

tyre ...

igus® solutions for machines
in the tyre production



plastics for longer life® ... igus

industry

... www.igus.eu/tyreproduction

Reduce cost ...

igus® plastic solutions for tyre production equipment.

The tyre production industry places top priority on components being free from lubricants and resistant to dust. Maintenance-free and tribologically optimised plastics from igus® fulfill these and many other requirements igus® products whilst totally lubrication-free also exhibit high strength even at high speeds. With more than 100,000 products from stock, igus® offers a huge modular kit in the sectors of energy supply/cable guidance and protection, highly flexible cables, as well as lubrication and maintenance-free plain bearing solutions for all types of movement.

In this brochure we present you many products and existing applications. Our online tools enable you to reduce process costs. igus® delivers from stock in 24-48 hours! Also, see our industry website.

 www.igus.eu/tyreproduction



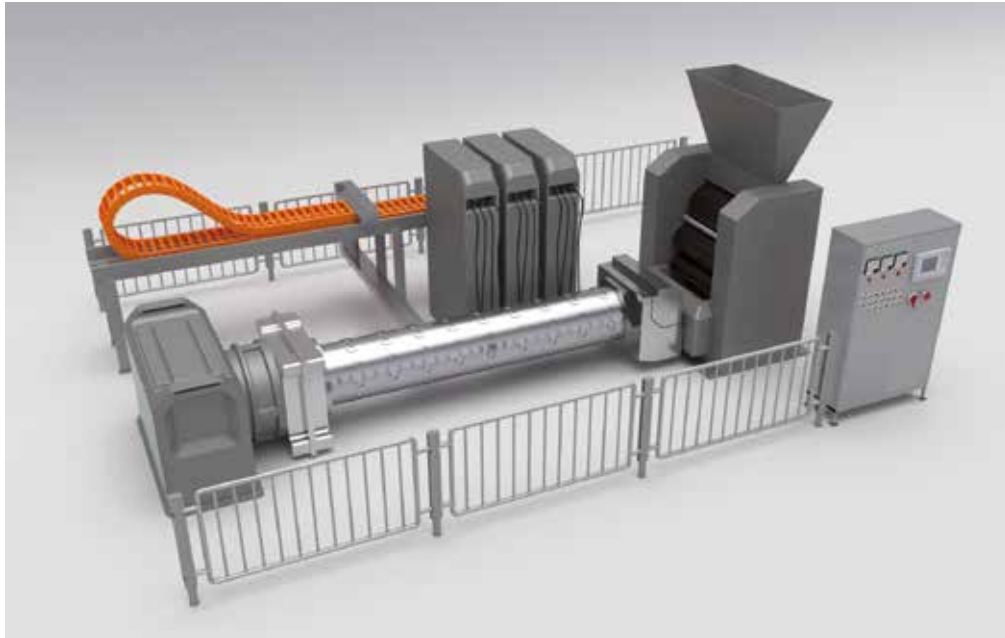
... improve technology



... with motion plastics®
products from igus®

High loads ...

Extruder machine



e-chain® E2/000

Lightning fast installation using thumb – safe seat without additional closing mechanism.

- energy chains® of medium sizes
- Inner heights from 21 to 45 mm
- Snap open on left and right
- Diverse modular interior separation

 www.igus.eu/E2000



e-chain® E4.1

Numerous interior separation options, to open on both sides.

- energy chains® of medium sizes
- Inner heights from 21 to 162 mm
- Snap open along inner or outer radius

 www.igus.eu/E4-1

chainflex® CF5/CF6 control cable

- For tight installation spaces
- For heavy-duty use, PVC outer jacket
- Oil resistant, flame retardant

 www.igus.eu/CF6



... small spaces ...

Coating machine

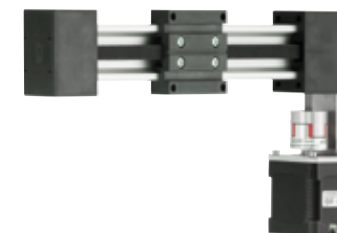


e-chain® E2 micro

Smallest inner widths and radii possible.

- energy chains® of medium sizes
- Inner heights from 5 to 15 mm
- Snap open along inner or outer radius
- For tight installation spaces


 www.igus.eu/E2micro



drylin® ZLW toothed belt axis

Fast positioning.

- Drive ends with grooved ball bearings
- Lubrication-free linear guide through polymer plain bearings
- With or without motor drive
- Hard-anodised aluminium profile

 www.igus.eu/drylinZLW



igidur® plain bearings

Maintenance free for each shaft.

- Low coefficients of friction
- Vibration dampening
- High static and impact loads
- Self lubricating and corrosion resistant

 www.igus.eu/igidur

... high speeds ...

Cutting machine



e-chain® E2/000

Quickly opened from the right or left with a screwdriver or by hand – opening mechanism accessible from above.

- energy chains® of medium sizes
- Inner heights from 21 to 45 mm
- Snap open on left and right

www.igus.eu/E2000



drylin® SLW-linear axes

Precise setting of the cutting device.

- For format adjustments and quick small parts handling
- With or without motor drive
- Extensive accessories

www.igus.eu/drylinSLW



igidur® plain bearings

Maintenance free for each shaft.

- Low coefficients of friction
- Vibration dampening
- High static and impact loads
- Self lubricating and corrosion resistant

www.igus.eu/igidur

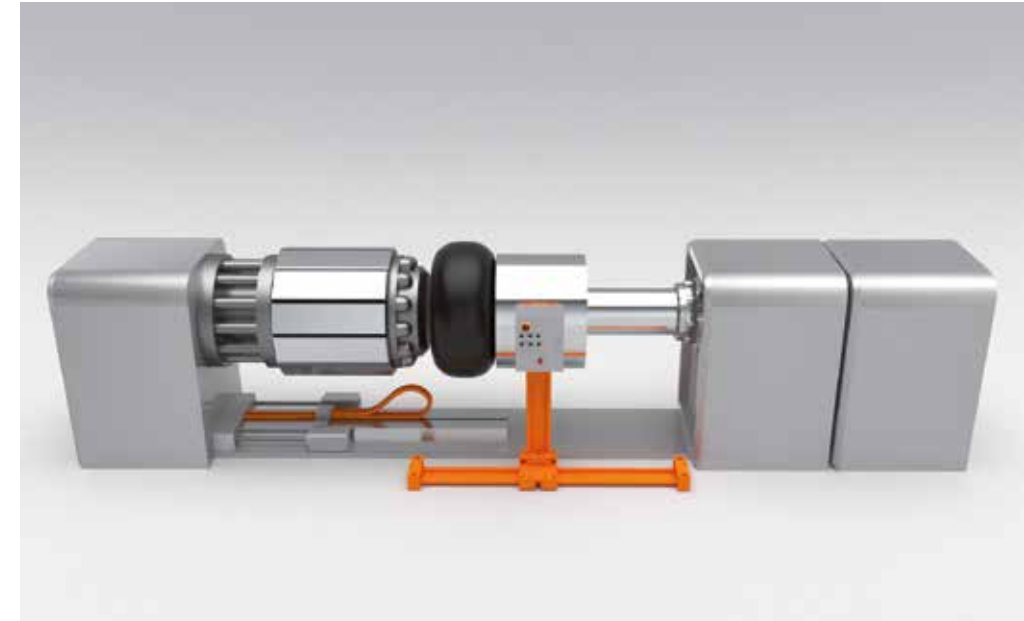
chainflex® CF9

- TPE outer jacket
- Oil-resistant, bio-oil-resistant

www.igus.eu/CF9

... and acceleration ...

Tyre building machine



e-chain® E4.1

Numerous interior separation options, to open on both sides.

- energy chains® of medium sizes
- Inner heights from 21 to 162 mm
- Snap open along inner or outer radius

www.igus.eu/E4-1

chainflex® CFBUS bus cable TPE

- For tight installation spaces
- For extremely heavy-duty use, overall shield
- Oil resistant, flame retardant

www.igus.eu/CFBUS



drylin® W profile guide

Lubrication-free guidance of the control instruments.

- Easy installation, maintenance free
- Resistant to dirt due to dry operation
- Low weight and quiet operation
- Square rail with floating bearing function for lateral installation

www.igus.eu/drylinW



... for all kinds of motion ...

Vulcanization system

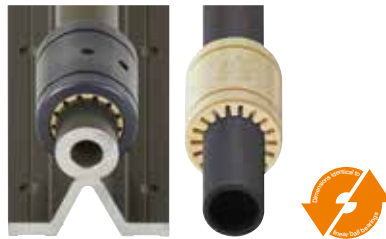


e-chain® E2/000

Excellent mechanical stability design and material provide long service-life.

- energy chains® of medium sizes
- Inner heights from 21 to 45 mm
- Snap open on left and right
- Diverse modular interior separation

 www.igus.eu/E2000



drylin® R shaft guide

Height adjustment with linear bearings.

- Same dimensions as recirculating ball bearings
- For all shaft materials
- Low weight
- Replaceable liners
- Linear adapter made from solid plastic or aluminium

 www.igus.eu/drylinR

... and installations ...

Uniformity measuring machine



e-chain® E2/000

Small pitch for silent operation, low weight.

- energy chains® of medium sizes
- Inner heights from 21 to 45 mm
- Snap open on left and right
- Diverse modular interior separations

 www.igus.eu/E2000

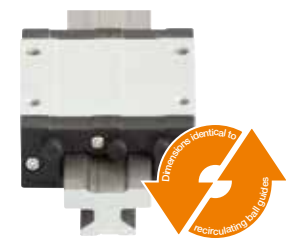


drylin® SLW-linear axes

Manual and electrically adjustable.

- For format adjustments and quick small parts handling
- With or without motor drive
- Extensive accessories

 www.igus.eu/drylinSLW



drylin® T linear guides

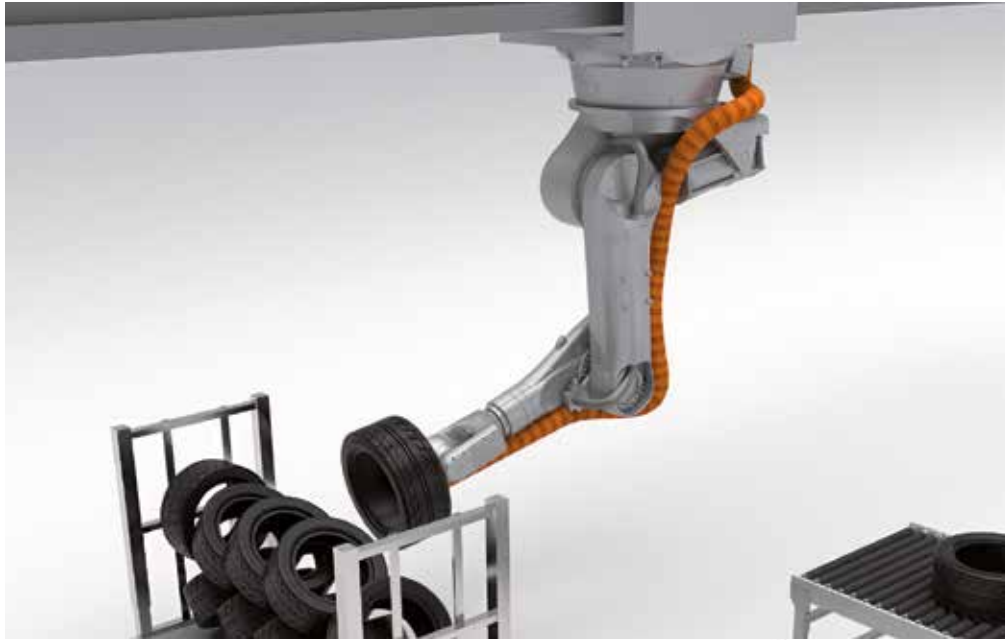
Linear system for high static loads.

- Automatic clearance adjustment
- High static load capacity
- Highly resistant to dirt
- Low vibration and quiet

 www.igus.eu/drylinT

... multi axis ...

Store robots



triflex® RSP

RSP – Intelligent retraction system prevent creation of loops on robot head.

- Even larger triflex® R e-chains® can be guided safely up to Ø 125 mm
- Adjustable, variable retraction force with a pressure control valve
- Almost constant force path over the complete travel, even with heavy fillings

www.igus.eu/triflexRSP

triflex® R

Due to the small pitch, it can be shortened and lengthened individually.

- Multi-axis "3D e-chain™", torsion ± 10° per chain link
- Enclosed version, fully enclosed and snap open
- Can be lengthened and shortened as needed

www.igus.eu/triflexR

chainflex® CFROBOT

- Range of e-chains®-suitable torsion cables
- PUR outer jacket, overall Shield
- Resistant to oils and coolants, flame retardant

www.igus.eu/CFROBOT



... long travels

Gantry crane



e-chain® E2/000

Smooth, cable-friendly inner surfaces with large accessory kits.

- energy chains® of medium sizes
- Inner heights from 21 to 45 mm
- Snap open on left and right
- Diverse modular interior separation

www.igus.eu/E2000



e-chain® E4.1

Numerous interior separation options, to open on both sides.

- energy chains® of medium sizes
- Inner heights from 21 to 162 mm
- Snap open along inner or outer radius

www.igus.eu/E2micro



readycable® molded

Linear system for high static loads.

- Servo-, motor- and signal-/encoder cables
- No cutting costs, no minimum order quantities, no surcharges
- Smallest bend radius from 7.5 x d

www.igus.eu/readycable

igus® e-chain®

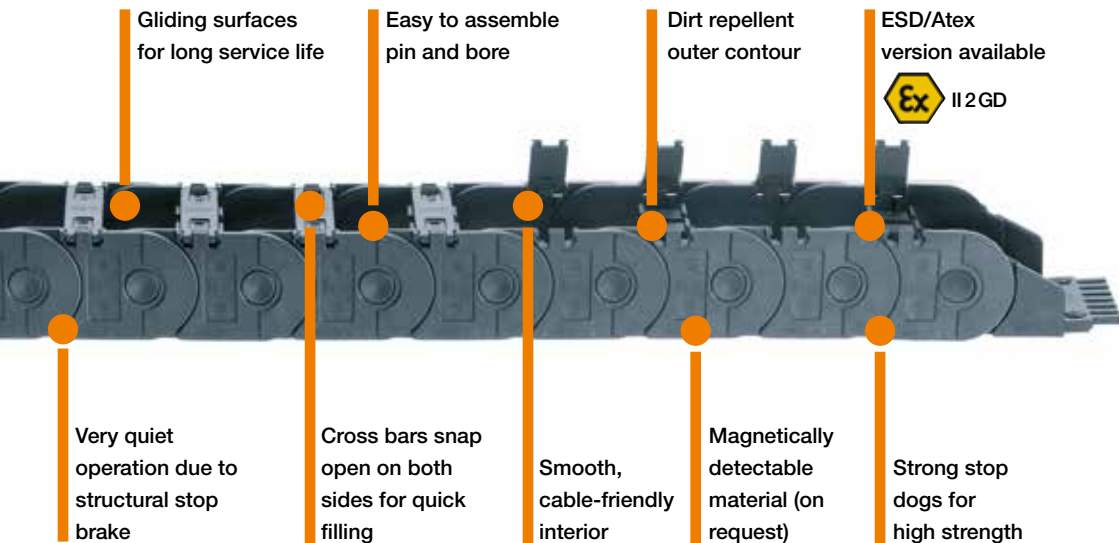
Solutions from the igus® e-chain® construction kit that make guiding energy easy and more reliable

e-chainsystems® – the "umbilical cord" of modern machines. They reduce downtime and increase the service lives of cables and hoses. Plastic energy chains® have been developed, produced and tested by igus® since 1971. e-chainsystems® carry sensitive bus, data and fiber optic cables, as well as energy forms such as electricity, gas, air and hydraulics.

- Carry sensitive bus, data and fibre optic cables, as well as energy forms such as electricity, gas, air and liquids in one system
- Many types of orientation and application
- For high dynamic loads and tough service life requirements

- For all environments and climates (from -40 °C to +120 °C)
- Easy to clean
- Compact installation
- Also as detectable material or as ESD/ATEX version
- Enclosed or open construction types
- Simple modular assembly on site, as well as quick retrofitting of cables

 www.igus.eu/e-chain



chainflex® cables

Fail-safe cables for energy chains

Flexible cables used in energy chains® need special design and manufacture to last through many cycles, high speeds and accelerations, as well as demanding environmental conditions. Electromagnetic compatibility and compliance with standards and guidelines such as UL, CSA, VDE, Inter- and Profibus are also taken for granted today. The igus® chainflex® product range extends from energy chain compatible control cables, servo cables, motor cables, as well as robot cables to bus cables, data cables, encoder cables and fibre optic cables.

- Temperatures -40 °C to +90 °C
- For highly dynamic applications in energy chains®
- Special design prevents cable failure and "corkscrewing"
- Over 1,040 types off the shelf
- Highly abrasion-resistant jacket materials (PVC, PUR, TPE)

 www.chainflex.eu



3 years igus® guarantee for every chainflex® cable. 100% tested at the igus® lab.

Guarantee statements reduce risk plant engineering. With our unique igus® guarantee for ALL chainflex® cables, we are providing predictable security for 36 months or up to 10 million double strokes, for cables from the chainflex® M family up to 5 million double strokes.

Guarantee
igus chainflex

36
months
guaranteed

Avoid lubrication ...

igus® **dry-tech®** bearing technology works entirely without lubrication when using iglidur® plastic plain bearings

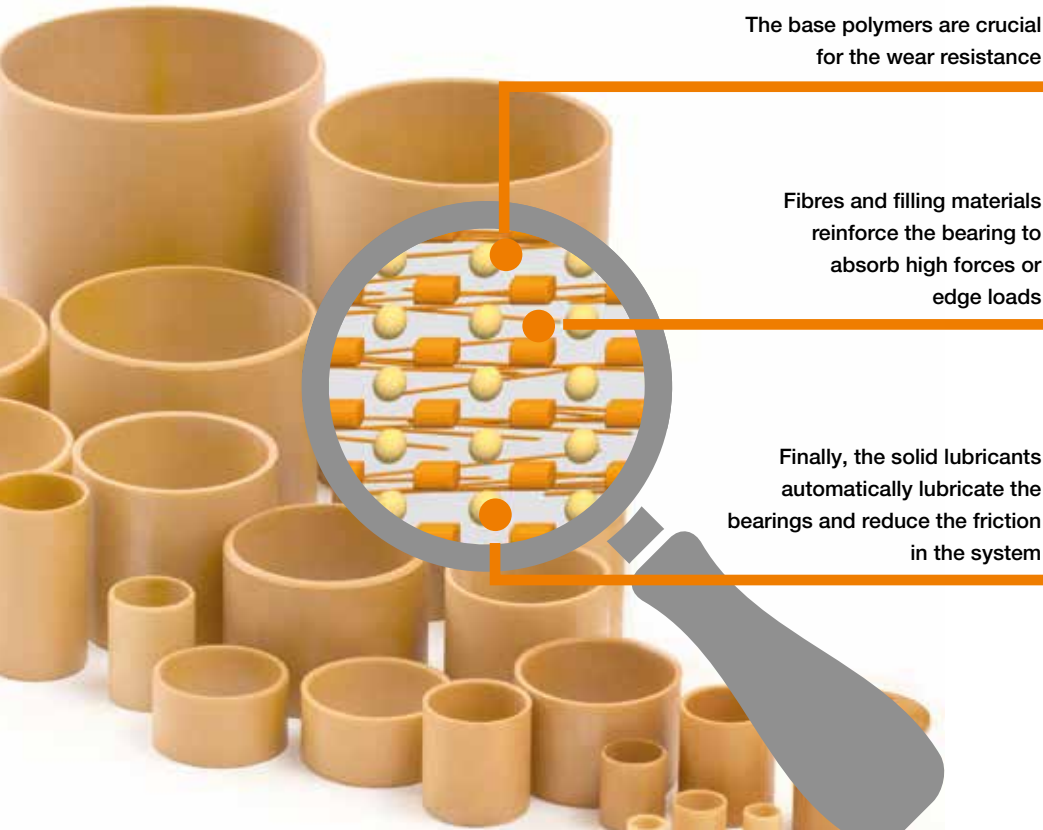
Lubricant and maintenance free plain bearings made from high-performance plastics – iglidur®.

No lubrication or maintenance required, while cutting costs and increasing service life, everything from stock and delivered promptly – that is the central idea of all igus® products. iglidur® plastics have been extensively tested with respect to wear and friction values including other relevant material properties. iglidur® polymer plain bearings from igus® signifies the step from the plastic bearing to the tested and therefore predictable machine component.

- Lubrication-free
- Lightweight
- Maintenance-free
- High static loads
- Corrosion free
- Vibration dampening
- Sea water resistant
- Metric and imperial dimensions
- Special dimension and designs

 www.igus.eu/igidur

Structure of iglidur® plain bearings:



... reduce maintenance effort

Eliminating lubrication means: "install and forget"

Lubrication-free linear technology – drylin®

drylin® is a product range of lubrication-free linear plain bearings based on the principle of sliding instead of rolling. Tribologically optimised iglidur® high performance polymers are used as sliding surfaces. drylin® linear systems travel in dry-running mode and are maintenance free. Linear guides on rails or round shafts are available. drylin®-drive technology can supply 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 ruggedness and resistance to influences such as dirt, water, chemicals, heat or impacts.

- Resistant to dirt due to dry operation
- Resistant to impacts and vibrations
- High static load capacity
- Suited for short-stroke applications
- Low weight
- Vibration dampening
- Sea water resistant
- Quiet operation
- Metric and imperial dimensions
- Special designs according to customer needs

 www.igus.eu/drylin

Using the example of drylin® W:

Low noise operation through sliding motion

Clean by avoiding lubricants

Profiles available in various geometries, installation sizes and clearances

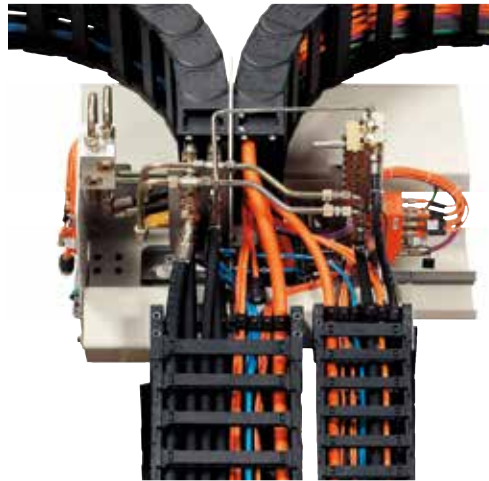


Smooth operation through sliding elements of iglidur® J/J200

Maintenance-free due to integrated lubricants

As assembled system ...

readychain®: chain - cable - guarantee ... delivered in 3-10 days



Assembled igus® readychain® systems: individual or serial production

readychain® – fully harnessed systems in 3-10 days

1,000 systems produced per week in 12 readychain® factories around the world – assembly time optimised to increase your cash-flow

- Eliminate storage costs for cables, e-chains® and connectors
- Cut turnaround times by half
- Flexibility when orders vary
- Reduce the number of suppliers and orders by 75%
- Minimise your machine downtimes
- System guarantee - depending on application

www.readychain.eu

readychain® assembly rack

80% savings during prototyping. Assembly transport rack for ready-to-install energy supply systems.



... delivered ready to install

readycable®: harnessed drive cables ... in 24-48h



readycable® – in 24-48h or today

igus® provides more than 3,200 harnessed cables for drives according to 22 different manufacturer standards. Professionally produced, 100% tested.

- Servo, power and signal/encoder cables
- No cutting charges, no surcharges for small quantities and packaging

- Cable length accurate to the centimetre as per customer specifications
- Smallest bend radii from 7.5 x d
- Reduce storage costs and increase cashflow

www.readycable.eu

Overmoulded cable available for use in energy chains®

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



Tested! Service life ...

9,679 tribological tests of all kinds per year (rotating, pivoting, linear, heated, under water, etc.) for the **dry-tech**® solutions. In addition, 661 customised tests at the **igus**® lab.



Part of the **igus**® **dry-tech**® laboratory, Cologne.



Wear tests under the influence of various media.



Endurance test.



Service life and wear test of a **drylin**® linear guide in the "under-water basin".

... predicted accurately.

Tested at the 2,750 m² Cologne lab. 4,100 tests, 7,512 findings added to the electronic database, 10 billion e-chains® cycles per year for chains and cables.



Part of the **igus**® **e-chain**® laboratory, Cologne.



Pivot wear test rig for testing the pivoting wear rate for medium loads.



Service life experiments for **e-chains**® and **chainflex**® cables.



Measuring the inner diameter of a press-fitted bearing.



Cold test at -40 °C for **chainflex**® cables and **e-chains**®

igus® services ...



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

www.igus.eu/tyreproduction



Quickly find and configure products and calculate service life – all online.

Using our online product finders, you can find the right igus® product and get a service life prediction.

www.igus.eu/online

i 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® has many years of experience and specialised resources in many industries.

www.igus.eu/industry

... fast and reliable.



The igus® delivery service

More than 97% of components from the catalogue are available from 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



Modern injection moulding technology

The igus® GmbH quality policy is based on the objective of identifying and meeting customer needs, and of always being a professional partner and reliable supplier. igus® has always been committed to producing products of the best possible quality and consistently developing innovative solutions.



The igus® lab

The industry's largest test lab, covering more than 2,750 m² of interior and exterior space, 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

i igus® motion plastics®

One vision has been driving us for 50 years – motion plastics®: moving parts made from 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 leader for developing and manufacturing energy supply systems and plain bearings.



/9001:2008 /16949:2009

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

/newsletter

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

Register here: www.igus.eu/newsletter

/contact

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

igus®

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