

# Trucks

Solutions for trucks and trailers



plastics for longer life<sup>®</sup>

igus<sup>®</sup>.eu...

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



## Safety for trucks and trailers

Your technical innovator and cost reducer,

### Dirk Tietz

Automotive Industry Manager

Phone: +49 2203 9649-562

E-mail: [dtietz@igus.net](mailto:dtietz@igus.net)

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

Travelling safely and efficiently on the road. motion plastics® from igus® enable trucks and trailers to withstand adverse conditions.

Utility vehicles – No other high-quality means of transport is as flexible as they are or offers a concept tailored to meet every need. Transporters, delivery vehicles for deliveries in inner cities as well as heavy trucks for long-distance transport have become forces for innovation in the automotive industry. What's more, in everyday circumstances, they have to withstand rough conditions such as fluctuating temperatures, moisture and improper use. This requires durable and safe machine elements such as iglidur® plastic plain bearings, igubal® spherical bearings, e-chains®, chainflex® cables and drylin® linear guides. They are not only cost-effective but also maintenance-free, lubrication-free and versatile. For further information and application examples relating to trucks and trailers, go to our website at: [www.igus.eu/trucks](http://www.igus.eu/trucks)

#### Advantages of motion plastics® in trucks and trailers:

- Lubrication and maintenance-free
- High wear resistance and coefficients of friction
- Lighter than comparable metallic bearings
- Dirt-resistant
- Resistant to chemicals and temperatures
- No corrosion
- Economic
- UV-resistant
- For small installation spaces/space-saving
- Safe for movements in all directions and along all axes



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

# Improve technology and reduce costs in trucks and trailers

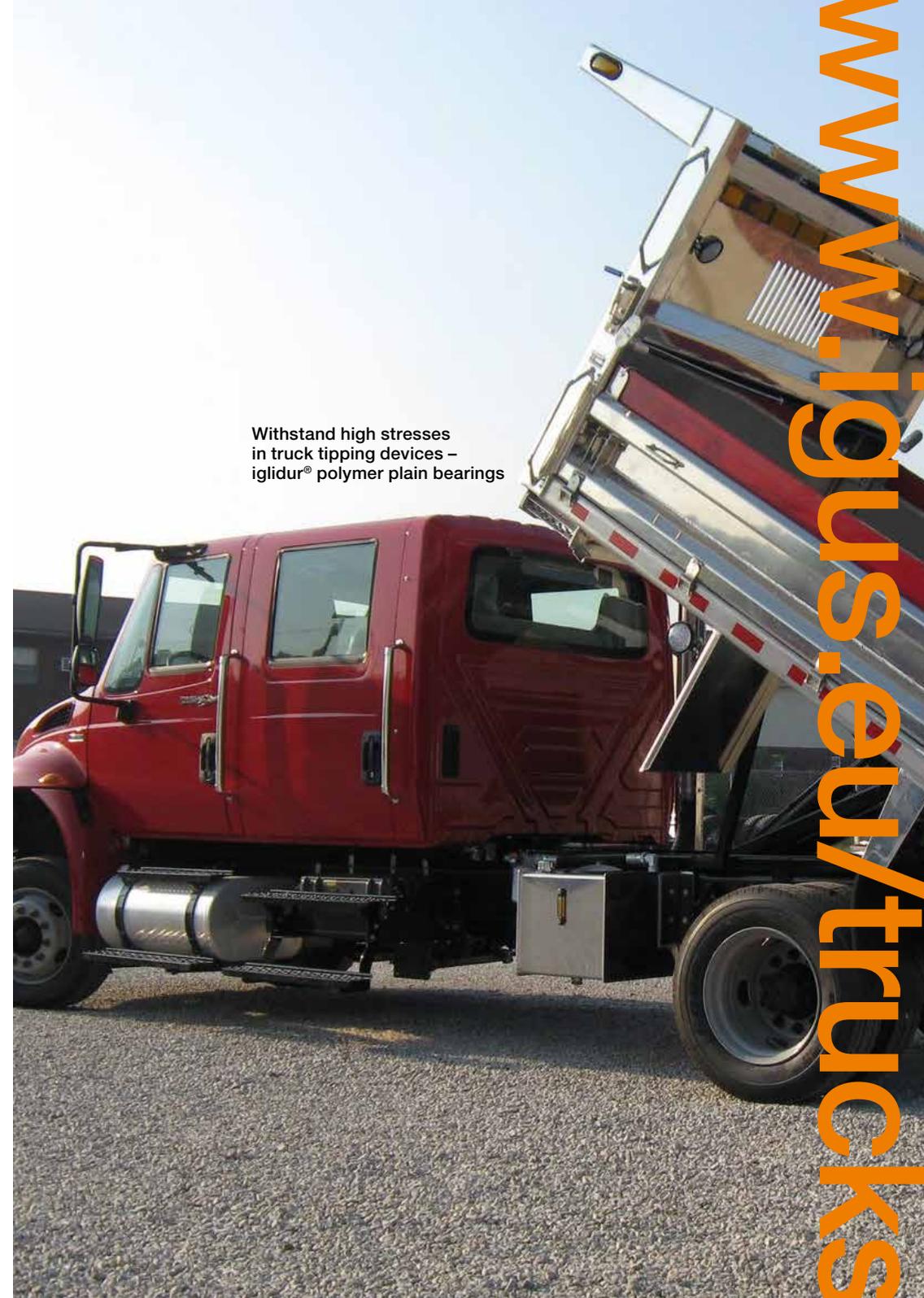
**When it comes to utility vehicles, solutions that are technically highly specialised and complex are needed and require specific know-how.**

This is all the more so given that moisture causes corrosion, while improper use in everyday life and frequently inadequate maintenance are commonplace. The installed machine elements also have to cope with these ambient conditions. In this context, iglidur® bearings from igus® work according to the motto "cost down, life up". The plastic plain bearings are not only cost-effective but also maintenance-free, lubrication-free and versatile. Even in bad weather conditions, they prove to be extremely robust and guarantee very long operating times. Polymer plain bearings ensure long-lasting functional reliability, especially at neuralgic points. At the same time, the fibre-reinforced compounds withstand even very high loads such as edge loads and impacts. They function reliably even in extreme temperatures and have a high chemical resistance. Moreover, they are extremely dirt-resistant as neither dust nor dirt can adhere to them. Actuators, shift-forks and shift-shafts, for example, profit from the materials iglidur® H4 and iglidur® H2. They ensure appropriate damping and silent movements, a high degree of wear resistance and long-term resistance to temperatures as high as +200 °C. In addition, contact corrosion simply does not occur. Such properties are also demanded in the manual gear change mechanism of gearboxes. The absence of a need for lubrication as well as vibration and impact damping are also necessary. iglidur® G is the means of choice for this. Plain bearings made of this material are also used as flange bearings in gearboxes, for example in the gearbox mechanisms of trucks and vans. The advantages in this application: simulation of a direct changeover to an existing transmission ratio as well as transfer of high gear-changing forces without the need for any maintenance whatsoever. Here, the bearings withstand abrasive media as well.

**Change your bearing now! Plastic instead of metal: reduce maintenance by 100%, weight by 80%, cost by 40% while increasing the service life.**



**Withstand high stresses in truck tipping devices – iglidur® polymer plain bearings**

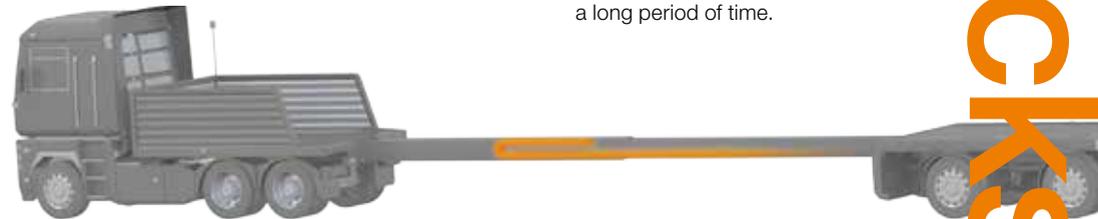


Extremely robust  
and resistant  
to vibrations –  
e-chains®  
for extendible  
heavy-load  
transporters



**This vehicle has been specially designed for the transportation of wind-turbine blades.** Thanks to the ability to extend the platform trailer so that is 62m long, i.e. three times its original length, it is possible to transport extremely long wind-turbine blades, even into areas that are very difficult to reach. Customised vehicle energy supply systems of the proven

E4.1 series are used in order to ensure that the electrical cables, brake lines and hydraulic hoses can roll safely in the inner tubes. When the vehicle is extended, the energy supply system is subjected to very strong push and pull forces, which it has to cope with over a long period of time.



Polymer plain bearings used in extremely dirty environments



FAUN Viatic GmbH, a member of the German Kirchhoff Group, decided in favour of lubrication-free and therefore maintenance-free polymer plain bearings from igus®. They ensure the long service life of road sweepers over the long term. The robust machines are used for everyday work in cities and municipalities or in extremely heavy-duty applications on building-sites, in steelworks and in coal mining, as runway sweeping machines for cleaning airport runways or as manoeuvrable sweepers for small districts.





The requirements for slurry distribution have grown enormously in the last few years. Whether cattle, pig or biogas slurry is involved, the aim is always to distribute the nutrient fertilizer evenly and economically over the agriculturally used areas without violation of the regulations governing the use of such types of fertilizer. This is where robust slurry tankers prove their worth. In their pendulum axes, lubrication-free polymer bearings withstand all adverse operating and environmental conditions when the aggressive fertilizer is being delivered.

## Lubrication-free polymer bearings in the pendulum axes of slurry tankers



www.igus.eu/trucks

# The perfect material for lubrication-free solutions - iglidur® Q290 in tail-lifts



## Demand for corrosion resistant components

This order was for the construction of tail-lifts for ambulances in Great Britain. The new material iglidur® Q290 from igus® was launched on the market at the right time for the construction of the tail-lift of the ambulance. Like all plain bearing materials made of igus® high-performance plastics, this is also optimised for friction and wear, and is used without external lubrication. The compatibility of the plain bearings was very important – the bearings should fit into the existing housings of the structure.

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



## igidur® H2 in brake caliper: resistant to vibrations

- High media resistance
- Lightweight
- Cost-effective
- Corrosion-resistant

 [www.igus.eu/H2](http://www.igus.eu/H2)



## igidur® P210 in the tilting mechanism: safe tilting of the driver's cab

- Low moisture absorption
- Resistant to high edge loads
- Resistant to dirt
- High wear resistance

 [www.igus.eu/P210](http://www.igus.eu/P210)



## igubal® double joints in gearboxes: low-noise substitute for metal

- Lightweight
- Vibration dampening
- High stability
- Cost-effective

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

## iglidur® G in door hinges: resistant to dirt

- High static loads
- Corrosion-free and dirt-resistant
- Resistant to edge pressure



## iglidur® H4 in cab bearing systems: strong in hydraulic vibration absorbers

- Media-resistant
- Low static friction
- Good vibration damping
- Wear-resistant



## iglidur® G in dumper/tipper trucks: extremely durable and robust

- Resistant to high edge loads
- Resistant to dirt
- High wear resistance
- Cost-effective



www.igus.eu/trucks



## drylin® pre-defined positional systems in head-rests: light weight, defined positioning

- Easy movement with roller support
- Wide range of sizes and versions
- For exact re-positioning

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



## igidur® J in steering systems: cost-effective with low friction

- Lightweight
- Withstands high shock loads
- Wear-resistant
- Noise-dampening

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



## igidur® TX + P210 washers in suspension: resistant to dirt and low temperatures

- Resistant to high edge loads
- Resistant to dirt
- High wear resistance

 [www.igus.eu/TX](http://www.igus.eu/TX) [www.igus.eu/P210](http://www.igus.eu/P210)

## iglidur® J in gear lever: light and silent

- Lightweight
- Quiet
- Cost-effective



## drylin® W in cabins: ergonomic operator control and silent

- Quiet operation
- Dirt-resistant
- No corrosion



## iglidur® M250 MDM in seat systems: rattle-free positioning

- Tolerance compensation possible
- Suitable for e-coating
- High static load up to 120MPa



www.igus.eu/trucks



## igidur® Q: in the articulated steering mechanism of a dump truck

- For high loads - wear-resistant on many shafts
- Excellent wear resistance, especially for extreme loads
- Recommended for extreme pv values

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



## igidur® H2 in the gearbox: changing gears easily and cleanly

- Noise dampening
- Resistant to transmission oil
- No contact corrosion

 [www.igus.eu/H2](http://www.igus.eu/H2)



## igidur® I3 3D material: wear-resistant parts in 3 days

- Conforms with the requirements of the automotive industry in accordance with FMV SS 302
- High wear resistance
- Max. application temperature: +80 °C

 [www.igus.eu/3dprintservice](http://www.igus.eu/3dprintservice)



Compliant according to FMV SS 302



## twisterchain® in robot crane: protection for cables and hoses in the case of 400° rotation

- For small installation spaces
- For movements along all axes - rotating, hanging, standing
- Dirt and weather-resistant

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



## E2 micro e-chain® in rear doors: extremely small bend radii possible

- Safe cable guidance
- Easy to open and quick assembly
- Quiet operation, stable and cost-effective

 [www.igus.eu/E2-1](http://www.igus.eu/E2-1)



## E2/000 e-chain®: space-saving, lightweight and easy to assemble

- Corrosion and weather-resistant
- Weight reducing
- Assembly-friendly

 [www.igus.eu/E2000](http://www.igus.eu/E2000)

## E2 e-chain® with extended crossbars: safe and reliable supply of hydraulic hoses

- Special inner contours for hose-friendly guidance of two hydraulic hoses
- High strength and long unsupported lengths
- For small installation spaces

 [www.igus.eu/hydraulic-chain](http://www.igus.eu/hydraulic-chain)

## E4.1 e-chain®: space-saving in aircraft towing vehicles

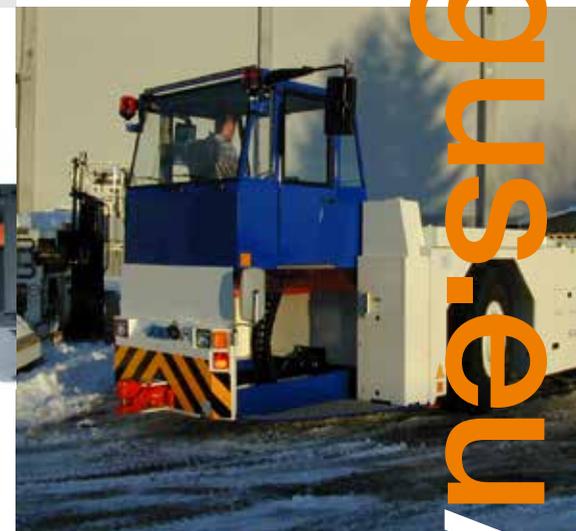
- Compact design
- Saves weight and makes maintenance almost superfluous
- For data, media and signals in one system

 [www.igus.eu/E4-1](http://www.igus.eu/E4-1)

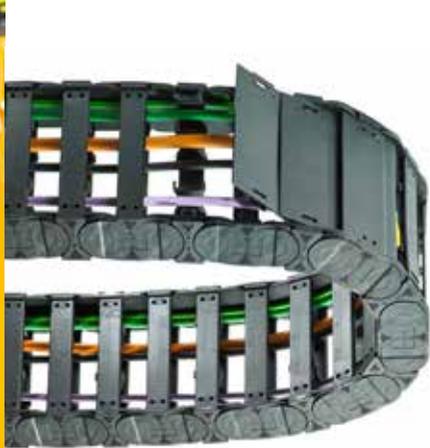
## E2 e-chain®: light, very stable and safe in airfield fuel tankers

- Space-saving solution
- Safe guidance of energy, data and media
- Easy and quick assembly

 [www.igus.eu/E2000](http://www.igus.eu/E2000)



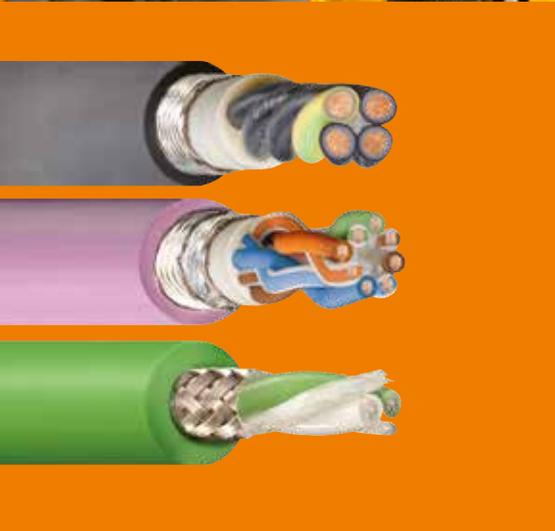
www.igus.eu/trucks



## E4.1L e-chain® in truck platforms: small bend radii and low temperatures

- Fully harnessed energy chain systems
- For very small bend radii and low temperature applications
- For all movements and axes

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



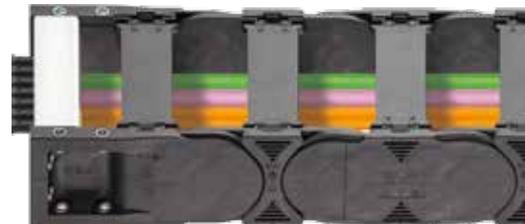
## chainflex® cables: 36 month guarantee\*

- For heaviest duty applications
- Low-temperature-flexible and UV-resistant
- 1,354 chainflex® types available from stock

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



\*36 month guarantee with a minimum service life of up to 10 million double strokes



## E4.1L e-chain® in concrete mixers: safety and reliability guaranteed

- Resistant to dirt and shock
- Space-saving
- UV-resistant

 [www.igus.eu/E4-1](http://www.igus.eu/E4-1)

# When it is all about the utility vehicle - igus® catalogue parts, special parts, bar stock and 3D printed solutions



**We can also go your way: customised solutions, special designs and special materials - (virtually) everything is possible.**

The standard is not the right solution for everyone. Therefore, igus® also manufactures a number of customised special designs. Structural and material special solutions such as plain bearings for multiple-edge shafts, bearings with reduced clearance or anti-rotation feature, special lead screw support blocks and glide pads, and so on, are specially adapted to your requirements. Starting from medium quantities we make almost everything possible.



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



**3D printing service – for individual parts made of high-performance plastics.**

In two simple steps to the 3D-printed component - with instant price. We print your individual component, using lubrication-free, abrasion-resistant iglidur® high-performance plastics. Upload your drawing in the STEP (STP) format, check the 360° view and select a filament. We ship your desired product - depending on the complexity - from 24hours.



[www.igus.eu/3Dprintservice](http://www.igus.eu/3Dprintservice)

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

## Assembly



- Service for fast, error-free installation
  - Specialised assembly personnel
- [www.igus.eu/assembly](http://www.igus.eu/assembly)

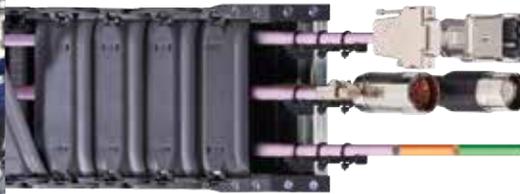
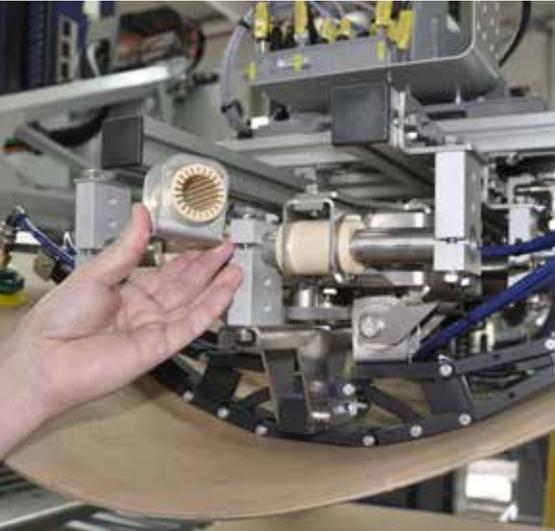


## Ready to install and industrially harnessed: [www.readychain.eu](http://www.readychain.eu)

Always the right harness for your application Ready-to-fit readychain® e-chain system® configured and delivered in 3-8 days.

Possible due to the large selection of energy chains for all kinds of motion, cables for e-chains® with 36 month guarantee plus the relevant connectors. Reduce the number of suppliers and orders by 75%. Minimise machine downtimes. System guarantee – depending on the application.

## Sampling



- We can provide support in the construction phase of your machine
- [www.igus.eu/sampling](http://www.igus.eu/sampling)



**Basic**  
e-chain® with fitted cables - strain relief in the system

**Standard**  
e-chain® with cables and relevant connectors

**Standard+**  
Harnesses e-chain systems® with associated sheet metal parts

**Premium**  
Ready-to-install complete system with transport rack



## Engineering



- Customised products
- Many solutions from the "modular construction system"



The type of harnessing most frequently used in trucks and trailers

**Basic**  
e-chain® with cables and relevant connectors

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



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



Long-term durability  
10 billion e-chain® cycles  
per year in e-chains® and  
the chainflex® laboratory

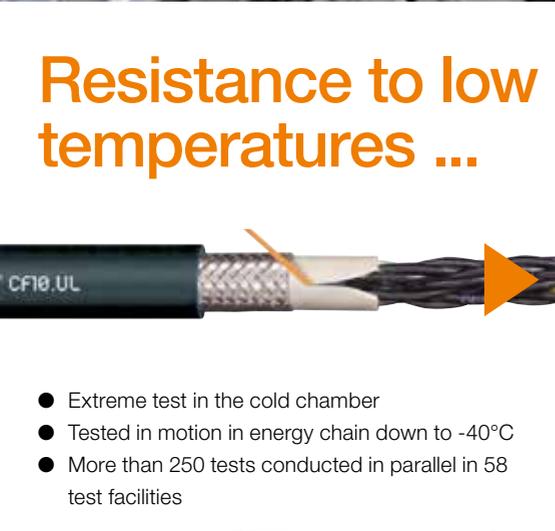
## Cable torsion ...



- Service life test for torsion in e-chain®
- Twisting of +/- 180°



Extensive  
test  
database



## Resistance to low temperatures ...

- Extreme test in the cold chamber
- Tested in motion in energy chain down to -40°C
- More than 250 tests conducted in parallel in 58 test facilities



## Investigation of coefficient of friction ...



- Constant load test
- Tests of wear and coefficient of friction
- Test of functioning, service life, strength and failure scenarios



Vibration test  
In this test, energy chains  
are subjected to  
vibrations between 30 and  
60 Hz.

## Front loader test rig ...



- More than 3 billion test cycles per year
- Special test set-ups for specific industries
- Further information at

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



Polymer bearings in a heavy-duty test with a maximum load of 500kg

From more than 15,000 tests per year was created, what is probably the world's largest test database. This database gives us the ability to always select the right product for your specific application. Individual tests for your industry are also possible.

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

# igus.eu/24

## Buy online - 24hrs!

Visit our industry web pages for more information, products, application examples and useful online tools. Quickly find and configure products and calculate service life – all online. With the help of our product finders, you can quickly find the right article and obtain an exact prediction of service life. All online tools also enable you to reduce process costs. igus® delivers from stock in 24-48 hours!

The screenshot shows the igus website interface. At the top, there's a navigation bar with 'Products', 'Calculators', 'Sales and Solutions', 'Service', 'Company', and 'My Account'. Below this is a search bar and a 'Shopping Cart' icon. The main content area features a large banner for 'Automotive' with the tagline 'modern plastic to reduce costs and weight' and an image of a silver sports car. Below the banner, the text reads 'Optimise cars and production with Tribo-turbo'. A section titled 'Which products are you interested in? Choose your area of use:' contains four icons: 'O-ring', 'Linear slide', 'Equipment - a chain', and 'Equipment and special dry-rolled bearings'. Below this, 'Advantages of our automotive production solutions:' are listed in two columns: 'Reduce cost by 40%', 'Reduce weight by 80%', '100% less maintenance and lubrication', 'Individual custom-made products', 'Predictable service life', 'Dirt resistant', and 'Especially durable'. On the right side of the page, there's a sidebar with a search bar, a 'MyCarting' button, and a list of services: 'No minimum order value', '7x 24h Delivery Consultation', 'Delivery from SAP', 'Free samples', and 'Is something not to your liking? Feedback'. Below this, it states 'More than 130,000 products available (order and consultation: Mon-Fri 9am-5pm and Sat from 12pm)'. At the bottom of the sidebar, there are links for 'Newsletter registration', 'Terms and conditions', 'Help', and 'General information'.

Always the right solution for the automotive, trucks and trailers industry. igus® is certified in accordance with ISO 9001:2015 and IATF 16949:2016 in the field of energy supply systems, cables and harnessing, as well as plastic bearings.

igus® GmbH  
Spicher Str. 1a  
D-51147 Cologne  
Phone: +49 2203 9649-145  
info@igus.de  
www.igus.eu

# igus.eu

© 2018 igus® GmbH  
Published by igus® GmbH, Germany  
MAT0074226.20 Issue 06/2018  
Subject to technical alterations.

# www.igus.eu/trucks