

material

igus® solutions for material flow, automated warehouses, logistics and conveyor technology

handling

plastics for longer life® ... igus

... www.igus.eu/materialhandling ...



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Material Handling

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Energy efficient, safe, light, affordable and quick to install – igus® plastics solutions for intra logistics.

Logistics is growing quickly thanks to the huge increase in online trading. Processes are becoming more complicated and faster. To deliver this, components and systems are needed to be reliable in operation and require very little servicing.

igus® offers plastics solutions for the safe guidance of energy and other media, and maintenance and lubrication-free plain bearings made of plastic. We test all the products under real-world conditions in the largest test lab of its kind in Cologne. More than 200,000 customers rely on plastics solutions from igus® worldwide.

The advantages of igus® products for the material handling field:

e-chains®:

- For long travels up to 800m
- For high dynamics - 7m/s speed, 10m/s² acceleration
- Maintenance-free
- Long service life
- Fast delivery, ready to install

chainflex® cables:

- Cold flexible down to -40°C
- Specifically designed for highly dynamic movements in energy chains®
- Special bus cables for extreme conditions
- 36 months' guarantee for all chainflex® cables

iglidur® plain bearings

- Dry running and lubrication-free
- High edge loads and surface pressures up to 250 MPa
- Light weight
- Maintenance-free

Our online tools also enable you to reduce process costs. igus® delivers from stock in 24-48 hours!

 www.igus.eu/materialhandling

I look forward to speaking to you.

... for material handling

























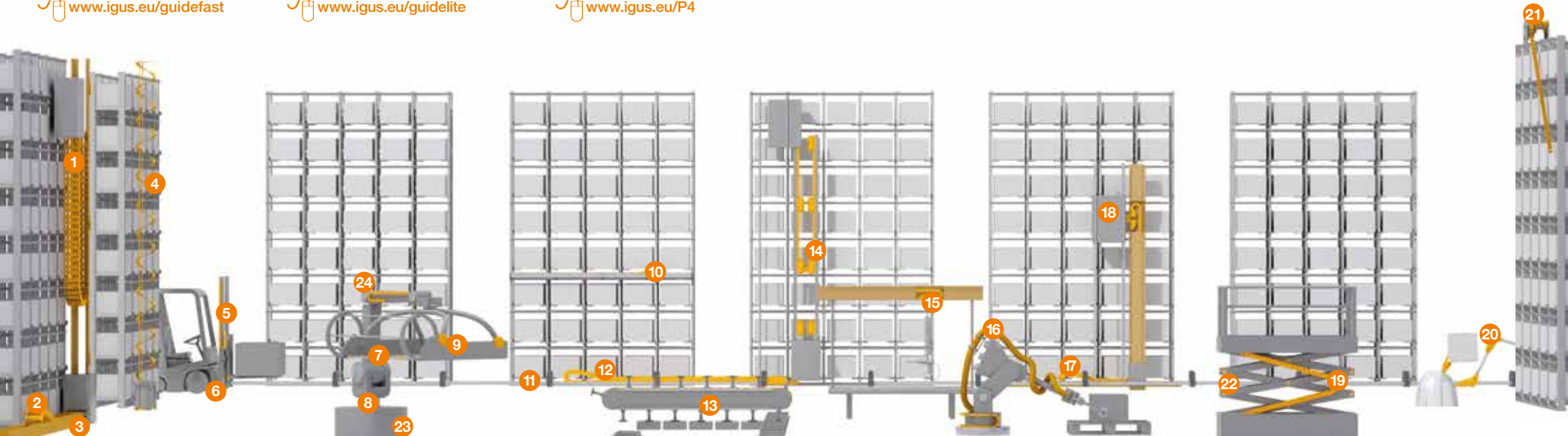
**Cost down ...
... life up!**

igus® products for ...

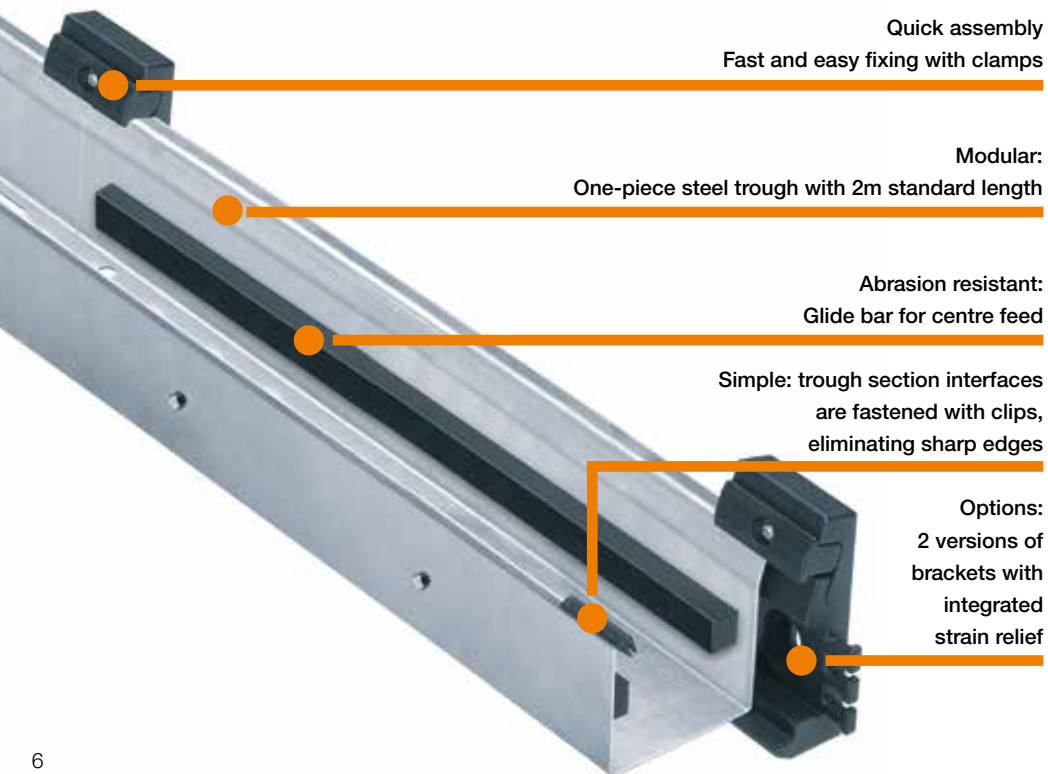
... intra logistics

Maintenance-free plastic products

- 1 e-chains® series for virtually any application
System E4.1
 www.igus.eu/E4.1
- 2 Electronic monitoring module
PPDS system
 www.igus.eu/PPDS
- 3 Troughs for long travels
Super aluminium
 www.igus.eu/SuperAlu
- 4 For vertical applications in a compact system.
liftband
 www.igus.eu/liftband
- 5 Assembled systems in 3-10 days
readychains®
 www.igus.eu/readychain
- 6 Heavy duty bearings for extremely high loads
iglidur® Q2
 www.igus.eu/Q2
- 7 Rotary motion in small spaces
twisterband
 www.igus.eu/twisterband
- 8 Lubrication free slewing ring bearings
iglidur® PRT
 www.igus.eu/PRT
- 9 Maintenance-free and lubrication-free spherical bearings **igubal®**
 www.igus.eu/igubal
- 10 E2/000 guide trough module
guidefast
 www.igus.eu/guidefast
- 11 Long travels up to 150 m without glide rails
guidelite & E2/000 e-chain®
 www.igus.eu/guidelite
- 12 Energy efficient roller chain profile for high speeds
System P4
 www.igus.eu/P4
- 13 Intelligent conveyor chain for pick & place
pikchain®
 www.igus.eu/pikchain
- 16 3D e-chain® and twistable cables for robots
triflex® R & CFROBOT
 www.igus.eu/triflexR
- 19 The e-chains® standard
System E2/000
 www.igus.eu/E2000
- 19 Lubrication-free iglidur® plain bearing materials
 www.igus.eu/iglidur
- 14 Vertical energy supply system without swinging out
guidelok slimline
 www.igus.eu/GLSL-F
www.igus.eu/GLSL-P
- 17 Reduce drive power up to 75%
E4.1 rol e-chain®
 www.igus.eu/E4.1
- 20 Modular kit for multiple-axis joint components
robolink®
 www.igus.eu/robolink
- 23 Magnetic chain for circular and vertical movements
 www.igus.eu/magsnap
- 15 Safe guidance of energy, data and air
micro flizz®
 www.igus.eu/microflizz
- 18 Linear and drive systems
drylin®
 www.igus.eu/drylin
- 21 Reduce cable wear with the alternative to cable reeling drums
e-spool
 www.igus.eu/e-spool
- 24 Cables with the smallest radii
 www.igus.eu/chainflex



Travels up to 150m ...

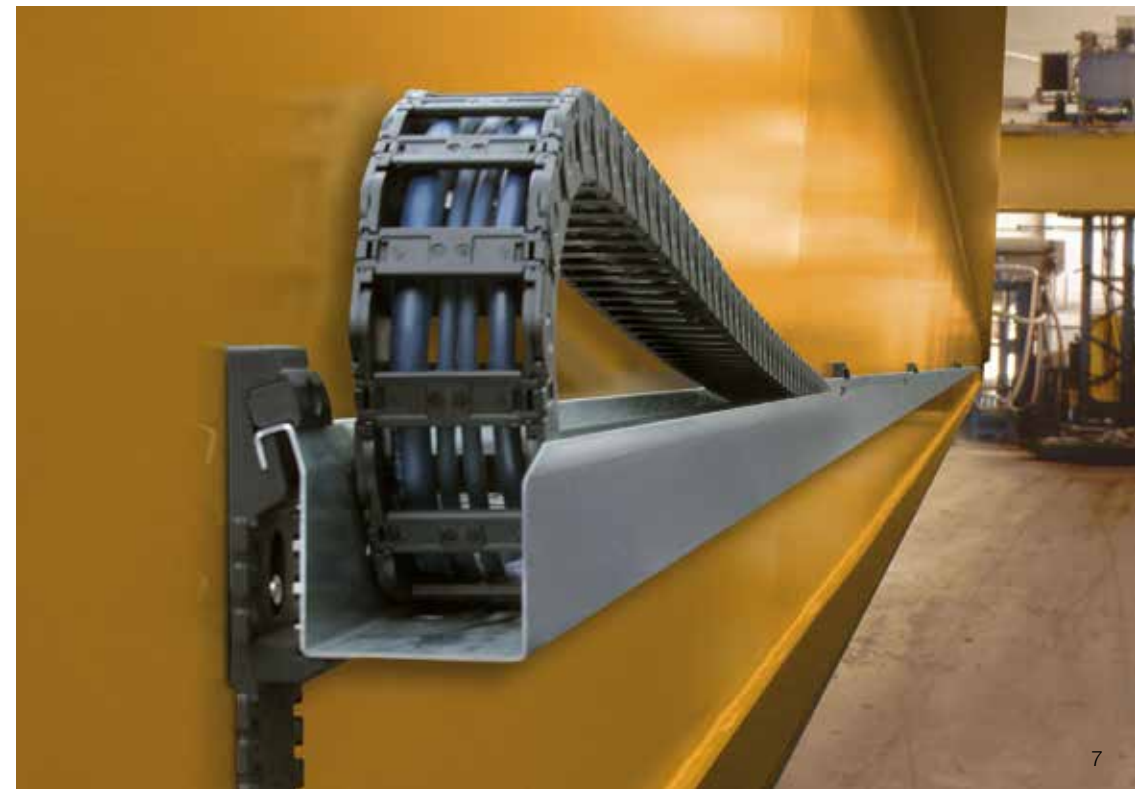
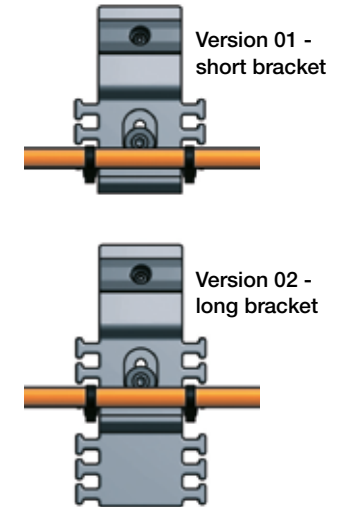


... quickly assembled

guidefast trough – for crane girders on standard indoor cranes.

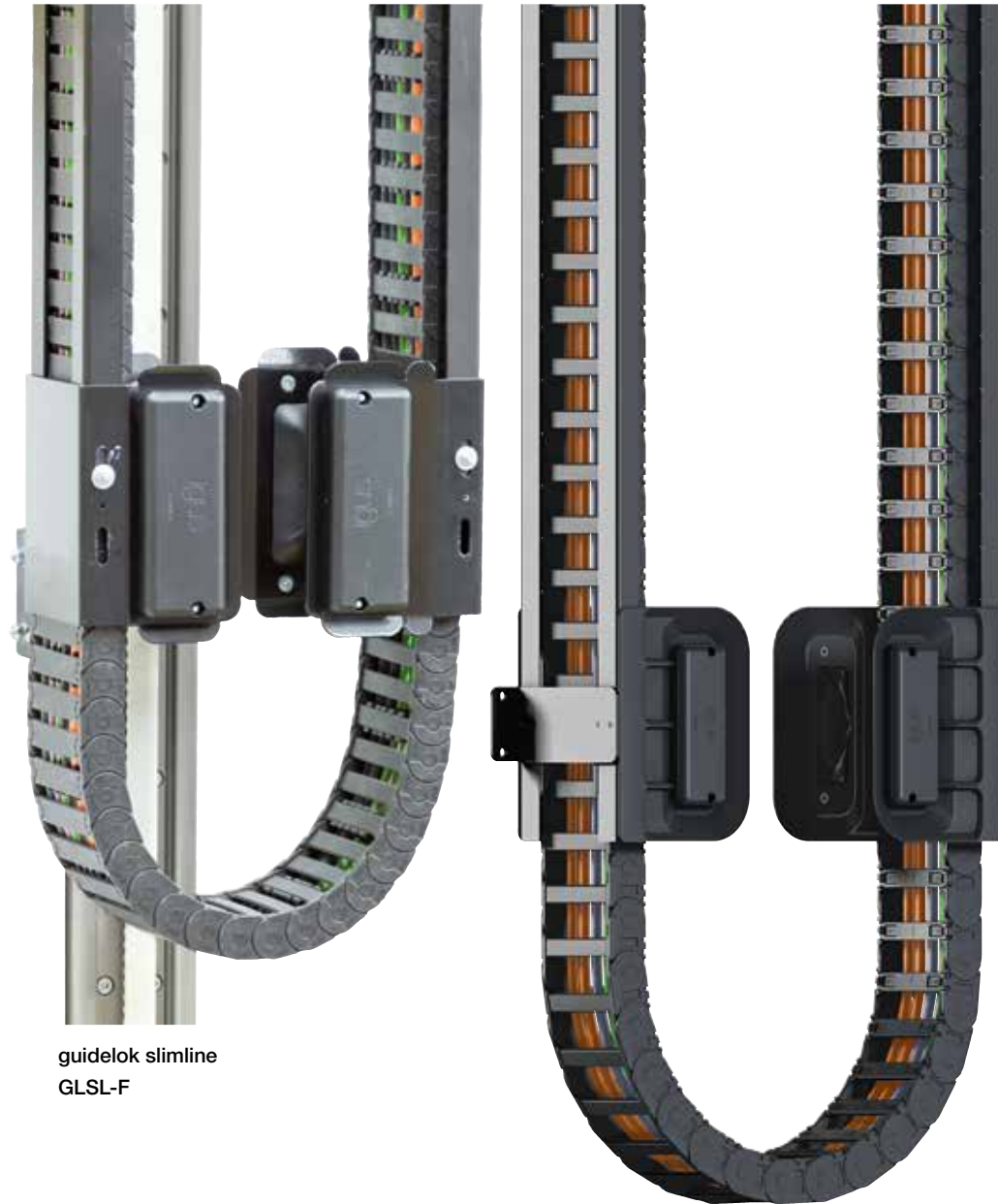
- Up to 80% less assembly time
- Fits virtually any standard crane girder
- Suitable for any wall-mounted application – not only on cranes
- Simplified electrical hookup, fixed installation
- Fix cables directly onto the trough bracket
- Less abrasion: Available with plastic glide bar
- Very light

www.igus.eu/guidefast



Reliable, fast, and cost-effective ... up to 50m height

The solution for all stacker cranes, jacks and lifts



guidelok slimline
GLSL-F

guidelok slimline
GLSL-P

guidelok slimline F / guidelok slimline P

Secure vertical guidance for e-chains® for highly dynamic storage and retrieval systems.

- For hanging applications up to 50m
- Energy + data + media are conducted in one system smoothly and reliably
- Reduces swinging of the chain, high reliability due to the lock mechanism and guide rails
- Up to 7m/s and 10m/s²
- Reduce troughs by 80%
- Saves cost and weight
- Quick and easy installation
- Low noise
- Easy access for servicing

 www.igus.eu/glsl-f

NEW: guidelok slimline P

- Now full polymer version
- Even faster to assemble, no screw together anymore
- Even lighter, due to full polymer design
- More cost-effective

 www.igus.eu/glsl-p



© SSI Schäfer



Special solutions for vertical ... and horizontal applications



e-spool modular kit

The alternative to a cable reeling drum. Reduce cable wear and guide different media types together.

- Cable diameters up to 19mm
- No tensile load on the cables
- Different media and diameters possible in one reel
- Energy supply possible in all directions (horizontal, vertical, diagonal ...)
- Space-saving
- Access paths are unobstructed

 www.igus.eu/e-spool



liftband

For vertical applications up to 13m height.

- Alternative to Zig-Zag solutions
- Lighter and smaller installation space
- Speeds up to 1m/s
- Acceleration up to 2m/s²
- Max. extension length 13m
- Cable bending radius up to 250mm

 www.igus.eu/liftband

System P4

Profile roller e-chain®:

- For very high fill weights and speeds
- Pitch of the chain links with and without roller is the same
- The upper run rollers travel through the lower run rollers (not on top of each other, as in previous roller chains), giving very quiet operation
- Integrated captive roller in the side link
- Long distances (up to 800m), high fill weights (up to 30kg/m) and high travel speeds up to 10m/s autoglide crossbars ensure safe guidance
- Available in 4 inner heights (32, 42, 56, 80mm)
- Modular P4 construction kit with interior separations from the E4 system
- 75% reduction of the drive power required to move the e-chain®

 www.igus.eu/P4



micro flizz® MF10

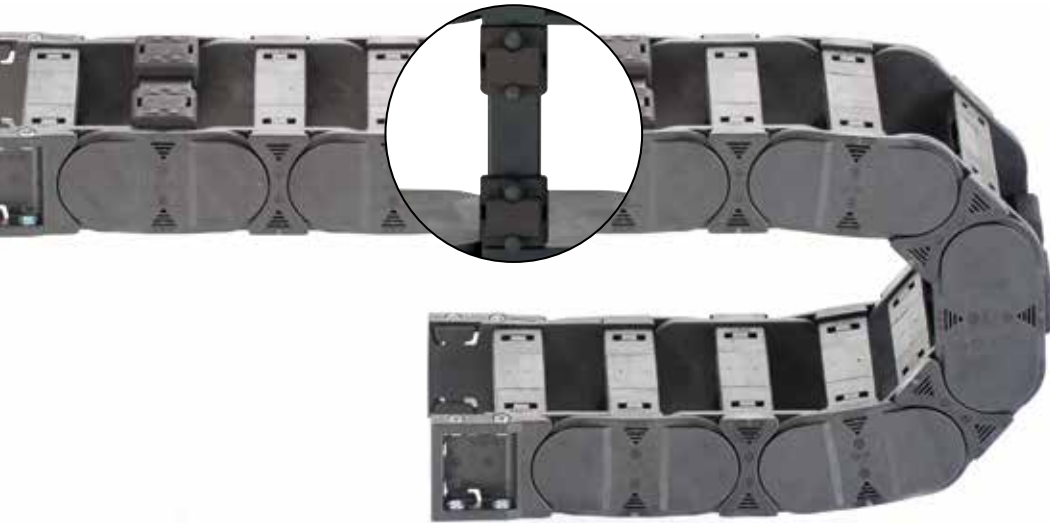
A system for the safe guidance of energy, data and air.

- Maintenance-free alternative for busbar
- Allows long travels with the smallest e-chains® without failure
- e-chain® is guided in a special groove, without sliding on itself
- Control option via stationary switch cabinet
- Accelerations up to 50m/s² and operating speeds up to 6m/s
- Fast assembly using pre-assembled, modular system
- Low space requirement
- Smooth operation through ball-bearing mounted carriage
- Also with EX tested e-chain® available (on request)
- Material rail MF06/MF08: aluminium anodised, material rail MF10: black anodised

 www.igus.eu/microfizz



The e-chain® that holds itself. No more trough!



igus® magsnap – guide troughs not required

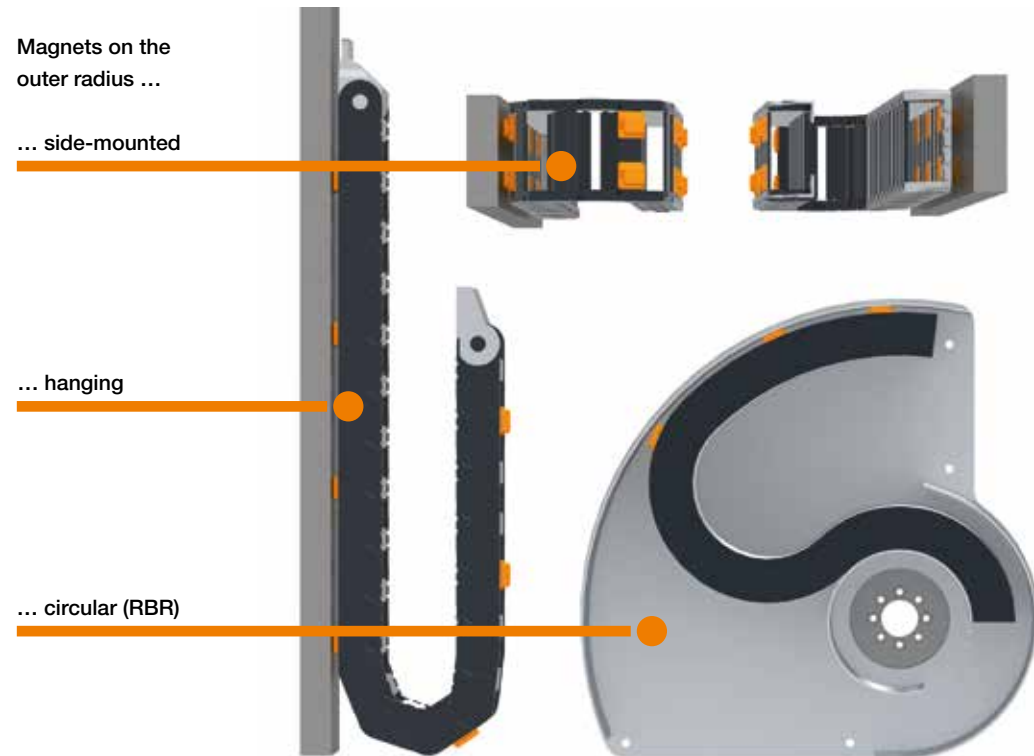
For long vertically hanging applications, where a guide trough is not possible for space reasons. Magnets hold the e-chain® in a specified direction and "fix" it to the mast of a lift or jack. Swinging of the e-chain® is therefore avoided. The magsnap e-chain® is also suited to vertical circular motion (RBR) because magnets of the outer radius of the e-chain® can hold on to the "RBR guide trough" and the e-chain® can be moved safely and quietly.

Typical application areas:

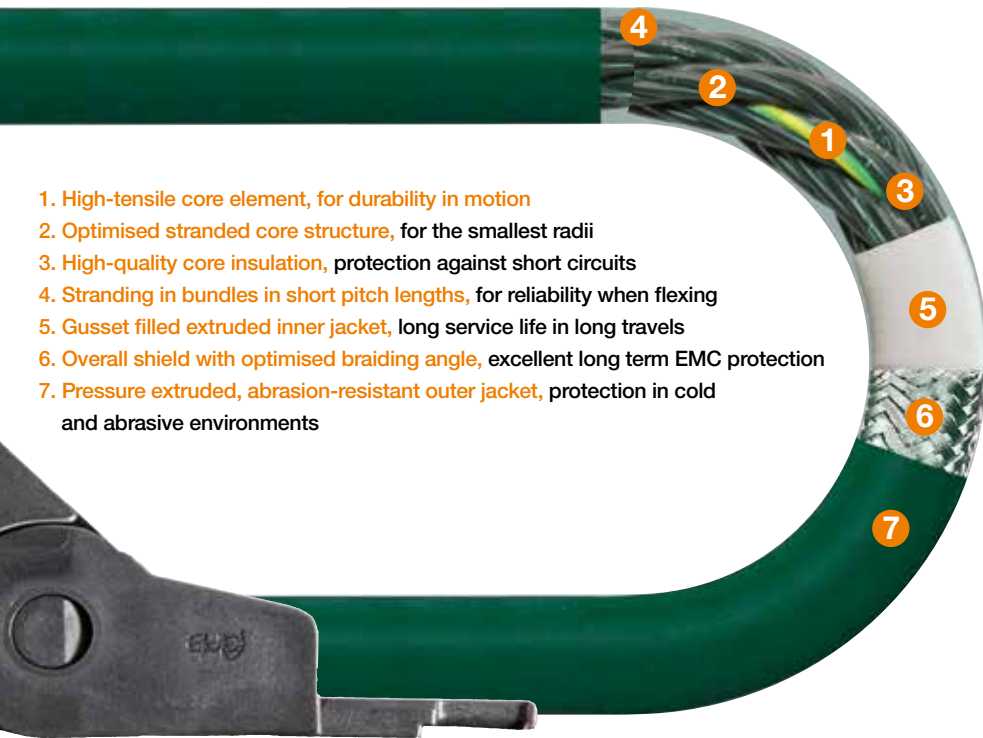
Hanging applications such as: lifts, hoists, jacks, automatic car parking and vertical applications with circular movements (RBR).

- Holds the e-chain® in vertical, horizontal or circular applications in a stable position
- Quick and easy assembly
- Equipped with dampening elements for noise reduction
- Easy to retrofit

 www.igus.eu/magsnap



chainflex® cables ...



1. High-tensile core element, for durability in motion
2. Optimised stranded core structure, for the smallest radii
3. High-quality core insulation, protection against short circuits
4. Stranding in bundles in short pitch lengths, for reliability when flexing
5. Gusset filled extruded inner jacket, long service life in long travels
6. Overall shield with optimised braiding angle, excellent long term EMC protection
7. Pressure extruded, abrasion-resistant outer jacket, protection in cold and abrasive environments

The special design of igus® chainflex® cables is the key to a long service life in energy chains®.

Control cable



E.g. chainflex® CF9.UL – for heavy duty in outdoor applications with UL approval. www.igus.eu/CF9UL



Shielded control cable



E.g. chainflex® CF10.UL – for heavy duty in cold temperatures. www.igus.eu/CF10UL



Motor cable



E.g. chainflex® CF38 – for heavy duty. www.igus.eu/CF38



... for e-chains®

- Savings due to different quality levels
- Solutions for long and short travels
- Always with 36 months guarantee
- Clear service life data for every series
- Matched to the e-chain®



www.chainflex.eu

Tested!

In the largest lab of its kind, igus® Cologne

For example: cold test

Objective: To determine the maximum service life of igus® chainflex® TPE cables at temperatures of -40°C.

Test setup: An igus® CF340 TPE cable was moved in an e-chain® in the igus® climate container with a travel of 7 m and a speed of 1.5 m/s at -40°C.

Result: The test was terminated after 3.7 million double strokes. The cable showed little or no wear and was fully functional.



Individual cores



E.g. chainflex® CF340 – for heavy duty in small installation spaces. www.igus.eu/CF340



Fibre optic cable (FOC)



E.g. chainflex® CFLG.2G. – gradient fibre optic cable for heavy duty, with the smallest radii, indoor and outdoor applications. www.igus.eu/CFLG



Bus cable



E.g. chainflex® CF060 – Profibus, Profinet, Ethernet, CAN-BUS cables for heavy duty in the smallest of spaces. www.igus.eu/CF060



chainflex® cables ...

Bus cables for hanging applications up to 50m

chainflex® bus cable CFSPECIAL.182 – Profibus/Ethernet cable

For high tensile load. Solution for moving applications that go beyond the normal energy supply applications.

- For hanging applications up to 50m
- For increased tensile load
- Storage and retrieval units, hanging control elements and lifts

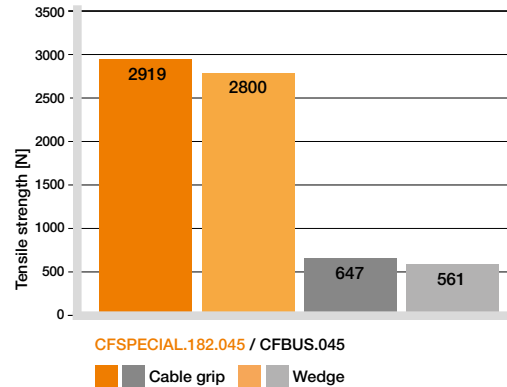
www.chainflex.eu/CFSP1



In the largest lab of its kind, igus® Cologne

Test 4428 – CFSPECIAL.182.045

Ethernet cable for heavy duty – flawless data transmission at 2919 N – 15,000% more than called for in the DIN standard.



...for every moving application

Save up to 67% ... with a customised solution ... with guarantee

chainflex® CF27.D



- For heavy duty
- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Notch-resistant
- Flame-retardant
- Hydrolysis and microbe-resistant
- PVC-free/halogen-free

www.chainflex.eu/CF27D

chainflex® CF887



- For flexural stress
- PVC outer jacket
- Shielded

www.chainflex.eu/CF887

Save up to 71% ... with a customised solution ... with guarantee

chainflex® CFBUS



- For heavy duty
- TPE outer jacket
- Shielded
- Oil-resistant
- Bio-oil-resistant
- Flame-retardant
- Hydrolysis and microbe-resistant

www.chainflex.eu/CBUS

chainflex® CF888



- For flexural stress
- PVC outer jacket
- Shielded

www.chainflex.eu/CF888



Cost down ... life up ... effective immediately we provide a three-year guarantee on every chainflex® cable.

Guarantee statements in the area of plant engineering are often associated with considerable risks. With our unique igus® guarantee for ALL chainflex® cables we provide predictable reliability for 36 months, or up to 10 million double strokes (or 5 million double strokes for the very cost-effective chainflex® M cables).



readychain® speed



Swapped in seconds

Plug & Work. The new readychain® speed makes connecting harnessed e-chains® easier than ever before. Fitted in seconds – without tools. Connector and mounting bracket are blended into a single unit for the shortest possible downtime.

Typical application areas:

Switch cabinets, automotive, storage and retrieval units, etc.

- Connected in seconds without tools
- Connector and mounting bracket are blended into a single unit
- Swap e-chains® in seconds
- Minimise downtimes
- Reliable connection with very tough connectors

 www.igus.eu/readychainS

Strong crossbars.
Various widths, any length

Cable strain relief

Modular inserts

Matching coupling

readychain® systems

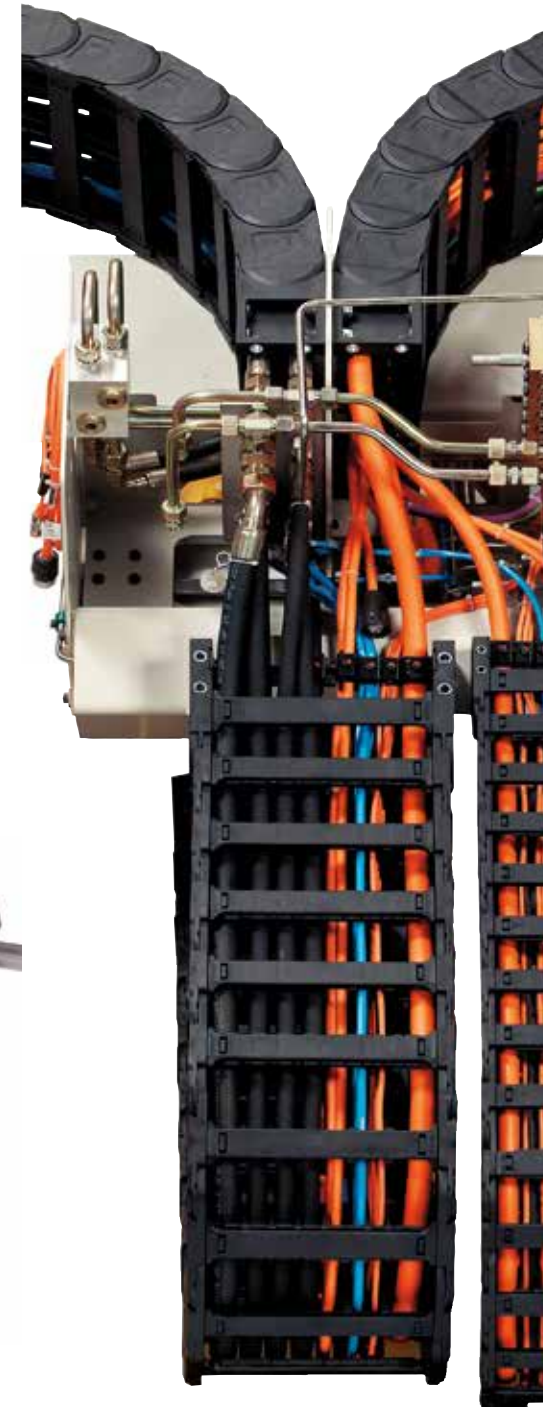
Good reasons for ready-to-install assembled e-chainsystems® from igus®

- Increase your cash-flow
- Keep your capacities flexible
- Reduce your throughput times
- Avoid machine downtimes
- Turn 30-100 orders into one
- Reduce your storage costs to zero
- Modern equipment - enables reasonable prices with highest quality
- Our own test laboratory for testing your selected components
- More than 3,500 connectors and accessories from stock
- Delivery with attachments and sheet metal components specific to the machine
- Certified quality according to DIN EN ISO 9001:2008
- Our own readychain® factory with over 130 specialists
- Up to 1,000 systems a week leave the factory
- Make use of our experience since 1993
- Worldwide service in 28 countries and sales partners in 42 countries

 www.readychain.de



Turnkey igus® readychain® systems with energy chains®, cables, connectors and metal parts suitably to your system.



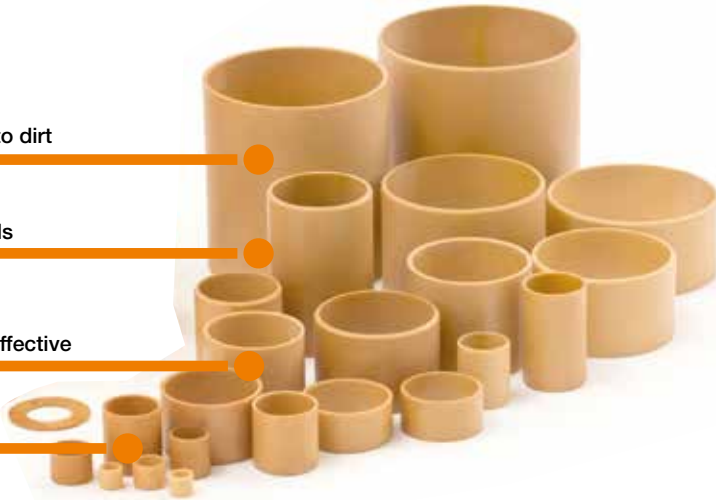
igus® dry-tech® plain bearings ...

Lubricant-free and resistant to dirt

Wear-resistant with high loads

Maintenance-free and cost-effective

Pressures up to 200 MPa



iglidur® plain bearings

iglidur® plastic bearings from igus® are lubricant-free, maintenance-free, cost effective and versatile. They always offer a solution – either from the catalogue range or as a custom-made special plain bearing solution.

www.igus.eu/iglidur

- 47 different materials – delivered from stock
- Corrosion resistance
- Insensitivity to dirt
- High compressive strengths
- Low coefficients of friction
- High wear resistance



iglidur® G – the allrounder
Universal bearing for applications with medium to high loads.



iglidur® J – versatile in continuous operation
The perfect combination of wear-resistant plain bearings for medium loads and optimum coefficients of friction.



iglidur® Q2 – the heavy duty bearing
Plain bearing solution for heavy duty pivoting applications and extreme conditions.



iglidur® TX1 – "Heavy Duty" up to 200 MPa
Extremely high rigidity and durability especially under high radial loads in pivoting operations.

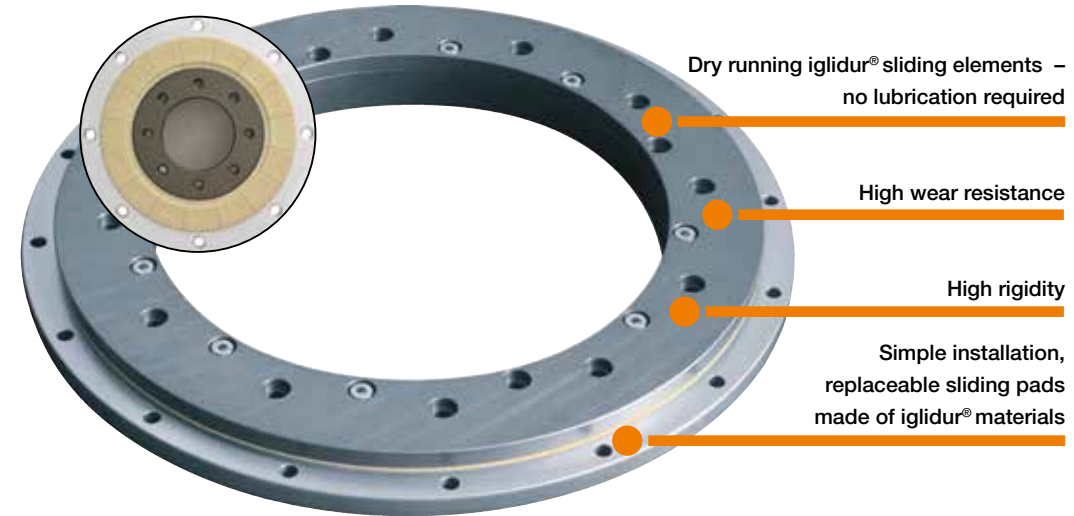
www.igus.eu/g

www.igus.eu/j

www.igus.eu/q2

www.igus.eu/tx1

... 100% lubricant-free



Dry running iglidur® sliding elements – no lubrication required

High wear resistance

High rigidity

Simple installation, replaceable sliding pads made of iglidur® materials

Polymer slewing ring bearing – iglidur® PRT

iglidur® PRT is a low priced, low maintenance slewing ring bearing with tribo-optimised iglidur® polymer sliding pads. The sliding elements operate completely without maintenance and lubrication. The main body of the PRT slewing ring is manufactured from hard anodised aluminium. All fastening screws are made of stainless steel.

- Maintenance and lubricant free
- Ready-to-install
- Robust and corrosion resistant
- Optionally usable up to 180° C
- For low to medium surface speeds

www.igus.eu/PRT



Slewing ring bearing - design 01
Slewing ring with high rigidity, useable up to +180° C, high chemical resistance.



Slewing ring bearing – geared
For all 6 sizes of the design 01, 4 standards are available for the gearing of the outer ring.



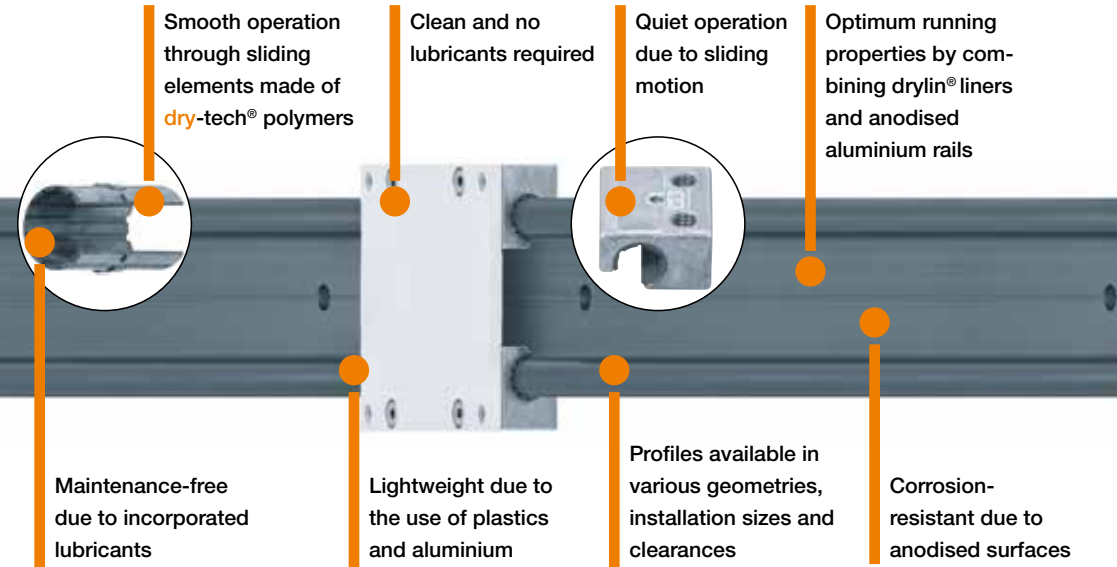
Slewing ring bearing – design 02
Slewing ring with extremely low weight. Outer ring made of anodised aluminium or stainless steel (V4A).



Universal sliding pads
Using the flexible iglidur® PRT universal sliding elements, large, plain bearing supported slewing ring systems can be custom fabricated based on design 01.

Sliding instead of rolling ...

drylin® W – modular linear modular kit



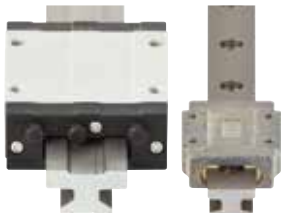
Other maintenance-free drylin® linear technology solutions.



drylin® N

- Flat guides in 4 sizes
- Extremely low installation heights from 6 to 12 mm
- Rail widths from 17 to 80 mm
- Numerous carriage options – also with pretension
- Very low weight

www.igus.eu/drylinN



drylin® T

- Rail guides dimensionally interchangeable ball guides
- Adjustable bearing clearance
- Automatic clearance adjustment
- High static load capacity
- Service life up to 50,000 km
- Low vibration and quiet

www.igus.eu/drylinT



drylin® R

- Shaft guides dimensionally interchangeable with ball bearing system
- For all shaft materials
- Low weight
- Replaceable liners
- Linear adapters made of solid plastic or aluminium

www.igus.eu/drylinR

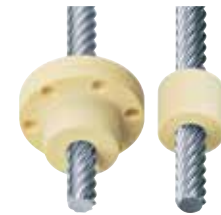
... drylin® linear modular system

Lubricant-free linear technology – drylin®.

drylin® is a product range of lubricant-free linear plain bearings based on the principle of sliding instead of rolling. Tribologically optimised iglidur® high performance polymers are used as sliding surfaces. The drylin® linear systems use dry operation and are maintenance free. Linear guide systems on rails or round shafts are available. The drylin® drive systems are supplied as ready-to-connect systems with lead screw drives or toothed belt drives, with or without motor. The focus is on, besides the freedom from maintenance and lubrication, the robustness and insensitivity to influences such as dirt, water, chemicals, heat or impacts.

- Insensitive to dirt due to dry operation
- Insensitive to impacts and vibrations
- High static load capacity
- Suitable for short-stroke applications
- High speeds possible up to 10 m/s and accelerations up to 100 G
- Low magnetism

www.igus.eu/drylin



drylin® Lead Screw Technology

- Systems consisting of lead screw nut and lead screw
- dryspin® high-helix threads, efficient and long-lasting
- Self-locking trapezoidal and metric threads

www.igus.eu/drylinSD



drylin® drive technology

- Linear modules with lead screw drive or toothed belt
- For manual or electrical adjustments
- Can be configured with custom stroke lengths

www.igus.eu/drylin-drive



drylin® E drive technology

- Linear axes with stepper motors/ DC motors
- Fail-safe due to the use of encoders and initiators
- Can be combined for gantry configurations

www.igus.eu/drylinE

Misalignment compensation

Maintenance-free igubal® pillow block and flange bearings



igubal® pillow block bearing

Easy to install bearing units in different designs

- Misalignment compensation
- Robust design for varying loads

 www.igus.eu/pillowblock

igubal® flange bearing

For lateral shaft support.

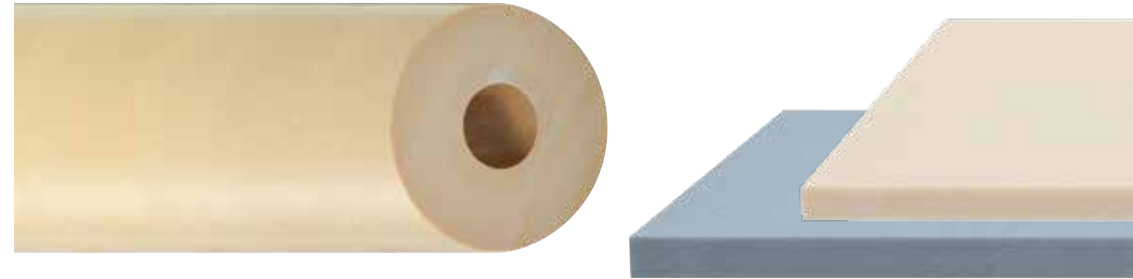
- Compact and low weight.
- 2 or 4 mounting holes

 www.igus.eu/igubal-flange



For free design

iglidur® bar stock optimised for friction and wear coefficients



iglidur® for free design.

Bar stock made of technical plastic.

Available in sizes from 10mm up to 100mm diameter, also available in plate, suitable for machining - for prototypes, test samples and production requirements. Many materials available, including: iglidur® A180 that meets the requirements of the FOOD AND DRUG ADMINISTRATION (FDA) for direct use (or contact) in environments with foodstuffs.

- Very high media-resistance
- Low-cost
- Wear-resistant
- Compliance with EC Directive 10/2011 EC possible
- FDA-compliance possible

 www.igus.eu/barstocks



**NEW:
in black!**

iglidur® tribo tape. iglidur® off the reel:

igus® tribo tape is designed for lining tribologically stressed areas and shapes, for optimising sliding areas, for machine beds etc. At just 0.5 mm thick (0.65 mm including the adhesive back), the space requirement is extremely low. The optional self-adhesive back gives almost unlimited application potentials.

- Materials: iglidur® A160, iglidur® V400, iglidur® B160
- Lubricant and maintenance free
- Easy to cut
- Can be glued
- Less installation space required

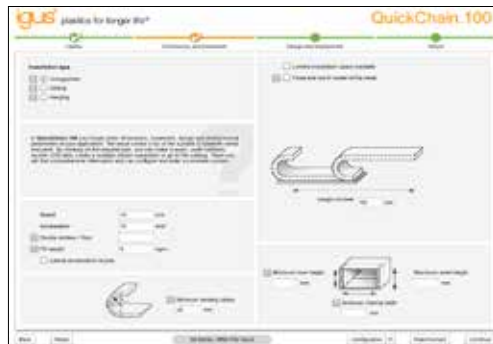
 www.igus.eu/tribotape

igus® services ...



www.igus.eu/materialhandling

Visit our industry web pages with much more information, products, application examples and useful online-tools.



www.igus.eu/quickchain100

Expert for system design and calculations for travels up to 100 m.



For any task – in any batch size

Different industries need different solutions. Whether in mechanical engineering, automotive-manufacturing or in the robot industry – igus® offers customised support for specialised applications. igus® already has many years of experience and specialised resources in many industries.

www.igus.eu/industry

... quick and reliable



The igus® delivery service

Over 97% availability of all catalogue items – no need for you to stock

- Over 100,000 products from stock
- No minimum order value
- No surcharges for small quantities
- No costs for cutting cables
- No packaging costs

www.igus.eu/24



The igus® assembly service

Ensure error-free installation and avoid downtime and additional costs – with the igus® e-chainsystem® assembly service.

- Products and services from a single source – with low logistics costs for you
- igus® system guarantee, customised for each application

www.igus.eu/assemblyservice



The igus® lab

The industry's largest test lab (1,750m²) conducts more than two billion test cycles per year on a total of 107 test rigs.

- Extensive test databases
- Customised tests on request

www.igus.eu/test

igus® motion plastics®

One vision has been driving us for more than 50 years – motion plastics®: Moving parts made of plastic that cost less and last longer. Our core technology consists of tribo-polymers – high-performance plastics, which we have optimised for friction and wear. The technology has made us into a world-wide leader for developing and manufacturing energy supply systems and plain bearings.



/9001:2008 /16949:2009

igus® is certified for energy chains®, cables, and harnessing, as well as plastic plain bearings in acc. with ISO 9001:2008 and ISO/TS 16949:2009.

/newsletter

Free of charge! Discover more about the latest trends and innovations from the world of igus® motion plastics® world. Many exciting applications and videos, even from your industry.

Register here: www.igus.eu/newsletter

/contact

Your personal contact person for your industry and your country: www.igus.eu/contact

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