>105</td>
<td>90</td>
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<td>110</td>
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<td>100</td>
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<td>400</td>
<td>385</td>
<td>960.40.120</td>
<td></td>
</tr>
</tbody>
</table>

### Additional option for simple fastening of the e-chain without drilling

1. Set Fixed end module (Part No. dependent on e-chain Series - Detailed information: page 1208)
2. C-profile also available in stainless steel V2A, material 1.4301 (AISI 304). Please add index "E" to the Part No.
### Aluminum SuperTrough | Complete sets

**Trough side parts sets - consisting of part \( E \) / \( H \) / \( R \) / \( S \)**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>974.30.SL</td>
<td>10.0 kg</td>
</tr>
<tr>
<td>974.31.SL</td>
<td>12.8 kg</td>
</tr>
</tbody>
</table>

**For an additional noise damping with silencer profile, please add index \( \text{Bi} \) to the Part No. Example: 974.30.SL-Bi**

#### Installation sets - consisting of part \( E \) / \( H \) / \( R \) / \( S \)

1. Installation set without C-profile
   - Part No.: 960.50
   - Weight: 0.08 kg

1. Installation set with C-profile C-profile length according to dimension \( B_{sy} \)
   - Part No.: 960.50.XXX
   - Weight: upon request

* Please add the C-profile length as shown on the tables on the right page. Example: 960.50.200

### Aluminum SuperTrough | Components as single parts

**Single parts, trough**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>74.11*</td>
<td>4.94 kg</td>
</tr>
<tr>
<td>83.79</td>
<td>1.30 kg</td>
</tr>
<tr>
<td>75.01*</td>
<td>0.86 kg</td>
</tr>
</tbody>
</table>

**Single parts, installation set**

1. Bottom clamp, aluminum individual
   - Part No.: 75.50
   - Weight: 0.04 kg

1. C-profile, individual C-profile length according to dimension \( B_{sy} \)
   - Part No.: 92.52.XXX
   - Weight: 90 kg/m

1. Screw M8 x 20, individual
   - MAT: M0405445

1. Sliding nut M8, individual
   - MAT: M0405411

1. Interface connector, individual
   - 75.60

### Additional option for simple fastening of the e-chain without drilling

1. Set: Fixed end module (Part No. depends on e-chain Series - Detailed information)  
   - Part No.: 974.80.50 | 974.81.50

* Please add the C-profile length as shown on the tables on the right page. Example: 92.52.12.5

### C-profile also available in stainless steel V2A, material 1.4301, (AISI 304). Please add index \( \text{E} \) to the Part No.

**E4.56/H4.56/R4.56**

<table>
<thead>
<tr>
<th>E4.1</th>
<th>E4.56/H4.56/R4.56</th>
<th>E4/light</th>
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</thead>
<tbody>
<tr>
<td>14040/14140/R18840</td>
<td>14240/14340</td>
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</tbody>
</table>

**E6**

<table>
<thead>
<tr>
<th>E6.62</th>
</tr>
</thead>
</table>

---

**Heavy-Duty version for high load applications**

The Aluminum SuperTrough is also available for plant manufacturing as well as with special Heavy Duty brackets for safe connection. **Installation set Part No. 974.50**. You can configure the Heavy-Duty version on our online catalog with the respective e-chains you’ve chosen. More information about the Aluminum SuperTrough can be found on our website: www.igus.eu/salun
Aluminum SuperTrough | 975.30.SL | 975.31.SL

Trough height: 236 mm | Product range

For the following igus® Series

E4.1
- E4.80/H4.80/R4.80
- E4/Light
- 15050/15150/R19850
- 15250/15350

E6
- E6.80

Trough side parts sets - consisting of part ① / ② / ③ / ④
Part No. Weight
975.30.SL** + 14.0 kg
975.31.SL** + 16.6 kg

**For an additional noise damping with silencer profile, please add index "A" to the Part No. Example: 975.30.SLA.

Installation sets - consisting of part ① / ② / ③ / ④ / ⑤ / ⑥
Part No. Weight
960.50 + 0.08 kg
960.50.XXX** upon request

* Please add the C-profile length as shown on the tables on the right page. Example: 960.50.425

Aluminum SuperTrough | Components as single parts

Single parts, trough
Part No. Weight
① 1 Trough side part, individual, 2 m section 75.11 + 6.94 kg
② 1 Glide bar, plastic, individual 83.79 + 1.30 kg
③ 1 Glide strip, plastic, individual, 2 m section 75.01 + 0.08 kg
④ 1 Silencer profile, rubber, individual, 2 m section (optional for an additional noise damping) 75.68.H.2000 + 0.38 kg

Single parts, installation set
Part No. Weight
① 1 Bottom clamp, aluminum individual 75.50 + 0.04 kg
② 1 C-profile, individual C-profile length according to dimension B_{hu} 92.52.XXO* + 0.90 kg/m
③ 1 Screw M8 x 20, individual MAT 00400445
④ 1 Sliding nut M8, individual MAT 00400413
⑤ 1 Interface connector, individual 75.60

Additional option for simple fastening of the e-chain without drilling
1 Set Fixed_end module (Part No. depend on e-chain Series - Detailed information page 1208) 975.80/B / 975.81/B

π Please add the C-profile length as shown on the tables on the right page. Example: 92.52.XXO* to the Part No.

C-profile also available in stainless steel V2A, material 1.4301 (AISI 304). Please add index "E" to the Part No.

Heavy-duty version for high load applications
This Aluminum SuperTrough is also available for plant manufacturing as add on item with special Heavy-duty brackets for safe connection: Installation set Part No. 975.80. You can configure the Heavy-Duty version at our online-catalog with the respective e-chain you've chosen. More information about the Aluminum SuperTrough see www.igus.eu/eu/salun
**Aluminum SuperTrough | Basic | Fixed end module**

**Quick and simple fastening onto the Aluminum SuperTrough**

**New in this catalog**

**Optimised fixed end module**

The fixed end module allows a KMA to be fastened to an Aluminum SuperTrough without additional drilling. The fixed end module is attached to the trough by tightening the screws. As a result, customers can save assembly time and minimize defects that may result from unassisted drilling into the trough. The new, optimised fixed end module is made from plastic and is therefore lighter and much more affordable than the original metal version. It fulfills the same requirements as the conventional metal version.

---

**Fixed end clamp to attach the e-chain® into the smallest Aluminum 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

**Fixed end clamp principle:**

1. **Fixed end clamp 970.80**
2. **Mounting bracket**
3. **Aluminum SuperTrough 970.30.SL**

---

**Aluminum SuperTrough | Test examples**

The igus® Aluminum SuperTrough has been used in test setups since 2005.

Test setup Axis 1: Speed 1.5 m/s, Travel: 18 m, Mileage so far: about 50,000 km (test runs since 2005)

---

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

---

**Part For Aluminum**

<table>
<thead>
<tr>
<th>No.</th>
<th>SuperTrough</th>
<th>e-chain</th>
<th>Application including inner width (B1)</th>
<th>Mounting Bracket</th>
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<tbody>
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<td>970.80</td>
<td>970.30.SL</td>
<td>970.31.SL</td>
<td>10, 15/R15 (fixed end clamp)</td>
<td>.050 one-piece</td>
</tr>
<tr>
<td>970.80</td>
<td>970.30.SL</td>
<td>970.31.SL</td>
<td>1500 (fixed end clamp)</td>
<td>.050 one-piece</td>
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<td>971.80</td>
<td>971.30.SL</td>
<td>971.31.SL</td>
<td>2500, 255</td>
<td>.07 KMA</td>
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<td>972.80</td>
<td>972.30.SL</td>
<td>972.31.SL</td>
<td>2700, R58</td>
<td>.06 KMA</td>
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<td>973.31.SL</td>
<td>3500, R68</td>
<td>.10 KMA</td>
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<td>974.80</td>
<td>974.30.SL</td>
<td>974.31.SL</td>
<td>14040/14140/R18840, 14240/14340</td>
<td>.10 KMA</td>
</tr>
<tr>
<td>975.80</td>
<td>975.30.SL</td>
<td>975.31.SL</td>
<td>15050/15150/R19850, 15250/15350</td>
<td>.10 KMA</td>
</tr>
</tbody>
</table>

1/ Material: polymer 2/ Material: Aluminum AlMg3, seawaterresistant


*New in this catalog
Steel guide trough

Very stable and rugged for Heavy-Duty applications
Steel Guide Trough | Introduction

High load: Very stable and robust guide trough made of steel

Huge program: Big range, two piece design, 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: Directly on the ground of with c-profiles

Simple connection: Fixed end module (add-on item), for fast and easy mounting - without any drilling

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 C-profile on which the guide parts are assembled. The assembly brackets used vary in height only.


New in this catalog
1) Optional in stainless steel: V2A, material 1.4301 (AISI 304), V4A, material 1.4404 (AISI 316L), V4A, material 1.4571 (AISI 316Ti)

2) Steel guide troughs, one-piece. Only for Series 10, 15 and 215

More information and assembly instructions → www.igus.eu/eu/steelguide

igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu 1213
Steel Guide Trough | Parts

Components
- Blue: Guide trough
- Gray: Glide bar
- Purple: Installation set
- Green: C-profile

Steel Guide Trough | Features

Steel Guide Trough without and with glide bars available

Steel Guide Trough | Configuration 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: 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® c-profile 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.eu/eu/installation-guide-pdf

Order example | Based on Part No. 94.30 | 94.31

Order example: Length of travel 30 m - Center mounted for Series E4.56.20.300.0 with BRi = 239

Guide trough set (set of 2 trough side parts, incl. glide strips) without glide bar
Order text: 16 m guide trough without glide bar (8 x 2 m sections) Part No. 94.30

Guide trough set (set of 2 trough side parts, incl. glide strips) with glide bar
Order text: 16 m guide trough with glide bar (8 x 2 m sections) Part No. 94.31

Installation set complete (guide trough-sets + 1)
Order text: 17 installation sets 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 (number of trough pieces + 1)

More information and assembly instructions | www.igus.eu/eu/steelguide
Steel Guide Trough | **92.30** | **92.31** | Heavy-Duty

Trough height: 70 mm | Product range

**For the following igus® Series**

<table>
<thead>
<tr>
<th>E2/000 (E2 medium)</th>
<th>2500</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] 255 E6</td>
<td>[ ] E6.29/R6.29</td>
</tr>
</tbody>
</table>

**Steel Guide Trough | Complete sets**

**Trough side parts sets**

- Set of 2 trough side parts, **without** glide bars, 2 m section: 92.30. E/E44/E45 = 7.60 kg
- Set of 2 trough side parts, **with** glide bars, 2 m section: 92.31. E/E44/E45 = 9.60 kg

**Installation sets - consisting of part**

- 1 Installation set **without** C-profile: 92.50
- 1 Installation set **with** C-profile length according to dimension B_{RI} = 92.50.000E upon request

* Please add the C-profile length as shown on the tables on the right page. Example: 92.50.200

**Steel Guide Trough | Components as single parts**

**Single parts, trough**

- 1 Trough side part, individual, 2 m section: 92.11. E/E44/E45 = 3.80 kg
- 1 Glide bar, individual, each 2 m: 92.01
- 1 Glide bar, individual, each 2 m + 11 screw sets: 92.20

**Single parts, installation set**

- 11 Screw sets for 2 m sections: 92.21
- 1 Clamping bracket, individual: 92.51
- 1 Countersunk-head screw M6 x 14, individual: 92.53
- 1 Hexagon nut M6, individual: 92.54
- 1 Hexagon-head screw M10 x 16, individual: 92.55
- 1 Glide nut M10, individual: 92.56
- 1 C-profile, individual (C-profile length according to dimension B_{RI}) = 92.52.000E

**Additional option for simple fastening of the e-chain without drilling**

- 1 Set Fixed end module (Detailed information ► page 1236): 90.80.01

* Please add the C-profile length as shown on the tables on the right page. Example: 92.52.200

1) Trough side parts + C-profile - Also available in stainless steel V2A, material 1.4301 (AISI 304). Please add index “E” to the Part No.
2) Trough side parts - Also available in stainless steel V4A, material 1.4404 (AISI 316L). Please add index “E44” to the Part No.
3) Trough side parts - Also available in stainless steel V4A, material 1.4571 (AISI 316Ti). Please add index “E45” to the Part No.

**igus® steel guide trough used in a robotics application**

1217 More information and assembly instructions ► www.igus.eu/eu/steelguide
Steel Guide Trough | 95.30 | 95.31 | Heavy-Duty

Trough height: 100 mm | Product range

For the following igus® Series

- E2/000
  - 2700
  - E2
  - R58

Steel Guide Trough | Complete sets

Trough side parts sets

- Set of 2 trough side parts, without glide bars, 2 m section
- 95.30 E/E444/E455 = 10.00 kg

- Set of 2 trough side parts, with glide bars, 2 m section
- 95.31 E/E444/E455 = 12.00 kg

Installation sets - consisting of part

- 1 Installation set without C-profile
- 95.50
  - 0.45 kg

- 1 Installation set with C-profile (C-profile length according to dimension BRi)
- 95.50.XXX* upon request

* Please add the C-profile length as shown on the tables on the right page. Example: 95.50.200

Steel Guide Trough | Components as single parts

Single parts, trough

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>95.11 E/E444/E455</td>
<td>5.00 kg</td>
</tr>
<tr>
<td>92.01</td>
<td>0.75 kg</td>
</tr>
<tr>
<td>92.20</td>
<td>0.98 kg</td>
</tr>
</tbody>
</table>

Single parts, installation set

<table>
<thead>
<tr>
<th>Item</th>
<th>Weight</th>
</tr>
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<tbody>
<tr>
<td>92.21</td>
<td>0.23 kg</td>
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<td>95.51</td>
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<td>92.56</td>
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</tr>
<tr>
<td>92.52.XXX*</td>
<td>0.90 kg/m</td>
</tr>
</tbody>
</table>

Additional option for simple fastening of the e-chain without drilling

- 1 Set Fixed end module (For Series R58, upon request. Detailed information page 1236)
- 95.80.01
  - 10.00 kg

* Please add the C-profile length as shown on the tables on the right page. Example: 95.50.200

1) Trough side parts + C-profile - Also available in stainless steel V2A, material 1.4301 (AISI 304). Please add index “E” to the Part No.

2) Trough side parts - Also available in stainless steel V4A, material 1.4404 (AISI 316L). Please add index “E44” to the Part No.

3) Trough side parts - Also available in stainless steel V4A, material 1.4571 (AISI 316Ti). Please add index “E45” to the Part No.
Steel Guide Trough | **99.30 | 99.31 | Heavy-Duty**

Trough height: 100 mm | Product range

For the following igus® Series

- E4.1
- E4.28/R4.28
- E6
- E6.35

---

Steel Guide Trough | **C-profile lengths**

C-profile length according to dim. \( B_{Ri} \)

**E4.28/R4.28**

<table>
<thead>
<tr>
<th>Width index</th>
<th>( B_{Ri} )</th>
<th>Part No.</th>
<th>Installation set</th>
</tr>
</thead>
<tbody>
<tr>
<td>.040</td>
<td>65</td>
<td>upon request</td>
<td></td>
</tr>
<tr>
<td>.050</td>
<td>75</td>
<td>95.50-200</td>
<td></td>
</tr>
<tr>
<td>.062</td>
<td>87</td>
<td>95.50-200</td>
<td></td>
</tr>
<tr>
<td>.070</td>
<td>95</td>
<td>95.50-200</td>
<td></td>
</tr>
<tr>
<td>.075</td>
<td>95</td>
<td>95.50-200</td>
<td></td>
</tr>
<tr>
<td>.087</td>
<td>112</td>
<td>95.50-200</td>
<td></td>
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<tr>
<td>.100</td>
<td>125</td>
<td>95.50-200</td>
<td></td>
</tr>
<tr>
<td>.150</td>
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<td>200</td>
<td>95.50-300</td>
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<td>.225</td>
<td>225</td>
<td>95.50-375</td>
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<td>.250</td>
<td>250</td>
<td>95.50-375</td>
<td></td>
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<tr>
<td>.275</td>
<td>275</td>
<td>95.50-400</td>
<td></td>
</tr>
<tr>
<td>.300</td>
<td>300</td>
<td>95.50-425</td>
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</tr>
<tr>
<td>.325</td>
<td>325</td>
<td>95.50-450</td>
<td></td>
</tr>
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</table>

**E6.35**

<table>
<thead>
<tr>
<th>Width index</th>
<th>( B_{Ri} )</th>
<th>Part No.</th>
<th>Installation set</th>
</tr>
</thead>
<tbody>
<tr>
<td>.030</td>
<td>55</td>
<td>upon request</td>
<td></td>
</tr>
<tr>
<td>.040</td>
<td>65</td>
<td>upon request</td>
<td></td>
</tr>
<tr>
<td>.050</td>
<td>75</td>
<td>95.50-200</td>
<td></td>
</tr>
<tr>
<td>.060</td>
<td>85</td>
<td>95.50-200</td>
<td></td>
</tr>
<tr>
<td>.070</td>
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<td></td>
</tr>
<tr>
<td>.080</td>
<td>105</td>
<td>95.50-225</td>
<td></td>
</tr>
<tr>
<td>.090</td>
<td>115</td>
<td>95.50-225</td>
<td></td>
</tr>
<tr>
<td>.100</td>
<td>125</td>
<td>95.50-250</td>
<td></td>
</tr>
<tr>
<td>.110</td>
<td>135</td>
<td>95.50-250</td>
<td></td>
</tr>
<tr>
<td>.120</td>
<td>145</td>
<td>95.50-250</td>
<td></td>
</tr>
</tbody>
</table>

---

**Steel Guide Trough | Complete sets**

<table>
<thead>
<tr>
<th>Trough side parts sets</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set of 2 trough side parts, <strong>without</strong> glide bars, 2 m section</td>
<td>99.30 E4 / E6</td>
<td>10.00 kg</td>
</tr>
<tr>
<td>Set of 2 trough side parts, <strong>with</strong> glide bars, 2 m section</td>
<td>99.31 E4 / E6</td>
<td>12.00 kg</td>
</tr>
</tbody>
</table>

**Installation sets - consisting of part**

1. **Installation set without C-profile**
   - 95.50
   - 0.41 kg

2. **Installation set with C-profile (C-profile length according to dimension \( B_{Ri} \))**
   - 95.50.XXXX

* Please add the C-profile length as shown on the tables on the right page. Example: 92.50.200

---

**Steel Guide Trough | Components as single parts**

**Single parts, trough**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Trough side part, individual, 2 m section</td>
<td>99.11 E4 / E6</td>
</tr>
<tr>
<td>1 Glide bar, individual, each 2 m</td>
<td>92.01</td>
</tr>
<tr>
<td>1 Glide bar, individual, each 2 m + 11 screw sets</td>
<td>92.20</td>
</tr>
</tbody>
</table>

**Single parts, installation set**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 Screw sets for 2 m sections</td>
<td>92.21</td>
</tr>
<tr>
<td>1 Clamping bracket, individual</td>
<td>95.51</td>
</tr>
<tr>
<td>1 Countersunk-head screw M6 x 14, individual</td>
<td>92.53</td>
</tr>
<tr>
<td>1 Hexagon nut M6, individual</td>
<td>92.54</td>
</tr>
<tr>
<td>1 Hexagon-head screw M10 x 16, individual</td>
<td>92.55</td>
</tr>
<tr>
<td>1 Glide nut M10, individual</td>
<td>92.56</td>
</tr>
<tr>
<td>1 C-profile, individual (C-profile length according to dimension ( B_{Ri} ))</td>
<td>92.52.XXXX E4</td>
</tr>
</tbody>
</table>

Additional option for simple fastening of the e-chain® without drilling

1. **Set Fixed End Module**
   - Detailed information [page 1236]
   - 99.80.01
   - 10.00 kg

---

1) Trough side parts + C-profile - Also available in stainless steel V2A, material 1.4301 (AISI 304). Please add index \( .E \) to the Part No.
2) Trough side parts - Also available in stainless steel V4A, material 1.4404 (AISI 316L). Please add index \( .E44 \) to the Part No.
3) Trough side parts - Also available in stainless steel V4A, material 1.4571 (AISI 316Ti). Please add index \( .E45 \) to the Part No.

---

Light weight and high stability: Polymer e-chain® tames stiff hydraulic hoses.
Steel Guide Trough | 97.30 | 97.31 | Heavy-Duty

Trough height: 130 mm | Product range

### Steel Guide Trough | Complete sets

<table>
<thead>
<tr>
<th>Trough side parts sets</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set of 2 trough side parts, without glide bars, 2 m section</td>
<td>97.30 E/ E44p/ E45n</td>
<td>= 11.60 kg</td>
</tr>
<tr>
<td>Set of 2 trough side parts, with glide bars, 2 m section</td>
<td>97.31 E/ E44p/ E45n</td>
<td>= 13.60 kg</td>
</tr>
</tbody>
</table>

### Installation sets - consisting of part

1. Installation set without C-profile
   - 93.50 = 0.49 kg

2. Installation set with C-profile (C-profile length according to dim. \(B_{RI}\))
   - 93.50.XXX* = upon request

*Please add the C-profile length as shown on the tables on the right page. Example: 93.50.350

### Steel Guide Trough | Components as single parts

<table>
<thead>
<tr>
<th>Single parts, trough</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trough side part, individual, 2 m section</td>
<td>97.11 E/ E44p/ E45n</td>
<td>= 5.90 kg</td>
</tr>
<tr>
<td>Glide bar, individual, each 2 m</td>
<td>92.01</td>
<td>= 0.75 kg</td>
</tr>
<tr>
<td>Glide bar, individual, each 2 m + 11 screw sets</td>
<td>92.20</td>
<td>= 0.98 kg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Single parts, installation set</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 Screw sets for 2 m sections</td>
</tr>
<tr>
<td>1 Clamping bracket, individual</td>
</tr>
<tr>
<td>1 Countersunk-head screw M6 x 14, individual</td>
</tr>
<tr>
<td>1 Hexagon nut M6, individual</td>
</tr>
<tr>
<td>1 Hexagon-head screw M10 x 16, individual</td>
</tr>
<tr>
<td>1 Glide nut M10, individual</td>
</tr>
</tbody>
</table>

| C-profile, individual (C-profile length according to dim. \(B_{RI}\)) | 92.52.XXX* (1) |

*Please add the C-profile length as shown on the tables on the right page. Example: 92.52.350

1) Trough side parts + C-profile - Also available in stainless steel V2A, material 1.4301 (AISI 304). Please add index “E” to the Part No.
2) Trough side parts - Also available in stainless steel V4A, material 1.4404 (AISI 316L). Please add index “E5” to the Part No.
3) Trough side parts - Also available in stainless steel 316L, material 1.4404 (AISI 316L). Please add index “E5” to the Part No.

---

E4.32/H4.32/R4.32 | E4.32/L4.32/R4.32 | E6.40/R6.40

<table>
<thead>
<tr>
<th>With index</th>
<th>(B_{RI})</th>
<th>Part No.</th>
<th>Installation set</th>
</tr>
</thead>
<tbody>
<tr>
<td>.05</td>
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<td>93.50.200</td>
<td></td>
</tr>
<tr>
<td>.06</td>
<td>96</td>
<td>93.50.225</td>
<td></td>
</tr>
<tr>
<td>.07</td>
<td>105</td>
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<td>.08</td>
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<td></td>
</tr>
<tr>
<td>.09</td>
<td>125</td>
<td>93.50.250</td>
<td></td>
</tr>
<tr>
<td>.10</td>
<td>135</td>
<td>93.50.250</td>
<td></td>
</tr>
<tr>
<td>.11</td>
<td>145</td>
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<td>.12</td>
<td>153</td>
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<td>.13</td>
<td>166</td>
<td>93.50.275</td>
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<td>.14</td>
<td>178</td>
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<td>.15</td>
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<td>.16</td>
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<td>.17</td>
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<td>.18</td>
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<td>.19</td>
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<td></td>
</tr>
<tr>
<td>.21</td>
<td>265</td>
<td>93.50.375</td>
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<tr>
<td>.22</td>
<td>278</td>
<td>93.50.375</td>
<td></td>
</tr>
<tr>
<td>.23</td>
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<tr>
<td>.30</td>
<td>380</td>
<td>93.50.425</td>
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<tr>
<td>.31</td>
<td>393</td>
<td>93.50.425</td>
<td></td>
</tr>
<tr>
<td>.32</td>
<td>406</td>
<td>93.50.425</td>
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<td>.33</td>
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<td>93.50.425</td>
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<td>.34</td>
<td>432</td>
<td>93.50.425</td>
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<tr>
<td>.35</td>
<td>445</td>
<td>93.50.425</td>
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</tr>
</tbody>
</table>

---

### Additional option for simple fastening of the e-chain without drilling

1 Set Fixed end module (Detailed information ➤ page 1236)

- 97.80.01 = 11.80 kg

---

*For the following igus® Series

- E4.1
- E4.32/H4.32/R4.32
- E4.1 light
- E4.32/L4.32/R4.32
- E6
- E4.32/R6.40

---

igus GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu
Steel Guide Trough | Heavy-Duty

Trough height: 130 mm | Product range

For the following igus® Series

E2/000
- 3500
- E2
- R68
- E4.1
- E4.42/H4.42/R4.42
- E4.42 light
- E4.48L/R4.48L
- E6
- E6.52/R6.52

Note: The inner width of the guide trough and the C-profile length of the assembly kit can differ according to the bracket you choose. Please call us!

Steel Guide Trough | Complete sets

<table>
<thead>
<tr>
<th>Trough side parts set</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set of 2 trough side parts, without glide bars, 2 m section</td>
<td>E45 93.30</td>
<td>11.80 kg</td>
</tr>
<tr>
<td>Set of 2 trough side parts, with glide bars, 2 m section</td>
<td>E44 93.31</td>
<td>12.20 kg</td>
</tr>
</tbody>
</table>

Installation sets - consisting of part

| 1 Installation set without C-profile | 93.50 | 0.49 kg |
| 1 Installation set with C-profile - C-profile length according to dim. $B_{RI}$ | 93.50.XXX* | upon request |

* Please add the C-profile length as shown on the tables on the right page. Example: 93.50.X50

Steel Guide Trough | Components as single parts

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trough side part, individual, 2 m section</td>
<td>E45 93.11</td>
</tr>
<tr>
<td>Glide bar, individual, each 2 m</td>
<td>E44 93.01</td>
</tr>
<tr>
<td>Glide bar, individual, each 2 m + 11 screw sets</td>
<td>E44 93.20</td>
</tr>
</tbody>
</table>

Single parts, installation set

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 Screw sets for 2 m sections</td>
<td>E45 93.21</td>
</tr>
<tr>
<td>1 Clamping bracket, individual</td>
<td>E44 93.51</td>
</tr>
<tr>
<td>1 Countersunk-head screw M6 x 14, individual</td>
<td>E44 92.53</td>
</tr>
<tr>
<td>1 Hexagon nut M6, individual</td>
<td>E44 92.54</td>
</tr>
<tr>
<td>1 Hexagon-head screw M10 x 16, individual</td>
<td>E45 92.55</td>
</tr>
<tr>
<td>1 Glide nut M10, individual</td>
<td>E44 92.56</td>
</tr>
<tr>
<td>1 C-profile, individual (C-profile length according to dim. $B_{RI}$)</td>
<td>E45 92.52.XXX*</td>
</tr>
</tbody>
</table>

Additional option for simple fastening of the C-chain without drilling

1 Set Fixed end module (Detailed information page 1236) | E45 93.80.01 | 11.80 kg |

Note: Please consult igus® for delivery time!

Steel Guide Trough | C-profile lengths

C-profile length according to dim. $B_{RI}$

<table>
<thead>
<tr>
<th>Width</th>
<th>Index chain</th>
<th>$B_{RI}$</th>
<th>Part No.</th>
<th>Installation set</th>
</tr>
</thead>
<tbody>
<tr>
<td>E45</td>
<td>93.50.XXX*</td>
<td>0.50</td>
<td>E45 93.50.XXX*</td>
<td>E45 93.50.XXX*</td>
</tr>
<tr>
<td>E44</td>
<td>93.50.XXX*</td>
<td>0.75</td>
<td>E44 93.50.XXX*</td>
<td>E44 93.50.XXX*</td>
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<td>93.50.XXX*</td>
<td>1.00</td>
<td>E44 93.50.XXX*</td>
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<td>E45</td>
<td>93.50.XXX*</td>
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<td>E45 93.50.XXX*</td>
<td>E45 93.50.XXX*</td>
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<td>93.50.XXX*</td>
<td>1.75</td>
<td>E45 93.50.XXX*</td>
<td>E45 93.50.XXX*</td>
</tr>
<tr>
<td>E45</td>
<td>93.50.XXX*</td>
<td>2.00</td>
<td>E45 93.50.XXX*</td>
<td>E45 93.50.XXX*</td>
</tr>
<tr>
<td>E45</td>
<td>93.50.XXX*</td>
<td>2.25</td>
<td>E45 93.50.XXX*</td>
<td>E45 93.50.XXX*</td>
</tr>
<tr>
<td>E45</td>
<td>93.50.XXX*</td>
<td>2.50</td>
<td>E45 93.50.XXX*</td>
<td>E45 93.50.XXX*</td>
</tr>
</tbody>
</table>

Note: Please consult igus® for delivery time!

Travel up to 195 m with the igus® System E4, safely guided in an igus® steel trough

1224 More information and assembly instructions • www.igus.eu/eu/steelguide
**Steel Guide Trough | Heavy-Duty**

Trough height: 170 mm | Product range

---

**For the following igus® Series**

- **E4.456/E4.56/E4.56**
- **E4.62**
- **E4.456/E4.56/E4.56**
- **E4.62**
- **E4.456/E4.56/E4.56**
- **E4.62**
- **E4.456/E4.56/E4.56**
- **E4.62**

---

**Steel Guide Trough | Complete sets**

**Trough side parts set**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>94.30.E4/E4.456/E4.56</td>
<td>14.70 kg</td>
</tr>
</tbody>
</table>

Set of 2 trough side parts, without guide bars, 2 m section

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>94.31.E4/E4.456/E4.56</td>
<td>19.00 kg</td>
</tr>
</tbody>
</table>

Installation set - consisting of part

| 1 Installation set without C-profile | 94.50 | = 0.58 kg |

| 1 Installation set with C-profile C-profile length according to dimension | 94.50.XXX | upon request |

---

**Steel Guide Trough | Components as single parts**

**Single parts, trough**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>94.11.E4/E4.456/E4.56</td>
<td>7.35 kg</td>
</tr>
<tr>
<td>93.01</td>
<td>= 1.68 kg</td>
</tr>
<tr>
<td>93.20</td>
<td>= 2.22 kg</td>
</tr>
</tbody>
</table>

| 1 Glide bar, individual, each 2 m | 93.01 | = 1.68 kg |
| 1 Glide bar, individual, each 2 m + 11 screw sets | 93.20 | = 2.22 kg |

**Single parts, installation set**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>93.21</td>
<td>= 0.54 kg</td>
</tr>
<tr>
<td>94.51</td>
<td>= 0.25 kg</td>
</tr>
<tr>
<td>92.53</td>
<td>= 0.5 kg</td>
</tr>
<tr>
<td>92.54</td>
<td>= 0.5 kg</td>
</tr>
<tr>
<td>92.55</td>
<td>= 0.5 kg</td>
</tr>
<tr>
<td>92.56</td>
<td>= 0.5 kg</td>
</tr>
</tbody>
</table>

**Additional option for simple fastening of the e-chain without drilling**

| Part Fixed end module (Detailed information | 94.80.01 | = 14.70 kg |

---

| 1) Trough side parts + C-profile - Also available in stainless steel V2A, material 1.4301 (AISI 304). Please add index "E" to the Part No. |
| 2) Trough side parts - Also available in stainless steel V4A, material 1.4404 (AISI 316L). Please add index "E-E" to the Part No. |
| 3) Trough side parts - Also available in stainless steel V4A, material 1.4404 (AISI 316L). Please add index "E-E" to the Part No. |

---

More information and assembly instructions: <www.igus.eu/eu/steelguide>
### Steel Guide Trough | Complete sets

<table>
<thead>
<tr>
<th>Trough side parts sets</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set of 2 trough side parts, without glide bars, 2 m section</td>
<td>94.14550.30</td>
<td>94.14550.31</td>
</tr>
<tr>
<td>Set of 2 trough side parts, with glide bars, 2 m section</td>
<td>94.14550.31</td>
<td>19.00 kg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Installation sets</th>
<th>Consisting of part</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Installation set without C-profile</td>
<td></td>
<td>94.50</td>
<td>0.58 kg</td>
</tr>
<tr>
<td>1 Installation set with C-profile (C-profile length according to dimension $B_{RI}$)</td>
<td></td>
<td>94.50.xxx</td>
<td>upon request</td>
</tr>
</tbody>
</table>

* Please add the C-profile length as shown on the tables on the right page. Example: 94.50.xxx

### Steel Guide Trough | Components as single parts

<table>
<thead>
<tr>
<th>Single parts, trough</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Trough side part, individual, 2 m section</td>
<td>94.14550.11</td>
<td>7.35 kg</td>
</tr>
<tr>
<td>1 Glide bar, individual, each 2 m</td>
<td>93.01</td>
<td>1.68 kg</td>
</tr>
<tr>
<td>1 Glide bar, individual, each 2 m + 11 screw sets</td>
<td>93.20</td>
<td>2.22 kg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Single parts, installation set</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 Screw sets for 2 m sections</td>
<td>93.21</td>
<td>0.54 kg</td>
</tr>
<tr>
<td>1 Clamping bracket, individual</td>
<td>94.51</td>
<td>0.25 kg</td>
</tr>
<tr>
<td>1 Countersunk-head screw M6 x 14, individual</td>
<td>92.53</td>
<td></td>
</tr>
<tr>
<td>1 Hexagon nut M6, individual</td>
<td>92.54</td>
<td></td>
</tr>
<tr>
<td>1 Hexagon-head screw M10 x 16, individual</td>
<td>92.55</td>
<td></td>
</tr>
<tr>
<td>1 Glide nut M10, individual</td>
<td>92.56</td>
<td></td>
</tr>
<tr>
<td>1 C-profile, individual (C-profile length according to dimension $B_{RI}$)</td>
<td>92.52.xxx</td>
<td>0.90 kg/m</td>
</tr>
</tbody>
</table>

**Additional option for simple fastening of the e-chain without drilling**

| 1 Set Fixed end module (Detailed information | 94.14550.80.01 | 14.70 kg |

* Please add the C-profile length as shown on the tables on the right page. Example: 92.52.xxx

1. Trough side parts + C-profile - Also available in stainless steel V2A, material 1.4301 (AISI 304). Please add index "E" to the Part No.
2. Trough side parts - Also available in stainless steel V4A, material 1.4404 (AISI 316L). Please add index "E44" to the Part No.
3. Trough side parts - Also available in stainless steel V4A, material 1.4571 (AISI 316Ti). Please add index "E45" to the Part No.

---

**System E4 with extension links - long travel application onboard West Navigator (Norway)**

For more information and assembly instructions, visit [www.igus.eu/eu/steelguide](http://www.igus.eu/eu/steelguide)
Steel Guide Trough | 96.30 | 96.31 | Heavy-Duty

Trough height: 220 mm | Product range

For the following igus® Series

- **E4.80**
- **E4/light**
- **15050/15150R19850**
- **15250/15350 E6**
- **E6.80**

**Options**

- With reinforced mounting angles for very rugged and extreme applications

**Note**

The inner width of the guide trough and the C-profile length of the assembly kit can differ according to the bracket you choose. Please call us!

### Steel Guide Trough | Complete sets

<table>
<thead>
<tr>
<th>Trough side parts sets</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>2) Trough side parts, with glide bars, 2 m section</td>
<td>96.31 E47 / E44p / E45p</td>
<td>22.20 kg</td>
</tr>
</tbody>
</table>

**Installation sets - consisting of part**

1) Installation set without C-profile

   - Part No. 96.50
   - Weight 0.72 kg

2) Installation set with C-profile length according to dim. BRi

   - Part No. 96.50 X00* upon request

*Please add the C-profile length as shown on the tables on the right page. Example: 96.50 X75.

### Steel Guide Trough | Components as single parts

**Single parts, trough**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Trough side part, individual, 2 m section</td>
<td>96.11 E47 / E44p / E45p</td>
</tr>
<tr>
<td>2) Glide bar, individual, each 2 m</td>
<td>93.01</td>
</tr>
<tr>
<td>1) Glide bar, individual, each 2 m + 11 screw sets</td>
<td>93.20</td>
</tr>
</tbody>
</table>

**Single parts, installation set**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>11) Screw sets for 2 m sections</td>
<td>93.21</td>
</tr>
<tr>
<td>1) Clamping bracket, individual</td>
<td>96.51</td>
</tr>
<tr>
<td>1) Countersunk-head screw M6 x 14, individual</td>
<td>92.53</td>
</tr>
<tr>
<td>1) Hexagon nut M6, individual</td>
<td>92.54</td>
</tr>
<tr>
<td>1) Hexagon-head screw M10 x 16, individual</td>
<td>92.55</td>
</tr>
<tr>
<td>1) Glide nut M10, individual</td>
<td>92.56</td>
</tr>
</tbody>
</table>

**C-profile, individual (C-profile length according to dim. BRi)**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) C-profile, individual (C-profile length according to dim. BRi)</td>
<td>92.52 X00*</td>
</tr>
</tbody>
</table>

*Additional option for simple fastening of the e-chain without drilling

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set Fixed end module (Detailed information page 1236)</td>
<td>96.80.01</td>
</tr>
</tbody>
</table>

*Please add the C-profile length as shown on the tables on the right page. Example: 92.52 X75.

1) Trough side parts + C-profile - Also available in stainless steel V2A, material 1.4301 (AISI 304). Please add index "E" to the Part No.
2) Trough side parts - Also available in stainless steel VA4, material 1.4404 (AISI 316L). Please add index "E6" to the Part No.
3) Trough side parts - Also available in stainless steel V4A, material 1.4571 (AISI 316Ti). Please add index "E45" to the Part No.

1230 More information and assembly instructions | www.igus.eu/eu/steelguide

igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu 1231
Steel Guide Trough | Heavy-Duty
Trough height: 300 mm | Product range

For the following igus® Series

• E4.1
• E4.112/H4.112/R4.112
• E4/Right
• 1640/R1608

Option:
With reinforced mounting angles for very rugged and extreme applications

Note: The inner width of the guide through and the C-profile length of the assembly kit can differ according to the bracket you choose. Please call us!

Steel Guide Trough | Complete sets

Trough side parts sets
Set of 2 trough side parts, without glide bars, 2 m section
98.30 E4/V/E44/P/E45/P = 34.00 kg
Set of 2 trough side parts, with glide bars, 2 m section
98.31 E4/V/E44/P/E45/P = 39.00 kg

Installation sets - consisting of part
1 Installation set without C-profile
98.50 = 1.16 kg
1 Installation set with C-profile (C-profile length according to dim. BRI)
98.50.XXX* = upon request

* Please add the C-profile length as shown on the tables on the right page. Example: 98.50.350

Steel Guide Trough | Components as single parts

Single parts, trough
1 Trough side part, individual, 2 m section
98.31 E4/V/E44/P/E45/P = 17.3 kg
1 Glide bar, individual, each 2 m
93.01 = 1.68 kg
1 Glide bar, individual, each 2 m + 11 screw sets
93.20 = 2.22 kg

Single parts, installation set
11 Screw sets for 2 m sections
93.21 = 0.54 kg
1 Clamping bracket, individual
98.51 = 0.52 kg
1 Countersunk-head screw M8 x 20, individual
92.05
1 Hexagon nut M8, individual
92.04
1 Hexagon-head screw M10 x 16, individual
92.55
1 Glide nut M10, individual
92.56
1 C-profile, individual (C-profile length according to dim. BRI)
92.52.XXX* E1 = 0.90 kg/m

Additional option for simple fastening of the e-chain without drilling
1 Set Fixed end module (Detailed information ▶ page 1236)
98.80.01 = 34.6 kg

* Please add the C-profile length as shown on the tables on the right page. Example: 92.52.375 E

1) Trough side parts + C-profile - Also available in stainless steel V2A, material 1.4301 (AISI 304). Please add index "E1" to the Part No.
2) Trough side parts + Also available in stainless steel V4A, material 1.4404 (AISI 316L). Please add index "E4" to the Part No.
3) Trough side parts + Also available in stainless steel V2A, material 1.4301 (AISI 304). Please add index "E1" to the Part No.
For the following igus® Series
E4.1

Steel Guide Trough | Heavy-Duty
Trough height: 480 mm | Product range

This igus® steel guide trough has reinforced mounting angles for very rugged and extreme applications.

Note: The inner width of the trough guide and the C-profile length of the assembly kit can differ according to the bracket you choose. Please call us!

Steel Guide Trough | Complete sets

<table>
<thead>
<tr>
<th>Trough side parts sets</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set of 2 trough side parts, <strong>without</strong> glide bars, 2 m section</td>
<td>90.30 E4 / E44P / E45P = 90,50 kg</td>
<td></td>
</tr>
<tr>
<td>Set of 2 trough side parts, <strong>with</strong> glide bars, 2 m section</td>
<td>90.31 E4 / E44P / E45P = 90,40 kg</td>
<td></td>
</tr>
</tbody>
</table>

Installation sets - consisting of part

1) Installation set **without** C-profile
2) Installation set **with** C-profile (C-profile length according to dimension BRi) upon request

* Please add the C-profile length as shown on the tables on the right page. Example: 90.50 450

Steel Guide Trough | Components as single parts

<table>
<thead>
<tr>
<th>Single parts, trough</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Trough side part, individual, 2 m section</td>
<td>90.11 E4 / E44P / E45P = 26,7 kg</td>
<td></td>
</tr>
<tr>
<td>1 Glide bar, individual, each 2 m</td>
<td>90.01</td>
<td>= 1,68 kg</td>
</tr>
<tr>
<td>1 Glide bar, individual, each 2 m + 11 screw sets</td>
<td>90.20</td>
<td>= 2,22 kg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Single parts, installation set</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 Screw sets for 2 m sections</td>
<td>90.21</td>
<td>= 0,54 kg</td>
</tr>
<tr>
<td>1 Clamping bracket, individual</td>
<td>90.51</td>
<td>= 0,52 kg</td>
</tr>
<tr>
<td>1 Countersunk-head screw M8 x 25, individual</td>
<td>MAT20040014</td>
<td></td>
</tr>
<tr>
<td>1 Hexagon nut M8, individual</td>
<td>MAT20040012</td>
<td></td>
</tr>
<tr>
<td>1 Hexagon-head screw M12 x 30, individual</td>
<td>MAT20040384</td>
<td></td>
</tr>
<tr>
<td>1 Glide nut M12, individual</td>
<td>MAT20040385</td>
<td></td>
</tr>
<tr>
<td>1 C-profile, individual (C-profile length according to dimension BRi)</td>
<td>IE70.41-41.xxxE E1 = 0,90 kg/m</td>
<td></td>
</tr>
</tbody>
</table>

Additional option for simple fastening of the e-chain® without drilling

* Please add the C-profile length as shown on the tables on the right page. Example: 92.52 450 E

1) Trough side parts + C-profile - Also available in stainless steel V2A, material 1.4301 (AISI 304). Please add index "E" to the Part No.
2) Trough side parts - Also available in stainless steel V4A, material 1.4404 (AISI 316L), Please add index "E44" to the Part No.
3) Trough side parts - Also available in stainless steel V4A, material 1.4571 (AISI 316Ti). Please add index "E45" to the Part No.

More information and assembly Instructions  www.igus.eu/eu/steelguide
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 2,000 mm long kit can be used for middle-feed, end-feed and opposed installation.

- Fast fixation of mounting brackets thanks to prefabricated boreholes
- Fast installation of C-profile for strain relief
- Fast bolting of glide bars

**Industries:** Power plants, coal conveyors, mining, composting plants, raw material storage, gypsum plants, etc.

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### Steel Guide Trough | **One-piece, U-shaped**

Special solution for Series 10, B15 and 15

**Components**
- Guide trough
- Glide bar
- Installation set
- **Ba** = Outer e-chain' width
- **Bi** = Inner e-chain' width
- **Ha** = e-chain' outer height
- **Hi** = Inner trough height
- **Hoa** = Outer trough height
- **Boa** = Inner trough width
- **Boa** = Outer trough width

---

**For the following igus® Series**
- E2 mini
- 10
- B15
- zipper
- 15 / R15

---

**For Series 10, 15 and B15 are one-piece, U-shaped steel guide troughs available. They have got a continuous glide bar for the transition from area with the glide bars to the area without glide bars. Available from stock are the guide troughs for the e-chains with an outer width up to 60 mm. For the e-chains with a width of more than 60 mm special solutions are on short call. For this trough sizes are no installation sets necessary as the guide troughs are made of a single U-profile. The solution for the trough joint is specific for every application.**

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**Fixed end module - length 2000 mm**

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**More information and assembly instructions | www.igus.eu/eu/steelguide**
Further Guide Troughs

guidefast, tubular trough, snap-in trough and support tray
Further guide troughs | **guidefast | Tubular trough**

**For crane girders and indoor cranes - guidefast guide trough**
- Save up to 80% installation time compared to standard trough systems
- Fits virtually any standard crane girder
- Simplified installation, permanently installed cable can be fixed at the trough brackets
- With polymer glide bars for centre fed applications

**Product range with order options**
- From page 1242 or online
- [www.igus.eu/eu/guidefast](http://www.igus.eu/eu/guidefast)

---

**Let's light and dirt through - Tubular trough system RS**
- Resistant to dirt - wear debris falls through
- More translucent than sheet metal constructions
- Easy and fast assembly and cost-effective
- Easy and space saving delivery

**Product range with order options**
- From page 1246 or online
- [www.igus.eu/eu/Tubulartrough](http://www.igus.eu/eu/Tubulartrough)

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Further guide troughs | **Snap-in trough | Support tray**

**Simple and cost-effective - Snap-in trough system SP**
- Smaller than conventional troughs
- Easy and fast assembly
- No sharp metal edges in the internal area because of covered connectors
- Cost-effective because of easy assembly

**Product range with order options**
- From page 1252 or online
- [www.igus.eu/eu/Snap-in-trough](http://www.igus.eu/eu/Snap-in-trough)

---

**Support tray tool kit - For support of the lower run**
- Simple one-piece support trays according to your requirements and specification
- Complete system, ready to install
- No more costly self-made designs
- Easy installation onto your machine, on profiles or wall-mount brackets

**Product range with order options**
- From page 1258 or online
- [www.igus.eu/eu/supporttray](http://www.igus.eu/eu/supporttray)
guidefast guide trough | Introduction

Quick:
- Easy and fast fixation with clamping blocks

Modular:
- One-piece steel guide trough in 2 m lengths

Wear-reducing:
- Glide bar for middle-feed installations

Easy:
- Smooth connection of trough parts with clip connectors

Options:
- 2 Versions of trough brackets with integrated strain relief

Quickly installed as a modular kit solution, for crane girders and indoor cranes - guidefast

- Mounted on the side of the crane girder - the welding of brackets onto the girder can be omitted.
- 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 ±5 mm vertical adjustment of brackets
- 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 | Contents | Selection Table

<table>
<thead>
<tr>
<th>Trough profile*</th>
<th>For E2/000</th>
<th>Inner trough width [mm]</th>
<th>Complete width [mm]</th>
<th>Material</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>guidefast - without glide bar</strong> for E2/000 Series: 1500 ● 2500 ● 2700</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>GF91.30.025.2000</strong></td>
<td>1500.025.</td>
<td>42.5</td>
<td>81</td>
<td>galvanized steel*</td>
<td>1244</td>
</tr>
<tr>
<td><strong>GF91.30.050.2000</strong></td>
<td>1500.050.</td>
<td>67.5</td>
<td>106</td>
<td>galvanized steel*</td>
<td>1244</td>
</tr>
<tr>
<td><strong>GF92.30.05. 2000</strong></td>
<td>2500.05.</td>
<td>77</td>
<td>115.5</td>
<td>galvanized steel*</td>
<td>1244</td>
</tr>
<tr>
<td><strong>GF92.30.07. 2000</strong></td>
<td>2500.07.</td>
<td>97</td>
<td>135.5</td>
<td>galvanized steel*</td>
<td>1244</td>
</tr>
<tr>
<td><strong>GF92.30.10. 2000</strong></td>
<td>2500.10.</td>
<td>123</td>
<td>161.5</td>
<td>galvanized steel*</td>
<td>1244</td>
</tr>
<tr>
<td><strong>GF95.30.05. 2000</strong></td>
<td>2700.05.</td>
<td>70</td>
<td>108.5</td>
<td>galvanized steel*</td>
<td>1244</td>
</tr>
<tr>
<td><strong>GF95.30.07. 2000</strong></td>
<td>2700.07.</td>
<td>95</td>
<td>133.5</td>
<td>galvanized steel*</td>
<td>1244</td>
</tr>
<tr>
<td><strong>GF95.30.10. 2000</strong></td>
<td>2700.10.</td>
<td>120</td>
<td>158.5</td>
<td>galvanized steel*</td>
<td>1244</td>
</tr>
</tbody>
</table>

| **guidefast - with glide bar** for E2/000 Series: 1500 ● 2500 ● 2700 |
| **GF91.31.025.2000** | 1500.025. | 42.5 | 81 | galvanized steel* | 1244 |
| **GF91.31.050.2000** | 1500.050. | 67.5 | 106 | galvanized steel* | 1244 |
| **GF92.31.05. 2000** | 2500.05. | 77 | 115.5 | galvanized steel* | 1244 |
| **GF92.31.07. 2000** | 2500.07. | 97 | 135.5 | galvanized steel* | 1244 |
| **GF92.31.10. 2000** | 2500.10. | 123 | 161.5 | galvanized steel* | 1244 |
| **GF95.31.05. 2000** | 2700.05. | 70 | 108.5 | galvanized steel* | 1244 |
| **GF95.31.07. 2000** | 2700.07. | 95 | 133.5 | galvanized steel* | 1244 |
| **GF95.31.10. 2000** | 2700.10. | 120 | 158.5 | galvanized steel* | 1244 |

*Standard material: Galvanized steel. Also available as stainless steel version V2A, material 1.4301 (AISI 304) or black powder coating

igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu 1243

More information and assembly instructions ▶ www.igus.eu/eu/guidefast
2 Versions of trough brackets with integrated strain relief

Version 01 - short trough bracket Part No. GF9.2.12 with integrated strain relief, possible ± 5 mm vertical adjustment

Version 02 - long trough bracket Part No. GF9.2.11 with integrated strain relief, possible ± 5 mm vertical adjustment

Components - Set guidefast guide trough

- Trough profile, 2 m section
- Glide bar, polymer, 2 m section, optional
- Guide fast clip connector, Part No. 908.467

Components - Set trough bracket

- Version 01 - short trough bracket
- Version 02 - long trough bracket
- Clamping blocks, Part No. G9.2.10

For the following igus® Series

- E2/000
  - 1500
  - 2500
  - 2700

Guidefast backet

- "short" Version 01
- "long" Version 02

For E2/000 e-chain®

- Trough profile* without glide bar Set incl. clip connectors, Part No. 908.467
- Trough profile* with glide bar Set incl. clip connectors
- Guidefast backet "short" Version 01 Set incl. clamping blocks
- Guidefast backet "long" Version 02 Set incl. clamping blocks

<table>
<thead>
<tr>
<th>E2/000</th>
<th>Trough profile* without glide bar</th>
<th>Trough profile* with glide bar</th>
<th>Guidefast backet &quot;short&quot; Version 01</th>
<th>Guidefast backet &quot;long&quot; Version 02</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500</td>
<td>GF91.30.025.2000</td>
<td>GF91.31.025.2000</td>
<td>GF9.2.12</td>
<td>GF9.2.11</td>
</tr>
<tr>
<td>1500.05</td>
<td>GF91.30.050.2000</td>
<td>GF91.31.050.2000</td>
<td>GF9.2.12</td>
<td>GF9.2.11</td>
</tr>
<tr>
<td>2500.05</td>
<td>GF92.30.050.2000</td>
<td>GF92.31.050.2000</td>
<td>GF9.2.12</td>
<td>GF9.2.11</td>
</tr>
<tr>
<td>2500.07</td>
<td>GF92.30.07.2000</td>
<td>GF92.31.07.2000</td>
<td>GF9.2.12</td>
<td>GF9.2.11</td>
</tr>
<tr>
<td>2500.10</td>
<td>GF92.30.10.2000</td>
<td>GF92.31.10.2000</td>
<td>GF9.2.12</td>
<td>GF9.2.11</td>
</tr>
<tr>
<td>2700</td>
<td>GF95.30.025.2000</td>
<td>GF95.31.025.2000</td>
<td>GF9.2.12</td>
<td>GF9.2.11</td>
</tr>
<tr>
<td>2700.05</td>
<td>GF95.30.050.2000</td>
<td>GF95.31.050.2000</td>
<td>GF9.2.12</td>
<td>GF9.2.11</td>
</tr>
<tr>
<td>2700.07</td>
<td>GF95.30.07.2000</td>
<td>GF95.31.07.2000</td>
<td>GF9.2.12</td>
<td>GF9.2.11</td>
</tr>
<tr>
<td>2700.10</td>
<td>GF95.30.10.2000</td>
<td>GF95.31.10.2000</td>
<td>GF9.2.12</td>
<td>GF9.2.11</td>
</tr>
</tbody>
</table>

Guidefast backet "short" Version 01 - Set incl. clamping blocks

<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>42.5</td>
<td>61</td>
<td>81</td>
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<td>77</td>
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<td>97</td>
<td>75</td>
<td>135.5</td>
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<td>123</td>
<td>75</td>
<td>163.5</td>
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<td>95</td>
<td>105</td>
<td>133.5</td>
</tr>
<tr>
<td>120</td>
<td>105</td>
<td>158.5</td>
</tr>
</tbody>
</table>

*Standard material galvanized steel. Also available as stainless steel-version V2A, material 1.4305 (AISI 304) or black powder coating

For E2/000 e-chain®

- Trough profile set without glide bar (incl. 5 clip connectors)
- Trough bracket set (incl. clamp blocks, "long" Version 02)

Order example for end feed, travel ≈ 9.5 m / guide trough 10 m

<table>
<thead>
<tr>
<th>Order text</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trough profile set without glide bar (incl. 5 clip connectors)</td>
<td>GF92.30.07.2000</td>
</tr>
<tr>
<td>Trough brackets (incl. 11 clamping blocks, &quot;long&quot; Version 02)</td>
<td>Part No. GF9.2.11</td>
</tr>
</tbody>
</table>

Order text: 10 m = 5 x 2 m sections trough profile, without glide bar Part No. GF92.30.07.2000

10 m = 5 x GF92.30.07.2000 + 11 x GF9.2.11

More information and assembly instructions www.igus.eu/eu/guidefast
Tubular Trough System RS

Introduction

Tubular steel Ø 12x1, Ø 15x1 (galvanized)
Installation set (Material igumid G)
Installation set for junction of area with glide bar to area without glide bar
Installation set for junction of area with glide bar to area without glide bar and spacer plate in detail
Waste products simply fall through the spaces with glide bar

Transition from area without glide bar to area with glide bar and spacer plate in detail

Area 1 m with glide bar
Area 1 m without glide bar
2 m total length

Lets light and dirt through - Tubular trough system RS

igus® tubular trough are simple and reasonable options to safely guide e-chains®. Recommended for less demanding applications and applications with travel speeds less than 2 m/s, as well as travel distances less than 50 m.:

- For application areas where dirt, chips occur - the waste products simply fall through the spaces
- The tubes are available in galvanized steel or polymer
- Very easy assembly - the elements are pushed together and clipped in
- No difficult setting of the correct width - the fitting spacers are delivered with the complete order
- Junction installation set for junction of area without glide bar to area with glide bar

Typical industries and applications:

- For application areas with dirt or chips

Available from stock. Delivery time in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
For the following igus® Series

Order Example: Inner width 57 mm.

For 8 m trough the following parts are required:

<table>
<thead>
<tr>
<th>Area with glide bar:</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 x Installation set</td>
<td>92.71.05</td>
<td>0.15</td>
</tr>
<tr>
<td>4 x 4 piece</td>
<td>92.80</td>
<td></td>
</tr>
</tbody>
</table>

Area without glide bar:

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>92.74.05</td>
<td></td>
</tr>
</tbody>
</table>

1 x Installation set junction

For the following igus® Series

Order Example: Inner width 50 mm.

For 8 m trough the following parts are required:

<table>
<thead>
<tr>
<th>Area with glide bar:</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 x Installation set</td>
<td>93.71.05</td>
<td>0.20</td>
</tr>
<tr>
<td>4 x 4 piece</td>
<td>93.80</td>
<td></td>
</tr>
</tbody>
</table>

Area without glide bar:

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>93.74.05</td>
<td></td>
</tr>
</tbody>
</table>

1 x Installation set junction

---

Tubular Trough System RS

Trough height: 90 mm | Product range

For 1 m trough without glide bars 6 tubes 1 meter long are required. For 1 m trough with glide bars 4 tubes 1 meter long are required.

Supplement Part No. with the required width XXX in the dimension table. Example: 92.71.050

Order Example: Inner width 57 mm.

For 8 m trough the following parts are required:

<table>
<thead>
<tr>
<th>Area with glide bar:</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 x Installation set</td>
<td>92.71.05</td>
<td>0.15</td>
</tr>
<tr>
<td>+ tube: 4 x 4 piece</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Area without glide bar:

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>92.74.05</td>
<td></td>
</tr>
</tbody>
</table>

1 x Installation set junction

---

Tubular Trough System RS

Trough height: 146 mm | Product range

For 1 m trough without glide bars 6 tubes 1 meter long are required. For 1 m trough with glide bars 4 tubes 1 meter long are required.

Supplement Part No. with the required width XXX in the dimension table. Example: 93.71.050

Order Example: Inner width 50 mm.

For 8 m trough the following parts are required:

<table>
<thead>
<tr>
<th>Area with glide bar:</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 x Installation set</td>
<td>93.71.05</td>
<td>0.20</td>
</tr>
<tr>
<td>+ tube: 4 x 4 piece</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Area without glide bar:

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>93.74.05</td>
<td></td>
</tr>
</tbody>
</table>

1 x Installation set junction
For 1 m trough without glide bars, 6 tubes 1 meter long are required. For 1 m trough with glide bars, 4 tubes 1 meter long are required.

**Tubular Trough | Components**

**Component** | **Part No.** | **Weight**
--- | --- | ---
Installation set without glide bars | 95.70.XXX | 0.21
Installation set with glide bars | 95.71.XXX | 0.17
Installation set junction | 95.74.XXX |

*Note: The table above lists the part numbers and weights for the installation sets and related components.*

Supplement Part No. with the required width XXX in the dimension table. Example: 95.71.200

**Order Example:** Inner width 50 mm. For 8 m trough the following parts are required:

<table>
<thead>
<tr>
<th>Area with glide bar:</th>
<th>4 x Installation set</th>
<th>Part No. 95.71.05</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+ tube: 4 x 4 piece</td>
<td>Part No. 93.80</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area without glide bar:</th>
<th>4 x Installation set</th>
<th>Part No. 95.70.05</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+ tube: 4 x 6 piece</td>
<td>Part No. 93.80</td>
</tr>
</tbody>
</table>

1 x Installation set junction | Part No. 95.74.05

**Dimensions**

For the following igus® Series

E2/000

<table>
<thead>
<tr>
<th>Width</th>
<th>Bi</th>
<th>Ba</th>
<th>B_Ra</th>
<th>B_Ri</th>
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</thead>
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<tr>
<td>50</td>
<td>60</td>
<td>120</td>
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<td>60*</td>
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<tr>
<td>75</td>
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<tr>
<td>90*</td>
<td>106</td>
<td>164</td>
<td>111</td>
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<tr>
<td>90</td>
<td>100</td>
<td>164</td>
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<tr>
<td>125</td>
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<td>200</td>
<td>219</td>
<td>277</td>
<td>224</td>
<td></td>
</tr>
</tbody>
</table>

*spacer plate upon request

XXX = e-chain® width

For more information and assembly instructions, visit www.igus.eu/eu/Tubulartrough
Simple and cost-effective - Snap-in trough System SP

The igus® snap-in trough system SP is a very simple and cost-effective trough-system made from galvanized steel to guide e-chains® up to 50 m lengths at low speeds.

- Smaller than conventional troughs
- Easy and fast assembly
- Fixed inner width due to spacer
- No sharp metal edges in the internal area because of covered connectors
- Cost-effective because of easy assembly

Typical industries and applications
- For simple applications with less installation space

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
Snap-in trough System SP 91.930 91.931
Trough height: 55.5 mm | Product range

For the following igus® Series

Order Example: Series 15, inner width 50 mm.
For 20 m trough the following parts are required:

- Trough set without glide bars (5 x 2 m) Part No. 91.930
- Trough set with glide bars (5 x 2 m) Part No. 91.931
- Installation set with spacer plate Part No. 91.950.05

Supplement Part No. with the required width XXX in the dimension table. Example: 91.950.05

Dimensions

<table>
<thead>
<tr>
<th>XXX</th>
<th>B_{Ba}</th>
<th>B_{Bi}</th>
</tr>
</thead>
<tbody>
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<td>21</td>
<td>46</td>
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<td>025</td>
<td>31</td>
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<td>038</td>
<td>43</td>
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<tr>
<td>06</td>
<td>88</td>
<td>113</td>
</tr>
<tr>
<td>07</td>
<td>108</td>
<td>133</td>
</tr>
</tbody>
</table>

Component: Trough set without glide bars, 2 glide strips of 1 m
Part No. 91.930 Weight = 1.50

Component: Glide bar set, 2 glide bars, 1 m section
Part No. 91.920

Component: Installation set with spacer plate
Part No. 91.950.05 Weight = 0.03

Component: Installation set without spacer plate
Part No. 91.950

Dimensions

<table>
<thead>
<tr>
<th>XXX</th>
<th>B_{Ba}</th>
<th>B_{Bi}</th>
</tr>
</thead>
<tbody>
<tr>
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<td>03</td>
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<td>05</td>
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<td>07</td>
<td>66</td>
<td>119</td>
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<tr>
<td>09</td>
<td>78</td>
<td>131</td>
</tr>
<tr>
<td>10</td>
<td>92</td>
<td>145</td>
</tr>
<tr>
<td>12</td>
<td>114</td>
<td>167</td>
</tr>
</tbody>
</table>

Component: Trough set without glide bars, 2 glide strips of 1 m
Part No. 92.930 Weight = 5.50

Component: Glide bar set, 2 glide bars, 1 m section
Part No. 92.920

Component: Installation set with spacer plate
Part No. 92.950.05 Weight = 0.08

Component: Installation set without spacer plate
Part No. 92.950

For 20 m trough the following parts are required:

- Trough set without glide bars (5 x 2 m) Part No. 92.931
- Trough set with glide bars (5 x 2 m) Part No. 92.931
- Installation set with spacer plate Part No. 92.950.05

More information and assembly Instructions: www.igus.eu/eu/Snap-in-trough
For the following igus® Series

E2/000

1250

For the following igus® Series

E2/000

1270

1250

2700

For the following igus® Series

E2/000

1250

Order Example: Series 3500, inner width 50 mm.
For 20 m trough the following parts are required:

- 10 m, Trough set without glide bars (5 x 2 m) Part No. 93.931
- 10 m, Trough set with glide bars (5 x 2 m) Part No. 93.931
- Installation set with spacer plate Part No. 93.950.050

Snap-in trough System SP | 93.930 | 93.931
Trough height: 138,6 mm | Product range

Supplement Part No. with the required width XXX in the dimension table. Example: 93.950.050

Dimensions

<table>
<thead>
<tr>
<th>XXX</th>
<th>Ba</th>
<th>Ri</th>
</tr>
</thead>
<tbody>
<tr>
<td>050</td>
<td>102</td>
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</tr>
<tr>
<td>075</td>
<td>127</td>
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<tr>
<td>100</td>
<td>152</td>
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</tr>
<tr>
<td>250</td>
<td>302</td>
<td>302</td>
</tr>
</tbody>
</table>

Component

- Trough set without glide bars, 2 glide strips of 1 m
- Trough set with glide bars, 2 glide strips of 1 m
- Glide bar set, 2 glide bars, 1 m section
- Screw set
- Installation set with spacer plate
- Installation set without spacer plate

Part No. | Weight
---------|--------
93.930 | 9.00
93.931 | 10.0
93.920 |
93.921 |
93.950.000 | 0.20
93.950.00 | 0.16

Order Example: Series 2700, inner width 50 mm.
For 20 m trough the following parts are required:

- 10 m, Trough set without glide bars (5 x 2 m) Part No. 95.931
- 10 m, Trough set with glide bars (5 x 2 m) Part No. 95.931
- Installation set with spacer plate Part No. 93.950.05

Supplement Part No. with the required width XXX in the dimension table. Example: 95.950.05

Dimensions

<table>
<thead>
<tr>
<th>XXX</th>
<th>Ba</th>
<th>Ri</th>
</tr>
</thead>
<tbody>
<tr>
<td>050</td>
<td>94</td>
<td>70</td>
</tr>
<tr>
<td>075</td>
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<td>85</td>
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<td>100</td>
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<tr>
<td>250</td>
<td>244</td>
<td>220</td>
</tr>
</tbody>
</table>

More information and assembly instructions: www.igus.eu/eu/Snap-in-trough
Support Tray | Introduction

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.

Light weight material - available in the color of your choice.

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 | Contents | Selection Table

Support tray with bracket for easy mounting on your application.

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

More information and assembly Instructions: www.igus.eu/eu/supporttray
### Support Tray Type 01

**Product range**

- Standard-length from stock 1000 mm and 2000 mm

**For the following igus® Series**

- E2/000
- E2/000 2400/2450/2480/2500
- E2/000 2600/2650/2680/2700
- E4.1
- E4.21
- E4.28/R4.28
- E4.32/H4.32/R4.32
- E4.41 light
- E4.38L/R4.38L
- E6
- E6.29/R6.29
- E6.35
- E6.40/R6.40
- E6
- E61.29

### Dimensions and mounting holes

#### Support Tray - Type 01

<table>
<thead>
<tr>
<th>System</th>
<th>Suitable for the following series</th>
<th>Width</th>
<th>B_{Ri}</th>
<th>B_{Ra}</th>
<th>Part No. Support tray single</th>
<th>Part No. Support tray with bracket</th>
<th>Part No. single bracket</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2/000</td>
<td>2400/2450/2480/2500</td>
<td>0.05</td>
<td>89</td>
<td>80</td>
<td>S9.010.05.000</td>
<td>S9.011.05.000</td>
<td>097.724.05.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.07</td>
<td>114</td>
<td>105</td>
<td>S9.010.07.000</td>
<td>S9.011.07.000</td>
<td>097.724.07.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.10</td>
<td>139</td>
<td>130</td>
<td>S9.010.10.000</td>
<td>S9.011.10.000</td>
<td>097.724.10.0</td>
</tr>
<tr>
<td>E2/000</td>
<td>2600/2650/2680/2700</td>
<td>0.05</td>
<td>89</td>
<td>80</td>
<td>S9.010.05.000</td>
<td>S9.011.05.000</td>
<td>097.724.05.0</td>
</tr>
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<td>S9.010.07.000</td>
<td>S9.011.07.000</td>
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<tr>
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<td>139</td>
<td>130</td>
<td>S9.010.10.000</td>
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<td>114</td>
<td>105</td>
<td>S9.010.07.000</td>
<td>S9.011.07.000</td>
<td>097.724.07.0</td>
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<td>0.10</td>
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<td>S9.010.10.000</td>
<td>S9.011.10.000</td>
<td>097.724.10.0</td>
</tr>
</tbody>
</table>

**Bracket - Type 01**

- B_{Ra} = B_{Ri} + 9 mm
- B_{Ri} = 50 mm

**Order key**

- Part No. structure 1000 mm: S9.010.07.1000.0
- Part No. structure 2000 mm: S9.011.15.2000.0

**Please replace [2000] 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 us.

**More information and assembly instructions** [www.igus.eu/eu/supporttray](http://www.igus.eu/eu/supporttray)
Support Tray | **Type 02** | Product range

Standard length from stock 1000 mm and 2000 mm

- Support Tray Type 02 - Standard length from stock 1 m and 2 m
- All connection rails 975 mm
- Bracket for easy mounting on your application

### System Suitable for the following series

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<tr>
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<td>Width</td>
<td>Part No.</td>
<td>Part No.</td>
<td>Part No.</td>
<td>Width</td>
<td>Part No.</td>
<td>Part No.</td>
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<tr>
<td>index</td>
<td>[mm]</td>
<td>tray, single</td>
<td>tray with bracket</td>
<td>single bracket</td>
<td>[mm]</td>
<td>tray, single</td>
<td>tray with bracket</td>
</tr>
<tr>
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<td>10</td>
<td>167</td>
<td>59.020.10.0</td>
<td>59.021.10.0</td>
<td>907.759.010.0</td>
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</tbody>
</table>

Please replace [boxed] 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 us.

### Support Tray - Type 02

**Dimensions and mounting holes**

- **B_{H1}** - 56 mm
- **B_{H2} = B_{H1} + 11 mm**

**Standard lengths from stock 1 m and 2 m - All connection rails 975 mm**

**Bracket - Type 02**

### Order key

**Part No. structure 1000 mm**

<table>
<thead>
<tr>
<th>S9.020.20.1000.0</th>
<th>Part No. structure 2000 mm</th>
<th>S9.021.20.2000.0</th>
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<td>Support tray</td>
<td>Support tray</td>
</tr>
<tr>
<td>without bracket</td>
<td>with bracket</td>
<td></td>
</tr>
<tr>
<td>e-chain - width</td>
<td>e-chain - width</td>
<td></td>
</tr>
<tr>
<td>Length 1000 mm</td>
<td>Length 2000 mm</td>
<td>Color, powdered black</td>
</tr>
</tbody>
</table>

**Color, powdered black**

---

More information and assembly instructions: [www.igus.eu](http://www.igus.eu)
e-chains®
for long travels
E4/4HD | P4 | rol e-chain® | autoglide
**E4/4HD | System P4 | e-chains® for long travels**

Extremely high additional fill weights on long travels - E4/4HD “Heavy-Duty”
System E4/4HD was designed for the most demanding tasks.
- Extremely high additional fill weights on long travels
- In heavy pollution or high humidity, the E4/4HD provides the required stability
- Extremely high torsional stiffness due to the “tongue and groove” design
- A longer service life is enabled by the particularly large glide surfaces
- Ideal for “Heavy-Duty” applications

www.igus.eu/eu/E4HD

---

**rol e-chain® | autoglide | e-chains® for long travels**

Rolling instead of gliding, long travels up to 800 m - rol e-chain®
Special solution for long travels. Reduce push-pull forces over 75%, gliding
- Major reduction in drive power for moving the e-chain®
- Travels up to 800 m on E4/4 rol e-chain®
- Speeds up to 6 m/s possible
- Various roller types for optimum application adaptation
- Can be used even in dirty environments

www.igus.eu/eu/role

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**from page 1269**

**from page 1284**

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57% less energy consumption - System P4 profile-rol e-chain®
Safe, low-noise, abrasion-resistant energy supply system on long travels up to 800 m and more
- Long travels up to 800 m and more, high fill weights up to 30 kg/m
- For very long travels and high travel speeds up to >10 m/s
- Identical pitch of the e-chain link with or without roller
- Smooth, low noise operation
- Autoglide crossbars provide a safe guiding
- Large modular tool box system with interior separations of the System E4

www.igus.eu/eu/P4

---

Self-guiding e-chainsystems®, guide troughs not required - autoglide
Safe, low-noise, abrasion-resistant energy supply system on long travels up to 80 m and more
- In 4 Versionen erhältlich
- Travels up to 80 m and travel speeds up to 2,5 m/s
- Cost-effective solution, guide troughs not required!
- Very quick installation times for long travels!
- Small installation width, silent operation

www.igus.eu/eu/autoglide

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**from page 1304**

**from page 1320**
**Introduction**

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

The E4/4HD system was designed for the most demanding tasks. The E4/4HD 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 enabled by the particularly large glide surfaces.

- For extremely high additional fill weights and long travels
- Ideal for "Heavy-Duty" applications

**Typical industries and applications**

- RTG, quay cranes, many other cranes
- Heavy machinery
- Steel mills
- Shipyards
- Composting plants
- Farms
- General mechanical engineering, etc.

**E4/4HD | Contents | Selection Table**

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width</th>
<th>Outer height</th>
<th>Bending radius</th>
<th>Travels max.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4040HD</td>
<td>56</td>
<td>50 - 600</td>
<td>104 - 654</td>
<td>84</td>
<td>135 - 400</td>
<td>350</td>
<td>1272</td>
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<tr>
<td>5050HD</td>
<td>80</td>
<td>50 - 600</td>
<td>110 - 660</td>
<td>108</td>
<td>150 - 500</td>
<td>500</td>
<td>1278</td>
</tr>
</tbody>
</table>

**Crossbars every link**

For especially demanding applications

**e-tubes**

Fully enclosed, excellent cable protection

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)

**The E4 e-chain® opener reduces assembly time**

E-chain® opener tools for convenient opening and closing of E4 series igus® e-chains®. Especially for e-chains® with many crossbars the assembly is much easier. Especially in areas difficult to access mounting is simplified big savings in assembly time. More information at www.igus.eu/E4savetime

**AX - Special e-chains® for fine dust applications**

For long travel applications and fine dust applications, we have developed a special e-chain® system with exterior dirt-repellent stop dogs. Exterior stop dogs prevent the settling of dust, dirt, chips, flour, etc. Mounting brackets and accessories available. More information at www.igus.eu/4040AX

**System E4/4HD**

- Proven with long travels
- e-tubes available as special design with HT material for 850°C (1562°F) hot chips

**ESD/ATEX version upon request**

**E4/4HD - High torsional rigidity**

**ESD classification: Electrically conductive**

**Notch crossbar with backside scaling**

**Wide, rounded plastic crossbars - cable friendly**

**Closed and open styles can be combined**

**Very wide gliding surface, less wear**

**High tensile stability**

**Hinged snap-open removable lids**

**Chip protection**

**Steel mounting brackets**

**ESD classification: Electrically conductive**

**ESD/ATEX version upon request**

**E4/4HD | Contents | Selection Table**

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
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<th>Outer width</th>
<th>Outer height</th>
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<tr>
<td>4040HD</td>
<td>56</td>
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<td>110 - 660</td>
<td>108</td>
<td>150 - 500</td>
<td>500</td>
<td>1278</td>
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</tbody>
</table>

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### Application

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. 20 m in vertical direction above and under water.

### Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Details</th>
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<tbody>
<tr>
<td>Gliding speed max.</td>
<td>10 [m/s]</td>
</tr>
<tr>
<td>Acceleration max.</td>
<td>50 [m/s²]</td>
</tr>
<tr>
<td>Material - permitted temperature</td>
<td>-40°C up to +120°C</td>
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<tr>
<td>Flammability class</td>
<td>VDE 0304 IIC UL94-HB</td>
</tr>
</tbody>
</table>

### Order example | Order key

Order example for complete e-chain Series 4040HD (1.0 m), color black, with mounting brackets and interior separation:

<table>
<thead>
<tr>
<th>e-chain (1.0 m)</th>
<th>Please indicate e-chain length or number of links: 1.0 m or 11 links</th>
<th>4040HD.30.300.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ Mounting brackets</td>
<td>1 set</td>
<td>4040HD.12.E</td>
</tr>
<tr>
<td>+ Interior separation</td>
<td>with 2 separators assembled every 2nd link</td>
<td>2 x 56.1.1</td>
</tr>
</tbody>
</table>

Order text: 1.0 m 4040HD.30.300.0 +4040HD.12.E +2 x 56.1.1

### Order key

- **4040HD.30.300.0**
  - Standard color black
  - Bending radius 10
  - Width index 30
  - Series / Type HD

Available from stock. **Delivery time in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)*
e-chains® Series 4040HD | crossbars every link, openable along both radii
e-tubes | Series 8840HD | fully enclosed, hinged, snap-open removable lids

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>4040HD</th>
<th>8840HD</th>
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<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
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<th>40440HD</th>
<th>8840HD</th>
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<td>591</td>
<td>8.66</td>
<td>-</td>
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<tr>
<td>4040HD.</td>
<td>60. R.0</td>
<td>600</td>
<td>654</td>
<td>9.31</td>
<td>-</td>
</tr>
</tbody>
</table>

**Note:** We recommend to realize the engineering of such a plant by our technicians. In case of travels <10 m we recommend an unsupported e-chain.

Available bending radii R (mm): 135* | 150 | 200 | 250 | 300 | 350 | 400

Supplement Part No. with required radius (R). Example: 4040HD. 30.300.0

---

**Gliding applications | Long travels up to max. 350 m | Fill weight 16 kg/m**

**Dimensions**

- **Innerheight:** 56 mm
- **Pitch:** 91 mm/lin
- **Links/m:** 11 (1001 mm)
- **Chain length:** \(\frac{S}{2} + K_2\)

**Hot Chips up to 850°C**

e-tubes that repel hot chips, up to 850°C. Some applications, depending on amount and size of the chips, can burn or melt the surface. That is no longer the case with the igus® igumid HT material.

More information ➤ [www.igus.eu/eu/HT](http://www.igus.eu/eu/HT)
Steel mounting brackets | pivoting

Moving end
Moving end
Fixed end
Fixed end

Steel pivoting | Recommended for gliding applications on long travels

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Mounting bracket</th>
</tr>
</thead>
<tbody>
<tr>
<td>4040HD.1E</td>
<td>assembled set of stainless steel mounting brackets</td>
</tr>
<tr>
<td>4040HD.1F</td>
<td>Mounting brackets Moving end</td>
</tr>
<tr>
<td>4040HD.2E</td>
<td>Mounting brackets Fixed end</td>
</tr>
</tbody>
</table>

Notes: By ordering steel mounting brackets in combination with an e-chain®, they will be delivered assembled!

- For pivoting connections
- Secure connection
- One part (two-piece) for all e-chain® widths
- Electrically conductive
- Stainless steel version available - please add index .E
  (Material: stainless steel 1.4301)

In the standard configuration separators are assembled every 2nd e-chain® link!

Standard separator, wide base unassembled assembled 56.1.1
Separator for QuickLock crossbar unassembled assembled 56.2.1
Separator, narrow base unassembled assembled 56.3.1
Notch separator for notch crossbar unassembled assembled 56.5.1

Full-width shelf, lockable unassembled assembled 520.X al 521.X

Width X [mm] unassembled assembled Width X [mm] unassembled assembled Width X [mm] unassembled assembled
050 520.050 521.050 125 520.125 521.125 225 520.225 521.225
065 520.065 521.065 150 520.150 521.150 250 520.250 521.250
075 520.075 521.075 175 520.175 521.175 300 520.300 521.300
100 520.100 521.100 200 520.200 521.200 450 520.450 521.450

E-tube: 40 mm | e-chain®: 16 mm

In the standard configuration separators are assembled every 2nd e-chain® link!

Strain relief, e.g., clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options ▶ from page 1148
Aluminum SuperTrough “Heavy-Duty”
Part No. 974.30.SL | 974.31.SL | Trough height: 184 mm

Components, trough “Basic”:
- Trough side parts, aluminum, 2 m
- Glide bar, plastic, 2 m
- Glide strips, plastic, 2 m (without glide strips on request)
- Optional: Silencer profile, rubber

Components, installation set “Basic”:
- Bottom clamp, aluminum
- C-profile, galvanized steel
- Screw M8 x 25
- Sliding nut M8
- Interface connector, plastic

C-Profile

Ba = Outer width e-chains®
Bi = Inner width e-chains®
BRi = Inner trough width
BRa = Outer trough width
HRi = Inner trough height
HRa = Outer trough height
nMon = Number of installation sets
nRi = Number of trough sets

Trough set
Guideway set
Installation set

Guide trough set without glide bar (set of 2 trough side parts, incl. glide strips)
Order text: 16 m guide trough without glide bar (2 x 2 m sections) Part No. 974.30.SL
Guide trough set with glide bar (set of 2 trough side parts, incl. glide strips)
Order text: 16 m guide trough with glide bar (2 x 2 m sections) Part No. 974.31.SL

Installation set “Basic” complete (guide trough sets + 1)
Order text: 17 installation sets Part No. 974.50.475

Option: For an additional noise dampening with silencer profile, please add Index A - Example:
Part No. 974.30.SLA

Length of the C-profile according to dimension B_m (see table)

P4 - profile-rol e-chain®, 57% less energy consumption
- Safe, low-noise, abrasion-resistant energy supply system on long travels up to 800 m and more
- High additional fill weights up to 30 kg/m
- High speeds up to 10 m/s
- Identical pitch of the e-chain® link with or without roller
- Integrated captive roller in the side part
- Autoglide crossbars provide for a safe guiding

More information from page 1294 or www.igus.eu/eu/P4

rol e-chain® - Rolling instead of gliding
Special solution for long travels. Reduce push-pull forces over 75% (gliding)
- Travels up to 800 m
- Travel speeds up to 6 m/s
- Various roller types for optimum application adaptation

More information from page 1304 or www.igus.eu/eu/role

autoglide - Self-guiding e-chainsystems®
autoglide: self-guiding e-chains®, without the need of guide troughs
- 4 versions available
- Travels up to 80 m and travel speeds up to 2.5 m/s
- Cost-effective solution
- Very quick installation times for long travels
- Small installation width, silent operation

More information from page 1304 or www.igus.eu/eu/autoglide

Rolle: e-getriebe®
- Flat chain with self-guiding chain elements, no need for guide elements
- Metre lengths up to 500 m
- Various crossbar sets for long travels up to 800 m

More information from page 1308 or www.igus.eu/eu/rolle

igus® E4 e-chains® in a Container-Crane. High loads and high speeds also at difficult weather conditions.
e-chains® Series 5050HD | crossbars every link, openable along both radii
e-tubes | Series 9850HD | fully enclosed, hinged, hinged, snap-open removable lids

### Part No. | Bi [mm] | Ba [mm] | 5050HD | 9850HD
---|---|---|---|---
5050HD. - 05. R0 | 50 | 110 | 6.65 | -
5050HD. - 06. R0 | 65 | 125 | 6.74 | -
5050HD. 9850HD. 07. R0 | 75 | 135 | 6.81 | 7.25
5050HD. - 08. R0 | 87 | 147 | 6.89 | -
5050HD. 9850HD. 10. R0 | 100 | 160 | 6.99 | 7.55
5050HD. - 11. R0 | 112 | 172 | 7.11 | -
5050HD. 9850HD. 12. R0 | 125 | 185 | 7.18 | 7.91
5050HD. - 13. R0 | 137 | 197 | 7.32 | -
5050HD. 9850HD. 15. R0 | 150 | 210 | 7.35 | 8.29
5050HD. - 16. R0 | 162 | 222 | 7.47 | -
5050HD. 9850HD. 17. R0 | 175 | 235 | 7.60 | 8.60
5050HD. - 18. R0 | 187 | 247 | 7.71 | -
5050HD. 9850HD. 20. R0 | 200 | 260 | 7.77 | 8.91
5050HD. - 21. R0 | 212 | 272 | 7.84 | -
5050HD. 9850HD. 22. R0 | 225 | 285 | 7.91 | -
5050HD. - 23. R0 | 237 | 297 | 8.02 | -
5050HD. 9850HD. 25. R0 | 250 | 310 | 8.13 | 9.64
5050HD. - 26. R0 | 262 | 322 | 8.22 | -
5050HD. 9850HD. 27. R0 | 275 | 335 | 8.32 | 10.00
5050HD. - 28. R0 | 287 | 347 | 8.38 | -
5050HD. 9850HD. 30. R0 | 300 | 360 | 8.53 | 10.30

**Note:** Available bending radii R: [350] | [200] | [250] | [300] | [350] | [400] | [500]

Supplement Part No. with required radius (R). Example: 5050HD.30.300.0
Steel mounting brackets | Pivoting

By ordering steel mounting brackets in combination with an e-chain® they will be delivered assembled!

igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu

Steel pivoting | Recommended for gliding applications on long travels

- For pivoting connections
- Secure connection
- One part (two-piece) for all e-chain® widths
- Electrically conductive
- Stainless steel version available - please add index E (Material stainless steel 1.4301)

Steel pivoting

- Secure connection

Standard - for all applications

Separator with wide base for maximum locking strength and safe standing in e-chains®.

Moving end | Fixed end

Steel pivoting

- Secure connection

For even faster installation

Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip).

For many thin cables

Separator with a narrow base for a large number of thin cables side by side. Saves space in e-chains®.

Locks safely onto in 5 mm increments

Notch separator for the notch crossbar, with scaling on the notch crossbars. For exact positioning in e-chains®.

Horizontal separation

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.

1280 e-chains® for long travels | www.igus.eu/eu/5050HD | www.igus.eu/eu/9850HD

Strain relief, e.g. clamps, tie wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options ▶ from page 1148
**P4 - profile-rol e-chain®, 57% less energy consumption**

- Safe, low-noise, abrasion-resistant energy supply system on long travels up to 800 m and more
- High additional fill weights up to 30 kg/m
- High speeds up to 10 m/s
- Identical pitch of the e-chain link with or without roller
- Integrated captive roller in the side part
- Autoglide crossbars provide for a safe guiding

For more information, please visit www.igus.eu/eu/P4

**rol e-chain® - Rolling instead of gliding**

Special solution for long travels. Reduce push pull forces over 75% (gliding) □ Travels up to 800 m □ Travel speeds up to 6 m/s □ Various roller types for optimum application adaptation

For more information, please visit www.igus.eu/eu/role

**autoglide - Self-guiding e-chainsystems®**

Autoglide: self-guiding e-chains®, without the need of guide troughs □ 4 versions available □ Travels up to 80 m and travel speeds up to 2,5 m/s □ Cost-effective solution □ Very quick installation times for long travels □ Small installation width, silent operation

For more information, please visit www.igus.eu/eu/autoglide

---

**Aluminum SuperTrough | "Heavy-Duty"**

Part No. 975.30.SL | 975.30.SL | Trough height: 236 mm

**Installation set "Heavy-Duty" with C-Profile**

For Width | Length of the C-profile according to dimension BRa (see table)
--- | ---
05 | 114 | 975.50.290
06 | 129 | 975.50.290
07 | 139 | 975.50.295
08 | 151 | 975.50.295
09 | 164 | 975.50.300
10 | 176 | 975.50.300
11 | 189 | 975.50.325
12 | 202 | 975.50.325
13 | 214 | 975.50.350
14 | 225 | 975.50.350
15 | 239 | 975.50.400
16 | 264 | 975.50.400
17 | 289 | 975.50.425
18 | 301 | 975.50.425
19 | 314 | 975.50.450
20 | 326 | 975.50.450
21 | 339 | 975.50.475
22 | 339 | 975.50.475
23 | 351 | 975.50.500
24 | 364 | 975.50.500
25 | 376 | 975.50.500
26 | 389 | 975.50.525
27 | 401 | 975.50.525
28 | 414 | 975.50.550
29 | 426 | 975.50.550
30 | 439 | 975.50.575
31 | 439 | 975.50.575
32 | 451 | 975.50.590
33 | 464 | 975.50.590
34 | 476 | 975.50.590
35 | 489 | 975.50.625
36 | 501 | 975.50.625
37 | 514 | 975.50.650
38 | 526 | 975.50.650
39 | 539 | 975.50.675
40 | 551 | 975.50.675
41 | 564 | 975.50.700
42 | 576 | 975.50.700
43 | 589 | 975.50.725
44 | 601 | 975.50.725
45 | 614 | 975.50.750
46 | 625 | 975.50.750
47 | 637 | 975.50.800

**Guide trough set without glide bar** (set of 2 trough side parts, incl. glide strips)

**Guide trough set with glide bar** (set of 2 trough side parts, incl. glide strips)

**Order test: 16 m guide trough without glide bar** (8 x 2 m sections) Part No. 975.30.SL
**Order test: 16 m guide trough with glide bar** (8 x 2 m sections) Part No. 975.31.SL

**Installation set "Basic" complete** (guide trough sets + 1)

**Order example: Length of travel 30 m - Center mounted for Series 5050HD, 30.300.0 with BRa = 364**

**Guide trough set without glide bar** (set of 2 trough side parts, incl. glide strips)

**Guide trough set with glide bar** (set of 2 trough side parts, incl. glide strips)

**Order test: 16 m guide trough without glide bar** (8 x 2 m sections) Part No. 975.30.SL
**Order test: 16 m guide trough with glide bar** (8 x 2 m sections) Part No. 975.31.SL

**Installation set "Basic" complete** (guide trough sets + 1)

**Order example: Length of travel 30 m - Center mounted for Series 5050HD, 30.300.0 with BRa = 364**

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**Order test: 16 m guide trough with glide bar** (8 x 2 m sections) Part No. 975.31.SL

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**Order example: Length of travel 30 m - Center mounted for Series 5050HD, 30.300.0 with BRa = 364**

**Guide trough set without glide bar** (set of 2 trough side parts, incl. glide strips)

**Guide trough set with glide bar** (set of 2 trough side parts, incl. glide strips)

**Order test: 16 m guide trough without glide bar** (8 x 2 m sections) Part No. 975.30.SL
**Order test: 16 m guide trough with glide bar** (8 x 2 m sections) Part No. 975.31.SL

**Installation set "Basic" complete** (guide trough sets + 1)

**Order example: Length of travel 30 m - Center mounted for Series 5050HD, 30.300.0 with BRa = 364**

**Guide trough set without glide bar** (set of 2 trough side parts, incl. glide strips)

**Guide trough set with glide bar** (set of 2 trough side parts, incl. glide strips)

**Order test: 16 m guide trough without glide bar** (8 x 2 m sections) Part No. 975.30.SL
**Order test: 16 m guide trough with glide bar** (8 x 2 m sections) Part No. 975.31.SL

**Installation set "Basic" complete** (guide trough sets + 1)
**System P4**

**Introduction**

- 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: Steel mounting glide crossbars
- Robust: Steel mounting brackets

---

**Advantages**

- Better cables, stronger and rolling e-chains
- Rolling instead of gliding
- Stronger e-chains
- Optimized cables
- Gliding application

---

**Energy efficiency**

**Save up to ca. 57% energy**

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.

---

**System P4 | igus profile-rol e-chain tests**

**Travel speed igus® P4 profile-rol e-chain**

- 1999: 2 m/s
- 2004: 5 m/s
- 2008: 8 m/s

---

**System P4**

- Energy efficiency
- Save up to ca. 57% energy

---

**igus® System P4 Energy efficiency**

Sample calculations online

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**igus® GmbH Germany**

Phone +49 2203 9649-800  Fax -222  info@igus.de  www.igus.eu
System P4 | Contents | Selection Table

System P4 - profile-rol e-chain®
Safe, low-noise, abrasion-resistant on long travels

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height (hi)</th>
<th>Inner width (Bi)</th>
<th>Outer width (B)</th>
<th>Outer height (ha)</th>
<th>Bending radius (R)</th>
<th>Travels (max. [m])</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>P4.32</td>
<td>32</td>
<td>100 - 200</td>
<td>132 - 232</td>
<td>54</td>
<td>150 - 250</td>
<td>500</td>
<td>1288</td>
</tr>
<tr>
<td>P4.42</td>
<td>42</td>
<td>100 - 200</td>
<td>154 - 254</td>
<td>64</td>
<td>100 - 350</td>
<td>600</td>
<td>1292</td>
</tr>
<tr>
<td>P4.56</td>
<td>56</td>
<td>180 - 400</td>
<td>250 - 470</td>
<td>84</td>
<td>250 - 350</td>
<td>800</td>
<td>1296</td>
</tr>
<tr>
<td>P4.80</td>
<td>80</td>
<td>180 - 400</td>
<td>256 - 476</td>
<td>108</td>
<td>250 - 350</td>
<td>800</td>
<td>1300</td>
</tr>
</tbody>
</table>

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)

System P4 | Features | Accessories

- **Accessories**
  - Standard color black
  - Bending radius R
  - Width index
  - Series / Type

- **Features**
  - 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
  - Guide trough system
  - Special geometry in combination with autoglide cross bars allows for offset upper and lower run
  - Strong installation kits for long cycle life
  - Stainless trough segments resist corrosion and seawater

- **System P4**
  - e-chains®
  - For long travels
  - www.igus.eu/eu/P4

Technical data

- Gliding speed, rolling max. >10 [m/s]
- Acceleration, rolling max. 50 [m/s²]
- Material - permitted temperature °C, igumid G -40° up to +120° C
- Flammability class, igumid G VDE 0304 IIC UL94 HB

Order example | Order key

Order example for complete e-chain® Series P4.32 (1.0 m), color black, with mounting brackets and interior separation:

- e-chain® (1.0 m) Please indicate e-chain® length or number of links: 1.0 m or 18 links P4.32.15.150.0
- + Mounting brackets 1 set (with strain relief) P4.32100.34.VS.E45
- + Interior separation with 2 separators assembled every 2nd link 2 x 32.1.1

Order text: 1.0 m P4.32.15.150.0 + P4.32100.34.VS.E45 + 2 x 32.1.1

Order key P4.32.15.150.0

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)
**System P4 | Series P4.32**

**Dimensions**

<table>
<thead>
<tr>
<th>Ba + 6</th>
<th>Ba</th>
<th>Bi</th>
</tr>
</thead>
<tbody>
<tr>
<td>29 max.</td>
<td>32</td>
<td>2 x 54 + 3</td>
</tr>
</tbody>
</table>

- **Inner height**: 32 mm
- **Pitch**: 56 mm/link
- **Links/m**: 18 (1008 mm)
- **Chain length**: \( \frac{S}{2} + K_2 \)

**Gliding applications**

Long travels up to max. 500 m | Fill weight 6.0 kg/m

**Note**: We recommend to realize the engineering of such a plant by our technicians. In case of travels <10 m we recommend an unsupported e-chain®.

**System P4 principle**

Offset operation of upper and lower run, resulting in continuous roll-through surface.

**System P4 - guide trough system**

- Special geometry in combination with autoglide crossbars allows for offset upper and lower run
- Strong installation kits for long cycle life
- Stainless steel trough segments resist corrosion and seawater

**Product range**

**profile-rol-e-chain® with comb style autoglide crossbars, medium inner height**

**Profile-rol-e-chain® with comb style autoglide crossbars**

**Part No.**

<table>
<thead>
<tr>
<th>e-chain®</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R</th>
<th>Available bending radii</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>P4.32.10.R.0</td>
<td>100</td>
<td>132</td>
<td>075°</td>
<td>125°</td>
<td>150</td>
</tr>
<tr>
<td>P4.32.15.R.0</td>
<td>150</td>
<td>182</td>
<td>075°</td>
<td>125°</td>
<td>150</td>
</tr>
<tr>
<td>P4.32.20.R.0</td>
<td>200</td>
<td>232</td>
<td>075°</td>
<td>125°</td>
<td>150</td>
</tr>
</tbody>
</table>

*Radius available upon request, please consult igus® for delivery times.

Supplement Part No. with required radius (R). Example: P4.32.15.150.0

**Total length of guide trough**

**Guide trough with glide bar**

**Guide trough without glide bar**

**Notes**

- For further information, visit [www.igus.eu/P4.32](http://www.igus.eu/P4.32)

**igus® GmbH Germany | Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu**
### Steel mounting brackets - pivoting

**Part No.**

- **P4.32100.3.VS.E45**: Mounting brackets Moving end
- **P4.32100.4.VS.E45**: Mounting brackets Fixed end

**Recommended for gliding applications on long travels**

- **For pivoting connections**
- **Secure connection**
- **One part (two-piece) for all e-chain widths**
- **Electrically conductive** (Material: stainless steel 1.4301)

**Notes:** By ordering steel mounting brackets in combination with an e-chain®, they will be delivered assembled!

---

**Steel pivoting**

- For even faster installation
  - Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip).

- For many thin cables
  - Separator with a narrow base for a large number of thin cables side by side. Saves space in e-chains®.

- Locks safely onto in 5 mm increments
  - Notch separator for the notch crossbar, with scaling on the notch crossbars. For exact positioning in e-chains®.

**Horizontal separation**

- 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 one height.

---

**Strain relief**

- E.g., clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options is on page 1148.

---

**System P4 | Series P4.32 | Interior separation | Standard**

**New generation interior separation**

- In the standard configuration separators are assembled every 2nd e-chain link!

**Standard - for all applications**

- Separator with wide base for maximum locking strength and safe standing in e-chains®.

**Separator for QuickLock crossbar**

- Unassembled
- Assembled

**Separator; narrow base**

- Unassembled
- Assembled

**Notch separator for notch crossbar**

- Unassembled
- Assembled

**Full-width shelf; lockable**

- Unassembled
- Assembled

**Lockable full-width shelves**

<table>
<thead>
<tr>
<th>X (mm)</th>
<th>Assembled</th>
<th>Unassembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>3200.050</td>
<td>3210.050</td>
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<tr>
<td>75</td>
<td>3200.075</td>
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<td>100</td>
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<tr>
<td>115</td>
<td>3200.115</td>
<td>3210.115</td>
</tr>
</tbody>
</table>
System P4 | Series P4.42 | Product range

profile-rol e-chain® with comb style autoglidge crossbars, medium inner height.

P4.42 crossbars every link

P4.42 | openable along both radii, crossbars every link | comb style autoglidge crossbars

Part No. | e-chain | BI | Ba | R | Available bending radii | Weight |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>P4.42.10.R.0</td>
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<td>154</td>
<td></td>
<td></td>
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<td></td>
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<td>100</td>
</tr>
<tr>
<td>P4.42.20.R.0</td>
<td>200</td>
<td>254</td>
<td></td>
<td></td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

Supplement Part No. with required radius (R). Example: P4.42.15.150.0

Gliding applications | Long travels up to max. 600 m | Fill weight 7,0 kg/m

Note: We recommend to realize the engineering of such a plant by our technicians. In case of travels <10 m we recommend an unsupported e-chain®.

R | 100 | 125 | 150 | 200 | 250 | 300 | 350
---|----|----|----|----|----|----|----
H_3 | 140 | 140 | 140 | 140 | 140 | 140 | 140
D_2 | 520 | 785 | 940 | 1280 | 1620 | 1960 | 2265
K_2 | 930 | 1206 | 1407 | 1876 | 2345 | 2814 | 3216
\(\Delta_{CL}\) | 195 | 335 | 470 | 765 | 1045 | 1330 | 1615

System P4 - guide trough system

| Special geometry in combination with autoglidge crossbars allows for offset upper and lower run. Strong installation kits for long cycle life. Stainless steel trough segments resist corrosion and seawater. Available upon request. More information ® www.igus.eu/eu/P4

System P4 principle

Offset operation of upper and lower run, resulting in continuous roll-through surface.

System P4 - guide trough system

- Special geometry in combination with autoglidge crossbars allows for offset upper and lower run.
- Strong installation kits for long cycle life.
- Stainless steel trough segments resist corrosion and seawater.
- Available upon request.

More information ® www.igus.eu/eu/P4
Steel pivoting | Recommended for gliding applications on long travels

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Mounting bracket</th>
</tr>
</thead>
<tbody>
<tr>
<td>P4.42100.3.VS.E45</td>
<td>assembled set of stainless steel mounting brackets</td>
</tr>
<tr>
<td>P4.42100.4.VS.E45</td>
<td>Mounting brackets Moving end</td>
</tr>
<tr>
<td>P4.42100.3.VS.E45</td>
<td>Mounting brackets Fixed end</td>
</tr>
</tbody>
</table>

Notes: By ordering steel mounting brackets in combination with an e-chain®, they will be delivered assembled!

- For pivoting connections
- Secure connection
- One part (two-piece) for all e-chain® widths
- Electrically conductive (Material: stainless steel 1.4301)

Steel mounting brackets pivoting

New generation interior separation

In the standard configuration separators are assembled every 2nd e-chain® link!

- Standard separator, wide base
  - unassembled 42.1
  - assembled 42.1.1
- Separator for QuickLock crossbar
  - unassembled 42.2
  - assembled 42.2.1
- Separator, narrow base
  - unassembled 42.3
  - assembled 42.3.1
- Notch separator for notch crossbar
  - unassembled 42.5
  - assembled 42.5.1
- Full-width shelf, lockable
  - unassembled 3200.0
  - assembled 3210.0

Steel pivoting

Recommended for gliding applications on long travels

- Electrically conductive (Material: stainless steel 1.4301)

Strain relief, e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options ▶ from page 1148

1294 e-chains® for long travels ▶ www.igus.eu/eu/P4.42

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1295
System P4 | Series P4.56 | Product range
profile-rol e-chain® with comb style autoglide crossbars, large inner height

System P4 - guide trough system
- Special geometry in combination with autoglide crossbars allows for offset upper and lower run
- Strong installation kits for long cycle life
- Stainless steel trough segments resist corrosion and seawater
- Available upon request.

More information: www.igus.eu/eu/P4

1296 e-chains® for long travels | www.igus.eu/eu/P4.56
Steel mounting brackets

**pivoting**

By ordering steel mounting brackets in combination with an e-chain®, they will be delivered assembled!

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**System P4 | P4.56 | Steel mounting brackets pivoting**

**Note:** Please observe a lateral spacing to the side links of an e-chain®: 16 mm

For pivoting connections
- Secure connection
- One part (two-piece) for all e-chain® widths
- Electrically conductive (Material: stainless steel 1.4301)

**Steel pivoting | Recommended for gliding applications on long travels**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Mounting bracket pivoting</th>
</tr>
</thead>
<tbody>
<tr>
<td>P4.56100.3.VS.E45</td>
<td>assembled set of stainless steel mounting brackets</td>
</tr>
<tr>
<td>P4.56100.4.VS.E45</td>
<td>Mounting brackets Moving end</td>
</tr>
<tr>
<td>P4.56100.3.VS.E45</td>
<td>Mounting brackets Fixed end</td>
</tr>
</tbody>
</table>

**Fixed end**

<p>| | | |</p>
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<tr>
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**Moving end**

<p>| | | |</p>
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<tr>
<td>45</td>
<td>12</td>
<td>12</td>
</tr>
</tbody>
</table>

**Steel pivoting**

- For even faster installation
- For many thin cables
- Locks safely onto in 5 mm increments
- Horizontal separation
- Strain relief, e.g., clamps, tie-down plates, nakgets and plug-in clips are available from stock. The complete chainfix range with order options from page 1148

**Steel pivoting**

- Standard - for all applications
- For even faster installation
- For many thin cables
- Locks safely onto in 5 mm increments
- Horizontal separation

| Lockable full-width shelves Width X [mm] unassembled assembled |
|----|----|----|
| 050 | 520.050 | 521.050 |
| 065 | 520.065 | 521.065 |
| 075 | 520.075 | 521.075 |
| 100 | 520.100 | 521.100 |

| Width X [mm] unassembled assembled |
|----|----|
| 125 | 520.125 | 521.125 |
| 150 | 520.150 | 521.150 |
| 175 | 520.175 | 521.175 |
| 200 | 520.200 | 521.200 |
| 225 | 520.225 | 521.225 |
| 250 | 520.250 | 521.250 |
| 275 | 520.275 | 521.275 |
| 300 | 520.300 | 521.300 |
| 325 | 520.325 | 521.325 |
| 350 | 520.350 | 521.350 |
| 375 | 520.375 | 521.375 |
| 400 | 520.400 | 521.400 |
| 425 | 520.425 | 521.425 |
| 450 | 520.450 | 521.450 |

**Steel pivoting**

- Standard separator, wide base unassembled assembled 56.1.1
- Separator for QuickLock crossbar unassembled assembled 56.2.1
- Separator, narrow base unassembled assembled 56.3.1
- Notch separator for notch crossbar unassembled assembled 56.5.1

**Steel pivoting**

- Full-width shelf, lockable unassembled assembled 521.X

**Steel pivoting**

- New generation interior separation
- In the standard configuration separators are assembled every 2nd e-chain® link!
**System P4 | Series P4.80 | Product range**
profile-rol-e-chain® with comb style autoglode crossbars, large inner height

**System P4 principle**
Offset operation of upper and lower run, resulting in continuous roll-through surface

**System P4 - guide trough system**
- Special geometry in combination with autoglode crossbars allows for offset upper and lower run
- Strong installation kits for long cycle life
- Stainless steel trough segments resist corrosion and seawater
- Available upon request.

**Dimensions**
- Inner height: 80 mm
- Pitch: 100 mm/lnk
- Links/m: 10 (1000 mm)
- Chain length: \( \frac{S}{2} + K_2 \)

**Gilding applications**
Long travels up to max. 800 m and more | Fill weight 30 kg/m

**Part No.**
<table>
<thead>
<tr>
<th>e-chain®</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bending radii</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>P4.80</td>
<td>180</td>
<td>256</td>
<td>150° 200° 250° 300° 350° 400° 450° 500°</td>
<td>≈ 8.85</td>
</tr>
<tr>
<td>P4.80</td>
<td>200</td>
<td>276</td>
<td>150° 200° 250° 300° 350° 400° 450° 500°</td>
<td>≈ 9.33</td>
</tr>
<tr>
<td>P4.80</td>
<td>250</td>
<td>326</td>
<td>150° 200° 250° 300° 350° 400° 450° 500°</td>
<td>≈ 9.46</td>
</tr>
<tr>
<td>P4.80</td>
<td>300</td>
<td>376</td>
<td>150° 200° 250° 300° 350° 400° 450° 500°</td>
<td>≈ 9.83</td>
</tr>
<tr>
<td>P4.80</td>
<td>350</td>
<td>426</td>
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<td>≈ 10.19</td>
</tr>
<tr>
<td>P4.80</td>
<td>400</td>
<td>476</td>
<td>150° 200° 250° 300° 350° 400° 450° 500°</td>
<td>≈ 10.46</td>
</tr>
</tbody>
</table>

*Radius available upon request, please consult igus® for delivery times.

Supplement Part No. with required radius (R). Example: P4.80.20.250.0

**Extension link for heavy fill weights**
- 50% higher fill weight possible
- Maximum rigidity
- Divides cross section into compartments (electric/hydraulic)
- 2 inner heights (56, 80 mm)
- Available upon request.

More information: www.igus.eu/eu/P4

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**1300 e-chains® for long travels** | www.igus.eu/eu/P4 -80
System P4 | Series P4.80 | Interior separation | Standard

**New generation interior separation**

**Standard - for all applications**
Separator with wide base for maximum locking strength and safe standing in e-chains.

**For even faster installation**
Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip).

**For many thin cables**
Separator with a narrow base for a large number of thin cables side by side. Saves space in e-chains.

**Locks safely onto in 5 mm increments**
Notch separator for the notch crossbar, with scaling on the notch crossbars. For exact positioning in e-chains.

**Horizontal separation**
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.

**Steel pivoting | Recommended for gliding applications on long travels**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Mounting bracket pivoting</th>
</tr>
</thead>
<tbody>
<tr>
<td>P4.80100.34.VS.E45</td>
<td>assembled set of stainless steel mounting brackets</td>
</tr>
<tr>
<td>P4.80100.4.VS.E45</td>
<td>Mounting brackets Moving end</td>
</tr>
<tr>
<td>P4.80100.3.VS.E45</td>
<td>Mounting brackets Fixed end</td>
</tr>
</tbody>
</table>

**Notes:**
- By ordering steel mounting brackets in combination with an e-chain®, they will be delivered assembled!
- For pivoting connections
- Secure connection
- One part (two-piece) for all e-chain® widths
- Electrically conductive (Material: stainless steel 1.4301)

**Strain relief, e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options ▶ from page 1148**

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**Strain relief, e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with order options ▶ from page 1148**

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**1302 e-chains® for long travels ▶ www.igus.eu/eu/P4.80**
Long travels up to 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 800 metres 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 800 m possible
- Speeds up to 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
- Crane systems
- Bulk handling / Materials handling
- Mining / Construction machinery
- Shifting systems

Available from stock, Delivery time® in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
**Technical data**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gliding speed</td>
<td>max. 10 [m/s]</td>
</tr>
<tr>
<td>Acceleration</td>
<td>max. 50 [m/s²]</td>
</tr>
<tr>
<td>Material - permitted temperature</td>
<td>°C, igumid G</td>
</tr>
<tr>
<td>Flammability class</td>
<td>VDE 0304 IIC UL94-HB</td>
</tr>
</tbody>
</table>

**Order example | Order key**

Order example for complete e-chain Series 4040R (1.0 m), color black, with mounting brackets and interior separation:

- e-chain (1.0 m) Please indicate e-chain length or number of links: 1.0 m or 11 links: **4040.30.300.0**
- + Mounting brackets 1 set: **4040.30.12**
- + Interior separation with 2 separators assembled every 2nd link: **2 x 56.1.1**

Order text: 1.0 m 4040R.30.300.0 +4040.30.12 +2 x 56.1.1

**Available from stock. Delivery time in 24h or today!**

*(Delivery time means time until shipping of goods (after technical release))*
### Accessories

<table>
<thead>
<tr>
<th>e-chains</th>
<th>Series 2828R</th>
<th>Series 7728R</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-tubes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Pivoting KMA mounting bracket with all-sides attachment

- **Extension links** for extremely wide e-chains

#### More information

- www.igus.eu/eu/2828R
- www.igus.eu/eu/7728R

#### Product range

- **Accessories only for e-chains**
- **Smaller bending radii** (≈)

#### Bending radii for e-chains

<table>
<thead>
<tr>
<th>R1 (mm)</th>
<th>R2 (mm)</th>
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</thead>
<tbody>
<tr>
<td>2,56</td>
<td>3,03</td>
</tr>
<tr>
<td>2,02</td>
<td>3,59</td>
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<tr>
<td>2,65</td>
<td>4,04</td>
</tr>
<tr>
<td>2,92</td>
<td>4,43</td>
</tr>
</tbody>
</table>

#### Gliding applications

- **Long travels up to 250 m**
- **Full weight 60 kg/m**

#### Note

- We recommend to design the engineering of such a plant by our technicians.

#### Equation

\[ A_{12} = \frac{h_1}{l_{12}} \times 128 \]

#### Part No.

- **Series 7728R**
- **Series 2828R**

#### Weight per meter

- **e-chains**
- **e-tubes**
e-chains® | Series 3838R | crossbars every link, operable along both radii
e-tubes | Series 7838R | fully enclosed, hinged, snap-open removable lids

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>3838R [kg/m]</th>
<th>7838R [kg/m]</th>
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</thead>
<tbody>
<tr>
<td>3838R, 7838R, 05.0</td>
<td>50</td>
<td>77</td>
<td>2.06</td>
<td>2.25</td>
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<td>3838R, 06.0</td>
<td>68</td>
<td>95</td>
<td>2.09</td>
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<tr>
<td>3838R, 07.0</td>
<td>75</td>
<td>102</td>
<td>2.12</td>
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<td>3838R, 08.0</td>
<td>87</td>
<td>115</td>
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<td>2.77</td>
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Part No. | Part No. | Bi [mm] | Ba [mm] | 3838R [kg/m] | 7838R [kg/m] |
<table>
<thead>
<tr>
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<td>240</td>
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<tr>
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<td>315</td>
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<td>3.32</td>
<td>4.85</td>
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<tr>
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<td>400</td>
<td>427</td>
<td>3.90</td>
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</tr>
</tbody>
</table>

*Radius not available for e-tubes. Smaller bending radii (only for e-chains!) available upon request, please consult igus® for delivery time.

Available bending radii R [mm]: 150 | 170 | 200 | 215 | 250 | 300 | 350

Supplement Part No. with required radius (R). Example: 3838R.30.300.0

Girling applications | Long travels up to max. 330 m | Fill weight 7,0 kg/m²


Optimized, cable-saving, interior and 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 3,0 m
Aluminum SuperTrough, Basic Version

igus® GmbH Germany | Phone +49 2203 9649-800 | Fax-222 | info@igus.de | www.igus.eu
### e-chains® Series 4040R | Crossbars every link, operable along both radii

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>4040R [kg/m]</th>
<th>8840R [kg/m]</th>
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</thead>
<tbody>
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<td>50</td>
<td>86</td>
<td>3.65</td>
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</tr>
<tr>
<td>4040RL</td>
<td>06.R0</td>
<td>65</td>
<td>101</td>
<td>3.67</td>
<td>-</td>
</tr>
<tr>
<td>4040RL</td>
<td>07.R0²</td>
<td>75</td>
<td>111</td>
<td>3.78 ± 0.24</td>
<td>-</td>
</tr>
<tr>
<td>4040RL</td>
<td>08.R0</td>
<td>87</td>
<td>123</td>
<td>3.83</td>
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<td>149</td>
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<tr>
<td>4040RL</td>
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<td>161</td>
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<tr>
<td>4040RL</td>
<td>13.R0</td>
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<td>174</td>
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<tr>
<td>4040RL</td>
<td>15.R0</td>
<td>150</td>
<td>186</td>
<td>4.36 ± 5.31</td>
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<tr>
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<td>16.R0</td>
<td>162</td>
<td>199</td>
<td>4.47</td>
<td>-</td>
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<tr>
<td>4040RL</td>
<td>17.R0</td>
<td>175</td>
<td>211</td>
<td>4.58 ± 5.56</td>
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<tr>
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<td>18.R0</td>
<td>187</td>
<td>224</td>
<td>4.69</td>
<td>-</td>
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<tr>
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<td>236</td>
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<td>336</td>
<td>5.54 ± 7.27</td>
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</table>

*Bi not available for e-tubes. **Removable lid only, no hinged option.

Available bending radii R [mm]: 300 | 250 | 300 | 350 | 400

Supplement Part No. with required radius (R). Example: 4040R.30.300.0

### Gliding applications | Long travels up to max. 500 m | Fill weight 13 kg/m³

<table>
<thead>
<tr>
<th>R (mm)</th>
<th>200°</th>
<th>250°</th>
<th>300</th>
<th>350</th>
<th>400</th>
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<td>1370</td>
<td>1600</td>
<td>1850</td>
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<td>1820</td>
<td>2184</td>
<td>2548</td>
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<td>3276</td>
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</tbody>
</table>


Optimized, cable-saving Pivoting KMA mounting bracket with all-sides attachment

Steel mounting brackets, pivoting, robust, and electro-conductive

Extension links for extremely wide e-chains® up to 3.0 m

Aluminum SuperTrough, Basic Version

---

### e-chains® 4040RHD | Crossbars Every Link, Operable Along Both Radii | 8840RHD | Fully Enclosed, Hinged, Snap-Open Removable Lids

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>4040RHD 8840RHD [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>4040RHD.</td>
<td>05.R0.</td>
<td>05.0.</td>
<td>104.0.</td>
<td>+5.03</td>
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<tr>
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<td>06.R0.</td>
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<td>30.0.</td>
<td>354.0.</td>
<td>+6.91 +8.08</td>
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</tbody>
</table>

### Gliding Applications | Long Travels up to 600 m | Fill Weight 16 kg/m

- **AL** = Offset Fixed Point
- **S/2** = Moving End
- **S/2** = Fixed End
- **D2** = Guide Trough with Glide Bar
- **D2** = Guide Trough without Glide Bar
- **H2** = Total Length of Guide Trough

#### Accessories
- Optimized, cable-saving Steel mounting brackets, aluminum SuperTrough, robust and electrically conductive
- Interference program, pivoting, basic version

#### Notations
- *Note:* We recommend the engineering of such a plant by our technicians.
- In case of travels <10 m we recommend an unsupported e-chain.
- R = 200°, 250°, 300°, 350°, 400°
- H = 180°, 180°, 180°, 180°, 180°
- D = 1145°, 1870°, 2095°
- K = 1820°, 2548°, 2912°, 3276°
- AGL

#### Available Bending Radii
- R [mm]: 200°, 250°, 300°, 350°, 400°

Supplement Part No. with required radius (R). Example: 4040RHD 30.0.0
e-chains® Series 5050R

- Crossbars every link, operable along both radii
- Fully enclosed, hinged, snap-open removable lids

Part No. | Part No.  | Bi | Ba | 5050R  | 9850R
---------|-----------|----|----|--------|--------
5050R.5 | 5050R.5   | 05.R | 50 | 100 | 5.62
5050R.5 | 5050R.5   | 06.R | 65 | 115 | 5.68
5050R.9 | 9850R.9   | 07.R | 75 | 125 | 5.70, 6.24
5050R.9 | 9850R.9   | 08.R | 87 | 137 | 5.76
5050R.9 | 9850R.9   | 10.R | 100 | 150 | 5.79, 6.52
5050R.9 | 9850R.9   | 11.R | 112 | 163 | 5.85
5050R.9 | 9850R.9   | 12.R | 125 | 175 | 5.89, 6.89
5050R.9 | 9850R.9   | 13.R | 137 | 188 | 5.95
5050R.9 | 9850R.9   | 15.R | 150 | 200 | 5.98, 7.32
5050R.9 | 9850R.9   | 17.R | 175 | 225 | 6.09, 7.58
5050R.9 | 9850R.9   | 18.R | 187 | 238 | 6.15
5050R.9 | 9850R.9   | 20.R | 200 | 250 | 6.16, 7.89
5050R.9 | 9850R.9   | 22.R | 225 | 275 | 6.25
5050R.9 | 9850R.9   | 23.R | 237 | 288 | 6.31
5050R.9 | 9850R.9   | 25.R | 250 | 300 | 6.36, 8.61
5050R.9 | 9850R.9   | 27.R | 275 | 325 | 6.46, 8.82
5050R.9 | 9850R.9   | 30.R | 300 | 350 | 6.58, 9.27

Available bending radii R (mm): 1250, 1550, 1720, 1990, 2460

- *Radius not available for e-tubes. Smaller bending radii (only for e-chains) available upon request, please consult igus® for delivery time.


igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu 1317
5050RHD | 9850RHD | Product range
Heavy-Duty - Rolling instead of gliding, long travels up to 800 m

5050RHD
fully enclosed

5050RHD
9850RHD
crossbars every link

e-chains | 5050RHD | crossbars every link, operable along both radii
e-tubes | 9850RHD | fully enclosed, hinged, snap-open removable lids

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No. e-tubes</th>
<th>Bi</th>
<th>Ba</th>
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<td>300</td>
<td>360</td>
<td>8.53</td>
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</table>

For long travels www.igus.eu/eu/5050RHD www.igus.eu/eu/9850RHD
e-chains

Available bending radii R [mm] 250 | 300 | 350 | 400 | 500
Supplement Part No. with required radius (R). Example: 5050RHD.30.300.0

5050RHD-9850RHD | Dimensions | Accessories

G Harding applications | Long travels up to max. 800 m | Fill weight 30 kg/m

Part No. | Part No. e-tubes | Bi | Ba | 5050RHD 9850RHD |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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</table>

Note: We recommend to realize the engineering of such a plant by our technicians.
In case of travels <10 m we recommend an unsupported e-chain.

Available removable lids

Available bending radii R [mm] 250 | 300 | 350 | 400 | 500
Supplement Part No. with required radius (R). Example: 5050RHD.30.300.0
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 autoglide grooves.

Version 02 - For igus E2/000 e-chains®
Special crossbars with molded-on autoglide grooves. To be opened along the inner radius.

Version 03 - For igus easy chain e-chains®
Combination of the easily fillable easy chain® and injection-molded autoglide grooves in the inner radius.

Version 04 - For Series E2/000 e-chains®
Special plastic autoglide grooves side-mounted on the e-chain® “in the track”

Save on long travels, self-guiding e-chains® - autoglide

Long travels are always demanding for an e-chainsystem®. For much of the travel, the e-chain® must run on the lower run or on the glide bars. In addition the e-chainsystem® needs guides, in order to prevent a sideward 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 autoglide system in 1995. autoglide is a self-aligning e-chain®, which can dispense with guide troughs for up to 80 m travel.

- Travels up to 80 m and travel speeds up to 2,5 m/s
- Cost-effective solution, guide troughs not required!
- Very quick installation times for long travels!
- Small installation width, silent operation

Typical industries and applications
- Industrial vehicles
- Long travels with easier filling
- Simple outdoor applications

Available from stock. Delivery time® in 24h or today!
*Delivery time means time until shipping of goods after technical release*
Self-guiding e-chains® for System E4.1 - autoglide Version 01

For the larger e-chains® of the E4.1 system - crossbars in the inner radius of the e-chain® are provided with injection-moulded glide shoes. Glide wings and floor guides - Simple guide elements for quick installation on the subsurface are available for the autoglide system version 1. The traversable eccentric floor guides are fastened every 2 m on the subsurface. The glide wing fastened on the moving end feeds the e-chain® and holds this securely in the track. The autoglide crossbars safely guide the e-chain® and replace the guide trough.

- Save purchase and installation costs with this system
- Traversable over floor guide for travel distances over 10 m.

**Notes:** Only two glide wings AG.XXX.OF are required for the safe feeding of the e-chain®. 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

**Available from stock.** Delivery time® in 24h or today!

*Delivery time means time until shipping of goods (after technical release)*

Find a video online

✿ [www.igus.eu/eu/autoglide](http://www.igus.eu/eu/autoglide)

---

**Technical data**

- **Gilding speed**
  - max. 2.5 [m/s]

- **Acceleration**
  - max. 2.5 [m/s²]

- **Material - permitted temperature °C, igumid G**
  - -40° up to +120° C

- **Flammability class, igumid G**
  - VDE 0304 IIC UL94 HB

---

**Order example | Order key**

**Order example for complete e-chain® Series E4.32AG (15 m), color black, with mounting brackets and interior separation:**

- e-chain® (15 m) Please indicate e-chain® length or number of links: 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 2 m from the half of travel)
  - AG.380.BF

**Order text:** 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.

---

**Order key**

✿ E4.32.15.150.0.AG.OF.NC

- Assembly as NC Version
- With assembled glide wing
- autoglide
- Standard color black
- Bending radius R
- Width index
- Series / Type

---

**Available from stock.** Delivery time® in 24h or today!

*Delivery time means time until shipping of goods (after technical release)*

Find a video online

✿ [www.igus.eu/eu/autoglide](http://www.igus.eu/eu/autoglide)
**Series E4.32AG**

**Product range**
Crossbars in the inner radius with molded-on autoglide grooves

**autoglide Version 01**

**Dimensions**
- **Inner height**: 32 mm
- **Pitch**: 56 mm/link
- **Links/m**: 18 (1008 mm)
- **Chain length**: S + K₃

**autoglide principle**
Offset operation of upper and lower run, leads to a persisting glide surface

**Series E4.32AG**
Openable along both radii, crossbars every link | autoglide crossbars along the inner radius

<table>
<thead>
<tr>
<th>Part No. e-chain’</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R [mm]</th>
<th>Available bending radii</th>
<th>Weight [kg/m]</th>
<th>Glide wing</th>
<th>Floor guide</th>
<th>Single part</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.32.112.R0.AG.NC</td>
<td>112</td>
<td>136</td>
<td>100</td>
<td>125</td>
<td>150</td>
<td>175</td>
<td>200</td>
<td>220</td>
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<tr>
<td>E4.32.12.R0.AG.NC</td>
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<td>148</td>
<td>100</td>
<td>125</td>
<td>150</td>
<td>175</td>
<td>200</td>
<td>220</td>
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<tr>
<td>E4.32.15.R0.AG.NC</td>
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<td>173</td>
<td>100</td>
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<td>175</td>
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<tr>
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<td>200</td>
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<tr>
<td>E4.32.20.R0.AG.NC</td>
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<td>220</td>
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<tr>
<td>E4.32.262.R0.AG.NC</td>
<td>262</td>
<td>286</td>
<td>100</td>
<td>125</td>
<td>150</td>
<td>175</td>
<td>200</td>
<td>220</td>
</tr>
</tbody>
</table>

**Notes**
- We recommend to realize the engineering of such a plant by our technicians.
- In case of travels <10 m we recommend an unsupported e-chain®.

**Goliding applications**
Long travels up to max. 60 m | Fill weight*: 5.0 - 7.0 kg/m

**Accessories**
- Optimized, cable-saving interior separation program
- Forging KMA mounting bracket with all-sides attachment

**Supplement**
Part No. with required radius (R). Example: E4.32.15.150.0.AG.NC
For autoglide e-chains® with assembled glide wings, please add index .OF, e.g. E4.32.15.150.0.AG.OF.NC

**More widths upon request, please consult igus® for delivery time.**

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Phone +49 2203 9649-800 Fax -222 | info@igus.de | www.igus.eu

1325 e-chains® for long travels www.igus.eu/eu/E4.32AG
Series E4.42AG | openable along both radii, crossbars every link
| autoglide crossbars along the inner radius

**Dimensions**

**autoglide principle**
Offset operation of upper and lower run, leads to a persisting glide surface

**Glanding applications** | Long travels up to max. 70 m | Fill weight* 4.0 - 9.6 kg/m

*depends on radius

**Note:** We recommend to realize the engineering of such a plant by our technicians.
In case of travels <10 m we recommend an unsupported e-chain®.

**Accessories | More information**

Optimized, cable-saving interior separation program
Pivoting KMA mounting bracket with all-sides attachment

**Part No.** | **Bi** [mm] | **Ba** [mm] | **R** Available bending radii [mm] | **Weight** [kg/m] | **Glide wing** single part | **Floor guide** single part
---|---|---|---|---|---|---
E4.42.112.R.0.AG.NC | 112 | 312 | 125 | 150 | 160 | 175 | 200 | 250 | 300 | 350 | 2.372 | AG.380.0F | AG.380.BF
E4.42.12.R.0.AG.NC | 125 | 351 | 125 | 150 | 160 | 175 | 200 | 250 | 300 | 350 | 2.430 | AG.380.0F | AG.380.BF
E4.42.15.R.0.AG.NC | 150 | 376 | 125 | 150 | 160 | 175 | 200 | 250 | 300 | 350 | 2.569 | AG.380.0F | AG.380.BF
E4.42.17.R.0.AG.NC | 168 | 394 | 125 | 150 | 160 | 175 | 200 | 250 | 300 | 350 | 2.654 | AG.380.0F | AG.380.BF
E4.42.20.R.0.AG.NC | 200 | 426 | 125 | 150 | 160 | 175 | 200 | 250 | 300 | 350 | 2.831 | AG.380.0F | AG.380.BF
E4.42.262.R.0.AG.NC | 262 | 549 | 125 | 150 | 160 | 175 | 200 | 250 | 300 | 350 | 3.159 | AG.380.0F | AG.380.BF

More widths upon request, please consult igus® for delivery time.

Supplement Part No. with required radius (R). Example: E4.42.15.150.0.AG.NC

For autoglide e-chains® with assembled glide wings, please add index .OF e.g. E4.42.15.150.0.AG.0F.NC
### Dimensions

**autoglide principle**
Offset operation of upper and lower run, leads to a persisting glide surface.

**Series E4.56AG**

#### Part No. | Bi [mm] | Ba [mm] | R [mm] | Available bending radii | Weight [kg/m] | Glide wing single part | Floor guide single part
--- | --- | --- | --- | --- | --- | --- | ---
E4.56.15.R.0.AG.NC | 150 | 184 | 150 | 175 | 200 | 240 | 250 | 300 | 350 | 400 | 450 | 500 | 4.109 | AG.400.OF | AG.380.BF
E4.56.21.R.0.AG.NC | 232 | 247 | 150 | 175 | 200 | 240 | 250 | 300 | 350 | 400 | 450 | 500 | 4.567 | AG.400.OF | AG.380.BF
E4.56.25.R.0.AG.NC | 250 | 284 | 150 | 175 | 200 | 240 | 250 | 300 | 350 | 400 | 450 | 500 | 4.056 | AG.400.OF | AG.380.BF

*Note: We recommend to realize the engineering of such a plant by our technicians. In case of travels <10 m we recommend an unsupported e-chain.*

#### Gliding applications | Long travels up to max. 80 m | Fill weight* 6.4 - 12 kg/m

*depends on radius

**Accessories | More information**
www.igus.eu/eu/E4.56AG

- Optimized, cable-saving interior separation program
- Pivoting KMA mounting bracket with all-sides attachment

---

| Part No. | E-chain® | e-chain® autoglide Version 01 Series E4.56AG
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>E4.56.15.R.0.AG.NC</td>
<td>150</td>
<td>184</td>
</tr>
<tr>
<td>E4.56.21.R.0.AG.NC</td>
<td>232</td>
<td>247</td>
</tr>
<tr>
<td>E4.56.25.R.0.AG.NC</td>
<td>250</td>
<td>284</td>
</tr>
</tbody>
</table>

More widths upon request, please consult igus® for delivery time.

Supplement Part No. with required radius (R). Example: E4.56.15.150.0.AG.NC

For autoglide e-chains® with assembled glide wings, please add index .OF e.g. E4.56.15.150.0.AG.OF.NC
Self-guiding e-chains® for System E2/000 - autoglide Version 02

With the autoglide system, interfering guide troughs for use in long travels can be dispensed with. Self-guiding e-chains® glide safely on top of each other up to 70 m travel. This system has now been extended for igus® E2/000 and optimised further. Larger glide surfaces of the autoglide crossbars ensure an even higher lifetime of the system. A plug-in glide wing ensures the safe threading of the e-chain® in the first few metres of travel. The traversable excentric floor guides are fastened every 2 m on the subsurface.

- Travels up to 70 m without guide trough at speeds up to 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”

Find a video online
► www.igus.eu/safetrough

Technical data

- Gilding speed: max. 2.0 [m/s]
- Acceleration: max. 1.0 [m/s²]
- Material - permitted temperature °C: igumid G -40° up to +120° C
- Flammability class, igumid G: VDE 0304 IIC UL94 HB

Order example

Order example for complete e-chain® Series 2400AG (15 m), color black, with mounting brackets and interior separation:

- e-chain® (15 m) Please indicate e-chain® length or number of links: 15 m or 347 links 2400.05AG.100.0
- + Glide wing 2 glide wings are required per e-chain® AG.2400.OF
- + Floor guides 8 pieces (2 units every 2 m from the half of the travel) AG.380.BF

Order text: 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.
2400AG | snap-open along inner radius | Crossbars with molded-on autoglide grooves

### Product range

**Series 2400AG**

Crossbars with molded-on autoglide grooves

New in this catalog

---

### Dimensions

**autoglide principle**

Offset operation of upper and lower run, leads to a persisting glide surface

![Diagram of autoglide principle](image)

**Inner height:** 25 mm

**Pitch:** 46 mm/link

**Links/m:** 22 (0.012 mm)

**Chain length:** 5 + K3

---

### Gliding applications

| Long travels up to max. 40 m | Fill weight: 2.0 kg/m |

---

### Accessories

- Optimized, cable-saving, pivoting mounting brackets
- Crossbars with molded-on autoglide grooves
- Internal separation program for gliding applications
- KMA mounting bracket with all-sides attachment

---

### Table

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bending radii</th>
<th>Weight [kg/m]</th>
<th>Glide wing</th>
<th>Floor guide</th>
</tr>
</thead>
<tbody>
<tr>
<td>2400.05AG.R.0</td>
<td>57</td>
<td>73</td>
<td>075</td>
<td>100</td>
<td>125</td>
<td>150</td>
</tr>
<tr>
<td>2400.07AG.R.0</td>
<td>77</td>
<td>93</td>
<td>075</td>
<td>100</td>
<td>125</td>
<td>150</td>
</tr>
</tbody>
</table>

**Note:** We recommend to realize the engineering of such a plant by our technicians. In case of travels between 4 and 10 m we recommend an unsupported e-chain®.

---

**Supplement Part No. with required radius (R). Example:** 2400.05AG.100.0

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More widths upon request, please consult igus® for delivery time.

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**igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu **

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**1332 e-chains® for long travels**

www.igus.eu/eu/2400AG
autoglide Version 02 | Series 2600AG | Product range

Crossbars with molded-on autoglide grooves  New in this catalog

autoglide Version 02 | Series 2600AG | Dimensions

autoglide principle
Offset operation of upper and lower run, leads to a persisting glide surface

Gliding applications | Long travels up to max. 60 m | Fill weight 2.5 kg/m

Note: We recommend to realize the engineering of such a plant by our technicians.
In case of travels between 5 and 10 m we recommend an unsupported e-chain®.

Accessories | More information www.igus.eu/eu/2600AG

Optimized, cable-saving interior separation program for gliding applications
KMA mounting bracket with all-sides attachment

Part No. e-chain® Bi Ba R Available bending radii Weight Glide wing Floor guide

<table>
<thead>
<tr>
<th>Part No. e-chain®</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R</th>
<th>Available bending radii</th>
<th>Weight [kg/m]</th>
<th>Glide wing single part</th>
<th>Floor guide single part</th>
</tr>
</thead>
<tbody>
<tr>
<td>2600. 05 AG.R,0°</td>
<td>50</td>
<td>66</td>
<td>075</td>
<td>100</td>
<td>125</td>
<td>150</td>
<td>175</td>
</tr>
<tr>
<td>2600. 07 AG.R,0°</td>
<td>75</td>
<td>91</td>
<td>075</td>
<td>100</td>
<td>125</td>
<td>150</td>
<td>175</td>
</tr>
</tbody>
</table>

*Width and more widths upon request, please consult igus® for delivery times.*

Supplement Part No. with required radius (R). Example: 2600.05AG.100.0
**autoglide Version 02 | Series 3400AG | Product range**

Crossbars with molded-on autoglide grooves

**Dimensions**

**autoglide principle**

Offset operation of upper and lower run, leads to a persisting glide surface

**Gliding applications | Long travels up to max. 70 m | Fill weight* 5.0 - 8.0 kg/m**

*depends on radius

**Accessories | More information www.igus.eu/eu/3400AG**

Optimized, cable-saving interior separation program for gliding applications

KMA mounting bracket with all-sides attachment

---

### 3400AG | snap-open along inner radius | Crossbars with molded-on autoglide grooves

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R [mm]</th>
<th>Available bending radii</th>
<th>Weight [kg/m]</th>
<th>Glide wing</th>
<th>Floor guide</th>
</tr>
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<tbody>
<tr>
<td>3400.075 AG.R.O</td>
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<td>100</td>
<td>125</td>
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<tr>
<td>3400.100 AG.R.O</td>
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<td>120</td>
<td>100</td>
<td>125</td>
<td>150</td>
<td>200</td>
<td>250</td>
</tr>
</tbody>
</table>

**Note:** We recommend to realize the engineering of such a plant by our technicians. In case of travels between 6 and 10 m we recommend an unsupported e-chain®.

---

**Part No.**

Supplement Part No. with required radius (R). Example: 3400.100AG.100.0

---

*Width and more widths upon request, please consult igus® for delivery times.*
**easy chain® design in outer radius, injection-moulded autoglide sprockets in the inner radius - autoglide Version 03**

Version 03 is the quickly filled and cost-effective easy chain® e-chain® with injection-moulded autoglide sprockets in the inner radius. One-piece e-chain® with injection-moulded autoglide sprockets in the inner radius. The sprockets similar to tie-wrap plates are moulded 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®. Their 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 easy 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, silent operation
- UL94-V2 classifications

**Typical industries and applications**

- Industrial vehicles
- Long travels with easier filling
- Simple outdoor applications

**Available from stock. Delivery time* in 24h or today!**

*Delivery time means time until shipping of goods (after technical release)
**Series EA16 | Simply press cables in (outer radius) | autoglide crossbars (inner radius)**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bending radii</th>
<th>Weight [kg/m]</th>
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<tr>
<td>EA16.4.R.0.</td>
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<td>60</td>
<td>065</td>
<td>075</td>
</tr>
</tbody>
</table>

More widths upon request, please consult igus® for delivery time.

Supplement Part No. with required radius (R). Example: **EA16.4.100.0 (+ mounting bracket EA16.4.12PZ)**

**Autoglide principle**

Offset operation of upper and lower run, leads to a persisting glide surface

**Dimensions**

- Inner height: 32 mm
- Pitch: 30.5 mm/link
- Links/m: 33 (0.0065 m/m)
- Chain length: $S + K_3$

**Gliding applications**

- Long travels up to max. 20 m
- Fill weight: 0.4 [kg/m]

**Note:** We recommend to realize the engineering of such a plant by our technicians.

<table>
<thead>
<tr>
<th>R</th>
<th>065</th>
<th>075</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H_2$</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>$D_3$</td>
<td>325</td>
<td>355</td>
<td>570</td>
</tr>
<tr>
<td>$K_3$</td>
<td>702</td>
<td>763</td>
<td>1251</td>
</tr>
</tbody>
</table>

---

**Series EA25 | Simply press cables in (outer radius) | autoglide crossbars (inner radius)**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bending radii</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>EA25.050.R.0.</td>
<td>50</td>
<td>60</td>
<td>075</td>
<td>100</td>
</tr>
</tbody>
</table>

More widths upon request, please consult igus® for delivery time.

Supplement Part No. with required radius (R). Example: **EA25.050.100.0 (+ mounting bracket EA25.050.12PZ)**

**Autoglide principle**

Offset operation of upper and lower run, leads to a persisting glide surface

**Dimensions**

- Inner height: 32 mm
- Pitch: 25 mm/link
- Links/m: 40 (1000 mm)
- Chain length: $S + K_3$

**Gliding applications**

- Long travels up to max. 20 m
- Fill weight: 0.4 [kg/m]

**Note:** We recommend to realize the engineering of such a plant by our technicians.

<table>
<thead>
<tr>
<th>R</th>
<th>075</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H_2$</td>
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<td>100</td>
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<td>$D_3$</td>
<td>330</td>
<td>330</td>
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<tr>
<td>$K_3$</td>
<td>750</td>
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</tbody>
</table>

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igus® GmbH Germany | Phone +49 2203 9649-900 Fax -222 | info@igus.de | www.igus.eu
Special glide shoes provide a safe guiding for the E2/000 - autoglide Version 04

In this version, special plastic glide shoes are side-mounted on the e-chain link every 1,000 to 2,000 mm. The function of these gliding shoes resembles the leeboards used on sail boats. 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 autoglide 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 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

Technical data

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gilding speed</td>
<td>max. 0.5 [m/s]</td>
</tr>
<tr>
<td>Acceleration</td>
<td>max. 1.0 [m/s²]</td>
</tr>
<tr>
<td>Material - permitted temperature</td>
<td>-40° up to +120° C</td>
</tr>
<tr>
<td>Flammability class</td>
<td>VDE 0304 IIC UL94 HB</td>
</tr>
</tbody>
</table>

Order example

Order example for complete e-chain® Series 2500AG (10 m), color black, with mounting brackets and interior separation:
- e-chain® (10 m)
- e-chain® + glide wing
- + Floor guides

Order text: 209 links 2500.05.150.0 + 10 units 2500.05.150.0.AG + Mounting bracket + Interior separation (optional)

Note: The lateral glide wings are assembled on every 24th e-chain link.

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)
**e-chains**

- **Series 2400** snap-open along inner radius
- **Series 2500** snap-open along outer radius | Standard
- **Half e-tubes** Series 2450 snap-open along inner radius, enclosed along outer radius
- **Full e-tubes** Series 2480 snap-open along inner radius, fully enclosed

<table>
<thead>
<tr>
<th>Part No. e-chain/e-tube</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bending radii</th>
</tr>
</thead>
<tbody>
<tr>
<td>2400/2500/2450/2480 05, R, R, AG</td>
<td>57</td>
<td>73</td>
<td>055</td>
</tr>
<tr>
<td>2400/2500/2450/2480 07, R, R, AG</td>
<td>77</td>
<td>93</td>
<td>055</td>
</tr>
<tr>
<td>2400/2500/2450/2480 09, R, R, AG</td>
<td>89</td>
<td>105</td>
<td>055</td>
</tr>
<tr>
<td>2400/2500/2450/2480 10, R, R, AG</td>
<td>103</td>
<td>119</td>
<td>055</td>
</tr>
<tr>
<td>2400/2500/2450/2480 12, R, R, AG</td>
<td>125</td>
<td>141</td>
<td>055</td>
</tr>
</tbody>
</table>

**Floor guide single part**

**Accessories**

- Optimized, cable-saving
- Pivoting mounting brackets
- Inter-separation program for gliding applications
- KMA mounting bracket with all-sides attachment

**Legend**

- AG.380.BF
- K3

**Notes**

- We recommend to realize the engineering of such a plant by our technicians.
- In case of travels <3 m we recommend an unsupported e-chain.

**Specifications**

- **Inner height**: 25 mm
- **Pitch**: 46 mm/link
- **Links/m**: 22 (1012 mm)
- **Chain length**: S + K3

**Dimensions**

- **Floor guide single part**

**Gilding applications**

- Long travels up to max. 20 m
- Fill weight: 1,6 kg/m

**Radius**

- For Series 2450/2480 available upon request, please consult igus® for delivery time.

**Supplement Part No. with required radius (R). Example:** 2500.05.150.0.AG
**e-chains®**
- Series 2600 snap-open along inner radius
- Series 2700 snap-open along outer radius | Standard

**Half e-tubes**
- Series 2650 snap-open along inner radius, enclosed along outer radius
- Series 2680 snap-open along inner radius, fully enclosed

---

**Part No. e-chain/e-tube**

<table>
<thead>
<tr>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R [mm] Available bending radii</th>
<th>Hooge guide single part</th>
</tr>
</thead>
<tbody>
<tr>
<td>2600/2650/2680/2700.05.R.O.AG</td>
<td>50</td>
<td>66</td>
<td>075° 100 125 150 175 200 250</td>
</tr>
<tr>
<td>2600/2650/2680/2700.06.R.O.AG</td>
<td>65</td>
<td>81</td>
<td>075° 100 125 150 175 200 250</td>
</tr>
<tr>
<td>2600/2650/2680/2700.07.R.O.AG</td>
<td>75</td>
<td>91</td>
<td>075° 100 125 150 175 200 250</td>
</tr>
<tr>
<td>2600/2650/2680/2700.09.R.O.AG</td>
<td>90</td>
<td>106</td>
<td>075° 100 125 150 175 200 250</td>
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<tr>
<td>2600/2650/2680/2700.10.R.O.AG</td>
<td>100</td>
<td>116</td>
<td>075° 100 125 150 175 200 250</td>
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<tr>
<td>2600/2650/2680/2700.12.R.O.AG</td>
<td>125</td>
<td>141</td>
<td>075° 100 125 150 175 200 250</td>
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<tr>
<td>2600/2650/2680/2700.15.R.O.AG</td>
<td>150</td>
<td>166</td>
<td>075° 100 125 150 175 200 250</td>
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<tr>
<td>2600/2650/2680/2700.17.R.O.AG</td>
<td>175</td>
<td>194</td>
<td>075° 100 125 150 175 200 250</td>
</tr>
</tbody>
</table>

*Radius for Series 2650/2680 available upon request, please consult igus® for delivery time.

Supplement Part No. with required radius (R). Example: **2600.05.100.O.AG**

---

**Gliding applications** | **Long travels up to max. 30 m** | **Fill weight 2.0 kg/m**

The lateral glide wings are assembled on every 24th e-chain link.

**Note**: We recommend to realize the engineering of such a plant by our technicians. In case of travels <3 m we recommend an unsupported e-chain.

---

**Accessories** | More information | [www.igus.eu/eu/autoglide](http://www.igus.eu/eu/autoglide)

- Optimized, cable-saving  
- Pivot mounting brackets  
- Inter separation program for gliding applications  
- KMA mounting bracket with all-sides attachment

---

**igus® GmbH Germany** | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu
Special solutions for long travels

guidelok horizontal | guidelok slimline F | lbt flizz® | micro flizz®
Special solutions | For long travels

Cost-effective, enclosed energy supply - lbt flizz®
Travels up to 120 m,
speeds up to 8 m/s
- Applicable for moving and stationary control, ideal for all bus systems
- Low weight and good corrosion resistance at -10°C up to +60°C continous temperature
- Cost-effective, modular energy supply for all media, not only for electrical
- Quiet and maintenance free operation
► from page 1356 and
► www.igus.eu/eu/flizz

Master long travels with the smallest e-chain® - micro flizz®
compact system for a secure guidance of power, data and air
- Maintenance-free alternative for busbar
- Control via stationary switch cabinet possible
- Accelerations up to 50 m/s² and speeds up to 6 m/s
- e-chain® is guided in special slot, no sliding against each other
- Less space required
► from page 1360 and
► www.igus.eu/eu/microflizz

Modular system for projects - fast, completely from stock
...tested and time-proven in numerous projects, have now become available as a modular standard system.
- Faster quotations
- Faster project planning
► from page 1370

Safe vertical guidance - guidelok slimline F
in highly dynamic rack feeder
- Up to 7 m/s and 10 m/s²
- Up to 80% less trough required
- Saving costs and weight
- For hanging systems up to 50 m
- No swinging of the e-chain®, high reliability due to lever mechanism and guiding rails
- Faster and easier installation
► from page 1354 and
► www.igus.eu/eu/gsl-f

Chip protection on long travels up to 50 m
Upper run guide - guidelok horizontal
- Chips cannot get stuck between upper and lower run
- Enormous increase of “self-supporting” length of e-chains® and e-tubes
- Modular system with few parts (also possible without sideways trough)
- Lower cost than most steel chains or sophisticated gliding systems
► from page 1352 and
► www.igus.eu/eu/guidelok-HR

Safe vertical guidance - guidelok slimline F
in highly dynamic rack feeder
- Up to 7 m/s and 10 m/s²
- Up to 80% less trough required
- Saving costs and weight
- For hanging systems up to 50 m
- No swinging of the e-chain®, high reliability due to lever mechanism and guiding rails
- Faster and easier installation
► from page 1354 and
► www.igus.eu/eu/gsl-f

Chip protection on long travels up to 50 m
Upper run guide - guidelok horizontal
- Chips cannot get stuck between upper and lower run
- Enormous increase of “self-supporting” length of e-chains® and e-tubes
- Modular system with few parts (also possible without sideways trough)
- Lower cost than most steel chains or sophisticated gliding systems
► from page 1352 and
► www.igus.eu/eu/guidelok-HR
Upper run guide for long travels, 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 sophisticated 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

Find a video online
www.igus.eu/guidelok-HR

Available from stock. Delivery time* in 24h or today!
*Delivery time means time until shipping of goods (after technical release)

guidelok horizontal | Introduction | Advantages

Flip open and tight:
E4 e-tubes are tight and easy to fill

Upper run support:
Sophisticated upper run guide with pivoting roller brackets

Chip-proof:
Minimise wear by unsupported operation

Secure guiding:
Trough channel for guiding the lower run

Design-principle - horizontal guidelok guides the e-chain® on special spring loaded roller supports, that are pushed back by the e-chains® 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 again after the e-chain® has passed...

...the upper run then gets to lay on the roller support.

Principle sketch - guidelok horizontal - LLLL = Total length FFFF = Field length

For
Series     Bi [mm]   R  Available bending radii [mm]  Part No. guidelok elements
E4.56/R4.56  150 - 600 | 150 | 175 | 200 | 250 | 300 | 907.645.BI.R.LLLL/FFFF
E4.80/R4.80  50 - 600 | 150 | 175 | 200 | 250 | 300 | 907.645.BI.R.LLLL/FFFF
E4.112      200 - 600 | 150 | 175 | 200 | 250 | 300 | 907.645.BI.R.LLLL/FFFF
E4.56/R4.56  50 - 600 | 350 | 400 | 450 | 500 | 550 | 907.837.BI.R.LLLL/FFFF
E4.80/R4.80  50 - 600 | 350 | 400 | 450 | 500 | 550 | 907.837.BI.R.LLLL/FFFF
E4.112      200 - 600 | 350 | 400 | 450 | 500 | 550 | 907.837.BI.R.LLLL/FFFF

LLLl = Total length FFFF = Field length

More series and radii upon request, please consult igus® for delivery time.

Supplement Part No. with required value for total length and field length, example: 907.645.BI.R.20000/2000.0

Lateral supports with pivoting rollers for the upper run support of the e-chain®
guidelok slimline F | Introduction | 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 50 m in 1.5 m
or 2 m field length possible

**Safe vertical guidance - guidelok slimline F**

In highly dynamic rack feeder a speed for the horizontal movement exceeding in 7 m/s is not uncommon. The advanced igus® guidelok slimline F guides e-chains™ even at the fastest speed. 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.

- Up to 7 m/s and 10 m/s
- Up to 80% less trough required, saving costs and weight
- For hanging systems up to 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

guidelok slimline F | Product range | Dimensions

<table>
<thead>
<tr>
<th>For Series</th>
<th>Bi [mm]</th>
<th>R Radii [mm]</th>
<th>Part No. guidelok F</th>
<th>v max. vertical</th>
<th>v max. horizontal</th>
</tr>
</thead>
<tbody>
<tr>
<td>255</td>
<td>103</td>
<td>150</td>
<td>GLSL.F.255.10.150.LLLL/FFFF</td>
<td>4 [mm]</td>
<td>7 [mm]</td>
</tr>
<tr>
<td>2700</td>
<td>100</td>
<td>150</td>
<td>GLSL.F.2700.10.150.LLLL/FFFF</td>
<td>4 [mm]</td>
<td>7 [mm]</td>
</tr>
</tbody>
</table>

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

For Series Part No. guidelok F

www.igus.eu/eu/glsl-f

Find a video online ▶ www.igus.eu/eu/glsl-f-movie

Available from stock. Delivery time® in 24h or today!
*(Delivery time means time until shipping of goods after technical release)*

Special solutions for long travels online ▶ www.igus.eu/eu/glsl-f

igus® GmbH Germany | Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu
Safe energy and data transfer - The igus® chainflex® range of cables offers a selection from over 1,030 different cables available from stock. This includes power, signal, data and bus systems including fibre optic cables. In addition, we can offer you all supply cables for your drive systems, such as motor, servo cables and encoder cables; all can be supplied made-to-spec with connectors.

Cost-cutting installation - Thanks to the use of made-to-spec e-chain® systems, you can greatly reduce expensive time incurred for installation and assembly at the installation site. Function-tested systems guarantee fast commissioning of the powered system sections.

Installation service - We will be more than pleased to submit an offer to you for a full solution, including all installation services. This means that none of your own staff are tied up and, in future, you will have a trouble-free energy supply system at a fixed price.

Outdoor use in sewage treatment plants - Because of the particular strain in sewage treatment plants, some with flooding, foam, etc., a safety margin for all load values of 50%, compared to applications in the inner/dry zone, should be made. A review of the application data by our project engineers is recommended.

Reliability, function, maintenance-free with substantial cost advantages - lbt flizz®

- Speeds up to 8 m/s, at acceleration up to 10 m/s² - for travels up to 120 m
- Applicable for moving and stationary control, ideal for all bus systems
- Low weight and good corrosion resistance at -10°C up to +60°C continuous temperature
- Resistant against most chemicals, oils, fats, coolants and solvents
- Energy supply system protected from wind and weathering.
- Optionally fully enclosed design
- Cost-effective, modular energy supply system for all media, not only electrical
- Quiet and maintenance free operation
- Easy and fast installation since it supplied as a made-to-spec system
- Easy integration in existing systems
- Extruded guide profiles and support frames with end-to-end tubes for stabilisation
- Cable length 50 % of travel
- No cable junction

Typical industries and applications

- Sludge scrapers
- Sand catchers
- Stormwater overflow tanks
- Electric plating plants
- Cranes
- Plant construction

Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)

Find a video online

www.igus.eu/eu/lbt-movie

Special solutions for long travels online ▶ www.igus.eu/eu/flizz
**Applications**

**igus®**

GmbH Germany

| Phone +49 2203 9649-800 | Fax -222 | info@igus.de | www.igus.eu |

---

**lbt flizz®**

for high speeds and accelerations.

The complete system includes the igus® e-chain®, the lbt flizz® guide trough and the customised, fully assembled igus® chainflex® cables.

---

**lbt flizz®** in a longitudinal scraper travel (S) = 38 m

- Speed (v) = 1.0 m/min.
- Acceleration (a) = 0.5 m/s²
- Cycle time: 1.5 x hour/ 24 h/365 days

Energy supply system protected from wind and weathering. The used materials are weather-resistant, as well as resistant against most chemicals, oils, fats, coolants and solvents.

---

The scraper moves on the 38 m long final clarifier in round-the-clock operation. The energy supply is done via the lbt flizz® system.

---

Space-saving and compact energy supply with lbt flizz® - Maintenance system, delivered preassembled with assembled igus® e-chain®

---

igus® lbt flizz® - Sewage works of the company Hydrobudowa S.A. in Poland. The power supply system of the scrapers in 8 clarifiers was equipped with igus® e-chain® and lbt flizz®. The complete system runs directly over the clarifier. Advantages: - Low-maintenance system - Longer service life - Enclosed trough, protection against snow and ice - Space-saving compared to conventional system - Compact and safe - Travel (S) = 42 m - Assembled with igus® chainflex® cables

---

igus® lbt flizz® - Applications

- Sewage works of the company Hydrobudowa S.A. in Poland. The power supply system of the scrapers in 8 clarifiers was equipped with igus® e-chain® and lbt flizz®. The complete system runs directly over the clarifier. Advantages: - Low-maintenance system - Longer service life - Enclosed trough, protection against snow and ice - Space-saving compared to conventional system - Compact and safe - Travel (S) = 42 m - Assembled with igus® chainflex® cables

---

Special solutions for long travels online ✪ www.igus.eu/eu/flizz
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 50 m/s² and speeds up to 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

Find a video online
➤ www.igus.eu/eu/MF-movie

Available from stock. Delivery time® in 24h or today!
*Delivery time means time until shipping of goods after technical release*

Separation: 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

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
**micro flizz**® | MF06 | Dimensions | Technical data

1. Separated upper and lower run of the flizz® e-chain®, thus less friction and reduced push/pull forces
2. Winglets hold the e-chain® secure in the guidance channel
3. Polymer springs for a soft unrolling of the e-chain® in the flizz® channel effect a substantial noise reduction
4. Integrated strain relief in the guide carriage for the safe fixing of cables
5. Universal attachment options due to three T-grooves
6. Attachment of the e-chain® by roller cart on the moving end, gliding or locking possible
7. Opposed e-chains® can be used - a double filling or two independent travels are possible

**Technical data**

**micro flizz**-Series MF06 - Part No. MF06.10.018

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>hi</th>
<th>ha</th>
<th>R Bending radius</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF06.10.018</td>
<td>10</td>
<td>19</td>
<td>11</td>
<td>17</td>
<td>018</td>
</tr>
</tbody>
</table>

**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 - Die-cast aluminum material
- Cable diameter max.: ø 8 mm

**chainflex® special cables for micro flizz®**

Many high-flex chainflex® cables for micro flizz® on stock.

More information: [www.igus.eu/eu/chainflex](http://www.igus.eu/eu/chainflex)

**IGUS® CHAINFLEX® CF99**

*chainflex® viewable for illustration*
**micro flizz**® **MF08** | **Dimensions** | **Technical data**

![Schematic diagram of micro flizz Series MF08](image)

**micro flizz**-Series MF08 - Part No. MF.08.18.035

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi (mm)</th>
<th>Ba (mm)</th>
<th>hi (mm)</th>
<th>ha (mm)</th>
<th>R (Bending radius) (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF.08.18.035</td>
<td>18</td>
<td>29</td>
<td>13</td>
<td>21</td>
<td>035</td>
</tr>
</tbody>
</table>

**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 - Die-cast aluminum material
- Cable diameter max.: ø 9,5 mm

**micro flizz**® **MF10** | **Dimensions** | **Technical data**

![Schematic diagram of micro flizz Series MF10](image)

**micro flizz**-Series MF10 - Part No. MF.10.50.075

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi (mm)</th>
<th>Ba (mm)</th>
<th>hi (mm)</th>
<th>ha (mm)</th>
<th>R (Bending radius) (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF.10.50.075</td>
<td>50</td>
<td>63</td>
<td>20</td>
<td>27,5</td>
<td>075</td>
</tr>
</tbody>
</table>

**More dimensions**

- Installation height complete system: 275 mm
- Installation width complete system: 107,6 mm
- Recommended length channel pieces: Standard-trough piece length 2 m - Black anodised steel
- Cable diameter max.: ø 16 mm

---

**Special solutions for long travels online** | www.igus.eu/eu/microflizz
Calculate the number of required channel pieces (n) thus:

\[ n = \frac{L}{F} \]

Then round off the result.

- \( F \) = Field length [mm]
- \( L \) = Total length [mm]
- \( R \) = Bending radius [mm]
- \( B_i \) = Inner e-chain® width
- \( n \) = Number of channel pieces
- \( S \) = Travel = \( L - 300 \) [mm]
- \( F \) = Field length [mm]
- \( L \) = Total length [mm]
- \( X \) = Residual length [mm]

**Order example - End feed**

- **MF.06.10.018.5000/2000 Series MF06**
- **MF.08.18.035.5000/2000 Series MF08**
- **MF.10.50.075.5000/2000 Series MF10**

**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

**Order example - Central infeed**

- **MFG2.06.10.018.5000/2000 Series MF06**
- **MFG2.08.18.035.5000/2000 Series MF08**
- **MFG2.10.50.075.5000/2000 Series MF10**

**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.

**Order example - 2 carriages in opposite directions**

- **MFG2.06.10.018.10000/3000 Series MF06**
- **MFG2.08.18.035.10000/3000 Series MF08**
- **MFG2.10.50.075.10000/3000 Series MF10**

**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 field length (200 mm) and 2 channels each 1900 mm residual length.

**Order example - 2 carriages in opposite directions**

- **MFG2.06.10.018.10000/3000 Series MF06**
- **MFG2.08.18.035.10000/3000 Series MF08**
- **MFG2.10.50.075.10000/3000 Series MF10**

**micro flizz® mounted with 2 carriages in opposite directions**

- Total length 10000 mm, split into 2 channels each 3000 mm, the field length (200 mm) and 2 channels each 1900 mm residual length.
**Applications | Real-life tests**

**micro flizz®** in an outdoor application with 30 m travel.

**micro flizz®** as energy supplying rail guide of a scale to weigh chemicals, etc.

Energy supply to the strip at cold storage house doors, in operation for more than one year.

Safe energy supply also under strong dust and dirt accumulation with igus® micro flizz®

**Special solutions for long travels online** [www.igus.eu/eu/microflizz](http://www.igus.eu/eu/microflizz)
**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

*Find a video online*  
[www.igus.eu/eu/System-Project](www.igus.eu/eu/System-Project)

*Available from stock. Delivery time* in 24h or today!

*Delivery time means time until shipping of goods (after technical release)*
corrugated conduits, connectors, system support, accessories
### PMAFLEX | Conduits | Cable protection

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<td></td>
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<tr>
<td>PACOF</td>
<td>Flexible, medium, divisible</td>
<td>1376</td>
</tr>
<tr>
<td>BLNO</td>
<td>Divisible connectors</td>
<td>1377</td>
</tr>
<tr>
<td>BLN</td>
<td>Divisible lock nuts</td>
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</tr>
<tr>
<td>PCL</td>
<td>Very flexible, medium</td>
<td>1378</td>
</tr>
<tr>
<td>VOH</td>
<td>Flexible, very heavy</td>
<td>1379</td>
</tr>
<tr>
<td>PIS/PIH</td>
<td>Highly flexible, medium</td>
<td>1380</td>
</tr>
<tr>
<td>CYL</td>
<td>Very flexible, medium</td>
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### PMAFIX | Connectors | Safety and sealing systems

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<tr>
<td>IP66 - stat., IP67 dyn.</td>
<td>Oval clip</td>
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<td>PMAFIX / PMAFLEX Connectors</td>
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<td>PMAFIX connectors VW</td>
<td>90° elbow, metric &amp; PG</td>
<td>1384</td>
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<td>PMAFIX connectors VN</td>
<td>Straight, metric &amp; PG</td>
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<tr>
<td>PMAFIX connectors VA</td>
<td>45° elbow, metric &amp; PG</td>
<td>1386</td>
</tr>
<tr>
<td>PMAFIX connectors VB</td>
<td>90° curved elbow, metric &amp; PG</td>
<td>1387</td>
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<tr>
<td>PMAFIX connectors VO</td>
<td>Flange 90°</td>
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### PMA | Accessories

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<td>One-piece system support</td>
<td>1388</td>
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<tr>
<td>PMA MN</td>
<td>Hexagonal Lock Nuts, metric &amp; PG</td>
<td>1388</td>
</tr>
<tr>
<td>PMA 5GB</td>
<td>Conduit clamps</td>
<td>1389</td>
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<tr>
<td>PMA S14</td>
<td>Plug Screws, metric &amp; PG</td>
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**PMA-Program - overview**

**PMA - corrugated conduits, connectors, system support, accessories**

- Wide range of tubes
- Long service life of the tubes especially through millions of reverse bending cycles (I-PIST)
- UL-approved products
- PMAFIX safety locking system

**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-chainsystems® if required. By combining technical excellence with rigorous international safety standards, PMA meets the demands of industry worldwide - specialising 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 heavy weight, and pliable to highly flexible. Standard colours 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 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.

TN - Divisible connectors, PG (inch thread) and GTN - Divisible lock nuts, PG (inch thread)

No longer available with inch thread since 01/01/2011. Metric thread next page.
### BLNO - Divisible, straight, metric

In connection with PMA conduits and divisible PMA BLN lock nuts. For installation upon fully assembled cable looms or repair in machine and plant construction. **Features:**
- Specially modified polyamide 6
- IP54 - One-piece divisible fitting
- Self-extinguishing
- Free from halogens and cadmium
- Excellent impact strength
- **Temperature range:** -40°C up to +105°C
- **Short-term** up to +160°C
- **Special:** Push-in installation of conduit into pre-installed fitting also possible

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<thead>
<tr>
<th>Part No.</th>
<th>Thread Fits to conduit size: black metric NW diameter [mm]</th>
<th>Total length [m]</th>
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<td>I-BLNO-M508</td>
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<td>48 50</td>
</tr>
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</table>

### BLN - Divisible lock nut, metric

In connection with PMA Flexible System fitting. **Features:**
- Specially modified polyamide 6
- Excellent impact strength
- Simple installation
- Excellent chemical properties
- Free of halogens and cadmium
- **Temperature range:** -40°C up to +100°C
- **Short-term** up to +130°C

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### PMAFLEX conduits PCL - very flexible, medium

The PMAFLEX conduit type PCL is suitable for a wide range of applications in general machine building. Further more, this conduit type can be used in the vehicle building industry. The product is characterised by good weather resistance and applicability at low temperatures. **Features:**

- Specially modified polyamide 6/6.6 for cold impact
- Self-extinguishing
- Free of halogen and cadmium
- High impact strength also at low temperatures
- Temperature range: -50°C to 105°C
- Chemical resistance: to fuels, mineral oils, fats, alkalies, weak acids and bases etc.

### PMAFLEX conduits VOH - pliable, very heavy

The robust construction of PMAFLEX VOH conduit lends it outstanding impact and pull-out resistance. In the US market, this conduit type can also be used for exterior applications in machinery and installations (from 17 mm inside diameter). This product offers the greatest possible mechanical protection with good flammability properties. **Features:**

- Specially modified polyamide 6
- Very good self-extinguishing properties
- Free of halogen and cadmium
- High impact strength and pull-out resistance
- High stiffness and compression strength
- Temperature range: -40°C to 105°C
- Chemical resistance: to fuels, mineral oils, fats, alkalies, weak acids and bases etc.

### Conduits PCL

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### Conduits VOH

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<th>Conduit size NV</th>
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<th>Outside Ø</th>
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### Note: I-PCLT/PCLG - recommended for static use! (moderate dynamic application possible)

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### Note: I-VOHD/VOH - suitable for static use only!
PMARLEX conduits PIS/PIH - highly flexible, medium

These highly flexible products are used primarily 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).

**Features:**
- Specially modified polyamide 12
- PIS: medium-wall (nominal width 07 to 48)
- PIH: heavy-wall (nominal width 56 to 125)
- Self-extinguishing
- Free of halogen and cadmium
- Good mechanical properties also at low temperatures
- Temperature range: -50°C to 95°C; Short-term 150°C
- Chemical resistance: To fuels, mineral oils, fats, alkalis, acids and bases etc.

### Part No. structure

- **B** = black / **S** = grey
- **Nominal width**
- **Profile T** or **G**
- **Series**

### Table of Specifications

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<thead>
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<th>Part No.</th>
<th>Part No.</th>
<th>Conduit size NW</th>
<th>Inside Ø</th>
<th>Outside Ø</th>
<th>stat. R</th>
<th>dyn. R</th>
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</tbody>
</table>

### Notes

- **I-PIS/PIH** - Recommended for highly flexible applications!

---

PMARLEX conduits CYL - very flexible, medium

PMARLEX 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.

**Features:**
- Specially modified polyamide 6/6.6 for low-temperature applications
- Self-extinguishing, free of halogen and cadmium
- High impact strength also at low temperatures
- Temperature range: -40°C to 105°C; Short-term 150°C
- Chemical resistance: To fuels, mineral oils, fats, alkalis, weak acids and bases etc.

### Part No. structure

- **B** = black / **S** = grey
- **Nominal width**
- **Profile T** or **G**
- **Series**

### Table of Specifications

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Conduit size NW</th>
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<th>Outside Ø</th>
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<th>dyn. R</th>
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</tbody>
</table>

### Notes

- **I-CYL/CYLG - recommended for static use!**
  (moderate dynamic application possible)
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

<table>
<thead>
<tr>
<th>Nominal width</th>
<th>UK sizes</th>
<th>PMA code</th>
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<td>6</td>
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<tr>
<td>48</td>
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Table 2 - Thread codes

<table>
<thead>
<tr>
<th>Thread metric</th>
<th>PMA code</th>
<th>Thread code</th>
<th>PMA code</th>
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<tr>
<td>M12 x 1.5</td>
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<td>PG07</td>
<td>P07</td>
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<tr>
<td>M16 x 1.5</td>
<td>M16</td>
<td>PG09</td>
<td>P09</td>
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<tr>
<td>M20 x 1.5</td>
<td>M20</td>
<td>PG11</td>
<td>P11</td>
</tr>
<tr>
<td>M25 x 1.5</td>
<td>M25</td>
<td>PG13.5</td>
<td>P13</td>
</tr>
<tr>
<td>M32 x 1.5</td>
<td>M32</td>
<td>PG16</td>
<td>P16</td>
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<tr>
<td></td>
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<td>PG48</td>
<td>P48</td>
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</tbody>
</table>

Installation

Push-in conduit with a slight twist (open using screwdriver on conduit side)

Pull back slightly to ensure the locking mechanism is fully engaged

To re-open use a screwdriver

For ease of installation moisten seal cap with water or grease

Push conduit with seal cap fully into connector

Install retaining oval clip

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 manufacturer guidelines when using O-rings for sealing purposes.
These PMAFIX connectors are used in a wide range of applications. Together with PMAFLEX conduits they offer the highest grade of safety and sealing. **Features:**
- High-grade formulated polyamide
- Self-extinguishing, free of halogen, phosphor and cadmium
- Excellent impact strength
- Temperature range: -40°C to 105°C
- Short-term 160°C

**Content of delivery**
- IP66: Fitting with preassembled universal safety clips (AFN2), IP68: Fitting with oval clips (OVN2), conduit and thread seal (NVN3, SVN4)

**Features:**
- 90° elbow, metric & PG

### Table of Dimensions

<table>
<thead>
<tr>
<th>Part No. structure PG</th>
<th>Part No. structure metric</th>
<th>Thread</th>
<th>Fits to conduit size: Thread External</th>
<th>Total</th>
<th>A = Total length</th>
<th>B = External dim.</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP66</td>
<td>IP68</td>
<td>M40 x 1.5</td>
<td>36 40 19.0</td>
<td>54.0 x 65.0</td>
<td>72.0</td>
<td>72.0</td>
</tr>
<tr>
<td>B</td>
<td>S</td>
<td>M25 x 1.5</td>
<td>12 16 11.0</td>
<td>38.5 x 47.5</td>
<td>47.5</td>
<td>47.5</td>
</tr>
<tr>
<td>M16 x 1.5</td>
<td></td>
<td>10 12 11.0</td>
<td>34.0 x 40.5</td>
<td>39.0</td>
<td>39.0</td>
<td></td>
</tr>
<tr>
<td>M16 x 1.5</td>
<td></td>
<td>8 10 11.0</td>
<td>32.0 x 35.0</td>
<td>34.0</td>
<td>34.0</td>
<td></td>
</tr>
<tr>
<td>M12 x 1.5</td>
<td></td>
<td>6 8 11.0</td>
<td>30.5 x 32.0</td>
<td>32.0</td>
<td>32.0</td>
<td></td>
</tr>
<tr>
<td>M12 x 1.5</td>
<td></td>
<td>4 6 11.0</td>
<td>28.5 x 30.5</td>
<td>30.5</td>
<td>30.5</td>
<td></td>
</tr>
<tr>
<td>M12 x 1.5</td>
<td></td>
<td>2 4 11.0</td>
<td>26.5 x 28.5</td>
<td>28.5</td>
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</tbody>
</table>

---

For the sizes NW 17 to NW 48 curved elbows of type VB are available.

### Table of Dimensions

<table>
<thead>
<tr>
<th>Part No. structure PG</th>
<th>Part No. structure metric</th>
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<td>6 8 11.0</td>
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<tr>
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</tbody>
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<table>
<thead>
<tr>
<th>Part No. structure PG</th>
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<table>
<thead>
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<th>Part No. structure PG</th>
<th>Part No. structure metric</th>
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<tr>
<td>M16 x 1.5</td>
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<td>34.0</td>
<td>34.0</td>
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<td>30.5 x 32.0</td>
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</table>

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For the sizes NW 17 to NW 48 curved elbows of type VB are available.
These PMAFIX connectors are used in a wide range of applications. Together with PMAFLEX conduits they offer the highest grade of safety and sealing. Features: ● High-grade formulated polyamide ● Self-extinguishing, free of halogen, phosphor and cadmium ● Excellent impact strength ● Temperature range: -40°C to 105°C; Short-term to 160°C ● Content of delivery: IP66: Fitting with preassembled universal safety clips (AFN2), IP68: Fitting with oval clips (OVN2), conduit and thread seal (NVN3, SVN4)

Part No. structure PG

Part No. structure metric

Part No. structure PG

Part No. structure metric

Part No. structure metric

Part No. structure metric

Part No. structure PG

Part No. structure PG

Part No. structure PG

Part No. structure metric

Part No. structure metric

Part No. structure metric

Part No. structure metric

Part No. structure metric

Part No. structure metric

Part No. structure metric

Part No. structure metric

Part No. structure PG

Part No. structure PG

Part No. structure PG

Part No. structure PG

Part No. structure PG

Part No. structure PG

Part No. structure PG

Part No. structure PG

Part No. structure PG

Part No. structure PG

Part No. structure PG

Part No. structure PG

Part No. structure PG

Part No. structure PG

Part No. structure PG

Part No. structure PG

Part No. structure metric

Part No. structure metric

Part No. structure metric

Part No. structure metric

Part No. structure metric

Part No. structure metric

Part No. structure metric

Part No. structure PG

Part No. structure PG

Part No. structure PG
### PMA FLEX 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. **Features:**
- High-grade formulated polyamide
- Self-extinguishing, free of halogen, phosphor and cadmium
- Excellent impact strength
- **Temperature range:** -40°C to 105°C
- **Short-term** 160°C

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Fits to conduit size</th>
<th>Dimensions</th>
<th>Fixing screws</th>
</tr>
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<td>I-SFH-12-0</td>
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<td>I-SFH-17-0</td>
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</tr>
</tbody>
</table>

### PMA MN - hexagon lock nuts, metric & PG

These hexagon lock nuts are suitable for a wide range of applications. High torque guarantees a safe connection of the system. **Features:**
- Polyamide glass fiber reinforced
- **Temperature range:** -40°C to 105°C
- **Short-term** 150°C

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Fits to Thread: metric</th>
<th>Wrench size</th>
<th>Dimensions</th>
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<tbody>
<tr>
<td>I-BMN-M12</td>
<td>I-GMN-M12</td>
<td>M12 x 1.5</td>
<td>17.0</td>
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<td>I-BMN-M16</td>
<td>I-GMN-M16</td>
<td>M16 x 1.5</td>
<td>22.0</td>
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<td>I-BMN-M20</td>
<td>I-GMN-M20</td>
<td>M20 x 1.5</td>
<td>27.0</td>
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<td>I-BMN-M25</td>
<td>I-GMN-M25</td>
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<tr>
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<td>I-GMN-M32</td>
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<td>I-GMN-M63</td>
<td>M63 x 1.5</td>
<td>75.0</td>
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</table>

### PMA SGB - Conduit clamps

These conduit clamps are used for the mounting and smooth connection to the PMA conduits in the general machine and installation constructions. They are especially suitable for the mounting of static conduits. **Features:**
- Galvanized steel according to DIN 3016
- Elastomer free of halogen
- **Temperature range:** -50°C to 105°C

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Fits to conduit size NW</th>
<th>Dimensions</th>
<th>Fixing screws</th>
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<td>I-SGB-11</td>
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<td>I-SGB-21</td>
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<td>I-SGB-36</td>
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<td>19.0</td>
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### PMA SGB - Conduit clamps

These conduit clamps are used for the mounting and smooth connection to the PMA conduits in the general machine and installation constructions. They are especially suitable for the mounting of static conduits. **Features:**
- Galvanized steel according to DIN 3016
- Elastomer free of halogen
- **Temperature range:** -50°C to 105°C

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Fits to: size NW</th>
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<th>Fixing screws</th>
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<tr>
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<td>I-SGB-11</td>
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<td>I-SGB-48</td>
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### 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. **Features:**
- Product with metric thread: PA-GF
- Product with PG thread: PS
- Free of halogen, phosphor and cadmium
- **Temperature range:** -20°C to 60°C
- **Short-term** 100°C

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<thead>
<tr>
<th>Part No.</th>
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<th>Outside Ø</th>
<th>Total length</th>
<th>Thread length</th>
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</table>

### 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. **Features:**
- Product with metric thread: PA-GF
- Product with PG thread: PS
- Free of halogen, phosphor and cadmium
- **Temperature range:** -20°C to 60°C
- **Short-term** 100°C

<table>
<thead>
<tr>
<th>Part No.</th>
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<th>Thread length</th>
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### Standard Conduits

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<th>CYL PA6</th>
<th>VOH PA6</th>
<th>PIS PA12</th>
<th>FH</th>
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<td>PCL PA6</td>
<td>CYL PA6</td>
<td>VOH PA6</td>
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<td>CYL107*</td>
<td>VOH107*</td>
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* = replace with "B" for black or "S" for grey

** = replace with "B" for black or "S" for grey

### JUMBO Conduits

PMAGRIP

<table>
<thead>
<tr>
<th>Products</th>
<th>PCLG PA6</th>
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<th>BGG</th>
<th>BGO</th>
<th>SGS</th>
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<td>NW</td>
<td>PCLG</td>
<td>PHNG</td>
<td>BGG</td>
<td>BGO</td>
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* = replace with "B" for black or "S" for grey

### Connectors and Accessories

#### PMAFIX

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<tr>
<th>Products</th>
<th>IP66 - VN9A</th>
<th>IP66 - VA9A</th>
<th>IP66 - VY9A</th>
<th>IP66 - VI9A</th>
<th>SGB</th>
<th>MN</th>
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</thead>
<tbody>
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<td>PMAFIX 45° angle</td>
<td>PMAFIX 90° angle</td>
<td>PMAFIX 90° elbow</td>
<td>Straight with</td>
<td>PMAFIX</td>
</tr>
<tr>
<td>metric</td>
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<td>NW</td>
<td>NW</td>
<td>strain relief</td>
<td>hexagon lock</td>
</tr>
<tr>
<td>10</td>
<td>07</td>
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<td>*VWD-M120GT</td>
<td>*VFW-M120GT</td>
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* = replace with "B" for black or "S" for grey

### PMAGRIP

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<th>Products</th>
<th>IP66 - VOD</th>
<th>IP66 - VY</th>
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* = replace with "B" for black or "S" for grey

### PMAFLEX

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<th>IP66 - VN9A</th>
<th>IP66 - VA9A</th>
<th>IP66 - VY9A</th>
<th>IP66 - VI9A</th>
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<tbody>
<tr>
<td>Conduit type:</td>
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<td>PMAFIX 45° angle</td>
<td>PMAFIX 90° angle</td>
<td>PMAFIX 90° elbow</td>
<td>Straight with</td>
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* = replace with "B" for black or "S" for grey

### Distribution

PMARX - Order example

XXX-10 07 07 XX

NW (A) NW (B) NW (C)

Please note: Since 2003 are only complete packaging units available on request!
igus®

fax-forms & addresses

FAX  Tokyo  Cologne  Shanghai
We are ordering according to igus® general terms of sale. The prices are exclusive of the statutory value-added tax.

**Delivery date** | **Signature/stamp**
--- | ---

<table>
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<th>Item No.</th>
<th>igus® Order No.</th>
<th>Number</th>
<th>Price</th>
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Please copy, fill in and fax to +49 2203 9649-222 or visit our homepage [www.igus.eu](http://www.igus.eu).
**Type of Application** - please mark with a cross

<table>
<thead>
<tr>
<th>Application</th>
<th>Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsupported</td>
<td>☐</td>
</tr>
<tr>
<td>Cabling</td>
<td>☐</td>
</tr>
<tr>
<td>Hanging</td>
<td>☐</td>
</tr>
<tr>
<td>Standing</td>
<td>☐</td>
</tr>
<tr>
<td>Side-mounted</td>
<td>☐</td>
</tr>
<tr>
<td>Rotary motion</td>
<td>☐</td>
</tr>
<tr>
<td>Horizontal</td>
<td>☐</td>
</tr>
<tr>
<td>Nested</td>
<td>☐</td>
</tr>
<tr>
<td>Side by side</td>
<td>☐</td>
</tr>
<tr>
<td>Zig-Zag</td>
<td>☐</td>
</tr>
<tr>
<td>Combined</td>
<td>☐</td>
</tr>
</tbody>
</table>

**Travel**  
Center of travel  
Distance from the center

<table>
<thead>
<tr>
<th>Dim.</th>
<th>Dim.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[mm]</td>
<td>[mm]</td>
</tr>
</tbody>
</table>

**Dynamics**

Speed: [ ] [m/s]  
Acceleration: [ ] [m/s²]  
Outer diameter: [ ] [mm]  
Rotary motion: [ ]

**Environment**

Temperature: [ ] [°C]  
Humidity: [ ] [%]  
Dust, dirt, chips: [ ]

**Special parameters**

**Cables/Hoses**

<table>
<thead>
<tr>
<th>Number</th>
<th>Manufacturer/Type, No.</th>
<th>Conductor/AWG</th>
<th>Ø [mm]</th>
<th>Weight [kg/m]</th>
<th>Bending Radius</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Further individual components desired</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-chains® / e-tubes</td>
</tr>
<tr>
<td>chainflex® cables/special conduits</td>
</tr>
<tr>
<td>Guide troughs</td>
</tr>
<tr>
<td>Strain relief</td>
</tr>
<tr>
<td>Harnessing</td>
</tr>
<tr>
<td>On-site assembly</td>
</tr>
<tr>
<td>Others</td>
</tr>
</tbody>
</table>

**Interior separation / Vertical separators**

| Cable/hose layout within carrier |

**Cable/hose requirements**:

<table>
<thead>
<tr>
<th>Length</th>
<th>Cable/hose requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Temperature**  
[°C]  
**Humidity**  
[%]  
**Dust, dirt, chips**

**Dynamics**

<table>
<thead>
<tr>
<th>Speed</th>
<th>Acceleration</th>
<th>Ø Outer diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>[m/s]</td>
<td>[m/s²]</td>
<td>[mm]</td>
</tr>
</tbody>
</table>

**Environment**

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td>[°C]</td>
<td>[%]</td>
</tr>
</tbody>
</table>

**Special requests**

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Project analysis | Zig-Zag application

Zig-Zag application - Installation space

Zig-Zag travel:
Stroke (x4) [mm]
Connection height (x5) [mm]

Zig-Zag box:
Max. height (x1) [mm]
Max. length (x3) [mm]

-e-chains® - Series
Min. permitted radius [mm]
Max. additional load [kg/m]

Dynamics
Speed [m/s] 
Acceleration [m/s²]
Outer diameter [mm]

Cycles/Day 
Days/Year 

Environment
Temperature [°C] 
Humidity [%] 
Special parameters

Cables/Hoses
Number 
Manufacturer/Type, No. 
Conductor/AWG 
Ø [mm] 
Weight [kg/m] 
Bending Radius

Further individual components desired
-e-chains® / e-tubes
chainflex® cables/special conduits
Guide toughts
Strain relief
Harnessing
On-site assembly
Others

Project analysis | RBR* application

RBR application - Installation space

Side View

3D View

h [mm]

Top View

ø A [mm]
ø B [mm]

Rotation angle ± [°/mm]

Dynamics
Speed [m/s] 
Acceleration [m/s²]
Outer diameter [mm]

Cycles/Day 
Days/Year 

Environment
Temperature [°C] 
Kind of [e.g. chips] 
Humidity [%] 
ESD 
Dirt/Dust 
Special parameters

Cables/Hoses
Number 
Manufacturer/Type, No. 
Conductor/AWG 
Ø [mm] 
Weight [kg/m] 
Bending Radius

Further individual components desired
-e-chains® / e-tubes
chainflex® cables/special conduits
Guide toughts
Strain relief
Harnessing
On-site assembly
Others
### Project analysis | Zig-Zag application

| Date: | Phone: +49 2203 9649-800 | Fax: +49 2203 9649-222 |

**From:**
- To: igus® GmbH - Technical Sales
e-chainsystems®
Spicher Str. 1a
51147 Cologne (Porz-Lind)

**Environment**
- Temperature [°C]
- Humidity [%]
- Dirt/Dust (e.g. chips)
- ESD

**Dynamics**
- Speed [m/s]
- Acceleration [m/s²]
- Cycles/Day
- Days/Year
- Ø Outer diameter [mm]
- Min. permitted radius [mm]
- Max. additional load [kg/m]

**Cables/Hoses**
- Number
- Manufacturer/Type, No.
- Conductor/AWG Ø [mm]
- Weight [kg/m]
- Bending Radius

**Further individual components desired**
- e-chains® / e-tubes
- chainflex® cables/special conduits
- Guide troughs
- Strain relief
- Harnessing
- On-site assembly
- Others

### Project analysis | RBR* application (Reverse Bending Radius)

| Date: | Phone: +49 2203 9649-800 | Fax: +49 2203 9649-222 |

**From:**
- To: igus® GmbH - Technical Sales
e-chainsystems®
Spicher Str. 1a
51147 Cologne (Porz-Lind)

**Environment**
- Temperature [°C]
- Humidity [%]

**Dynamics**
- Speed [m/s]
- Acceleration [m/s²]
- Cycles/Day
- Days/Year
- Ø Outer diameter [mm]

**Cables/Hoses**
- Number
- Manufacturer/Type, No.
- Conductor/AWG Ø [mm]
- Weight [kg/m]
- Bending Radius

**Further individual components desired**
- e-chains® / e-tubes
- chainflex® cables/special conduits
- Guide troughs
- Strain relief
- Harnessing
- On-site assembly
- Others

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