

# indoor...

...Special igus® solutions for indoor cranes...



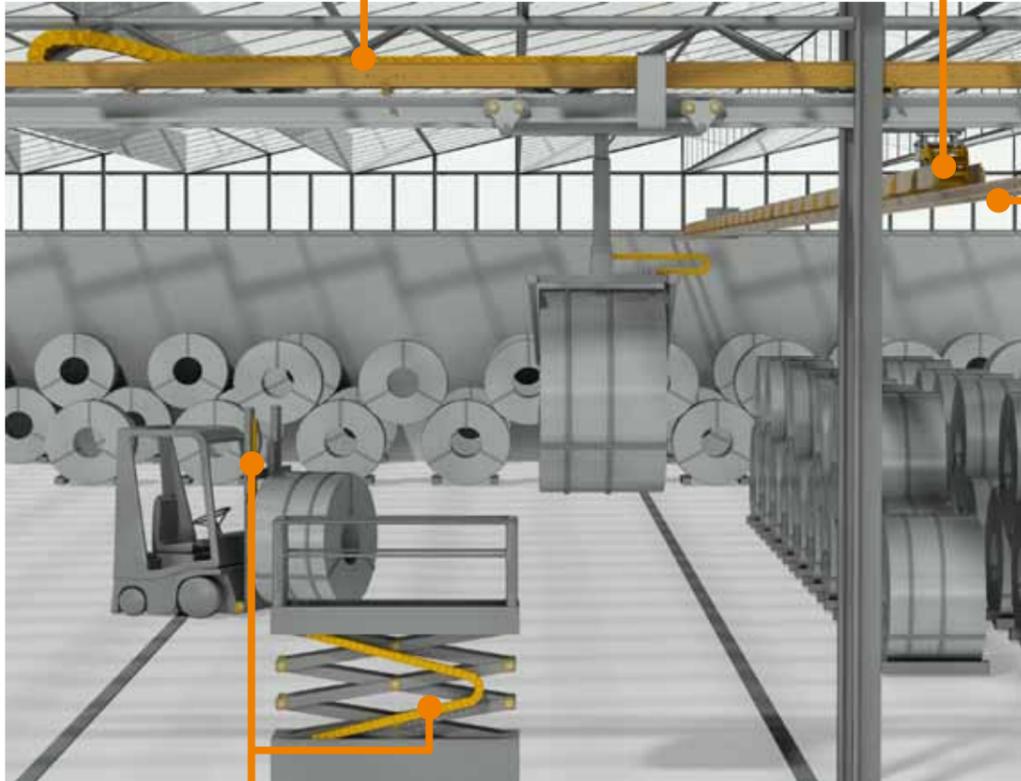
...E-ChainSystems®.E-Tubes®.ReadyChain®.Chainflex®...

# ..cranes

...iglidur®.igubal®.DryLin®.xiros®/..plastics.for.longer.life®/..

# ...content/...save.space&costs.../

igus® products for safe power and data transmission on low costs in indoor cranes



**For trolley travelling:**  
E-ChainSystems® E2/000 and E4.1  
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**For almost every indoor application:** E-Chains®  
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**Fail-safe Chainflex® cables**  
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## E-Chains® vs. Festoon or Bus Bar-systems



Without E-ChainSystem®



With spacesaving E-ChainSystem®

- Space saving construction!
- A loop station is not necessary, the trolley is able run on the full beam length!
- No down hanging cable loops!
- E-ChainSystems® reduces cable lengths by more than 50% (center feeding)!
- E-ChainSystems® prevents the cables from any external mechanical stress, i.e. uncontrolled whipping, swinging, getting stuck
- Easy and quick to assemble
- Short cable length, especially well for Bus systems and fibre optics

- All kind of media can be guided (power cables, control cables, hydraulics, pneumatics etc.)
- Low maintenance necessity will reduce your crane downtimes
- Quick and easy installation of additional cables
- E-ChainSystems® can be and have been used at trolley speeds up to 10 m/s
- E-ChainSystems® make travels up to 800 m
- Synchronous run of trolley and E-ChainSystem®
- Spare part guarantee for ten years and more

 **24 hrs delivery time**  
The goods leave igus® within 24 hrs. On request we can deliver via express or special delivery. Please inform us about your wishes.

 **No minimum order**  
igus® has no minimum order. Just order the amount you need.

 **With warranty**  
Beyond the legal warranty we also vouch for wear and tear. Together with you, we define your application's parameters. With a warranty certificate!

 **Ordering times**  
From Monday to Friday 8:00 am - 8:00 pm  
Saturday 8:00 am - 12:00 am

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

 **Onlineshop**  
See [www.igus.eu](http://www.igus.eu). There you can find our whole product range. Order around the clock.

 **You have questions?**  
For questions and more information call us or use our online productfinders on [www.igus.eu](http://www.igus.eu).



No down hanging cable loops.



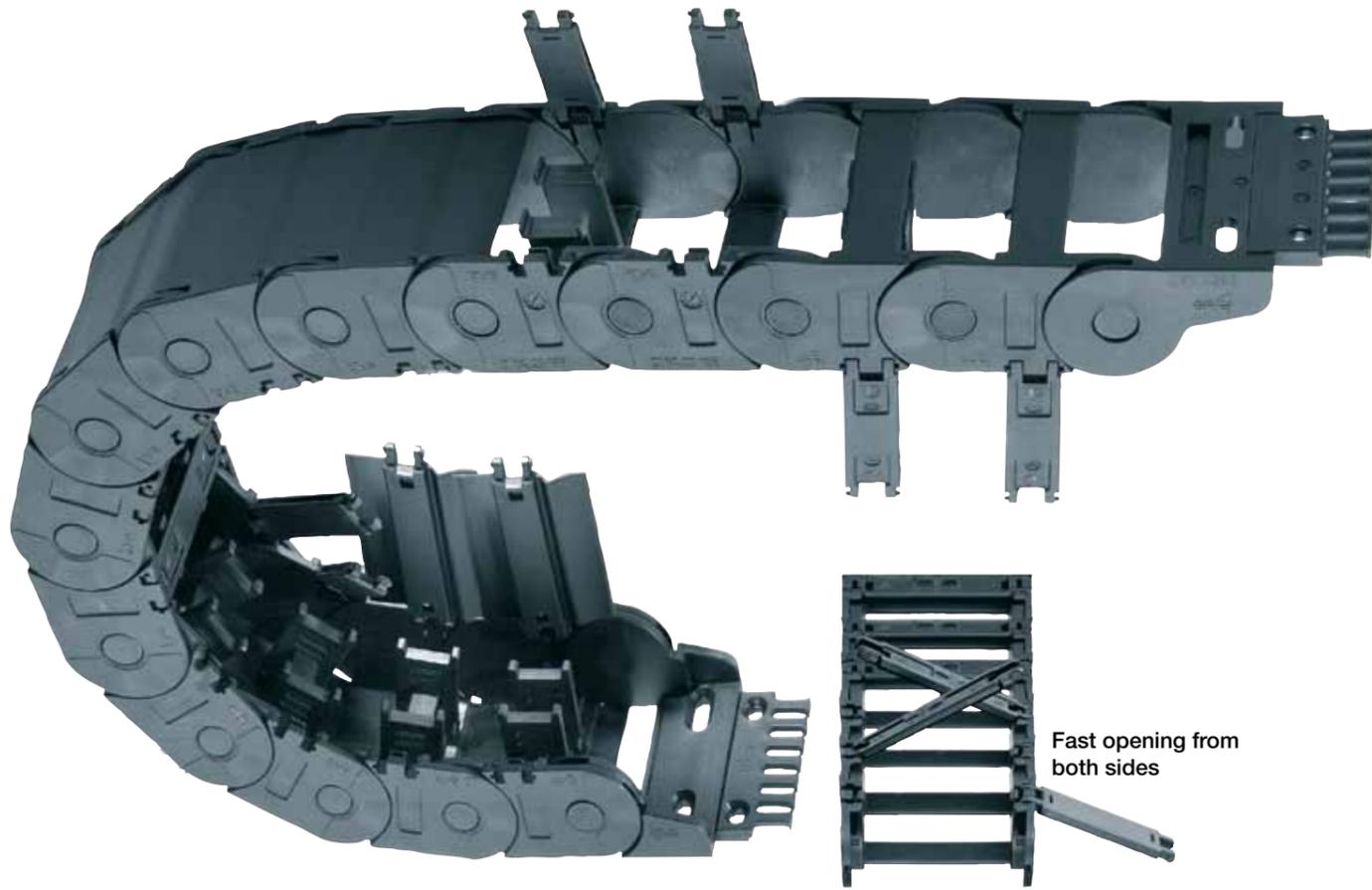
In safe position on the cranebeam



The cranebeam's end is also the end of the E-Chain®

# ...Trolley travelling/...

E-ChainSystem® E2/000



Fast opening from both sides



E2/000 in trolley travelling

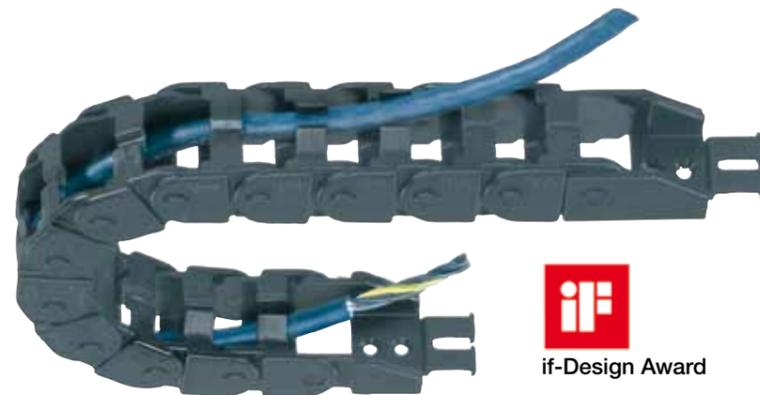
- Openable in inner- and outer radii
- Available in 21 - 45 mm inner height
- For high speeds and medium weights
- Also as E-Tube version available ex stock

Detailed Information and video: [www.igus.eu/en/e2000](http://www.igus.eu/en/e2000)

**Applications:** Joining technique, cutting machines, surface technology

Easy Chain® for simple applications: Favorable and easier to assemble.

- Quick to fill – just press in cables
- Small sizes from 5 mm inner height
- For small spaces or easy purpose

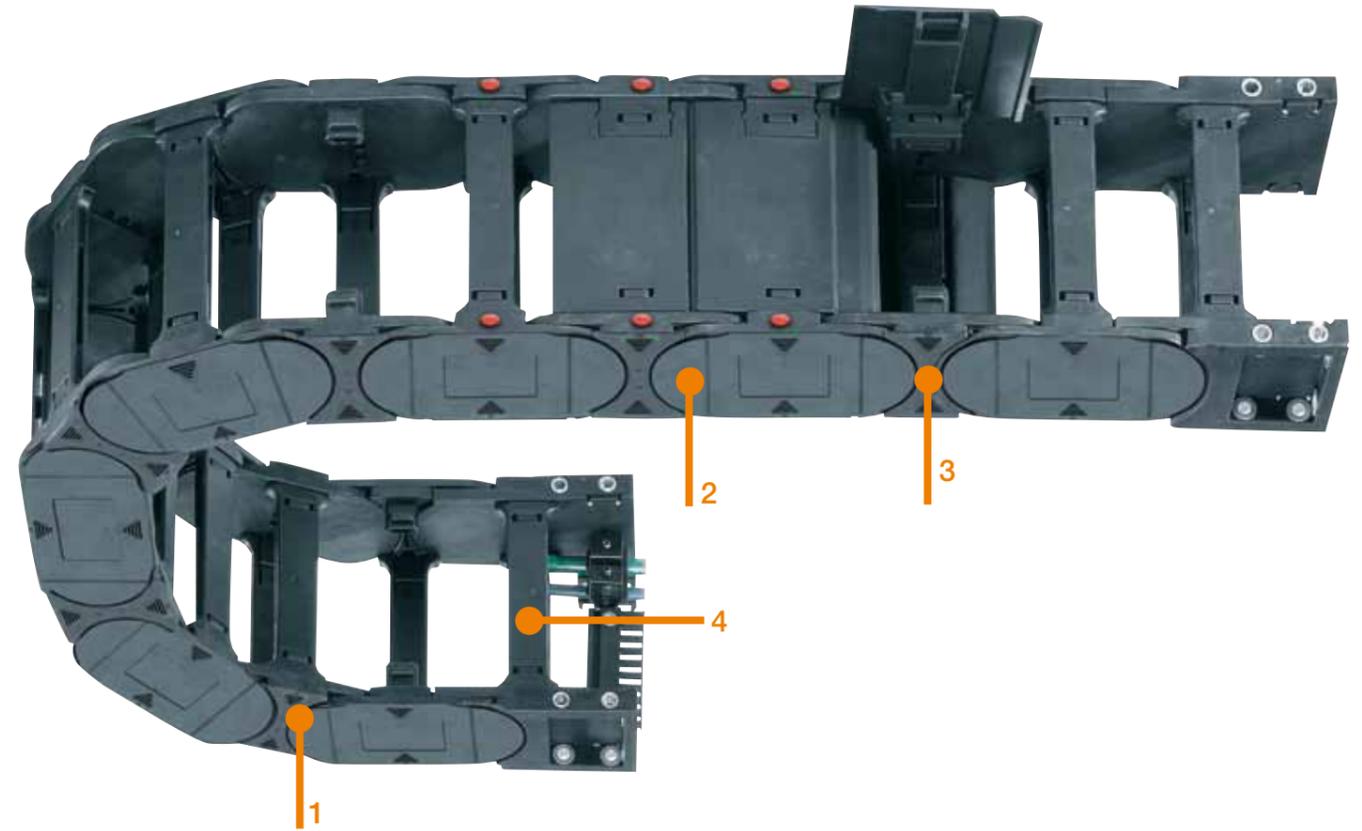


Saves time and money: [www.igus.eu/en/easychain](http://www.igus.eu/en/easychain)



if-Design Award

E-ChainSystem® E4.1



- 1. Low noise through integrated „brake“
- 2. Large unsupported lengths due to the optimized stop dogs
- 3. High rigidity and carrying capacity for shear forces thanks to tongue and groove design
- 4. Cable-friendly rounded crossbar
- Inner heights 21 - 350 mm; 3 versions: crossbars every link, crossbars every 2nd link and as tube



E-Chain® series E4.1 with extension links

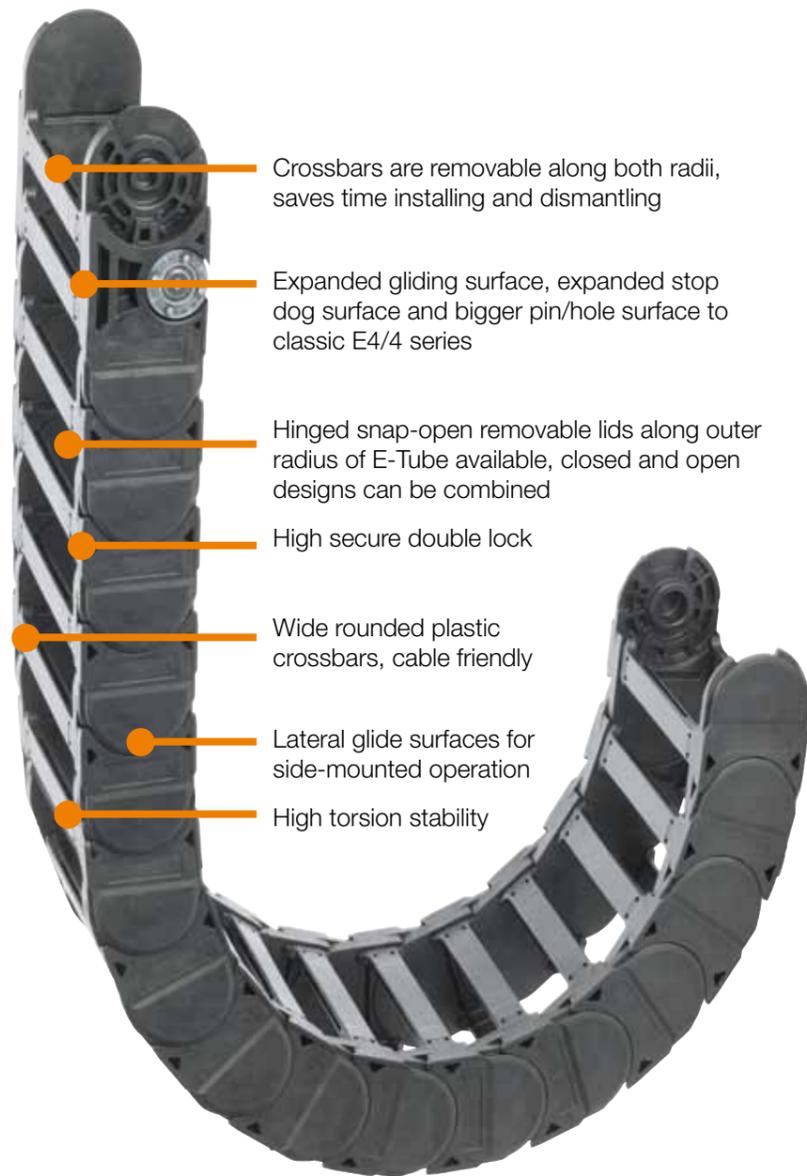
For unsupported length up to 7 m travel - option XXL



XXL-material: Allows for up to 25 % more unsupported span and for up to 7 m of unsupported travel without trough and support.

# ...Crane travelling/...

## Heavy Duty E-Chains®



Crossbars are removable along both radii, saves time installing and dismantling

Expanded gliding surface, expanded stop dog surface and bigger pin/hole surface to classic E4/4 series

Hinged snap-open removable lids along outer radius of E-Tube available, closed and open designs can be combined

High secure double lock

Wide rounded plastic crossbars, cable friendly

Lateral glide surfaces for side-mounted operation

High torsion stability



Heavy Duty E-Chain® in indoor crane in steel plant in India

The Heavy Duty Chain family was developed in view of the following applications:

- High cable loads
- High speeds
- Long travel lengths
- Strong dirt loads

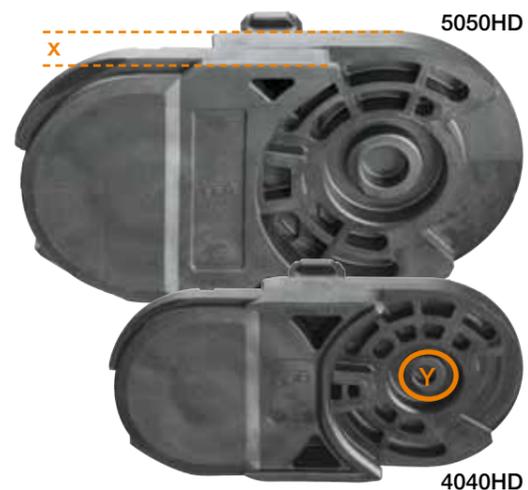
The improved E4/4 Heavy Duty takes cable carrier stability to new levels.

Strength and cycle life are improved by significantly increased gliding and load bearing surfaces.

E4/4 Heavy Duty takes higher push/pull forces at the same inner dimensions as regular E4/4 series.

Supplied from stock for the HD series:

- Roller glide for the reduction of the tensile/shear forces
- Extension link for large widths and for raising the load capacity
- Separators for the adaptation of the interior separation in the cable layout
- Mounting brackets for the fastening of the chain at fixed and moving ends

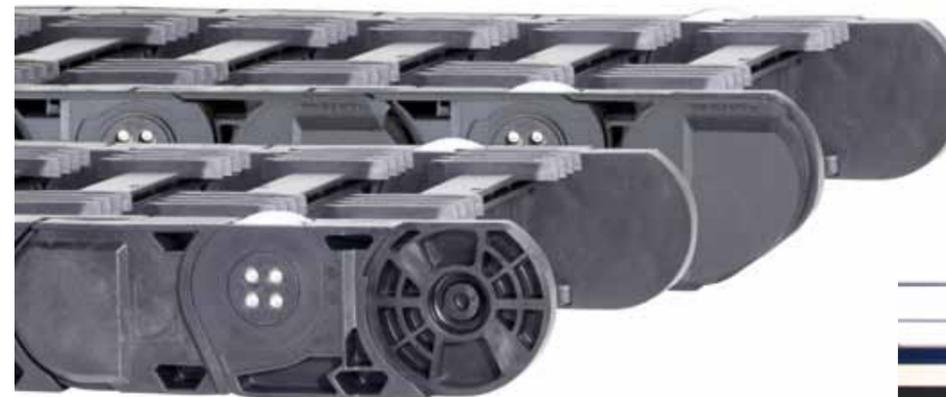


5050 HD to classic 5050:  
Y: +120%, X: +7,5 mm

4040 HD to classic 4040:  
Y: +140%, X: +9 mm

Typical Crane applications:  
STS, Goliath Cranes, Indoor Cranes, Bulk handling Cranes, Mining Crane, ...

## System P4



For long crane travellings:  
igus® E-ChainSystem® P4

For big plants or indoor cranes the system P4 is the perfect solution to supply with energy and data over long travels. [www.igus.eu/en/P4](http://www.igus.eu/en/P4)

- Tribo-optimized wear resistant roller material
- Large rolling and gliding surfaces

**Applications:** Forming and punching machines, transport

1) Four different inner heights: 32 mm, 42 mm, 56 mm and 80 mm available

2) Low maintenance RoI E-ChainSystem® from tribo-optimized plastic rollers

3) Comb-style AUTO-GLIDE cross bars

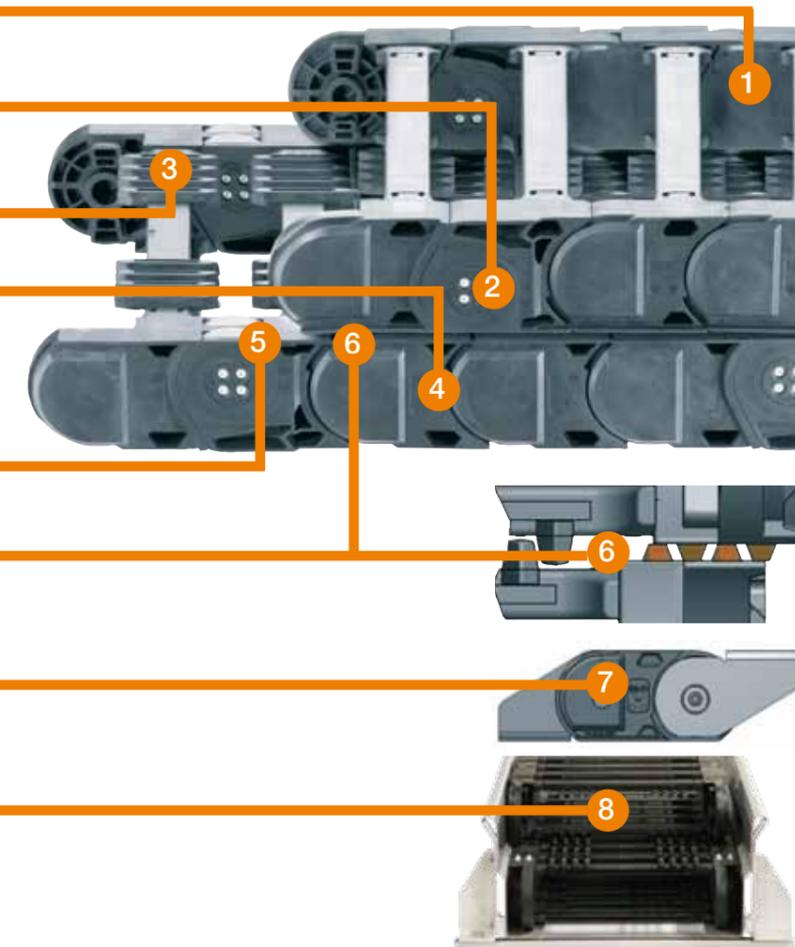
4) Same pitch for roller- / chain links

5) Exceptionally quiet through special roller and link design

6) Offset motion of upper and lower run

7) Robust steel mounting brackets available

8) Special P4 guide trough system available



# ...special.solutions/...

## Protection: Push-Pull Force Detection System in two versions

### Benefits:

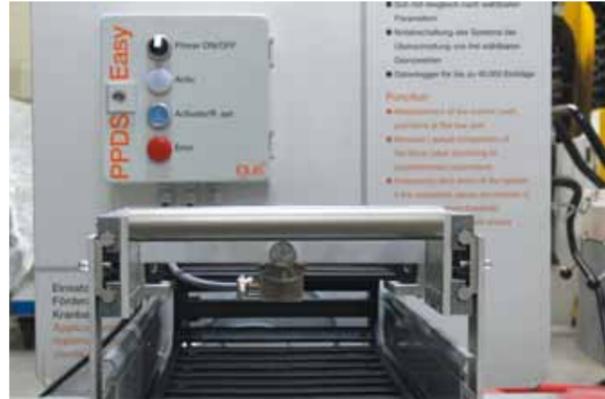
- Prevents down time
- Prevents damage to equipment
- Saves money
- Improves operational safety through preventative maintenance and fine tuning of the system

### Full PPDS System:

- **Data input**  
Nominal/actual comparison of force value at the tow arm, measured 4 times per second, relative to the position of the E-ChainSystem®.
- **Data exchange options**  
Malfunction alerts as defined – through SMS, e-mail, fax. Remote data exchange, online or through e-mail.
- **Data log**  
System data logout, retrospectively for up to 3 months, with a 128 MB memory chip. Alternatively incident-driven logout through modem memory

### Easy PPDS System:

- Low Cost Solution
- **Data input**  
Push-/Pullforces with freely selectable parameters. Measurement of the real force on moving end
- **Data exchange**  
Emergency shut-down of the system in case of overstepping of optional limit values.
- **Data log**  
Data log for up to 40,000 entries



Easy PPDS exhibition principle model. In reality integrated in the floatin moving arm



Push-/Pull-force monitoring with the igus® PPDS system

## For unsupported lengths: Horizontal “Guidelok” up to 50 m



Especially for long travels on indoor application, igus® Guidelok is a cost-effective solution.

- 1. Stuff cannot get stuck between upper and lower run, perfect for dusty environments
- 2. Modular system with few parts (also possible without side-ways trough)
- 3. Enormous increase of “self supporting” length of E-Chains®
- 4. Lower push-/pull forces (smaller E-Chains®, self supporting and rollers = energy efficient)
- Smaller E-Chains® for any given self supporting length
- Lower cost than most steel chains or sophisticated gliding systems
- Open guide trough design, chips can fall through

### Design principle



The E-Chain® is guided in the trough channel, pushing back the spring loaded roller support with its radius...

...which snaps back out after the E-Chain® radius has passed...

...the upper run then gets to lay on the roller support.

## Compact: Micro Flizz® - Long travels with smallest E-Chains®

Complete system for the control panel



- Compact, cost-saving complete system for safe guidance of energy, data and air
- Maintenance-free alternative for power bar
- Control through stationary switch cabinet possible
- Low noise
- Acceleration up to 50 m/s<sup>2</sup> and operating speed up to 6 m/s
- Quick installation through preassembled system in modular design
- Low space requirement
- Smooth-running through ball-bearing mounted carriage
- if-Design-Award

## Circular movements and “RBR” applications



“RBR” applications with a reverse bending radius have become an industry standard. igus® supports even this standard for cranes with RBR E-Chains®.

- For twisting crane applications
- Customised metal guide troughs and plates available
- Large range of accessories



For circular movements: E-Chains® with RBR

# iguide.troughs/.alu.iguide.trough

## Steel guide troughs

Guide troughs are used in long travels according to chain type from 5–12 m. They support the smooth low-friction operation of the igus® E-Chain® and E-Tubes. The in-feed point is at the center of the travel, and the E-Chain® glides by itself on one half of the travel. For the other half, we recommend glide bars mounted in the trough, on which the E-Chain® glides. igus® guide troughs have glide bars made of extremely abrasion-resistant plastic igulen (exception RS - gliding partner steel).

### Steel guide trough - very stable and rugged for heavy duty applications

If the igus® installation sets are used, the guide troughs are particularly easy to assemble. All the steel guide troughs are constructed according to the same basic principle. All sizes use a common C-profile on which the guide parts are assembled. The assembly brackets used vary in height only.

- Easy assembly with installation set
- Big range, two piece design, adjustable to E-Chain® width
- Available in galvanized steel and stainless steel
- Glide bar made of PE



## Snap-in trough system SP - simple and cost-effective



### Economically priced and simple guide options

igus® snap-in trough systems are simple and favorably priced options to safely guide E-Chains®. Recommended for less demanding applications and applications with travel speeds below 2 m/s, as well as travel distances below 50 m. The crucial advantage of the igus® insert trough is the low price and the very simple and fast installation.

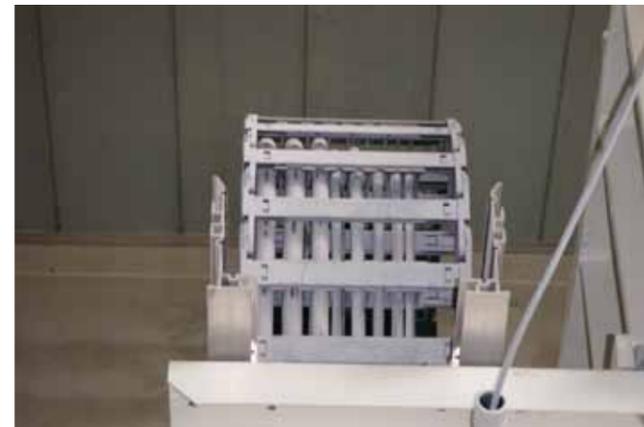
- Smaller than conventional troughs
- Easy and fast assembly
- No sharp metal edges in the internal area because of covered connectors
- Low price because of easy assembly



Long travel with igus® steel guide troughs and a harnessed E-Chain® in a crane application



Even in dusty environments: E-Chain® trough in slack yard crane



igus® E-Chain® with trough system



Rol E-Chain® 5050HD in super alu guide needs 75% less drive force.

# ...Chainflex® cables/...

Tested and stayed: Fail-safe Chainflex® cables with igus® guarantee



Competitor: corkscrews after 145,000 double strokes

igus® CF27: even after 5 million double strokes no wear!

## CFCRANE - Chainflex® Power cable

IGUS® CHAINFLEX® CFCRANE

For maximum voltages and outputs, igupren-outer jacket, oil-resistant, flame-retardant, minimum bending radius: 10 x d

## CF330.D - Chainflex® Power cable

IGUS® CHAINFLEX® CF330.D

For the high mechanical requirements of crane and general plant construction, TPE-outer jacket, PVC-free/halogen-free, oil-resistant, bio-oil-resistant, minimum bending radius: 7,5 x d

## CF30 - Chainflex® Power cable

IGUS® CHAINFLEX® CF30

For the high mechanical requirements of crane and general plant construction, PVC-outer jacket, oil-resistant, flame-retardant, minimum bending radius: 7,5 x d

## CF300.UL.D - Chainflex® Power cable

IGUS® CHAINFLEX® CF300.UL.D

For maximum load requirements, TPE-outer jacket, oil-resistant, bio-oil-resistant, flame-retardant, UV-resistant, minimum bending radius: 7,5 x d

## CF35.UL - Chainflex® Power cable

IGUS® CHAINFLEX® CF35.UL

For maximum load requirements, TPE-outer jacket, shielded, oil-resistant, bio-oil-resistant, flame-retardant, UV-resistant, minimum bending radius: 7,5 x d

## CF9.UL - Chainflex® Control cable

IGUS® CHAINFLEX® CF9.UL

For maximum load requirements, TPE-outer jacket, oil-resistant, bio-oil-resistant, PVC-free/halogen-free, low-temperature-flexible, minimum bending radius: 5 x d

## CF211 - Chainflex® data cable

IGUS® CHAINFLEX® CF211

For high load requirements, PVC-outer jacket, shielded, stranded in pairs, oil-resistant, flame-retardant, minimum bending radius: 10 x d

## CFBUS - Chainflex® Bus cable

IGUS® CHAINFLEX® CFBUS

For maximum load requirements, TPE-outer jacket, shielded, oil-resistant, bio-oil-resistant, flame-retardant, minimum bending radius: 10-12,5 x d

## CF14 CAT5 - Chainflex® Bus cable

IGUS® CHAINFLEX® CF14 CAT5

Ethernet special cable for maximum load requirements, TPE-outer jacket, oil-resistant, bio-oil-resistant, PVC-free/halogen-free, UV-resistant, minimum bending radius: 12,5 x d

## CFLG.G - Chainflex® FOC cable

IGUS® CHAINFLEX® CFLG.G

Gradient glass-fiber cable for maximum load requirements, TPE-outer jacket, halogen-free, low-temperature-flexible up to -40 °C, minimum bending radius: 15 x d

### igus® Chainflex®-cables

are optimized for high dynamic applications. The materials are developed for best service life in single or system use. The special Chainflex®-design prevents corkscrew and cable breakages.

Find over 850 Chainflex®-cables and detailed Information: [www.chainflex.eu](http://www.chainflex.eu)



Large igus® cable stock with chain-fit Chainflex® cables



ReadyChain® with Chainflex® in two girder crane



Pre-harnessed systems from igus® – ready to install



Perfect for outdoor applications: Chainflex®



Abrasion-free due to special materials

# ...igus® ReadyChain®/invis® power/...

Total pre-harnessed igus® E-ChainSystems® from one supplier



Precise and quick harnessing in our ReadyChain® factory



Installation-optimized of an igus® ReadyChain®



Serial production

ReadyChains® – E-Chains®, cables, accessory and metal components from igus® – with system guarantee

The advantages of plug and play E-ChainSystems® from igus®:

- Increase cash-flow
- Cover fluctuations
- Reduce waste
- Minimize downtime
- Reduce or purchase orders by about 75%
- Zero stock
- Modern equipment means low cost at highest quality
- System is checked in our test center
- More than 3,000 electrical components from stock
- Delivery with individual plates and mounting parts
- igus® is certified according to DIN EN ISO 9001:2000
- ReadyChain®-factory with more than 80 experts
- Over 800 systems leave the 10 ReadyChain® factories worldwide every week
- Experience since 1993
- Worldwide service in more than 50 countries

Detailed Information:  
[www.readychain.eu](http://www.readychain.eu)



Inductive energy transmission even in curves

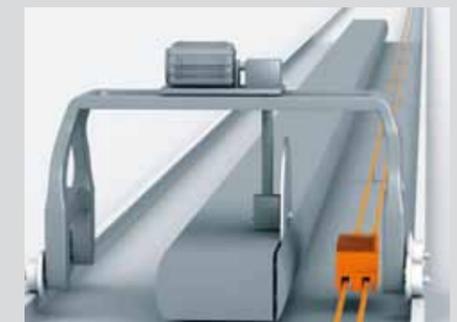
invis® power is a system based on the inductive energy transmission principle.

- Contactless, insensible, silent
- Wear-resistant, totally mechanical maintenance-free
- Works in dirt, water or clean room
- Several pickups possible
- Up to 40 kW power and more
- Modular
- Economical range of standard parts

Catalogs online: [www.igus.eu/invis](http://www.igus.eu/invis)



Robust modul kit



Resistant to dirt over long

# ...Bearings/...

igus® maintenance- and lubricant-free polymer bearings



## iglidur® bearings – Lifetime predictable

Every designer's dream: A life-time-predictable plainbearing without lubrication at low cost. Each material has got their own features. For all iglidur® bearings valids:

- Maintenance-and lubrication free
- Corrosion and dirt resistance
- High vibration dampening
- Very low tendency to creep

Detailed Information: [www.igus.eu/iglidur](http://www.igus.eu/iglidur)



New: Other iglidur® materials to improve technic and reduce costs

## igubal®: self-aligning plain bearings made of polymer

igubal® puts a complete system of self-aligning bearings at the developer's fingertips. Self-aligning bearings are easy to fit, adapt to all angular deviations and replace special housings in many cases.

- Exceptionally cost-effective
- Maintenance-free Lubrication-free
- Resistant to dust and dirt
- Corrosion-free Usable in liquid media

Detailed information: [www.igus.eu/igubal](http://www.igus.eu/igubal)



igubal® rod end and spherical bearings are available in many different types, e.g. with spherical ball material to choose.

## DryLin® - glides instead of rolling!

DryLin® is a product range of maintenance-free and lubricant-free linear bearings in four different main categories. Besides the freedom from maintenance, the main features include ruggedness and the insensitivity to dirt, water, chemicals, heat or impacts.

- Maintenance-free
- Dry operation
- Weight reduction
- For short-stroke applications
- Self-lubricating

Detailed information: [www.igus.eu/drylin](http://www.igus.eu/drylin)



DryLin® W Linear Guides with manual adjustable clearance „Turn-To-Fit“

# ...igus®.online/...

24h igus® service and products – [www.igus.eu](http://www.igus.eu)

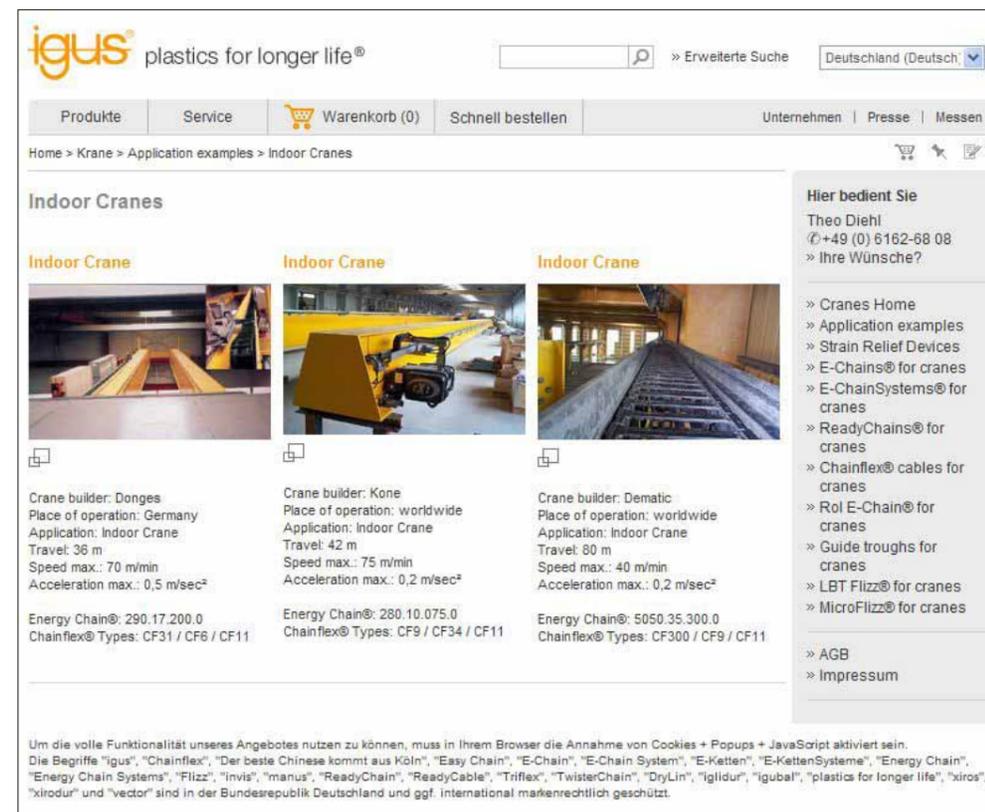
## i-net customer information system

At [www.igus.eu](http://www.igus.eu) track your orders in real time with igus® i-net. Just request a password, log into i-net and track your job-status 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



Request order tracking here: [www.igus.de/en/i-net](http://www.igus.de/en/i-net)



## Special homepage for the indoor cranes industry

You can find information, applications, videos and product details for indoor cranes on :

[www.igus-cranes.com/indoorcranes](http://www.igus-cranes.com/indoorcranes)

You can find more special websites for other industries (cranes, robotics,...) on:

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



# Fax Response

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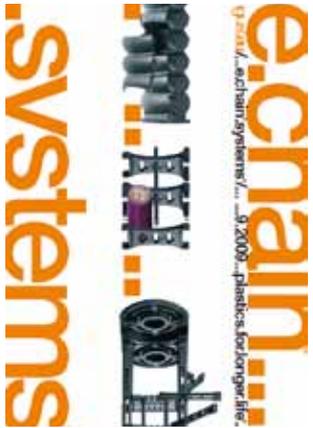


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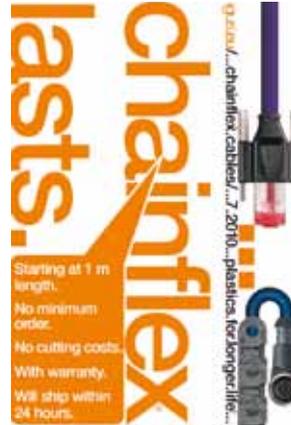
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D-51147 Cologne  
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cranes@igus.de

Please call me for further information

Please send me information on the following material:



igus® E-ChainSystems®  
catalog, 09/2009



igus® Chainflex® cables  
catalog, 07/2010



CD-ROM  
Crane presentation

igus®-cranes.com