

# 265 motion plastics® news

Autumn 2024

igus®



## GO ZERO Lubrication

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motion plastics® for a lubrication-free world

## From CAD to motion plastics®

Page 16

With the Free Form Hub service even faster to the customised igus® solution

## igus® bicycle frame in series production

Page 27

First injection moulded bicycle frame made of recyclable composite material

# #lubrication-free



## GO ZERO Lubrication

\$240 billion per year is spent on lubrication worldwide.

Why?

Go zero lubrication! With AI!

[igus.eu/lubrication-free](https://igus.eu/lubrication-free)



**i60s**  
60 years of igus®

### 60 years of igus®

On 15 October 1964, igus® was founded by Margret and Günter Blase. "Give me your most difficult part and I will give you a solution", said Günter Blase to win over his very first customer. At its core, this idea still drives us. Because our motion plastics® improve applications or reduce costs, often both at the same time.

This autumn, we present 265 new products across all igus® product worlds. Many of these innovations are the result of specific requests from our customers.

We dream of a lubrication-free world. And we love the progress that brings together the art of engineering, artificial intelligence and digital innovations.

The new Free Form Hub service is the next big step: simply upload CAD and we will tell you which part and/or which manufacturing process fits best. No matter whether 3D or injection moulding.

We hope you enjoy browsing through our new products and find plenty of inspiration.

Innovative wishes from Cologne



Michael Blase,  
CEO e-chain systems®



Tobias Vogel,  
CEO dry-tech®



Dr. Thilo Schultes,  
CEO dry-tech®  
New Businesses



Artur Peplinski,  
CEO igus® International



Frank Blase,  
CEO & entrepreneur

# motion plastics®



## e-chains® and -systems®

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## chainflex® cables

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## drygear® gear and gearbox technology

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## iglidur® bar stock

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## igubal® spherical bearings

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## xiros® ball bearings

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# News 2024



## drylin® linear technology

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## dryspin® lead screw technology

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## drylin® drive technology

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## Low Cost Automation

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## RBTX® marketplace

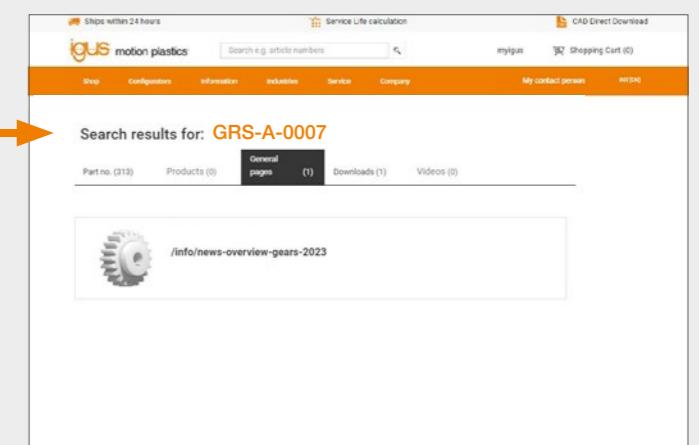
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### Print2Digital made easy ...



GRS-A-0007



The **QR code** will take you directly to the relevant page on the igus® website.  
No mobile device to hand? No problem.  
You can also use the **text code** to go directly to the product page via the search function on our website.

## Our motion plastics® mission

The world is moving constantly. And when something moves, that's where we come in and offer our customers technical innovations: improve what moves!

This guiding principle drives us as a manufacturer. We are igus®. We are a manufacturer of high-performance polymers for motion. Since 1964, we have been developing and producing motion plastics®, innovative products made from lubrication-free plastics. Together with you, we improve the technology of your applications or reduce your costs. Ideally, we achieve both: tech up, cost down. By developing products made from low-wear high-performance plastics, we improve motion worldwide, as our products always offer the following advantages:

- Long service life
- No additional lubrication necessary
- Up to 70% lighter than metal products
- Resistant to dirt, chemicals, corrosion, heat, and cold



"By using the igus® e-loop®, Top Drive systems are installed within a few hours instead of the usual days. Moving energy made easy."

Michael Blass,  
CEO e-chain systems®

### Improved applications thanks to motion plastics®

Movement is everywhere. We see this every day when we are allowed to accompany our customers in exciting projects. Today we serve 188,000 companies from over 80 countries around the world and from over 50 different industries. In the automotive or packaging industry, railway or agricultural technology, in machine tool construction or in the field of renewable energies, we improve what moves. Together we strive to find the best solution for every application - whether with catalogue or special parts.



"The study at the RWTH Aachen University confirms the enormous savings potential through the use of motion plastics®. Plastic instead of metal saves lubricants, time and money."

Tobias Vogel,  
CEO dry-tech®

### How sustainable are motion plastics®?

As a plastics processing company, we see it as our duty to use resources sustainably and to protect the environment. Our motion plastics® can make an important contribution to this - during their production, in use and at the end of their service life. Two topics in particular are very important to us: CO<sub>2</sub> neutrality, i.e. the direct influence on the climate, zero plastic waste in the production and the recyclability of our products through our recycling programmes.



"From now on, a unique 4-year guarantee on all igus® products with a predictable service life. The basis for this is formed by billions of test cycles in our laboratory."

Dr. Thilo Schultes,  
CEO dry-tech® New Businesses

### Tested and with a guarantee

Our products made from high-performance plastics offer you one major advantage - a long service life. For you, this means that with our motion plastics® you can utilise your machines and applications for longer and reduce maintenance and costs. To do this, we test our products extensively in our test laboratory and provide you with the data so that you can calculate the service life for your specific product in advance. So you can be sure that our motion plastics® deliver what they promise!



"The new igus® factory with solar panels supports our sustainability activities. Using the chainge® platform has enabled over 115,000kg of material to be recycled since 2020."

Artur Peplinski,  
CEO igus® International

### Recycling plastics and more

Recycling plays an important role in our goal of zero plastic waste, which we pursue with various measures. Technical and industrial plastics can be recycled via our chainge® recycling platform and recyclates can also be bought and sold. We offer bicycles and bicycle components made from recycled plastic on our igus:bike platform. We are promoting the new HydroPRS technology, which enables the chemical recycling of plastic. Our trainee company reguse is dedicated to recycling discarded electrical appliances. And of course we also offer various products made from recycled materials.



"With our online tools, you can configure and calculate igus® products precisely for your application with exact statements on service life, including a one-off 4-year guarantee."

Frank Blase,  
CEO & entrepreneur

### Unleash your engineering power with play

Develop and design machines and systems with ease. With joy and fun at work. In a collaborative process that develops and expands creativity and technical know-how. In short: Tech up made easy - that's what enjoyneering® stands for! We presented this concept at the Hannover Messe 2023, which includes real innovations and digital revolutions related to our motion plastics®. The enjoyneering® should enable engineers and technicians to unleash their technical potential with playful ease and to break new ground in problem solving, for example with the iguiverse®. The new Free Form Hub service helps finding the right igus® solution easily.

# improve what moves...

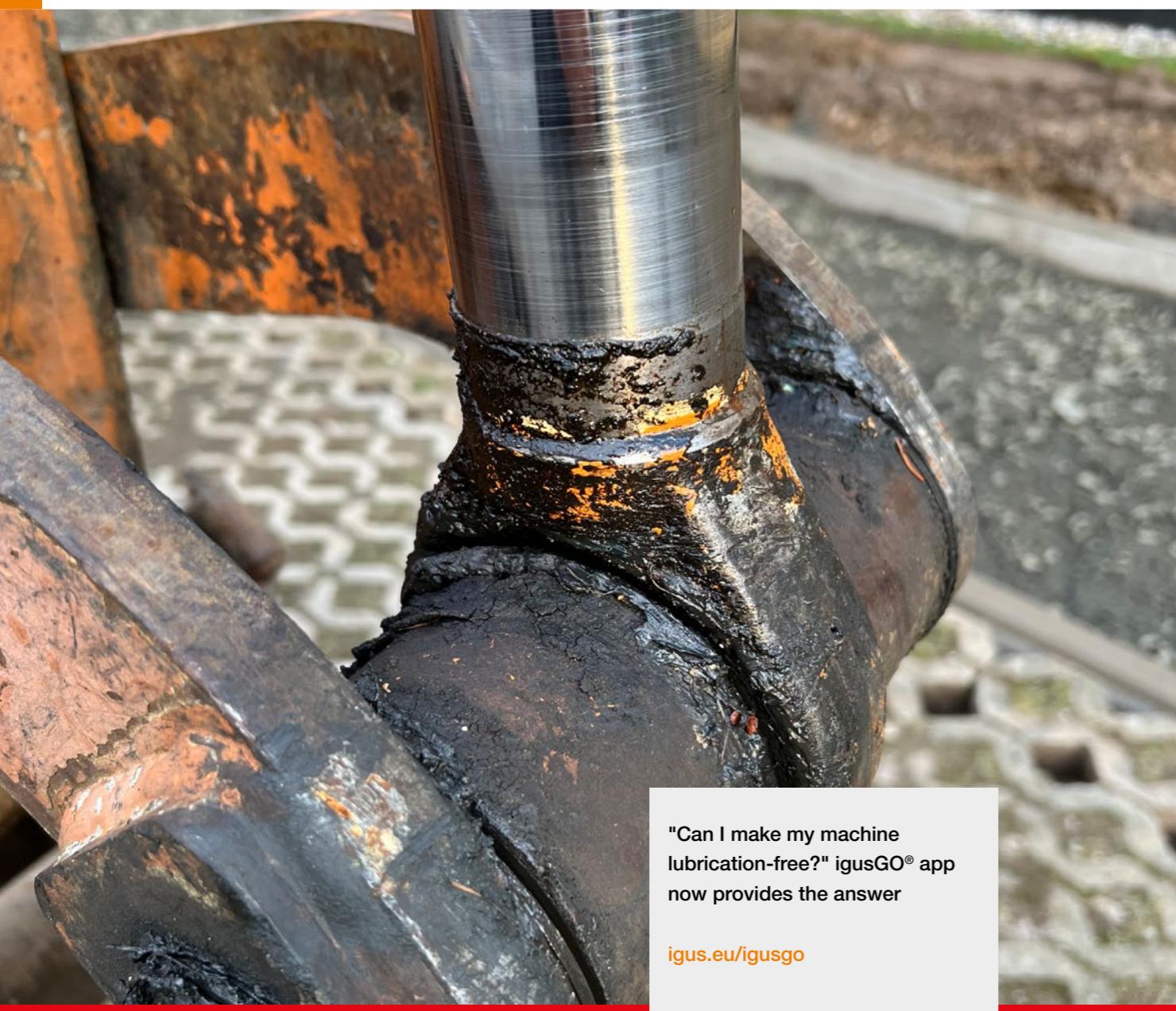
First-time study

#costdown



"The study with RWTH Aachen University confirms the enormous savings potential through the use of motion plastics®. Plastic instead of metal saves lubricants, time and money."

Tobias Vogel,  
CEO dry-tech®



How a world without lubrication helps industry & the environment

# Clean revolution

RWTH study shows that manufacturers of tractor trailers in Germany alone could immediately save around €60 million

## Why is a lubrication-free world important?

\$750 billion a year is the cost of machine failures due to inadequate lubrication. More than 27 million tons of lubricants seep into water and soil. Despite this, \$240 billion is spent on lubrication every year. A study by RWTH Aachen University quantifies for the first time how lubrication-free igus® plastics are driving the transition to a cleaner world. Manufacturers of tractor trailers in Germany alone could save €14 million in lubrication costs and €45.4 million in labour costs. A world-renowned beer bottler could save a total of €6 million in labour and lubricant costs by using lubrication-free bearings at its 160 sites.

igus® shows how easy it is to achieve the clean revolution - with AI, VR, digital twins and innovative materials: just take a photo of an excavator, crane, bicycle, etc., and the igusGO® app shows where and how lubrication can be dispensed with - including information on service life, cost savings and CO<sub>2</sub> footprint.

## GO ZERO Lubrication!



Read all the study results from RWTH Aachen University here:  
"Bearing points without lubrication?  
Guide, expert tips and practical examples"

"That works like a well-oiled machine" - Lubrication is so self-evident and important for moving parts that the lubrication condition has even become an established saying. Wherever parts move against each other, lubrication is necessary. It improves the coefficient of friction and protects not only against wear, but also against corrosion and dirt. But it also has its price. [...]

[igus.eu/lubrication-free](http://igus.eu/lubrication-free)

**GO ZERO Lubrication!**  
**Save lubrication time and costs**



# For the environment



"The new igus® factory with solar panels supports our sustainability activities. Using the chainge® platform has enabled over 115,000kg of material to be recycled since 2020."

Artur Peplinski,  
CEO igus® International

## 1 Lubrication-free motion plastics®

### High-performance polymers can do a lot

Long service life, no additional lubrication required and up to 70% lighter than metal products, also resistant to dirt, chemicals, corrosion, heat and cold.

#### Lubrication-free

How much motion plastics® can be saved? A joint study by RWTH Aachen University and igus® is the first to investigate how many kilograms of lubricant and the associated costs can be saved in applications if lubrication-free polymer bearings from igus® are used instead of conventional metal bearings.

#### Improve what moves

In material and product development, we work on the continuous improvement of friction and wear properties in order to improve the durability of the products and thus conserve resources.

#### CO<sub>2</sub> equivalent calculator

Calculation of the CO<sub>2</sub> equivalents for our iglidur® and igumid® G materials in order to incorporate possible CO<sub>2</sub> reductions into the material development. Please do not hesitate to contact us.

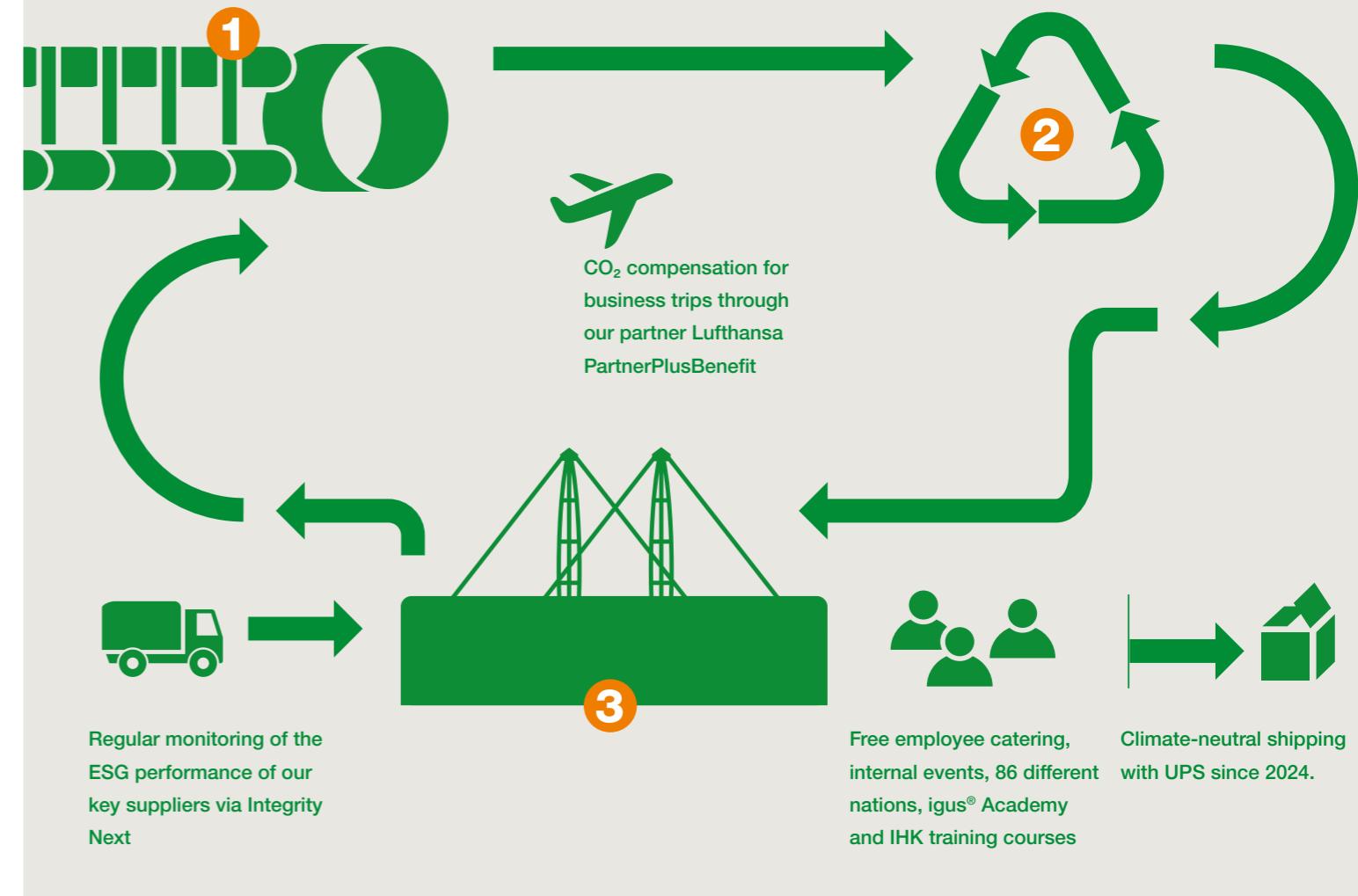


#### Our current brochure

Find out more about our sustainable business practices, products and partnerships, as well as our measures and progress on the various aspects of sustainability.

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

# #sustainable



**GO ZERO Lubrication!**  
... to protect the environment

# Sustainability at igus®



## ② chainge®

### Recycling platform

With chainge®, we have launched an online platform that accepts recycled material and offers recyclate. Recycling companies, those willing to recycle, regranulate users and suppliers come together here. Become our partner for a successful circular economy:

### Recycling plastics

You can send old energy chains and other industrial plastics (PA, PBT, POM, and many more) to our recycling system in just a few steps. In return, you will receive a voucher from igus®.

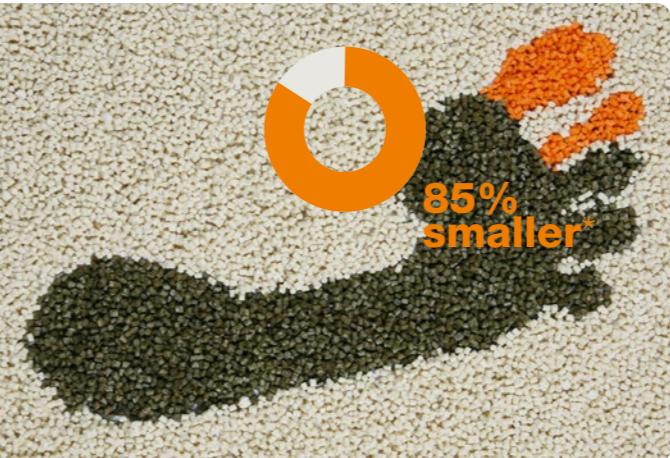
### Buy recyclate

Do you want to produce more sustainably and use recycled plastic? On the chainge® platform, you can find different materials with just a few clicks. Not what you are looking for? Contact us.

### Sell recyclate

Recycling companies, recyclable material suppliers, recyclate dealers, enthusiasts and convinced people: we want you to keep technical plastics in circulation. Become a partner in our network.

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



## ③ Energy supply

### On the road to climate neutrality

In 2023, we achieved 85% less CO<sub>2</sub> emissions than in 2020. The switch to green electricity in mid-2021 and to green gas in October 2021 played a key role here.

### Solar energy

igus® currently generates 500,000kWh per year through photovoltaic systems, with more in the pipeline. In total, more than 2,000,000kWh is feasible per year. anything.

### Would you have known?

igubal® pillow block bearings are often used in the bearings of large solar panels.

### Around 34t of plastic waste collected from rivers with the help of igus®

Every year, several million tonnes of plastic end up in the oceans. Around 1,600 rivers wash most of it into the sea. Plastic waste destroys marine ecosystems and contributes to the loss of biodiversity. To prevent it from spreading uncontrollably in the water and turning into microplastics, the start-up Plastic Fischer collects plastic waste from rivers in India and Indonesia - with the support of the Cologne-based plastics specialist igus®, among others.

[igus.eu/plastic-fischer](http://igus.eu/plastic-fischer)

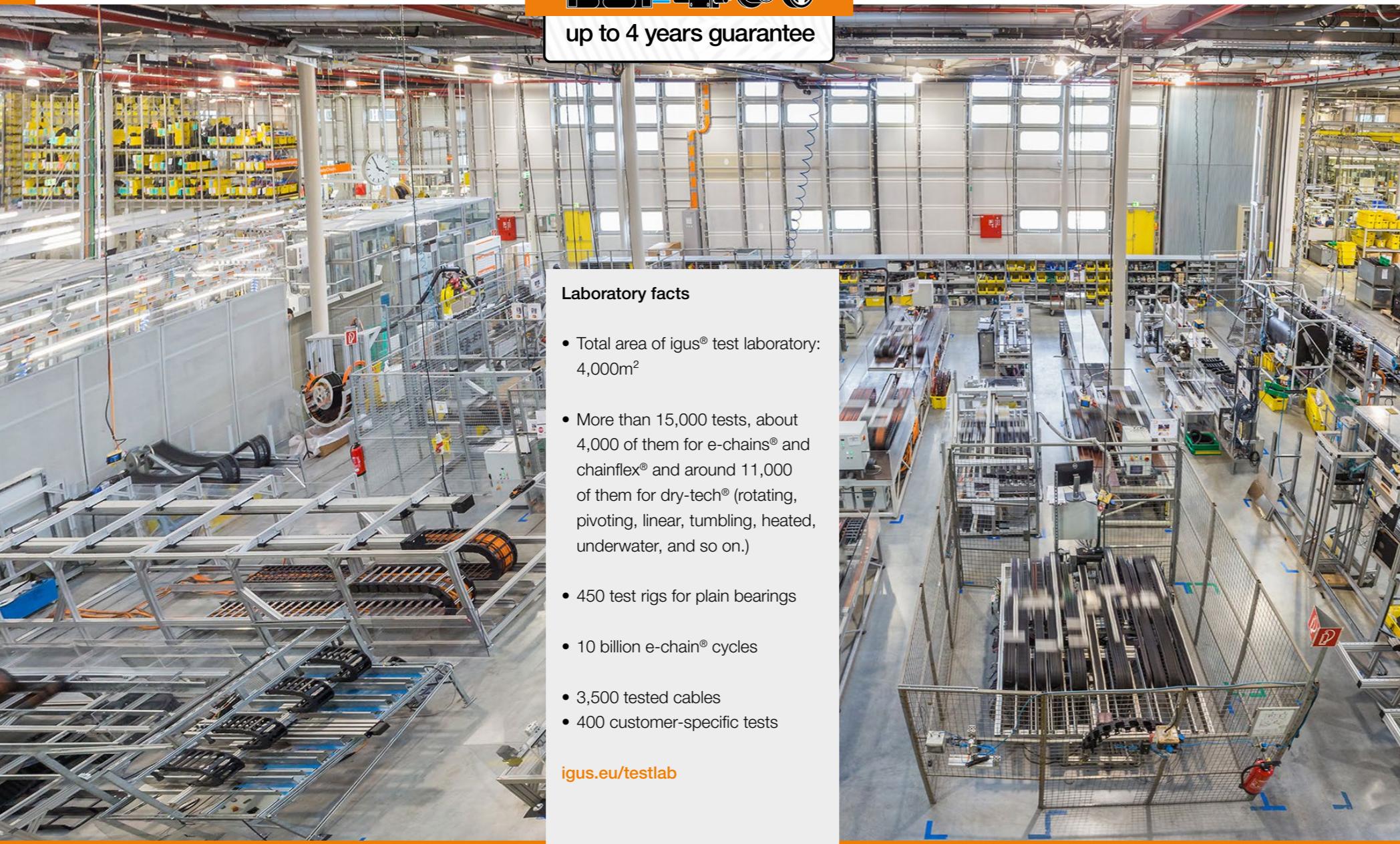


igus® guarantee



"From now on, a unique 4-year guarantee on all igus® products with a predictable service life. The basis for this is formed by billions of test cycles in our laboratory."

Dr. Thilo Schultes,  
CEO dry-tech® New Businesses



Unique: guarantee for all predictable igus® products

**4 years. Reliable.**

We offer a manufacturer's guarantee of up to four years on all products with a predictable service life. The guarantee service gives the buyer the security of knowing that their individual application has been designed exactly right and that they are always choosing the most favourable product that is sure to work.

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

**#guarantee**

	iglidur® plain bearings		xiros® ball bearings
	iglidur® other products		drylin® linear technology
	iglidur® slewing ring bearings		dryspin® lead screw technology
	iglidur® bar stock		drylin® drive technology
	iglidur® gears		e-chains® and e-chain systems®
	iglidur® 3D printing		chainflex® cables
	igubal® spherical bearings	Up to 4-year guarantee on motion plastics® of these product ranges	

**GO ZERO Lubrication!**  
... for planning security

Energy supply of the future

# Permanent innovations



"By using the igus® e-loop®, Top Drive systems are installed within a few hours instead of the usual days. Moving energy made easy."

Michael Blass,  
CEO e-chain systems®



igus® as an innovative development partner for the energy supply systems of the future

We at igus® specialise in wear-resistant, lubrication-free and low-maintenance components made of high-performance plastics for moving applications of all kinds. Every year, we introduce a large number of new innovations that ensure the considerable, steady growth and sustainable corporate success of igus® GmbH. The focus of these many new products and product range additions is particularly on specific applications that we can improve technically and/or solve more cost-effectively, true to our slogan "Tech up, cost down". In addition to concrete, tested new products, we also regularly present design studies, i.e. ideas that have been developed into initial drafts in order to sound out market potential. Here, too, there is usually already a specific challenge/application in the background.



#enjoyneering

In addition to these, we have many more ideas in the pipeline and in the minds of our product developers. This year, we would like to share what we consider to be the most exciting ideas with a wide audience and inspire machine and system designers in particular with these functional samples. We are represented by our products in almost all industries and sectors and therefore have a good insight into the general developments there - but of course the design engineers of the machine manufacturers are always at least one step ahead of us. The machine concepts of the future pose new challenges in terms of moving machine components. And as an innovative development partner with decades of experience, we are more than happy to help!



Application example

3,000 shore power connections per year

The Mongstad offshore base is one of the most frequently used bases in Norway. The shore power e-spool® makes sure that the vessels that change twice a day are reliably supplied with shore power. Integrated in a 10-foot container, it can be positioned as desired.



GO ZERO Waste!

Sustainable energy supply

[igus.eu/shore-power](http://igus.eu/shore-power)



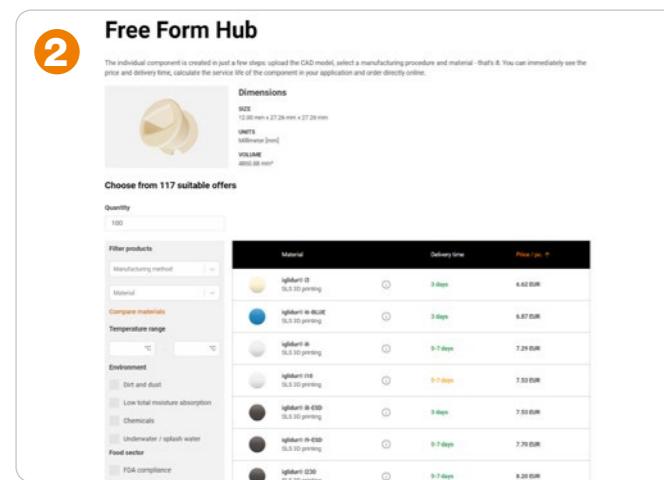
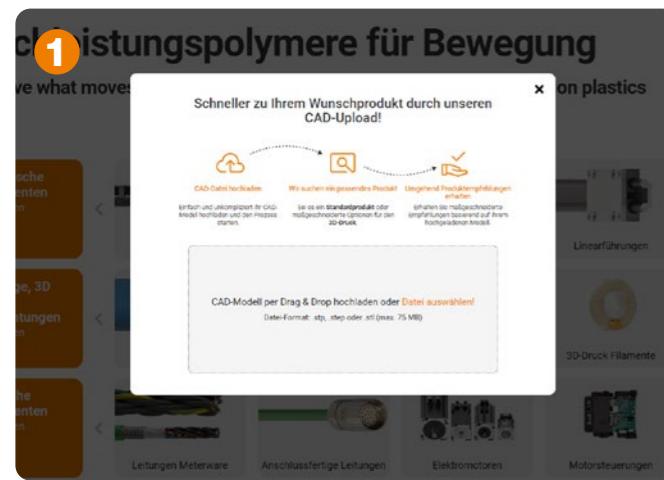


"With our online tools, you can configure and calculate igus® products precisely for your application with exact statements on service life, including a one-off 4-year guarantee."

Frank Blase,  
CEO & entrepreneur

## New online service Free Form Hub

# From CAD directly to the motion plastics® solution in just a few seconds



After uploading the file ① the CAD part is analysed using artificial intelligence and compared with the igus® product range. If they match, suitable standard solutions are suggested from which you can select the best option for your application.

If no igus® standard product can be found, we can calculate the production of your individual component using 3D printing and injection moulding in the new "Free Form Hub" service ②. You can see the price and delivery time immediately and use filters to find the most suitable materials for you from over 62 motion plastics®. You can easily design your application to be lubrication-free and order or enquire about the solution online - from a quantity of 1.

With motion on demand you get your igus® solution faster - as standard version or customised for you. This saves time and money: [igus.eu/motion-on-demand](https://igus.eu/motion-on-demand)

You will find the service right on the start page - directly next to the search field.

# igus® online tools



igiverse®  
Virtual engineering in our Industrial metaverse



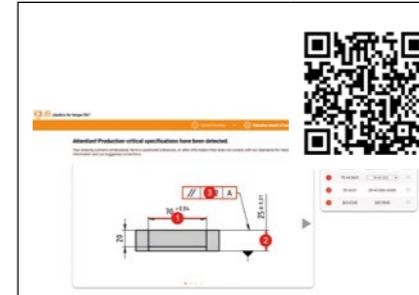
kopla®  
Service platform to develop customised configurators



smart IIOT  
Factory monitoring



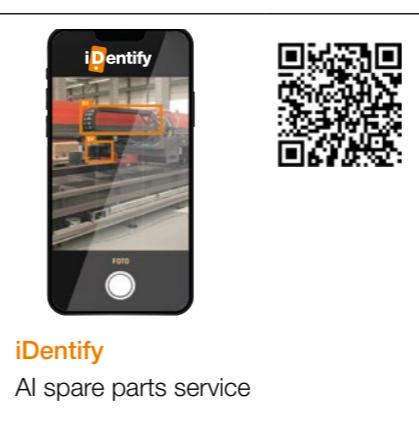
igusGO®  
Design lubrication-free applications in seconds



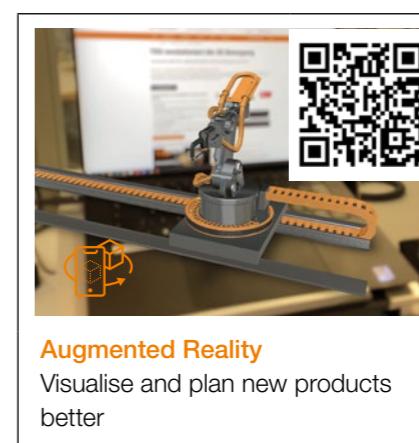
Tolerance check  
Direct feedback as to whether your turned/milled parts can be made



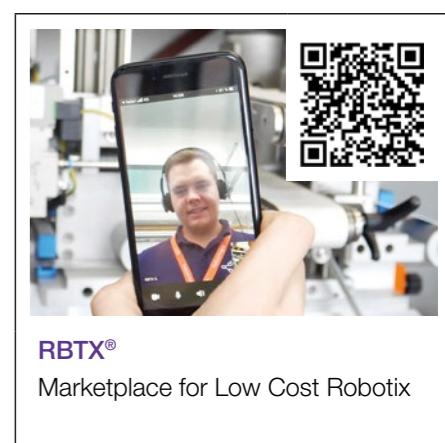
Online configurators  
Calculate the service life and other parameters of our motion plastics®



iDentify  
AI spare parts service



Augmented Reality  
Visualise and plan new products better



RBTX®  
Marketplace for Low Cost Robotix



Our digital services and solutions as brochure PDF for download.

[igus.eu/enjoyneering](https://igus.eu/enjoyneering)

## GO ZERO Lubrication!

... with AI and digital tools

motion plastics® for heavy-duty applications

# Heavy plastics

## #heavyduty



**drylin® SLR-60 Linear module**  
Strong linear module in size 60



**iglidur® Q3E**  
For extreme loads

motion plastics® made of high-performance plastic are strong, dirt-resistant and maintenance-free. Ideal for heavy-duty applications under harsh and dirty working conditions and in tough weather conditions.

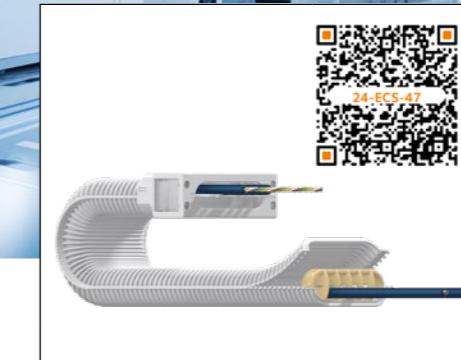
It's worth opting for heavy-duty motion plastics®. They are not only strong, but also durable and fail-safe. Our components are also lubrication-free, which saves time and money. And don't forget: motion plastics® are usually many times lighter. An effective contribution to greater energy efficiency.

[igus.eu/heavy-duty](http://igus.eu/heavy-duty)

motion plastics® for cleanrooms and laboratories

# Clean plastics

#cleanroom  
#lab



**e-skin® soft SKS28.100.02.1**  
More space in small cleanrooms



**e-skin® flat layer holder**  
Straight run guaranteed



**C6.38 cleanroom e-chain® with opening tool** The assembly-friendly cleanroom all-rounder

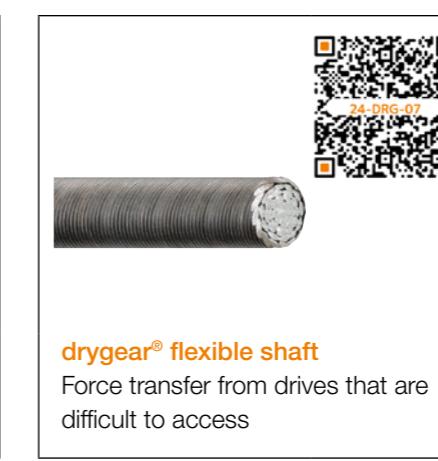
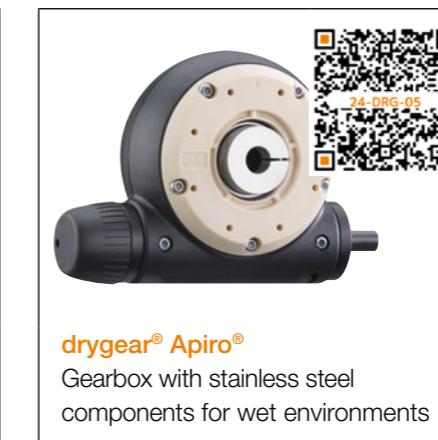
# FDA-compliant ... ... food-safe

Packaging is often required for sensitive goods such as food and beverages. In these complex production lines, speed, precision and purity are of the essence. Adapted to the requirements of the packaging industry, we offer a wide range motion plastics® that conform to FDA and EU10/2011 stipulations, run without lubrication and maintenance breaks and make their contribution to economical production.

Our high-performance polymers for the food sector can be sterilised with hot steam and cleaned with chemical substances without any problems. They fulfil essential requirements for use in food processing machines and production processes (food safety). The blue colouring also makes them easy to detect.

[igus.eu/packaging](http://igus.eu/packaging)  
[igus.eu/food](http://igus.eu/food)

## #packaging



motion plastics® for PTFE and PFAS-free applications

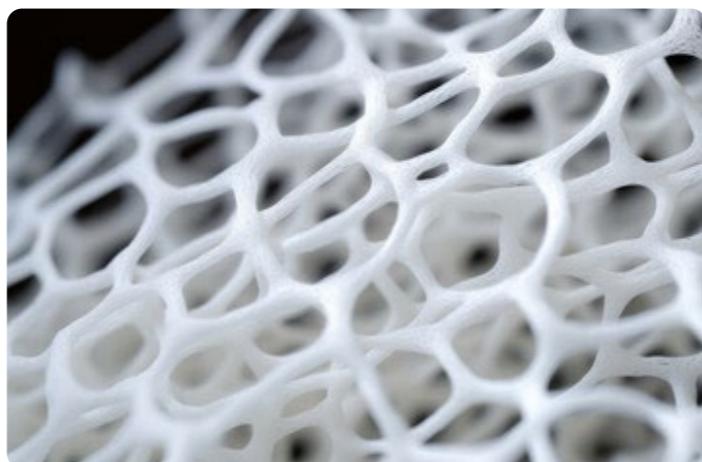
# igus® products and PTFE/PFAS



#PTFE  
#PFAS

Like the chemicals of the PFAS family, certain polytetrafluoroethylene compounds - PTFE for short - are considered "forever chemicals" and therefore potentially harmful to the environment, people and animals. The European Union is therefore working on a ban on the substances. Many igus® materials do not contain PTFE and are therefore not affected by a ban, also the majority of chainflex® cables are already PFAS-free.

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



iglidur® W300PF plain bearing  
For extreme endurance



drylin® WWP locking carriage  
Linear guide with snap function



iglidur® W300PF round bars  
High wear resistance



Telescopic rails in size 60  
drylin® NT-60-4  
Telescopic up to 2m



iglidur® JPF plates  
The all-rounder



motion plastics® for easy installation

# Tech up made easy

## #assembly

As "easiest to deal with company", we want to make it easy for our customers. What starts with the selection and configuration on the web also applies to the installation of our motion plastics®.

Simple, fast and therefore cost-effective, as there is little downtime for the application. Either through pre-assembled systems or clever design that simplifies replacement in your existing application. And even with more complex systems such as the e-loop® for top drives, the basic principle of "hours instead of days" applies. Tech up made easy.

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



Double axis system DLE-DA-ZLX  
For large workspaces up to 500mm x 500mm



Extender crossbar clip for series  
E2(i).26/ E2(i).38 / E2(i).48 series  
Optimum hose guidance



igubal® universal joint CJM  
Lightweight, cost-effective and  
corrosion-resistant



Extender crossbar clip for  
E4Q.64L / E4.64L Guide large  
hoses and cables efficiently



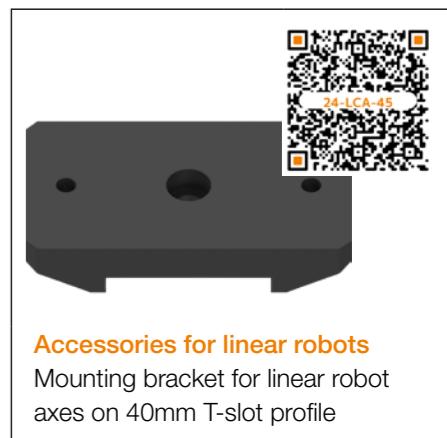
drygear® universal joint  
Articulated coupling for connecting  
two shafts



EC.WLC status indicator  
Easily recognise the condition of  
your e-chain®



iglidur® PRT-04 accessories  
Flexible retrofit



Accessories for linear robots  
Mounting bracket for linear robot  
axes on 40mm T-slot profile

Different. Sustainable. Low-maintenance. Recycled.

# RCYL

Recycled plastic bicycles for sustainable mobility

The bike was presented for the first time at the Hannover Messe 2022 under the name igus:bike. The first 100 bikes were produced at the beginning of 2024, and the name was changed to RCYL at the same time. Planning for series production is currently in the home straight and the sales launch is approaching. But what is so special about our urban bike?

RCYL is different from other bikes. It looks different. And is more sustainable. Because it is made from recycled plastics. The largest components, the frame and fork, are made from 50% recycled fishing nets. We want to build the most sustainable bike in the world. From the use of recycled raw materials to low-energy production and short delivery routes in Europe. Made in Cologne. And we think about later. Much later. Because at the end of its service life, we will take the bike back for a refund of 50 euros. This means we can easily produce new bikes from old ones.

Still, sustainability alone is not enough for us. We also want to offer the world's lowest-maintenance bike so that we have more time for the essentials. How does the RCYL bike manage this? It does not rust and does not need to be lubricated. It can simply be left out in the rain. Or be driven on the beach. It doesn't mind salty sea air, rain or snow. This makes the RCYL the perfect companion in the city or at the seaside! And the bike lasts a really long time! Countless test cycles in our own test laboratory make sure of it. This also serves safety - because this is our top priority. That's why we test our frames and components in our own test laboratory



- above and beyond the prescribed standards. So that the RCYL bike lasts as long as possible. However, we do not just rely on our own tests, but also have our results confirmed by independent, recognised test laboratories. Better safe than sorry.

RCYL does many things differently. More innovative. New. There's no other way if you want to use as much plastic as possible. This ranges from the new crank to the freewheel and the bearings in the wheels. And much more. How about a test drive to find out for yourself? We already use 50% recycled plastic for the frame and fork. However, we don't want to stop there - we want to set a circular economy in motion. So that there are no more huge landfills full of bicycles. And so that plastic waste is no longer disposed of in the environment, but is used in new bicycles.

[www.rcyl.bike](http://www.rcyl.bike)



Plastics for bikes  
**First igus® injection-moulded frame in series production**



Made from recyclable composite material with perfect properties for a bicycle frame. It provides the necessary stiffness in combination with a little flex, making it more comfortable than aluminium.

The frame is used in the new Reco Urban trekking e-bike from German manufacturer Advanced, which immediately won the coveted Eurobike Award in the "Best e-bike" category.

In addition to the frame, there will be other plastic components for bicycles using the injection moulding process: handlebars, wheels, forks ... All information about the igus® bike components can be found online.





## Transformer test rig

Winner of the silver vector award 2024:  
TDK RF Solutions temperature-resistant cable  
guidance uses e-chains® and spring cable drums



GO ZERO Waste ... sustainable energy supply

# e-chain systems® and accessories



**30**

**Quickly create a strain relief design**  
CFX strain relief configurator

**31**

**Optimum hose guidance**  
Extender crossbar clip  
for E2(i).26/ E2(i).38 / E2(i).48 series

**31**

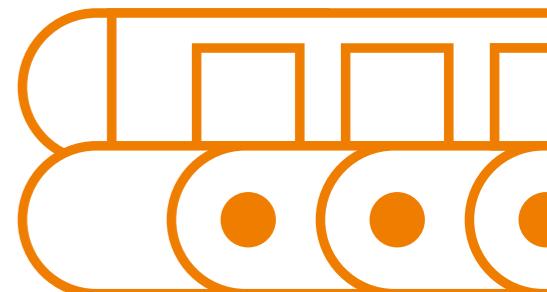
**Guide large hoses and  
cables efficiently**  
Extender crossbar clip for E4Q.64L / E4.64L

**32**

**Maximum strength,  
now with smaller inner height**  
YE.28 / YE.32

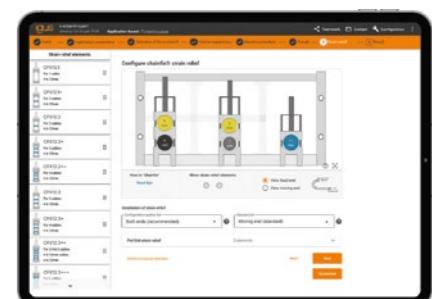
**33**

**Additional e-chain® width  
for more cables**  
guidelok swing GLO.S.E2i.21.038



## Blog topics

#assembly, page 24  
motion plastics® for easy installation



## Online tool

**Configurator for CFX strain relief  
clamps**  
[igus.eu/irm-configurator](http://igus.eu/irm-configurator)

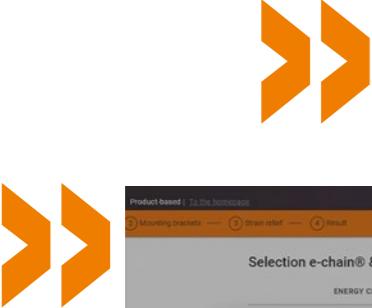
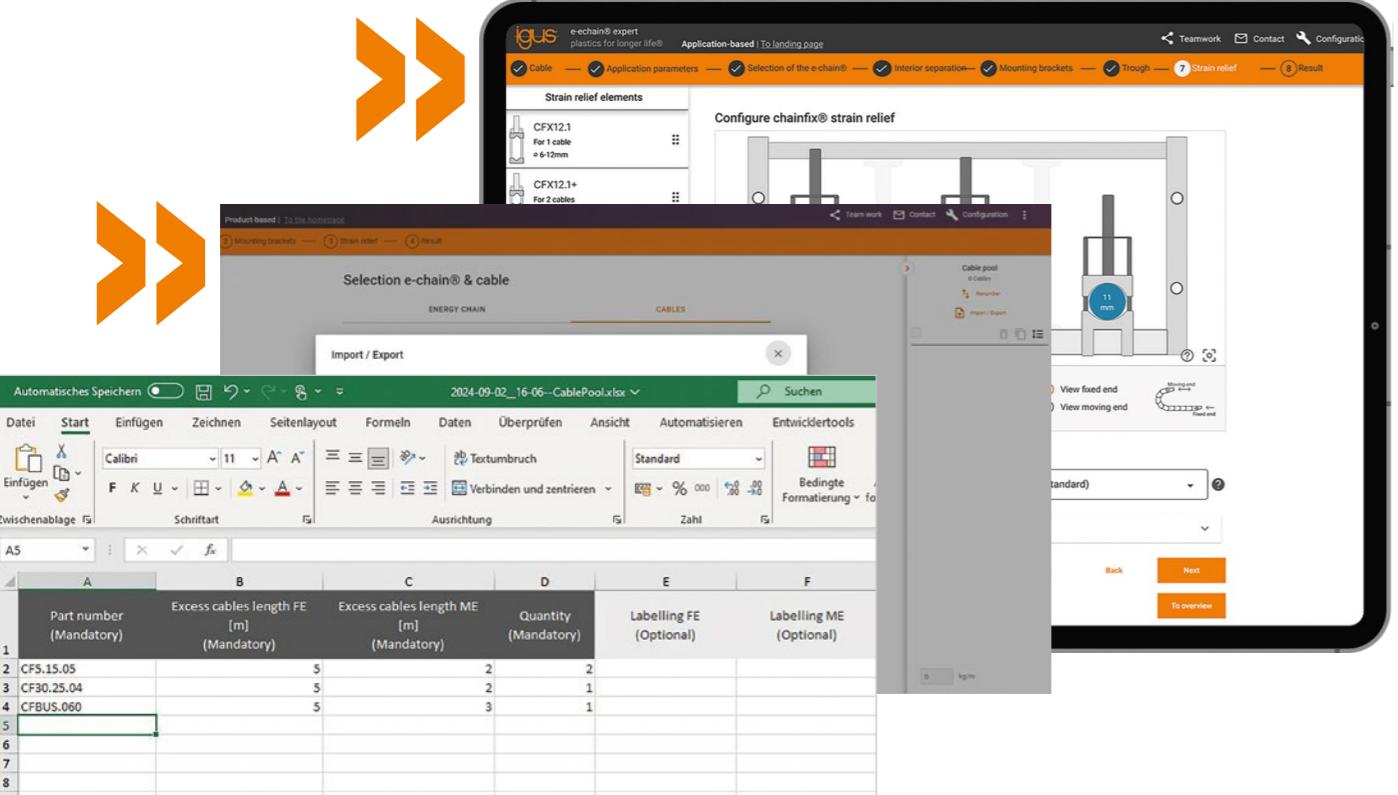


## Catalogue

Available soon: All information on energy chains and energy chain systems.  
Tested and with up to 4-year guarantee. MAT0075662.20

**igus.eu/news-ecs**

# Even quicker and easier

	A	B	C	D	E	F
Part number (Mandatory)	Excess cables length FE [m] (Mandatory)	Excess cables length ME [m] (Mandatory)	Quantity (Mandatory)	Labelling FE (Optional)	Labelling ME (Optional)	
1 CF5.15.05	5	2	2			
2 CF30.25.04	5	2	1			
3 CFBUS.060	5	3	1			
4						
5						
6						
7						
8						

## New

## Quickly create a strain relief design

New CFX strain relief configurator and new function for importing cable lists

Proper strain relief of the cables in an energy chain contributes significantly to the service life of the overall system.

- ▲ Quickly and easily import your own cable list (via Excel file) and configure suitable strain relief
- ▼ Save time and reduce potential follow-up costs due to incorrectly designed or missing strain relief
- Time savings of up to 50% in design and drawing creation
- Continuous further development of the online tool towards an AI-supported automatic energy supply configuration

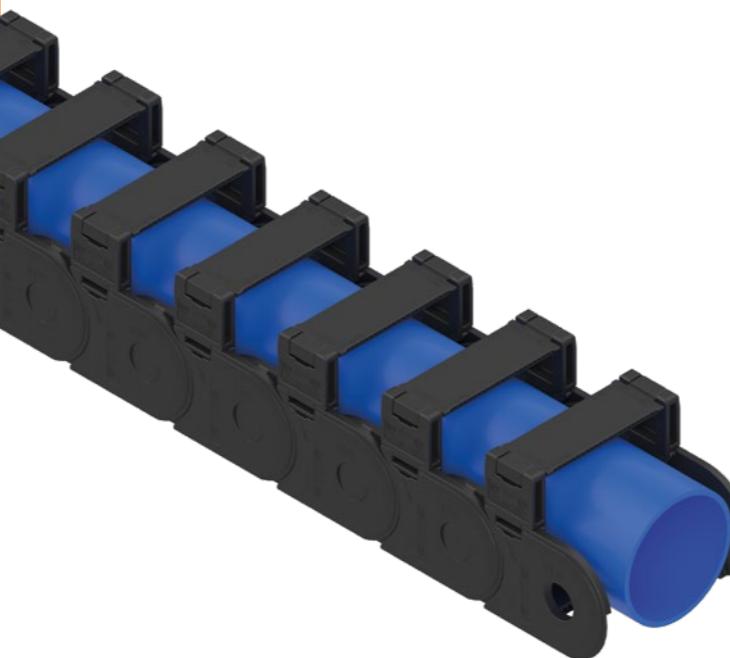


## Study #assembly

## Optimum hose guidance

Extender crossbar clip for E2(i).26/ E2(i).38 / E2(i).48 series

To extend the inner height and for guiding suction hoses. The extender crossbar clip can also be retrofitted to existing applications if required.



- ▲ Extender crossbar available for every chain width

- ▼ Backwards compatible: existing systems can be retrofitted

- Extension of the inner height of the e-chain® by up to 77% (extender crossbar clip E2(i).48)

- Have your energy chain recycled at the end of its service life with the igus® chainge® recycling program, regardless of manufacturer: [igus.eu/chainge](https://igus.eu/chainge)

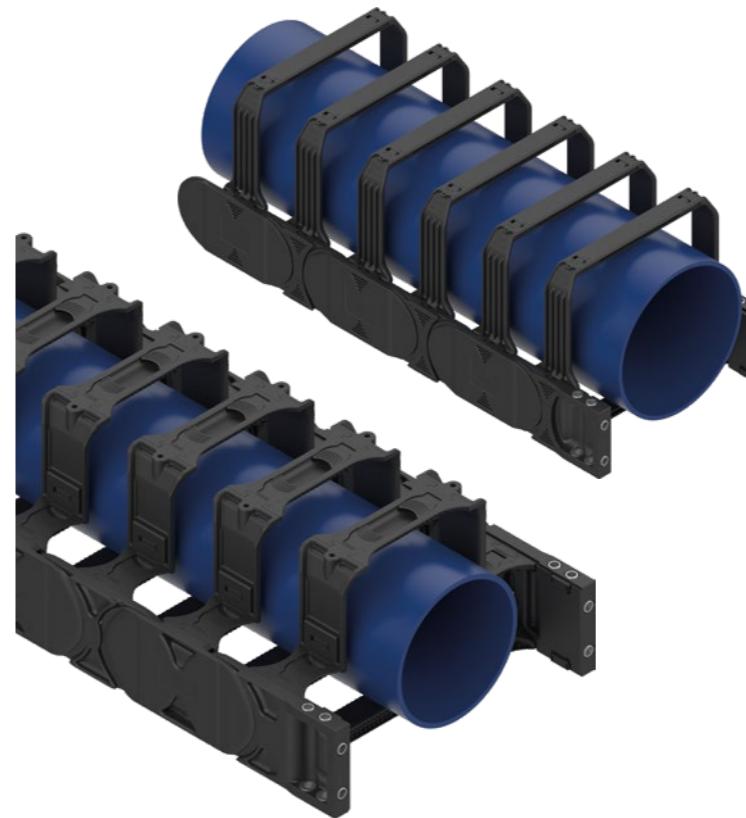


## Study #assembly

## Guide large hoses and cables efficiently

Extender crossbar clip for E4Q.64L / E4.64L

Adapt energy chain to hose diameter. Easily install without tools and replace hoses as needed. Using extender crossbars instead of crossbars enlarges the interior space of the energy chain enormously, allowing large suction hoses to be safely guided.



- ▲ Guide large hoses efficiently

- ▼ Use of smaller, more cost-effective chains

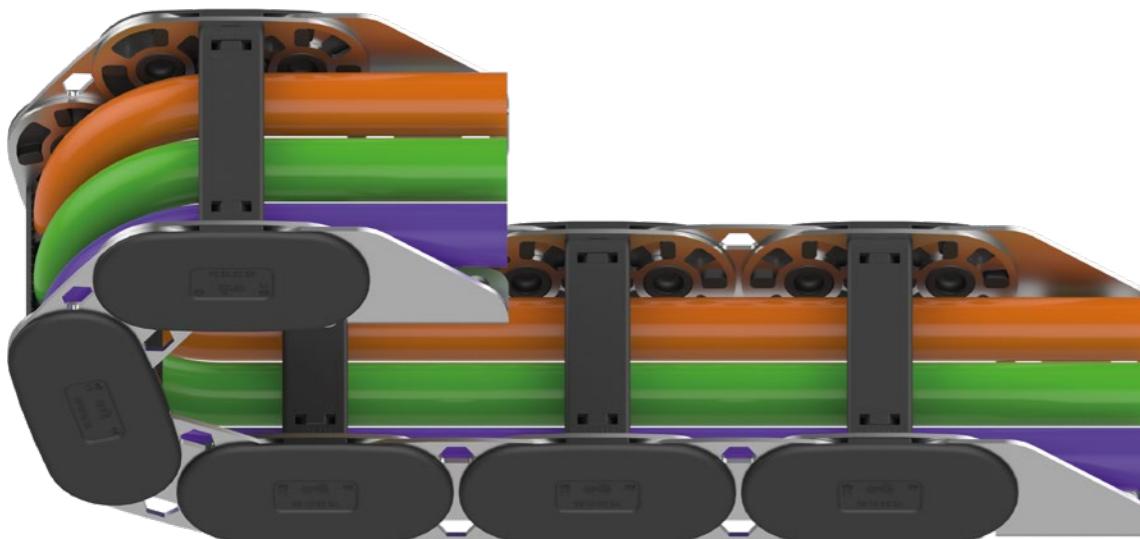
- Extension of the inner height of the e-chain® by up to 200% (extender crossbar clip E4.64L)

- Have your energy chain recycled at the end of its service life with the igus® chainge® recycling program, regardless of manufacturer:

[igus.eu/chainge](https://igus.eu/chainge)



# Compact size for high loads



## Study

### Maximum strength, now with smaller inner height

YE.28 / YE.32

Expansion of the successful YE product range. igus® hybrid chains (the best mix of plastic and steel) in a new size with an inner height of 28mm and 32mm. YE e-chains® and e-tubes are ideal energy supply systems for machines with inclined axes.

- ▲ Maximum strength: steel inner plates absorb the force of the fixed plastic inner/outer link stop-dogs
- ▼ Quick and easy installation thanks to the strain relief solution. No screws or rivets are required
- YE(HD): Additional loads of up to 50kg/m
- Have your energy chain recycled at the end of its service life with the igus® chainge® recycling program, regardless of manufacturer: [igus.eu/chainge](http://igus.eu/chainge)



# Compact crane guidance



## Plus

### Additional e-chain® width for more cables

guidelok swing GLO.S.E2i.21.038

Inner width increased by 13mm compared to GLO.S.E2i.21.025. This allows more cables to be guided in the application.

- ▲ Larger bend radii possible
- ▼ No additional guide trough is required
- Already successfully in use in various customer applications and in the igus® factory
- Have your energy chain recycled at the end of its service life with the igus® chainge® recycling program, regardless of manufacturer: [igus.eu/chainge](http://igus.eu/chainge)
- Online tools for digital configuration and individual service life calculation





## Clean and smooth running

Energy supply system e-skin® flat for particle-free semiconductor production in Heidelberg Instruments systems

GO ZERO waste ... sustainable energy supply

# e-chain® systems for cleanrooms



**36**

More space in small cleanrooms  
e-skin® soft SKS28.100.02.1

**37**

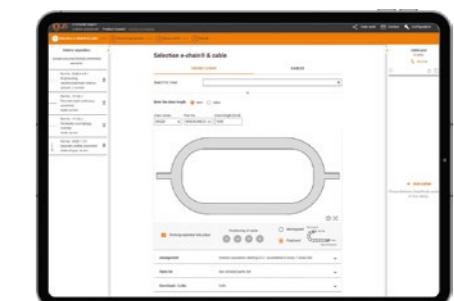
Straight run guaranteed  
e-skin® flat layer holder

**37**

The cleanroom all-rounder  
C6.38 cleanroom e-chain® with opening tool

## Blog topics

#cleanroom, page 19  
motion plastics® for cleanrooms



## Online tool

e-skin® in the e-chain® expert  
[igus.eu/e-chain-expert](http://igus.eu/e-chain-expert)

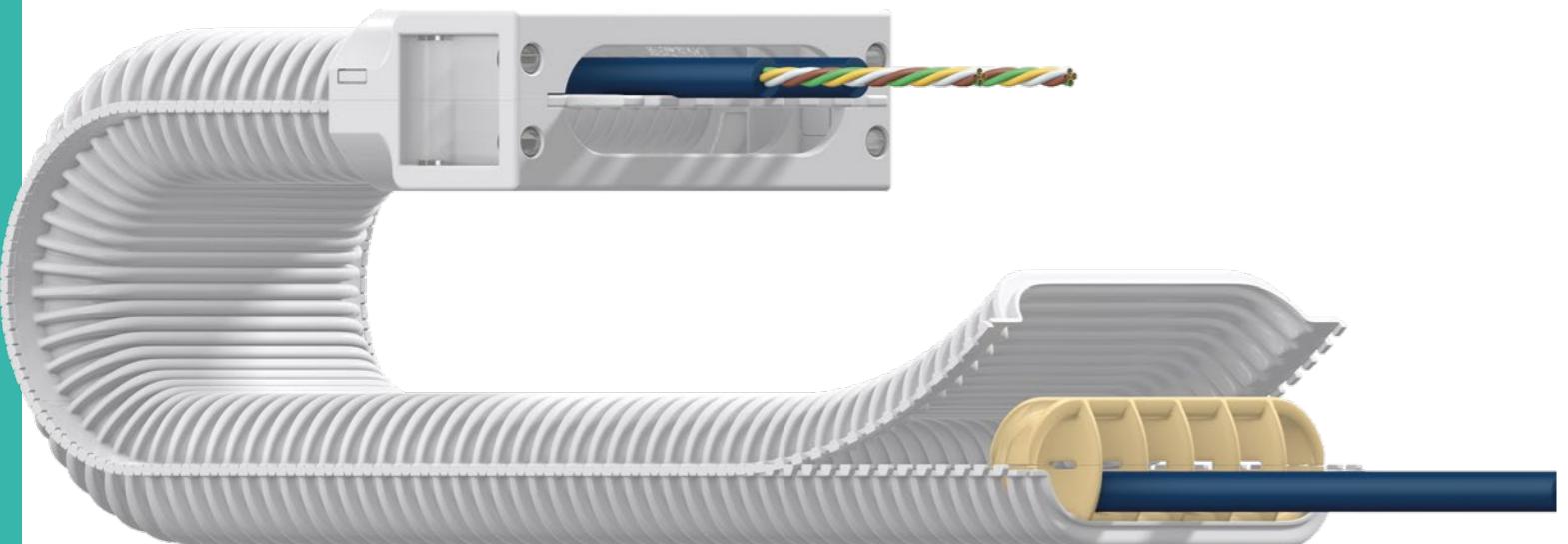


## Catalogue

Learn about our products for cleanroom applications. MAT0075622.20

**igus.eu/cleanroom**

# More space in small cleanrooms



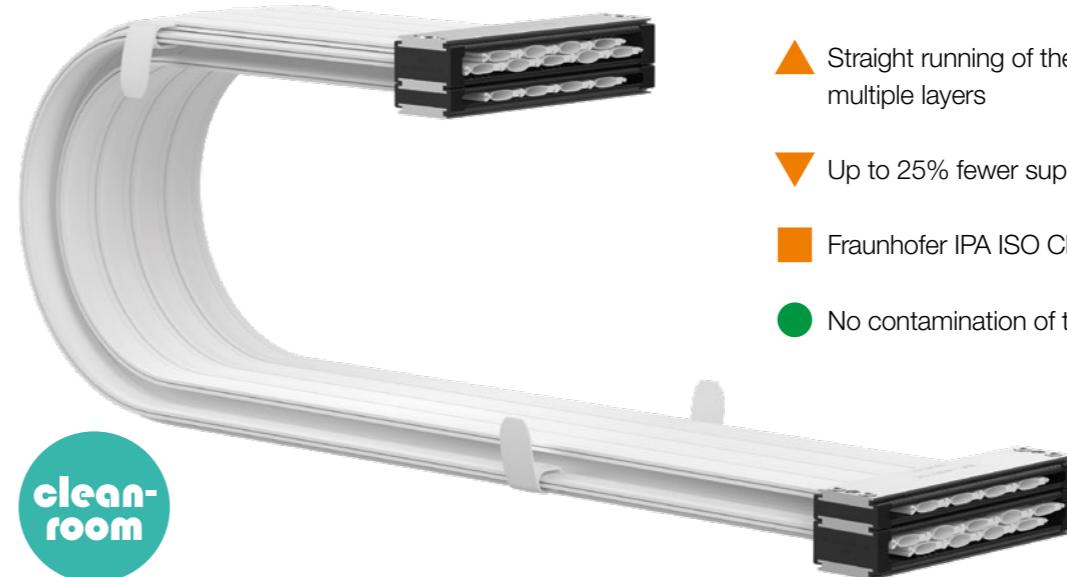
New #cleanroom

## Proven design with larger interior

e-skin® soft SKS28.100.02.1

The corrugated tube-like cleanroom energy supply, which consists of an upper and lower shell, is openable and has an unsupported length thanks to the shell design. The e-skin® soft fulfils the highest cleanroom class thanks to the specially developed polymer material igumer SKS. The version with an internal height of 28mm is now also available in a width of 100mm. There are now four inner heights: 20mm, 24mm, 40mm and 28mm. The inner height of 28mm is available in two widths: 68mm and 100mm.

- ▲ 47% more inner width, for more cables with the same inner height
- ▼ Flexible igumer SKS material makes the e-skin® soft suitable for small installation spaces
- Complies with the highest cleanroom class ISO 1 (tests in the igus® internal cleanroom laboratory)
- No contamination of production items in the cleanroom by particles
- e-skin® soft can be configured online by the expert



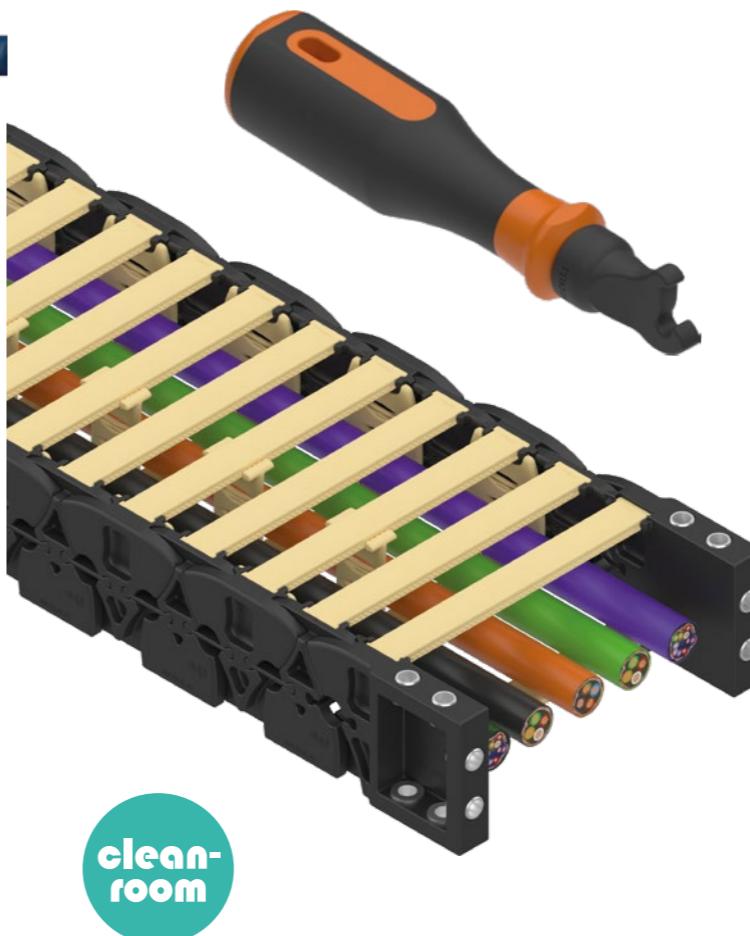
New #cleanroom

## Straight run guaranteed

e-skin® flat layer holder

The layer holder made from the tried and tested e-skin® material (igumer SK) guides several layers of e-skin® flat straight, even for very long unsupported lengths. The e-skin® flat layers remain on top of each other and can utilise the unsupported specifications of the e-skin® flat with support chain, even if they are not installed in every layer.

- ▲ Straight running of the e-skin® flat guaranteed even with multiple layers
- ▼ Up to 25% fewer support chains required in a system
- Fraunhofer IPA ISO Class 1 certified e-skin® flat system
- No contamination of the cleanroom by particles



New

## The cleanroom all-rounder

C6.38 cleanroom e-chain® with opening tool

The new e-chain® opener makes the C6 even more flexible as an all-rounder for the highest cleanroom requirements. Safe guidance with greatly reduced effort and time and minimised risk of crossbar damage. The C6 series is available in three inner heights (29, 38 and 53mm).

- ▲ Safe opening of longer e-chains® pieces
- ▼ 15% less assembly effort
- Complies with the highest cleanroom class ISO 1 (tests in the igus® internal cleanroom laboratory)
- Easy replacement of cables



GO ZERO Downtime ... no unplanned downtime

# smart plastics



**40**

**Clarity at a glance**  
EC.WLC status indicator

**41**

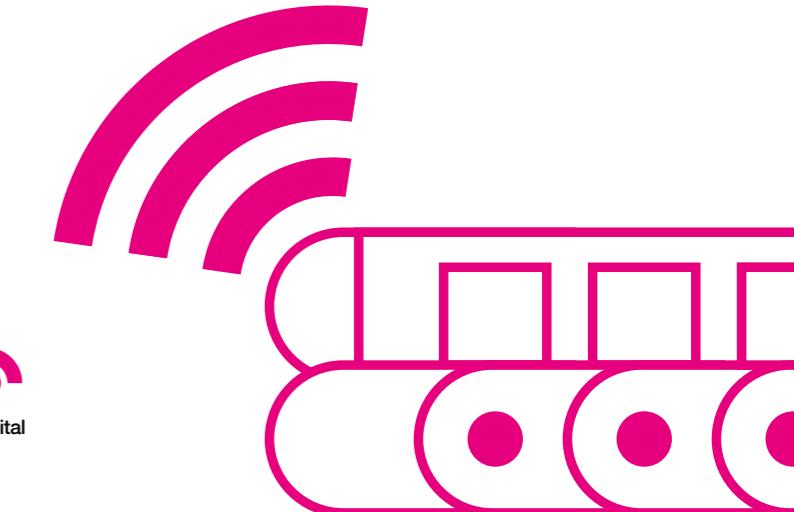
**Cost-efficient maintenance planning**  
IS.BLE predictive maintenance concept

**41**

**Flange mounted bearings become intelligent**  
igubal® spherical bearings with predictive maintenance

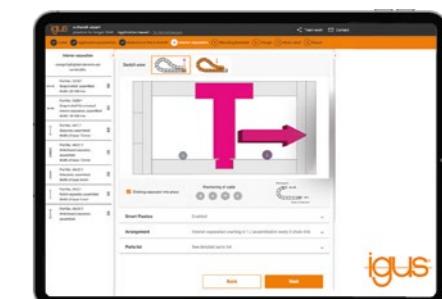
**42**

**Agricultural engineering:  
no more failures**  
iglidur® ball coupling



## Blog topics

#assembly, page 24  
motion plastics® for easy installation



## Online tool

**e-chain® expert**  
An intelligent energy chain with sensors for condition monitoring and predictive maintenance in just a few clicks.  
[igus.eu/e-chain-expert](http://igus.eu/e-chain-expert)



## Catalogue

Available soon: everything about smart plastics. Solutions for condition monitoring and predictive maintenance for reduced downtimes. MAT0075664.20

**[igus.eu/news-smartplastics](http://igus.eu/news-smartplastics)**



## Fail-safe container cranes

Reliable 24/7 operation at the Port of Hamburg: EUROGATE relies on intelligent sensor technology from igus®

# Clarity at a glance



New #assembly

## Easily recognise the condition of your e-chain®

### EC.WLC status indicator

The new mechanical condition indicator shows the wear status of the e-chain® at a glance using a traffic light system (red, yellow, green). This allows you to quickly and efficiently recognise whether there is a need for action. Abrasion exposes wear additives in the chain links and provides information on the condition of the gliding e-chain®. If the indicator is green, everything is OK; as wear increases, the indicator changes to yellow; if it is red, the e-chain® should be checked and replaced if necessary. The decreasing distance between the crossbars also indicates the state of wear.

- ▲ Colour indicator (red/yellow/green) for status information on gliding e-chain systems® applications
- ▼ Low cost - no electronics - physical measurement
- Ongoing test program in the industry's largest test laboratory for dynamic cable applications
- Reduced service calls save resources

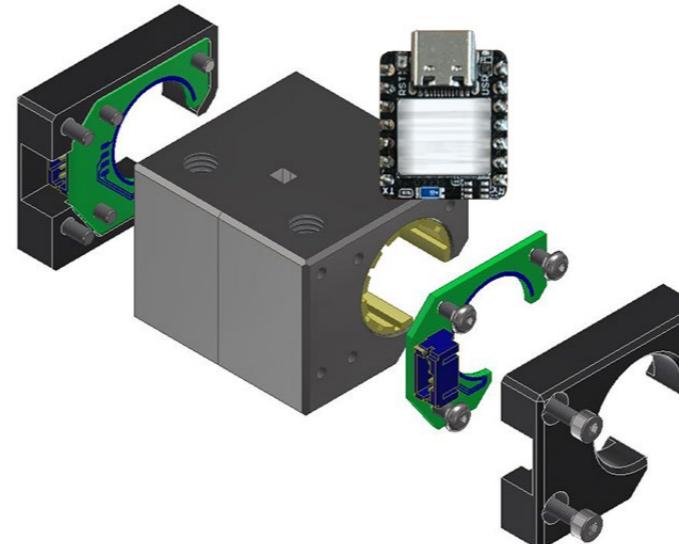


### Study

## Cost-efficient maintenance planning

### IS.BLE predictive maintenance concept

A sensor and evaluation unit with conductive components for simple recording of the PLM status and service life prediction.



- ▲ Direct PLM status display and service life prediction
- ▼ No additional communication technology required
- Running applications and test series
- Zero lubrication required
- Instant transmission to Low Energy Bluetooth (BLE) enabled mobile phones

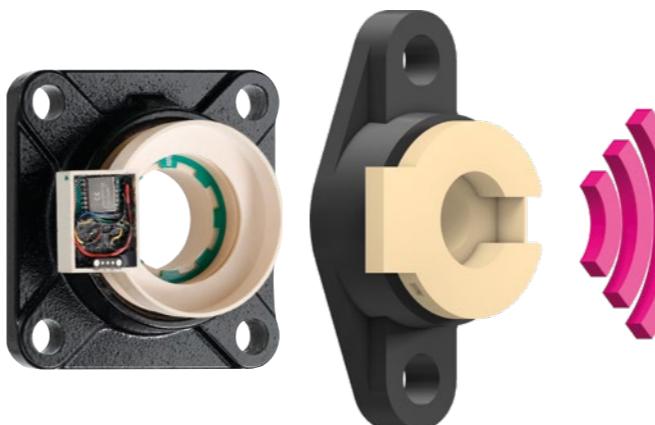


### New

## Flange mounted bearings become intelligent!

### igubal® spherical bearings with predictive maintenance

A new generation of igubal® spherical bearings is equipped with a predictive maintenance system.



- ▲ Low-friction and maintenance-free dry running with 100% corrosion-free operation
- ▼ Optimised maintenance scheduling and full utilisation of the service life
- Running applications and test series
- Zero lubrication required
- Sensor transmits via a long range network (LoRa)



# Eliminate heavy-duty failures



New

## Prevent breakdowns and planned maintenance

### iglidur® ball coupling

This is no longer a problem with the smart trailer coupling. How does that work? The wear of the bearing is monitored via an integrated sensor. Information will be provided as soon as a replacement is necessary.

- ▲ Lubrication-free at high loads
- ▼ No downtime for lubrication or corrosion removal
- Successful use of a wear insert made of iglidur® high-performance plastic at the Rockinger company
- Zero lubrication required
- Sensor transmits the wear condition of the bearing



### Background

## Drive safely with the smart ball coupling

The introduction of intelligent technologies in agricultural engineering, such as the smart ball coupling, is a significant step forward in increasing the efficiency and reliability of agricultural machinery. By integrating a sensor to monitor the wear of the bearing, maintenance work can be planned precisely and unexpected failures can be avoided. This system offers a proactive maintenance solution that not only saves costs, but also extends the service life of the machines.

The ball coupling made of iglidur® plastic proves its strengths in use in agricultural engineering at Rockinger. Regular lubrication in agricultural machinery costs time and money. Added to this are the risks of too much or too little lubrication. Rockinger was therefore looking for a lubrication-free solution. The insert made of high-performance polymers is integrated into the coupling's claw, which means that lubrication of the coupling is no longer necessary. The insert can withstand the highest vertical loads. At a driving speed of 40km/h, two and a half to three tonnes of vertical load press on the coupling and the insert. That is why igus® GmbH developed a material that is durable and resistant. At the same time, the insert remains robust even when exposed to dirt and extreme weather conditions.

The ball coupling is used on various implements such as balers, loader wagons, manure spreaders, dumper/tipper trucks and field sprayers.

Another advantage of the smart ball coupling is the reduction in material costs. As bearings are only replaced when necessary, unnecessary costs are avoided and resources are conserved at the same time. This not only contributes to cost efficiency, but also has a positive impact on the environment, as less waste is produced and the sustainability of agriculture is promoted.

When must the ball coupling be serviced? This depends on the individual wear and tear. The smart ball coupling works by means of a sensor that continuously monitors the condition of the bearing. In the event of imminent wear, a warning message is issued to inform the user that maintenance or replacement of the bearing is necessary. This early notification makes it possible to plan maintenance work before a failure occurs. The particular advantage is that it reacts to the actual condition of the machine parts and is not dependent on a predefined maintenance schedule. The smart ball coupling with its innovative sensor technology is a profitable

development in agricultural engineering. It enables precise and on-demand maintenance, prevents unexpected failures and contributes to cost savings and environmental protection. With this intelligent system, machines can be utilised more effectively and productivity in companies can be increased.



The ball coupling in use at Rockinger



## Curtain up with chainflex®

In a confined space, chainflex® cables move stage sections in the Budapest Opera House. Harnessed and ready-to-connect in igus® e-chains®.

GO ZERO Waste ... sustainable energy supply

# chainflex® cables



Tech up



Cost down



Proof



Sustainability



Digital

**46**

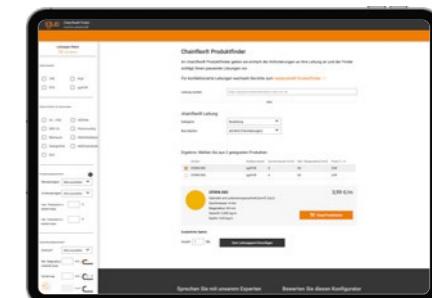
Designed for the future

Sustainability with chainflex® cables

**50**

Additions to the product range

chainflex® product range extension  
available from 12 November 2024



## Online tool

chainflex® product finder  
[igus.eu/quickcable](https://igus.eu/quickcable)



## Catalogue

Available soon: all information about chainflex® cables for moving applications.  
Tested and with a guarantee of up to four years. MAT0075666.20

**[igus.eu/news-chainflex](https://igus.eu/news-chainflex)**

# Designed for the future



## New

### chainflex® works – the basis for sustainability

#### 4-year service life guarantee

Since 1989, we have been manufacturing cables that are specially designed for continuous motion in energy chains. It is particularly important to us that all cables are extensively tested in our in-house test laboratory, covering an area of over 4,000 m<sup>2</sup>, to ensure that they last a long time in your applications. Today, we can give you a guarantee of up to 4 years on chainflex® cables. This chainflex® guarantee promise and the systematic procedures of the igus® laboratory are certified by UL.

- ▲ Planning safety thanks to a guarantee that is four times longer than the statutory warranty
- ▼ Additional reduction in unplanned downtime saves time and money
- Guarantee statement based on billions of test cycles in the largest test laboratory (4,000m<sup>2</sup>) in the industry
- Sustainability thanks to a longer service life is practical resource protection, enhancing economic efficiency and protecting the environment
- Calculate the cables service life online: [igus.eu/chainflexlife](http://igus.eu/chainflexlife)



#### Sustainability in the cable industry

### We want to make things happen!

Our cables already move a lot! They are specially developed to keep systems and machines in constant motion. We test everything extensively, are constantly adding new products to our portfolio and give a 4-year guarantee on our chainflex® cables.

In today's age of raw material scarcity and climate change, the issue of sustainability in products and plants is becoming important. This is especially true in the selection of suitable components. For example, the failure of a cable in a moving application leads to downtime, losses and high maintenance costs. Until now, the environmental impact of these failures has often been neglected.

For example, when producing a 4x1.5mm<sup>2</sup> PUR motor cable, approx. 298 kilogrammes of CO<sub>2</sub> are emitted per kilometer. If this motor cable needs to be replaced, the following avoidable CO<sub>2</sub> emissions are generated:

- For new production
- For disposal
- For replacement

The correct design of a cable and its guaranteed service life actively contribute to sustainability and climate protection. We offer a unique 4-year guarantee (previously 3 years) on all chainflex® cables in the catalogue to ensure planning reliability.

True to the motto "We want to make things happen", it is important to us to reduce our ecological footprint in addition to making applications move.

#### What does that mean specifically?

In our everyday work, we recycle up to 100% of our copper. This means that the copper can be reused in new cables. Before a cable reaches the end of its service life, there are also other aspects that allow us to act sustainably. For example, we sell residual lengths left on a cable drum at a 50% discount, so that

no waste is produced at this point. The fact that we have no cutting charges or minimum lengths also helps reduce waste. Our customers order just as much as they really need instead of an unnecessary amount of cable that ends up in the bin.

In addition, igus® sets great store by the quality of chainflex® products and the possibility to select exactly the right product for every application. This is only possible because igus® has gathered over 30 years of experience and test data in the largest laboratory for cables and e-chains®, which covers 4,000m<sup>2</sup>. This results in reliable statements on the durability and service life of a chainflex® cable. The chainflex® laboratory carries out special tests under realistic conditions, collecting data from over 2 billion test cycles with more than 1.4 million electrical measurements every year.

Continuous monitoring and documentation are carried out on 65 test systems with professionally qualified personnel. The e-chains® with cables are tested on a wide variety of travels, in horizontal or hanging applications. The same applies to the multi-axis triflex® systems in conjunction with chainflex® CFROBOT cables, where the focus is particularly on torsion resistance.

#### Data on the chainflex® test laboratory

- The industry's largest test lab for moving cables
- 30 years of experience
- 4,000m<sup>2</sup> test area
- 65 test stations
- 800 tests conducted in parallel
- 2 billion double strokes per year
- 1.4 million electric measurements per year
- Audited and certified by Underwriter Laboratories (UL)

Continuous testing, weekly batch tests and the constant endeavour to continuously improve the chainflex® cables actively prevent environmentally harmful waste caused by defects, failures or replacements at the customer's premises.



#### Four year chainflex® guarantee

The unique chainflex® guarantee has been extended to 4 years. The clear statements on the guaranteed service life give customers additional planning safety as our promise is four times longer than the statutory warranty.



Guarantee statement based on billions of test cycles in the largest test laboratory (4,000m<sup>2</sup>) in the industry.



## Online tools

Our digital tools support the correct selection and design of the cable. Based on the billions of test data from our laboratory, exact statements are made regarding the service life, which are also confirmed in writing. This massively increases planning reliability and reduces unplanned downtime in an application. In the end, the long shelf life of a product always means a clear plus for the environment and resources.

## Where is all of this going?

Of course, we know that neither the industry nor we are perfect and that

there is still room for improvement when it comes to sustainability. We need to focus on this topic even more!

Resources are becoming scarcer and we are therefore committed to making chainflex® as sustainable as possible in future. We also intend to improve our way of working even further by implementing measures that are in line with quality, durability and a conscious use of resources. This includes further optimisation of our products, alternatives to copper, even more local production for even shorter transport routes and much more.

We are looking forward to making a difference and being part of something big and hope that you too can benefit from our approach in the long term.



**Rainer Rössel**  
Head of Business Unit  
chainflex® cables



**Katharina Wielpütz**  
Business Development Manager  
chainflex® cables



# Introducing the new chainflex® products

All details online as of 12th November 2024,  
the countdown is on ...



24-CF-25

**Name:** [REDACTED]

**Category:** [REDACTED]

**Release date:** 12th November 2024

**What I like:** calculations, figures, data, facts

**What I don't like:** inaccuracy, registrations, extra costs

**My strengths:** as I am particularly good at calculating, I am very helpful when it comes to planning systems and machines. I am good at combining different parameters and it is easy for me to suggest solutions or alternatives.

**Problems I can solve:** unplanned breakdowns and machine downtimes due to cable failures in the energy chain often lead to problems and high costs. My precise calculations prevent this from happening. I also offer a customised certificate at the end of my calculations.

**siblings:** none

**My favourite place to spend time:** online

**Special features:** available at all times and everywhere, free of charge



**igus 4-year  
chainflex cable  
guarantee and  
service life  
calculator based  
on 2 billion test  
cycles per year**

**WITHOUT**  
... Packaging costs  
... Minimum order quantity  
... Cutting charges  
From 1 meter & from stock  
chainflex

New cables for use in energy chains

# Additions to the product range



New

We are adding new products to our portfolio – available from 12th November 2024

New cables for use in energy chains

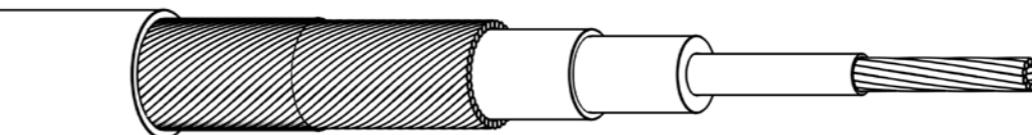
On the following pages you will find initial information in the form of fact sheets that will give you an idea of the new chainflex® products we are offering this autumn. Scan the respective QR codes and find out whether you were right with your guess.

- ▲ Huge range with over 1,350 cables: motor, bus, control, data, servo, fibre optic, robot and measuring system cables
- ▼ With the chainflex® price check, you can quickly find the right cable for your needs. Every electrical specification is available in seven cable qualities. The choice is yours: cost-effective price or cable for high technical requirements.
- Tested in our own laboratory on over 4,000m<sup>2</sup>, 64 systems and 800 parallel tests
- Sustainability thanks to a longer service life is practical resource protection, enhancing economic efficiency and protecting the environment
- Calculate the cables service life online: [igus.eu/chainflexlife](http://igus.eu/chainflexlife)



## Introducing the new chainflex® products

All details online as of 12th November 2024,  
the countdown is on ...



Name: [REDACTED]

Category: [REDACTED]

Release date: 12th November 2024

**What I like:** high power transmission for long travel distances with minimal losses, long travels, harsh environments, oil

**What I don't like:** torsion, PFAS

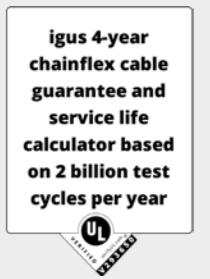
**My strengths:** I can transmit very high electrical currents and voltages with a bend radius of 10xd in an energy chain. Thanks to my particularly abrasion-resistant outer jacket, I am extremely robust and can achieve travels of up to 400m and more. I am guaranteed to achieve 10,000,000 double strokes in the application.

**Problems I can solve:** I can supply power to large systems with high energy requirements over long travels. Cold temperatures are not a problem because I am ideal for outdoor use and withstand temperatures down to -20°C in energy chains.

**siblings:** motor cable: I am the most powerful of my siblings and am often referred to as a high-power cable.

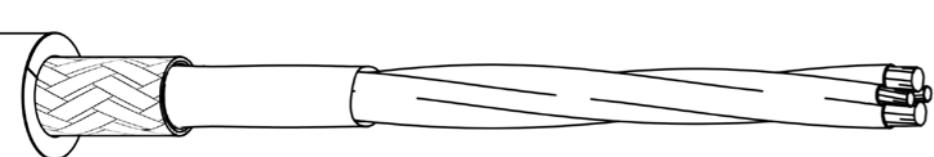
**My favourite place to spend time:** wherever large amounts of energy have to be transferred over long distances: ship to shore, crane applications, conveyor technology, stacker reclaimer, rail-mounted container gantry crane.

**Special features:** 4-year guarantee, available from stock



# Introducing the new chainflex® products

All details online as of 12th November 2024,  
the countdown is on ...



Name: [REDACTED]

Category: [REDACTED]

Release date: 12th November 2024

**What I like:** Large data volumes, long travels, small bend radii, oil, temperatures down to -35°C in energy chains

**What I don't like:** metals, halogens, PFAS

**My strengths:** I can transmit any bus system over a very long travel and ensure a high level of EMC safety. Compared to bus cables, I can easily be used in at least 50% smaller bend radii in an energy chain.

**Problems I can solve:** I am an excellent problem solver for applications with long travels where data must also be transmitted. I am particularly helpful with energy chains and EMC problems. Thanks to my oil resistance, applications with oil are no problem.

**iblings:** bus cables. I am the strongest of my siblings because I ensure maximum data and interference security. Eavesdropping on sensitive data is not possible with me.

**My favourite place to spend time:** wherever data needs to be transmitted securely. It doesn't matter whether I'm working indoors or out: cranes, wastewater treatment plants, machine tools, port cranes, semiconductor industry, stage and camera technology, storage and retrieval units, woodworking, robotics and much more.

**Special features:** 4-year guarantee, available from stock



# Introducing the new chainflex® products

All details online as of 12th November 2024,  
the countdown is on ...



Name: [REDACTED]

Category: [REDACTED]

Release date: 12th November 2024

**What I like:** oil and coolant, temperatures from -25°C to + 90°C in energy chains

**What I don't like:** torsion, PFAS, halogens

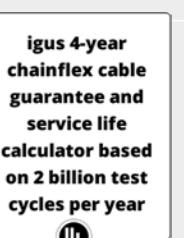
**My strengths:** I offer high power reserves to optimally fulfil the requirements of state-of-the-art drive systems. I am therefore particularly good in applications that require high flexibility, mechanical resistance and low capacitance.

**Problems I can solve:** as I am suitable for almost every drive manufacturer, I can easily be connected to different motors and supply them with power. If I am used for applications that are exported to North America, this is not a problem as I have a [REDACTED] UL/CSA AWM approval.

**iblings:** motor cable. We have many things in common, such as the task of supplying a motor with electrical energy. Our nominal voltage of 600/1,000V is also the same. However, I differ from the motor cables in terms of structure as I have additional shielded core pairs in addition to the main wires, which help optimise the power supply.

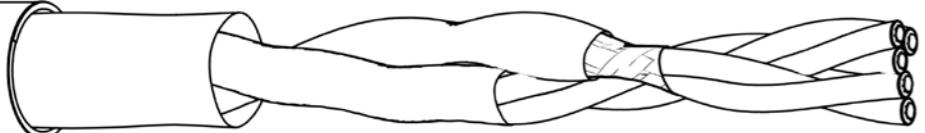
**My favourite place to spend time:** with all types of drive technology, from servo motors to linear drives, machine tools, handling technology

**Special features:** 4-year guarantee, available from stock, UL-certified



# Introducing the new chainflex® products

All details online as of 12th November 2024,  
the countdown is on ...



Name: [REDACTED]

Category: [REDACTED]

Release date: 12th November 2024

**What I like:** oil, coolant, temperatures from -25°C to +80°C in energy chains

**What I don't like:** torsion, halogens, PFAS

**My strengths:** measuring temperatures. I am also particularly good at dealing with large temperature differences and am robust in ambient temperatures of up to 1,300°C.

**Problems I can solve:** I support the monitoring of constant temperatures. Transferring tiny voltages (often in the millivolt range) safely and reliably, even with large temperature differences, is no problem for me.

**siblings:** none

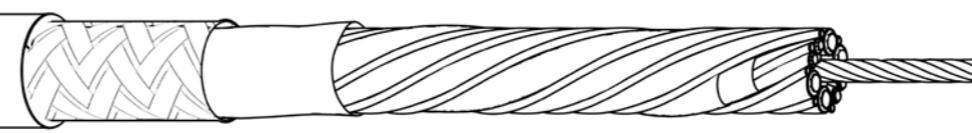
**My favourite place to spend time:** wherever temperature has to be measured reliably and the measured values have to be transmitted in motion: injection-moulding machines, plastic-welding systems, industrial dryers

**Special features:** available from stock



# Introducing the new chainflex® products

All details online as of 12th November 2024,  
the countdown is on ...



Name: [REDACTED]

Category: [REDACTED]

Release date: 12th November 2024

**What I like:** 40 drive manufacturers, data transmission, monitoring

**What I don't like:** PFAS, torsion, long distances

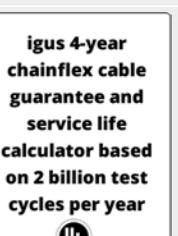
**My strengths:** setting machines in motion

**Problems I can solve:** every drive requires a precisely fitting cable that is compatible with the manufacturer's standards. The availability of the right cable, especially in the field of energy chain cables, can be a problem. The expansion of my product portfolio in the field of drive technology is the perfect solution as there is even more choice for a wide variety of applications from different manufacturers. With a bend radius of up to 10xd, I can also be used in small installation spaces in the energy chain to save space. In addition, all extensions are available from stock.

**siblings:** servo and motor cables

**Where I like to spend my time:** wherever motors are used: machine tools, storage and retrieval units, plastics machines, woodworking, robotics and much more

**Special features:** 10,000,000 double strokes guaranteed, available from stock with or without connector, with 4-year guarantee



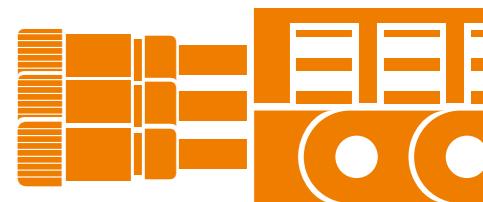


## Accuracy up to 50µm

Ultrasonic testing system for heavy plates in the steel industry. chainflex® cables harnessed and ready-to-connect in readychain® energy chains.

GO ZERO Waste ... sustainable energy supply

# readycable® readychain®



**58**

**Suitable for 40 manufacturers**  
readycable® cables  
for drive technology

**59**

**Suitable for Berger Lahr**  
Extension readycable®  
cables for drive systems

**60**

**Suitable for Siemens S200**  
Extension readycable®  
cables for drive systems

**61**

**SPE with Harting T1 PushPull**  
New connector  
for Single Pair Ethernet

## Blog topics

#assembly, page 24  
motion plastics®  
for easy assembly



## Online tool

readycable® finder  
[igus.eu/readycable-finder](http://igus.eu/readycable-finder)



## Catalogue

Available soon: everything about ready-to-connect cables.  
Tested and with a 4-year guarantee. MAT0075667.20

**igus.eu/news-readycable**

New readycable® cables for drive technology

# Suitable for 40 manufacturers



New

Expansion of the drive technology product range – from 12/11/2024

readycable® cables for drive technology

We are expanding the readycable® product range for drive technology with cables suitable for two other manufacturers.

Ready-to-connect and quality-checked cables suitable for 40 manufacturers, ready to ship in 5 working days.

To your required length, no minimum order quantity.

▲ The seven qualities always give you the most cost-effective cable that is guaranteed to work in your application

▼ Reduce storage space: ready to ship in 5 business days, to your required length, no minimum order quantity, no cutting charges

■ 100% tested (test seal of approval and test report)

● Individual service life calculation, exactly what you need

● Get the right drive cable in just two steps, online: [igus.eu/readycable](https://igus.eu/readycable)



New

## Suitable for Berger Lahr

Extension readycable® drive cables

Expansion of the readycable® product range of ready-to-connect cables suitable for Berger Lahr.



▲ The seven qualities always give you the most cost-effective cable that is guaranteed to work in your application

▼ Reduce storage space: ready to ship in 5 business days, to your required length, no minimum order quantity, no cutting charges

■ 100% tested (test seal of approval and test report) in the 4,000m<sup>2</sup> igus® test laboratory

● Long-lasting cable materials  
+ high-quality plug-in connectors + machining  
= Guaranteed reliability

● Individual service life calculation online:  
[igus.eu/readycable](https://igus.eu/readycable)



## Find and order the right drive cable online in 2 steps

Select with the readycable® finder, ready to ship in 5 working days



New readycable® cables for drive technology

# Suitable for Siemens S200



New

Delivered in 5 business days, to your required length, no minimum order quantity

New readycable® cables for drive technology

Discover the new readycable® suitable for Siemens - customised for your S200 drive technology: no minimum order quantity and to your required length, with centimetre accuracy (no cutting charges). Ready to ship in only 5 days.

- ▲ The seven qualities always give you the most cost-effective cable that is guaranteed to work in your application
- ▼ Reduce storage space: ready to ship in 5 business days, to your required length, no minimum order quantity, no cutting charges
- 100% tested (test seal of approval and test report)
- Individual service life calculation, exactly what you need
- Find the right drive cable online in 2 steps: [igus.eu/readycable](https://igus.eu/readycable)



New HARTING T1 Industrial Mini PushPull connector

# PushPull Single Pair Ethernet



New #assembly

Highest data transmission, smallest installation spaces

New HARTING T1 Industrial Mini PushPull connector

Continuous Industrial Ethernet communication with just one core pair, ideal for small installation spaces. Now also harnessed and ready-to-connect with the HARTING T1 Industrial Mini PushPull. This means that there are already 6 igus® assemblies for Single Pair Ethernet.

- ▲ Highest data transmission with only one core pair
- ▼ Ideal for realising small installation spaces
- 100% tested (test seal of approval and test report)
- Future-proof data communication
- Calculate the guaranteed service life of the cable online



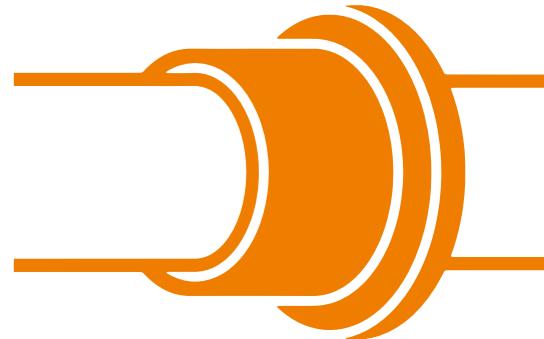


## Lubrication-free fertilisation

The Swiss company Brunner Spezialwerkstatt AG developed an innovative and emission-reducing manure-spreading system with lubrication-free polymer bearings.

GO ZERO Lubrication ... save lubrication time and costs

# iglidur® plain bearings



**64**

Wear-resistant, without PTFE  
iglidur® W300PF plain bearings

**66**

Wear-resistant and flexible  
iglidur® K230 double flange bearings

**66**

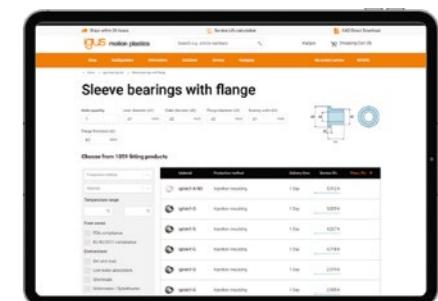
Resistant to chemicals, low-cost  
iglidur® C160 disc springs

**67**

100% dirt-repellent  
iglidur® SRSG03

## Blog topics

#PTFE, page 22  
motion plastics® for PTFE-free applications



## Online tool

iglidur® expert  
[igus.eu/ibh](http://igus.eu/ibh)



## Catalogue

Find out everything you need to know about iglidur® bearing technology. Take a look at application examples and additional information. MAT0075651.20

**igus.eu/news-iglidur**

# Wear-resistant, without PTFE



New **#PTFE**

## For extreme endurance without PTFE

### iglidur® W300PF plain bearings

The newly developed material iglidur® W300PF offers the performance of the proven classic endurance runner iglidur® W300 - without any PTFE.

- ▲ Highest wear resistance
- ▼ Reduced maintenance costs
- Same performance compared to iglidur® W300, tested in the igus® plain bearing laboratory
- Dispense with PTFE and PFAS



From development

## Insight into material development



The current debate about the ban on PFAS in plastics poses two challenges for materials development at igus: Firstly, it requires a comprehensive evaluation of existing materials and manufacturing processes to determine the extent to which PFAS are used. This is a complex task, as the substances are used in many plastics due to their chemical stability and superior properties. In addition, only around 100 PFAS substances can be detected by state-of-the-art measurement technology. We are investing heavily into the testing of our materials and liaising with our suppliers about the ingredients of the components we purchase.



igus® material development and compounding

The development of alternatives that have similar properties without harming the environment is another challenge. Intensive research and development is required to find or produce materials that fulfil the technical and ecological requirements.

igus® is well positioned to overcome these challenges. We invested in the research and development of alternative materials right at the start of the Europe-wide discussion about a possible ban on various PFAS and are working closely with suppliers. Regardless of the outcome of the political and public debate about the ban on PFAS, we will be able to offer our customers a wide range of products in which we dispense with the measurable and ecologically questionable PFAS.

With in-house material development and compounding, igus® can react quickly to changes and also has an experienced team that is able to develop innovative solutions. This combination of expertise, resources and agility makes igus® a valuable partner for manufacturers who need to implement moving parts without PFAS.

„PFAS-free“: This is how igus® denotes all materials that have been tested PFAS materials considered critical for the environment and health according to the SQP M1227 test method (LC-MS/MS and GC-MS). Exceptions are ubiquitous traces that cannot be completely excluded due to external influences, as well as substances from the group of fluoropolymers. PTFE, which is considered a harmless chemical, is also a popular solid lubricant at igus® and is contained in many bearing materials. In addition, igus® already has numerous materials without PTFE in its product range and is gradually developing others.



**Dr. Magnus Orth**  
Head of igus® material centre

New

## Wear-resistant and flexible

### Double flange bearings made of iglidur® K230

The iglidur® K230 material offers low moisture absorption and even more flexibility compared to the iglidur® M250 clip bearings.

- ▲ Lower moisture absorption (only 0.8%) and more flexibility
- ▼ Cost-effective, especially for large quantities
- Tested in the igus® plain bearing laboratory
- Lubrication-free - no lubricants are released into the environment



Plus

## 100% dirt-repellent

### iglidur® SRSG03

The standard program is now available for diameters of 30, 40, 50, 60 and 70mm.

- ▲ Reliable protection from dirt and dust ingress
- ▼ Reduces downtime and maintenance due to long service life
- No dirt ingress after 24 hours in the test rig
- Allows 100% lubrication-free operation



New

## Chemical resistance, low-cost

### iglidur® C160 disc springs

iglidur® C160 disc springs are particularly resistant to chemicals and cost-effective.

- ▲ Higher chemical resistance than iglidur® J
- ▼ Up to 50 % lower costs compared to iglidur® J
- Tested in the igus® plain bearing laboratory
- Environmentally friendly, no additional lubricants needed



# GO ZERO Lubrication



1.7 million hours of maintenance time for escalators. Why? Go zero lubrication! With AI!

igus®





### Fast, straight, precise

From the beginning to the end of the belt, 1,400 lubrication-free iglidur® rollers are used as smooth-running conveyor rollers.



GO ZERO Lubrication ... save lubrication time and costs

# iglidur® rollers



Tech up



Cost down



Proof



Sustainability



Digital

70

**Universal solution for food contact**  
Knife edge rollers made of iglidur® A181

71

**Wear-resistant all-rounder**  
Knife edge rollers made of iglidur® W301

71

**Particularly wear-resistant in kneading applications**  
Guide rollers made of iglidur® W301

### Blog topics

**#food, page 21**  
motion plastics® for the food industry



### Sample box

**iglidur® rollers sample box**  
[igus.eu/rollers-sample-box](http://igus.eu/rollers-sample-box)



### Catalogue

Find out everything you need to know about iglidur® bearing technology.  
Take a look at application examples and additional information. MAT0075651.20

**[igus.eu/news-rollers](http://igus.eu/news-rollers)**

# Universal solution for food contact



## Plus #food

### FDA-compliant and clearly visible

Knife edge rollers made of iglidur® A181

Suitable for use in direct contact with food. They are the ideal solution for machines in the food and packaging industries, medical equipment manufacturing, for small household equipment, etc. Even where wet cleaning contact occurs, the material is characterised by the lowest moisture absorption.

- ▲ Visually detectable
- ▼ Elimination of need for maintenance saves costs for lubricants and maintenance work
- Up to 4 times more wear-resistant than iglidur® A180
- Maintenance-free dry operation without lubricants



## Plus

### Wear-resistant all-rounder

Knife edge rollers made of iglidur® W301

This endurance classic has the highest resistance to external influences and the lowest coefficient of wear of all previous roller materials in almost all test parameters.

- ▲ Lowest wear rates of all iglidur® roller materials to date
- ▼ Lubrication- and maintenance-free, so extended maintenance intervals
- Up to 6 times more wear-resistant than iglidur® H1
- Environmentally friendly, no additional lubricants needed



## Plus

### Particularly wear-resistant in kneading applications

Guide rollers made of iglidur® W301

In almost all test parameters, these guide rollers impress with the highest wear resistance of all roller materials tested to date.

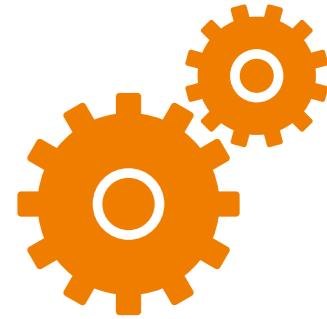
- ▲ Highest wear resistance of all iglidur® roller materials to date
- ▼ Long service life - saving on regular maintenance work
- Up to 6 times more wear-resistant than iglidur® H1
- Lubrication- and maintenance-free, so no environmental pollution





GO ZERO Lubrication ... save lubrication time and costs

# drygear® gear and gearbox technology



74

For wet environments  
drygear® Apiro®

75

Articulated coupling for connecting two shafts  
drygear® universal joint

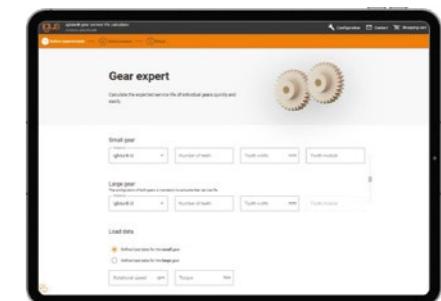
75

Force transfer from drives  
that are difficult to access  
drygear® flexible shaft

## Blog topics

#food, page 21  
motion plastics® for the food industry

#assembly, page 24  
motion plastics® for easy installation



## Online tool

Gear expert  
[igus.eu/gear-expert](http://igus.eu/gear-expert)



## Catalogue

Find out everything you need to know about iglidur® bearing technology.  
Take a look at application examples and additional information. MAT0075651.20

**igus.eu/news-drygear**

# For wet environments



New #food

## Gearbox with stainless steel components for wet environments

drygear® Apiro®

The new version of our Apiro® gearbox is the ideal solution for applications in humid environments.

- ▲ The stainless-steel version is ideal for regular wet cleaning environments
- ▼ A modular structure and the simple connection of individual components allow cost-effective solutions for an infinite number of applications
- Up to 2.5Nm in continuous operation and application temperatures of +5°C to +50°C
- Lubrication and maintenance-free
- Our CAD database gives you access to 2D/3D CAD files in various formats available for download, free of charge: [igus-cad.com](http://igus-cad.com)



New #assembly

## Articulated coupling for connecting two shafts

drygear® universal joint

The new corrosion-resistant universal joints are suitable for a modular design to transmit the rotary motion between the gearboxes, e.g. for format adjustment.

- ▲ Force transfer between the gearboxes
- ▼ Reduce maintenance costs through faster assembly
- Permissible torque transmission of up to 12Nm, tested in the igus® laboratory
- These universal joints are resistant to corrosion and suitable for applications that require regular wet cleaning



New #food

## Force transfer from drives that are difficult to access

drygear® flexible shaft

The new drygear® flex shaft for force transfer to drives that are difficult to access.



- ▲ For the food industry
- ▼ Lower maintenance costs due to corrosion resistance
- Stainless steel is particularly resistant to moisture, saltwater and other corrosive substances
- Environmentally friendly, no additional lubricants needed





## Quiet consistent movement

Built-in slewing ring bearing for free and smooth rotation.



GO ZERO Lubrication ... save lubrication time and costs

# iglidur® slewing ring bearings



Tech up



Cost down



Proof



Sustainability



Digital

78

Flexible retrofit

iglidur® PRT-04 accessories

79

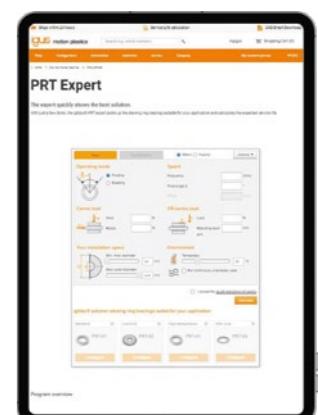
Lightweight, slim, cost-effective

iglidur® PRT-06 slewing ring bearings

## Blog topics

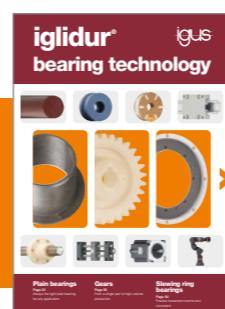
#assembly, page 24

motion plastics® for easy installation



## Online tool

iglidur® PRT expert  
[igus.eu/prt-expert](http://igus.eu/prt-expert)



## Catalogue

Find out everything you need to know about iglidur® bearing technology.  
Take a look at application examples and additional information. MAT0075651.20

**[igus.eu/news-prt](http://igus.eu/news-prt)**

# Flexible retrofit



New #assembly

## Easy additions with accessories

### iglidur® PRT-04 accessories

Expansion of the PRT-04 modular system:

1. Manual clamping consisting of manual clamp and aluminium block
2. Adjustment clamp in two variants: 90 degrees and 45 degrees
3. Tooth profile: AT10, HTD5M, T10 - anodised aluminium

► PRT-04 modular system: customised solutions for a wide range of applications

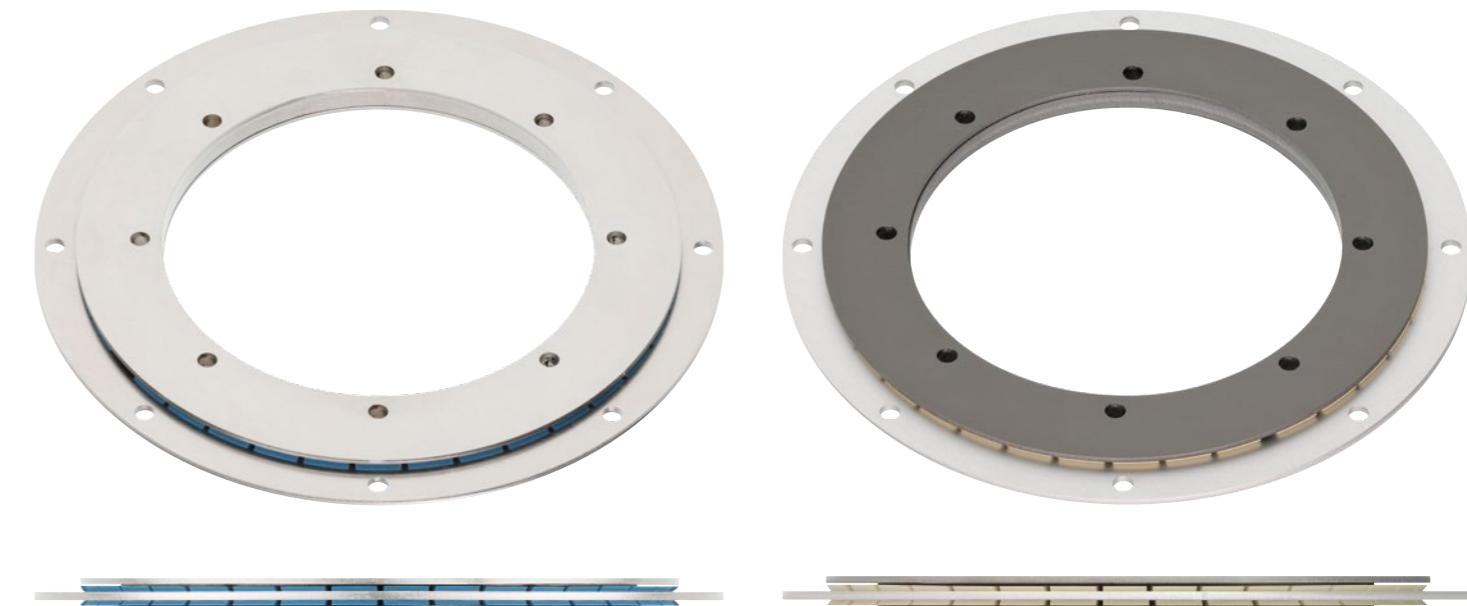
▼ Retrofit possible also for existing PRT-04 slewing ring ball bearings

■ Performance and safety optimisation, longer service life and standards compliance

● Maintenance-free and lubrication-free



# Lightweight, slim, cost-effective



New

## Low-cost with aluminium or stainless steel

### iglidur® PRT-06 slewing ring bearings

From product study to high-volume production: particularly cost-sensitive bearing solutions made of plastic sliding elements and aluminium or stainless steel. Available with the following materials: anodised aluminium, stainless steel or raw aluminium with sliding elements made of iglidur® J or A181 (FDA-compliant). The slewing ring bearing is available in sizes 100, 150, 200 and 300mm.

► Wide product range, durable material combinations and lightweight

▼ The new PRT-06 series is characterised by low costs

■ Up to 85% more cost-effective and at 8mm only half the height (compared to PRT-04)

● Environmentally friendly use in dry operation, 100% lubrication-free

● The PRT slewing ring bearing configurator determines the right slewing ring bearing for your application and allows you to calculate its service life: [igus.eu/prt-expert](http://igus.eu/prt-expert)





## Maintenance-free conveyor belts

Knife edge rollers made of tribo-polymers were developed for Krones to ensure reliable use around the clock.

GO ZERO Lubrication ... save lubrication time and costs

# iglidur® bar stock



Tech up



Cost down



Proof



Sustainability



Digital

**82**

**Endurance runner without PTFE**  
iglidur® W300PF round bars

**83**

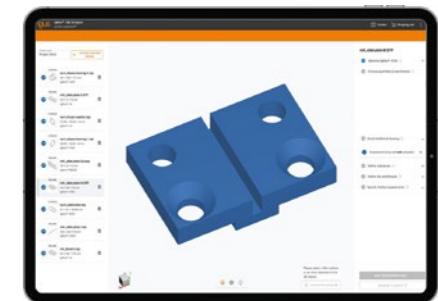
**The all-rounder, without PTFE**  
iglidur® JPF plates

**84**

**Sophisticated and cost-effective**  
Bar stock ECON materials

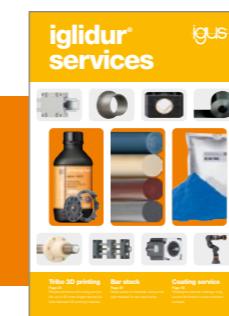
## Blog topics

**#PTFE, page 22**  
motion plastics® for PTFE-free applications



## CNC special parts

**Online services**  
[igus.eu/cnc](http://igus.eu/cnc)



## Catalogue

Find out everything you need to know about iglidur® services.  
Take a look at application examples and additional information. MAT0075652.20

**[igus.eu/news-barstock](http://igus.eu/news-barstock)**

iglidur® W300PF round bars

# Endurance runner without PTFE



New #PTFE

## High wear resistance

iglidur® W300PF round bars

Components made from iglidur® W300PF round bars show very good resistance to wear and media, low moisture absorption and are also PTFE-free.

- ▲ PTFE-free
- ▼ Economical use due to durability
- Same performance compared to iglidur® W300, tested in the igus® laboratory
- 100% lubrication-free
- Order individual machined parts made of bar stock online: [igus.eu/cnc](https://igus.eu/cnc)



New #PTFE

## The all-rounder, without PTFE

iglidur® JPF plates

Components made from the iglidur® JPF plates show very good resistance to chemicals and wear, low moisture absorption and are also PTFE-free.



▲ High wear resistance without PTFE

▼ Low-cost material

■ Same performance compared to iglidur® J, tested in the igus® laboratory

● Environmentally friendly, no additional lubricants needed

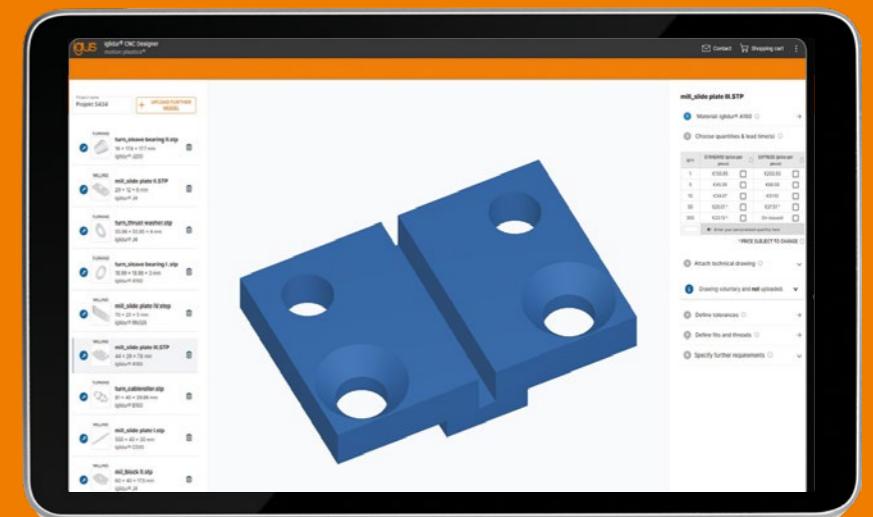
● Order individual machined parts made of bar stock online: [igus.eu/cnc](https://igus.eu/cnc)



## Get price, delivery time and service life in no time

Order CNC special parts quickly and easily online - no problem. Supported by helpful functions such as multi-part upload, feasibility analysis, service life calculator, tolerance check and express option, you will receive all the relevant information you need to order your special part in just a few minutes.

**igus.eu/cnc**



# Sophisticated and cost-effective



## New

### Excellent price-performance ratio

#### Bar stock ECON materials

With the ECON series, we offer a new product range of high-quality and affordable materials. The materials offer sophisticated properties for a wide range of applications.

- ▲ New materials with diverse specifications
- ▼ Up to 50% more cost-effective than iglidur® materials
- All five materials tested in the igus® test laboratory
- Environmentally friendly, zero lubrication required
- Order individual machined parts made of bar stock online: [igus.eu/cnc](https://igus.eu/cnc)



#### From development

### The new series of bar stock ECON materials

As a material developer at igus® GmbH, I have the exciting task of finding innovative solutions. We work closely with our customers to develop solutions that are specifically tailored to their needs. This was also the case with the ECON materials project. The growing demand for low-cost materials that still fulfil high quality standards was the starting point for our developments. Our mission is to find "the most cost-effective solution which works" for our customer.

With the ECON series, we are creating a new product line alongside our tribologically mature iglidur® high-performance plastics, focussing on price and quality. In many applications, the focus is less on tribological properties and more

on price, good mechanical properties and quality.

Our aim was to develop materials that are not only cost-effective, but also have excellent mechanical properties and are resistant to environmental influences. A central aspect of our development work was the selection of suitable raw materials coupled with optimisations in the manufacturing process. By using state-of-the-art technologies and fine-tuning the process parameters, we have succeeded in further reducing production costs while improving the quality of the materials.

The first tests of our new materials have been extremely promising. The products showed excellent strength

and high resistance to chemical and mechanical loads. I am convinced that our new ECON series is a very good addition to our product range and offers our customers many advantages. By combining cost efficiency, high performance and quality, we offer a solution that meets the current requirements of the market.



**David Fingaß**  
Development Engineer bar stock



**FEC200**  
Electrically conductive



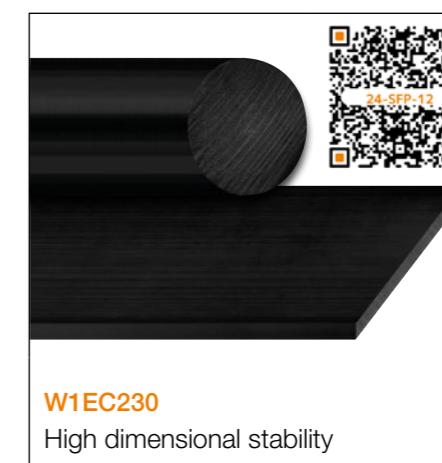
**PEC200**  
High rigidity



**REC200**  
Good mechanical specifications



**WEC230**  
High impact and impact resistance

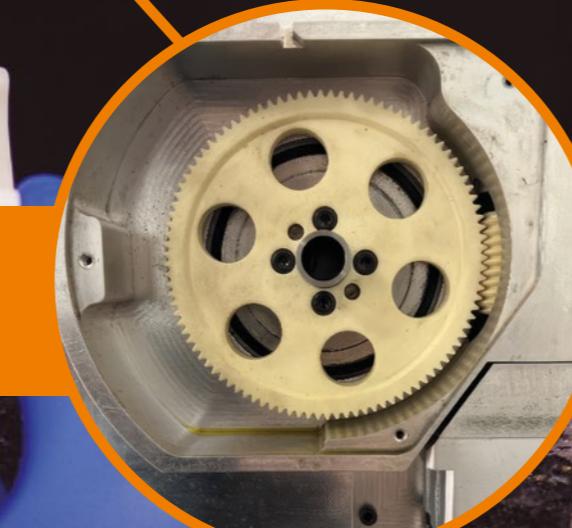


**W1EC230**  
High dimensional stability



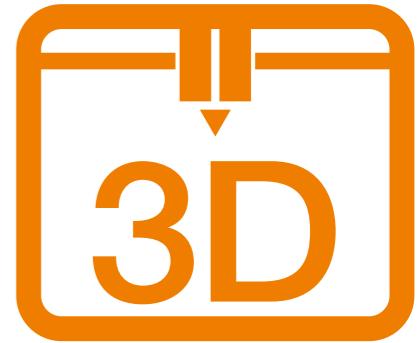
### Life-saving technology

Faster blood tests possible with 3D printed gears made from the wear-resistant iglidur® i3 material.



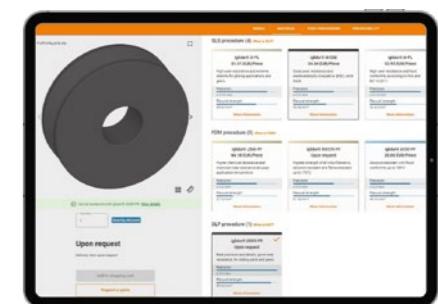
GO ZERO Lubrication ... save lubrication time and costs

# iglidur® 3D printing



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Quality surfaces, long service life  
iglidur® i150-BL tribofilament®



### Online tool

3D printing service  
[igus.eu/idd](http://igus.eu/idd)



### Catalogue

Find out everything you need to know about iglidur® services.  
Take a look at application examples and additional information. MAT0075652.20

**[igus.eu/news-3D-printing](http://igus.eu/news-3D-printing)**

iglidur® i150-BL tribofilament®

# Quality surfaces, long service life



Plus

## Our best-selling filament in black

iglidur® i150-BL tribofilament®

Our easy-to-process all-rounder filament iglidur® i150 is now also available in black with a great surface finish. Available in the shop in the 750g cardboard spool or as material in the 3D printing service online.

- ▲ Great surface finish for high-quality visible parts
- ▼ Produce sophisticated, functional components with affordable 3D printers
- More than 3x more wear-resistant and 78% lower coefficient of friction than PETG
- No component lubrication required due to integrated solid lubricants
- Print profiles for optimised print settings available to download free of charge:  
[igus.eu/filament-print-profiles](http://igus.eu/filament-print-profiles)



Sustainable cardboard spools

# 50% reduced CO<sub>2</sub> footprint

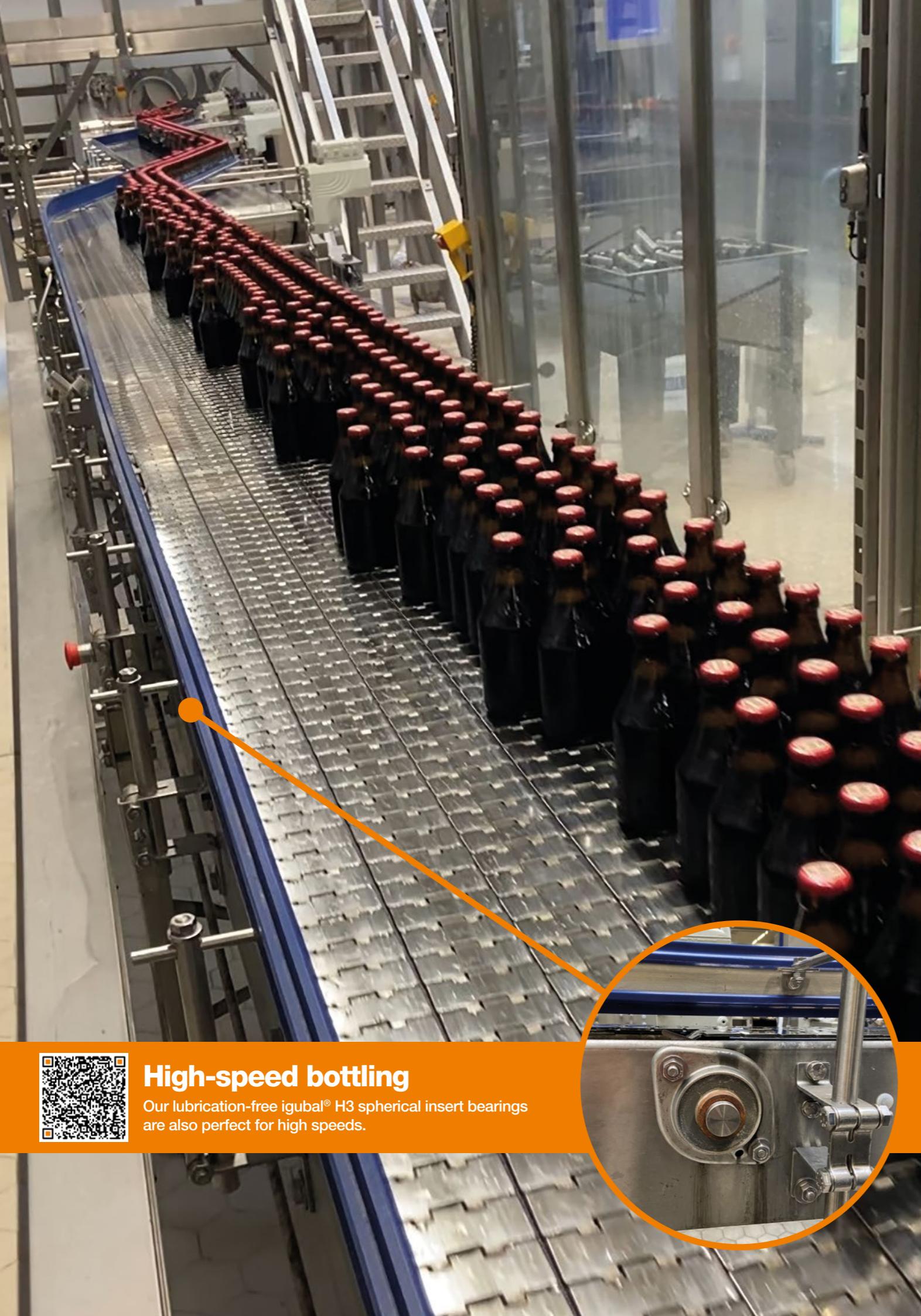


## 3D print filament on sustainable cardboard spool

After the changeover of the iglidur® tribofilament® i150, the tribofilaments® iglidur® i151, i180 and i180-BL are now also available in 750g-cardboard spool. Cardboard filament spools have a 50% lower carbon footprint than conventional polypropylene spools and are much easier for users to recycle.

**igus.eu/  
tribofilament**





GO ZERO Lubrication ... save lubrication time and costs

# igubal® spherical bearings



**92**

Plastic revolutionises  
CJM universal joint

**94**

In the name of sustainability  
Pillow block bearings KSTM-CL-ECO

**96**

Efficient, for square profiles  
Flange mounted bearings EFOM-SQ and EFSM-SQ

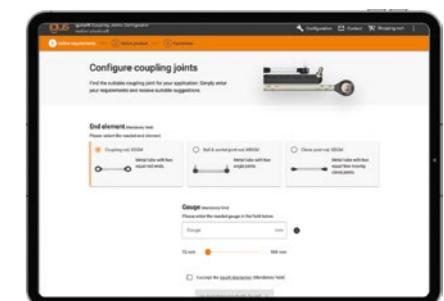
**96**

High speeds  
H3EM spherical insert bearings

## Blog topics

#packaging, page 20  
motion plastics® for hygiene-sensitive areas

#assembly, page 24  
motion plastics® for easy installation



## Online tool

Coupling joints configurator  
[igus.eu/gcc](http://igus.eu/gcc)



## Compact catalogue

Find out everything you need to know about igubal® spherical bearings.  
Take a look at application examples and additional information. MAT0075653.20



## High-speed bottling

Our lubrication-free igubal® H3 spherical insert bearings are also perfect for high speeds.

**igus.eu/news-igubal**

# Plastic revolutionises



Study #assembly

## Lightweight, cost-effective and corrosion-resistant

### Universal joint CJM

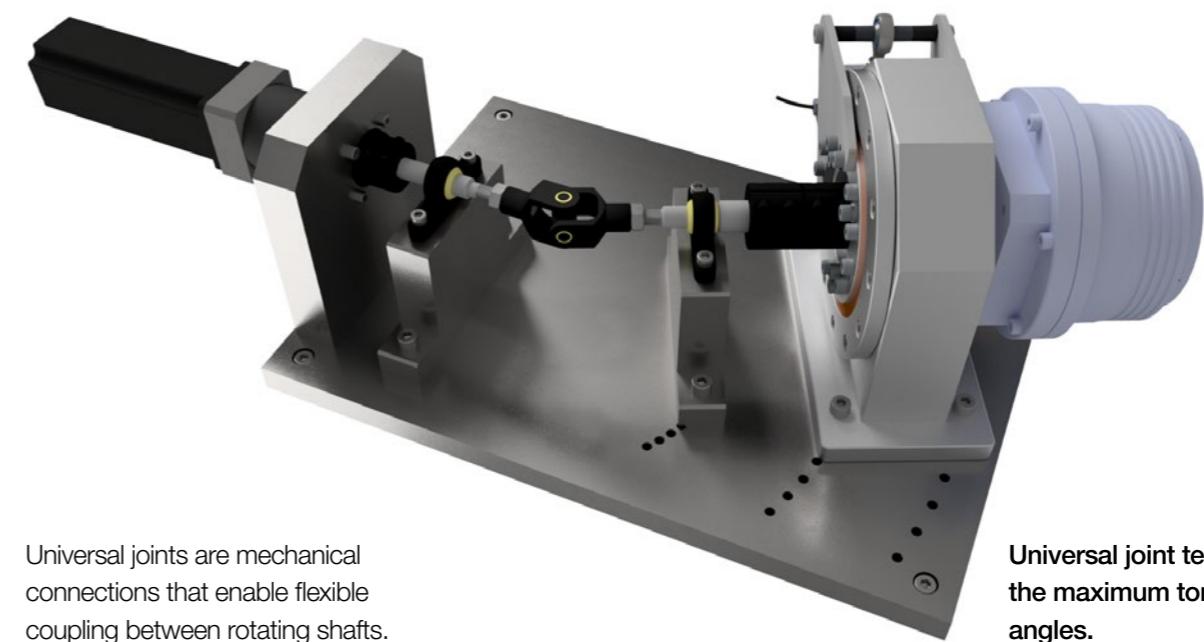
Our new plastic universal joints offer many advantages over metal, including weight reduction and cost efficiency.

- ▲ Lightweight, quiet and chemical-resistant
- ▼ Up to 45% more cost-effective than metallic solutions
- CJM-M10 successfully tested in the igus® laboratory, max. static torque 10Nm (safety included at 0°)
- Allows 100% lubrication-free operation



From development

## Findings on plastic universal joints



Universal joint test rig for determining the maximum torque at variable angles.

Universal joints are mechanical connections that enable flexible coupling between rotating shafts. Traditionally made of metal, the use of plastic universal joints is becoming increasingly popular as they offer numerous advantages over traditional metal designs. This study analyses the properties, advantages and challenges of plastic universal joints.

Various plastics are used to manufacture universal joints, including polyamide (PA) with excellent mechanical properties and wear resistance, polyoxymethylene (POM) with high rigidity and low friction, polyurethane (PU) with good flexibility and damping properties as well as polypropylene (PP), which is cost-effective and resistant to chemicals. Plastic universal joints must have high strength and rigidity in order to withstand the loads in industrial applications. Important mechanical properties include tensile strength, flexural strength, wear resistance and toughness.

Plastic universal joints are lighter than metal, which reduces the overall weight of machines and vehicles. They do not rust and are resistant to chemical influences. Plastics are generally more cost-effective in terms of material procurement and processing, they can dampen vibrations and noise better and

complex shapes and designs can be realised. Compared to metal, however, plastics offer lower tensile and flexural strength. At high temperatures, they can soften or melt and lose their mechanical properties over time. The long-term stability of plastic universal joints must therefore be researched further.

Plastic universal joints are used in the automotive industry, in robotics, in medical technology for surgical instruments and orthopaedic devices and in production technology for conveyor belts and packaging machines. A case study by a leading car manufacturer shows that the use of plastic universal joints in the drive shaft of a vehicle reduced the overall weight by 15%, improved fuel consumption by 5%, lowered production costs by 10% and reduced noise emissions by 20%.

Our igubal® universal joint consists of two clevis joints that are connected with a 90° offset via a central cross piece. The use of igumid® G gives the joint high impact resistance and temperature resistance from -40°C to +120°C.



**Jakob Fußbroich**  
Development Engineer igubal®

# In the name of sustainability



## Study

### Pillow block bearings made of ecological material

#### Pillow block bearings KSTM-CL-ECO

Housing made of 50% wood and spherical ball made of 94% renewable raw materials.

- ▲ Up to 30 % higher tensile strength compared to conventional design due to bionic notch geometry
- ▼ Reduction of maintenance and downtime
- Tested in the igus® laboratory for load and wear: 1,200N max. static radial tensile strain (safety included)
- Uses renewable resources, reducing fossil resource consumption



From development

### Bionic design meets ecological material



Inspired by nature - the bionic KSTM-CL-ECO pillow block bearing is made partly from renewable raw materials.

Our KSTM-CL pillow block bearings are innovative bearing solutions that have been specially developed for use in areas where conventional metal bearings often fail. These bearings are made of heavy-duty plastic materials that offer high wear resistance, corrosion resistance and smooth operation. The aim of this study is to investigate the performance of KSTM-CL-ECO pillow block bearings in various industrial applications.

A housing made of WPC (Wood-Plastic Composite) in combination with a spherical ball made of the plastic iglidur® N94 offers a number of advantages in terms of material properties, functionality and sustainability. WPC combines the natural properties of wood fibres with the durability of plastics, resulting in a robust yet lightweight housing. This lightweight design facilitates handling and assembly without compromising structural integrity. WPC is also characterised by its resistance to corrosion and weather, which makes it ideal for use in harsh environments where traditional materials such as metal or wood often fail.

Both WPC and iglidur® N94 require no regular care such as painting, sealing or lubrication. This not only lowers maintenance costs, but also reduces downtime in industrial applications.



The KSTM-CL-ECO pillow block bearing in a tensile test.

The spherical ball made of iglidur® N94 also offers outstanding sliding and wear properties that enable low-friction movements and long service life of the components. Since iglidur® N94 is self-lubricating, there is no need for

additional lubricants, which saves further maintenance costs.

WPC and iglidur® N94 also offer considerable advantages in terms of sustainability. WPC consists of a mixture of wood fibres and recycled plastic, which helps to conserve natural resources. The high resistance of these materials to environmental influences and wear extends the service life of the products and reduces material consumption over their life cycle. Both materials can be recycled at the end of their life cycle, which contributes to the circular economy and reduces the environmental impact of waste. WPC consists of 50% renewable raw materials, N94 even 94%. This reduces the consumption of fossil resources and minimises the CO<sub>2</sub> footprint. In addition, the combination of the lightweight WPC housing and the low-friction spherical ball made of iglidur® N94 leads to energy savings in the application, which contributes to an increase in efficiency and a reduction in costs, particularly in industrial plants.

In summary, housings made of WPC and spherical balls made of iglidur® N94 offer an excellent solution for a variety of applications. They combine high functionality and low maintenance with improved sustainability aspects, making them an attractive option for modern and environmentally conscious industrial applications.



**Julian Lewerenz**  
Development Engineer igubal®

New

## Efficient, for square profiles

### Flange mounted bearings EFOM-SQ and EFSM-SQ

The new flange mounted bearings are based on our EFOM and EFSM housings and, with a spherical ball made of iglidur® J4, offer a housing for square profiles.



- ▲ Radial load up to 10kN safety included
- ▼ Cost-effective and no minimum order quantity
- Successfully tested in the igus® laboratory, EFSM-25X25: 10kN max. static radial load (safety included)
- Environmentally friendly, no additional lubricants needed



## Plus **#packaging**

## High speeds

### H3EM spherical insert bearings

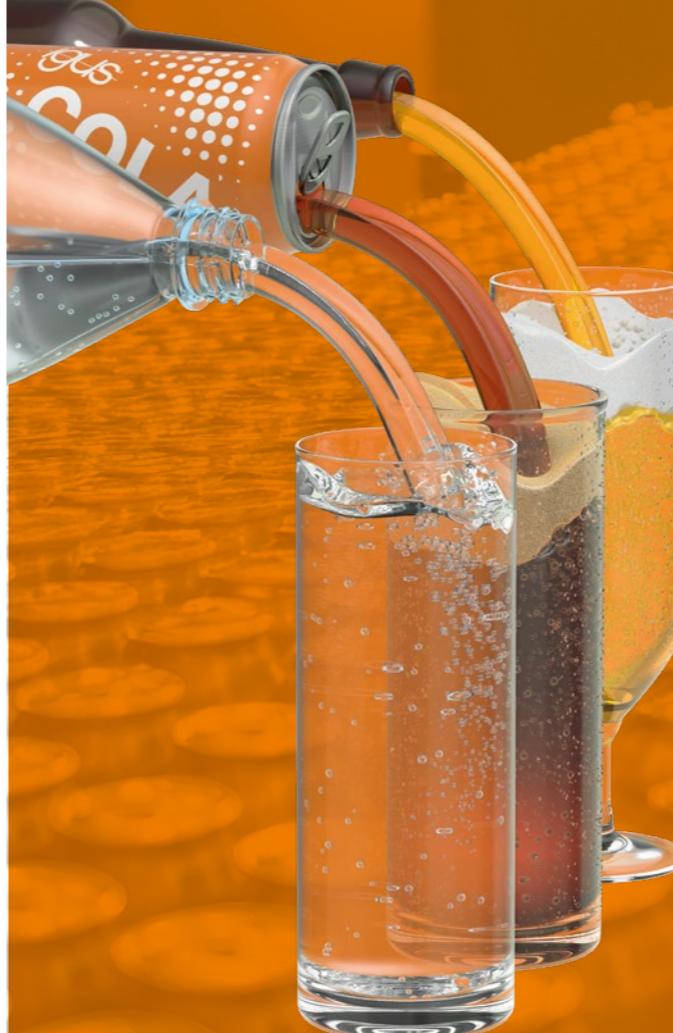
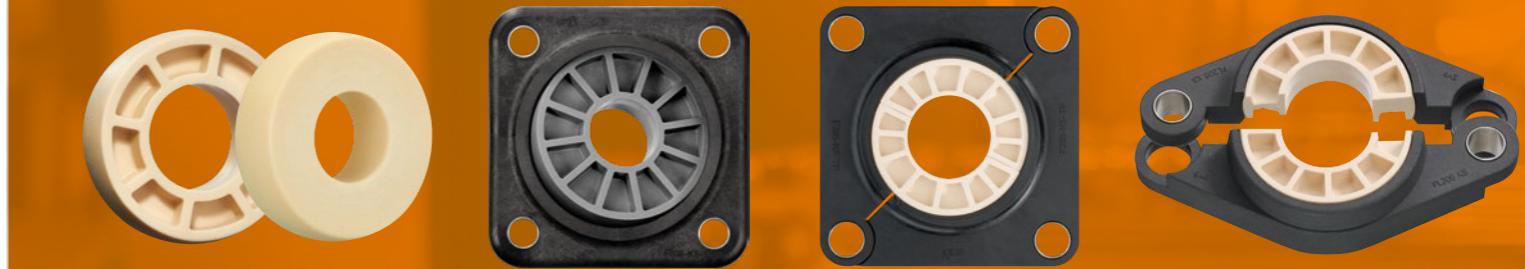


We have been testing our H3EM spherical insert bearings with a European brewery for more than two years. These can realise speed belt of an incredible 200 revolutions per minute - the equivalent of 55,000 beer bottles per hour.

- ▲ Speeds of up to 200rpm
- ▼ Simple installation of maintenance-free spherical insert bearings saves time and money
- Customer references with run times of over two years and load tests in the igus® laboratory, up to max. 21kN static radial load (safety included)
- Avoid regular bearing changes



# Reduce bottlenecks in your production lines ...



## Reduce bottlenecks in your production lines

Imagine a production line that runs as smoothly as your favourite drink. Our products make this a reality. “Reduce bottlenecks in your production lines“ is not just a motto, but also our promise to you: **minimum downtime, maximum efficiency.**

[igus.eu/reduce-bottlenecks](http://igus.eu/reduce-bottlenecks)





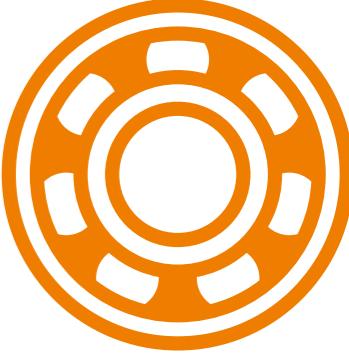
## Lubrication-free and dynamic

With xiros® conveyor rollers, the labeller is completely lubrication- and maintenance-free, dynamic and reduces downtime to a minimum.



GO ZERO Lubrication ... save lubrication time and costs

# xiros® ball bearings



Tech up



Cost down



Proof



Sustainability



Digital

# 100

### All-rounder for food

Radial deep groove ball bearings made of xirodur® B181

# 101

### Lightweight

Conveyor rollers with centre adapter

# 101

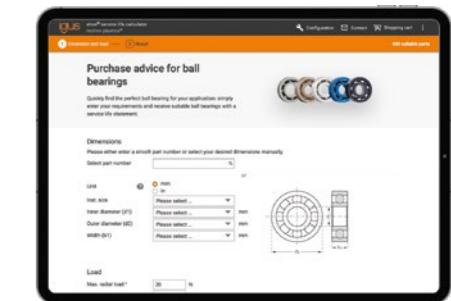
### For temperatures up to +120°C

Sliding ball transfer units

## Blog topics

#packaging, page 20  
motion plastics® for hygiene-sensitive areas

#food, page 21  
motion plastics® for the food industry



## Online tool

Purchase advice for ball bearings  
[igus.eu/xlr](http://igus.eu/xlr)



## Catalogue

Find out everything you need to know about xiros® ball bearings.  
Take a look at application examples and additional information. MAT0075654.20

[igus.eu/news-xiros](http://igus.eu/news-xiros)

Radial deep groove ball bearings made of xirodur® B181

# All-rounder for food



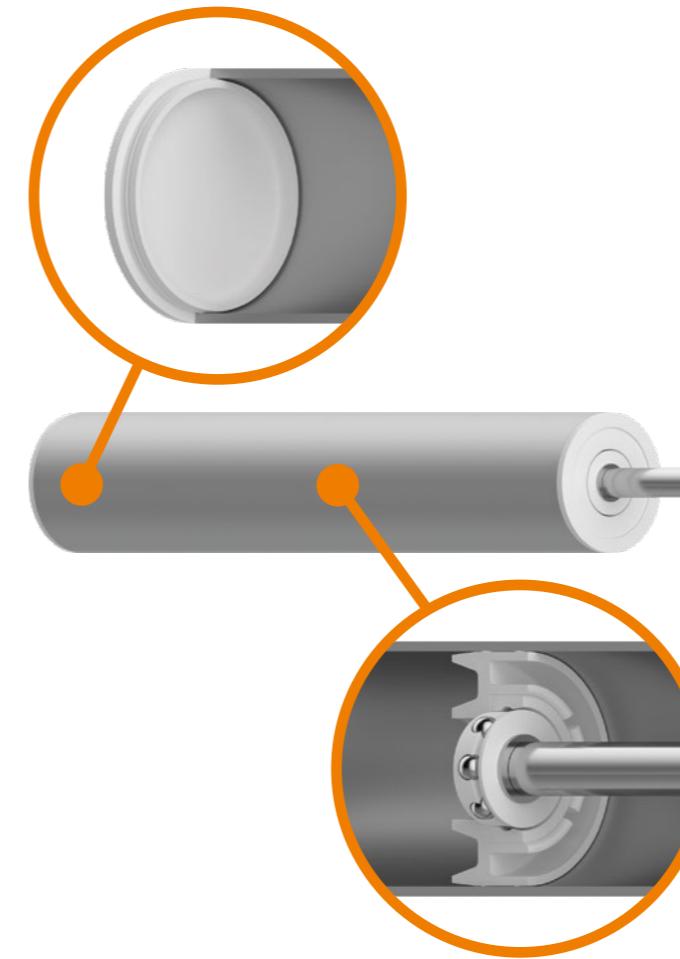
New #food

## The blue all-rounder for the food industry

Radial deep groove ball bearings made of xirodur® B181

You already know our material xirodur® B180. Now it is also available in blue as a visible part for the food industry. This material is the ideal solution for food-safe applications due to low wear, good resistance to chemicals and temperature fluctuations/extremes.

- ▲ Visible part: food-safe material in blue
- ▼ Up to 75% more cost-effective than stainless-steel ball bearings
- Comparable service life to xirodur® B180
- No lubrication, no environmental impact
- Online purchase advice: [igus.eu/xlr](https://igus.eu/xlr)



New #packaging

## Lightweight with up to 50% shorter shafts

Conveyor roller with centre adapter

To prevent the shafts from passing through the entire roller, the conveyor roller is closed on one side with a cover and supported in the centre with an adapter (bearing centring and mounting).

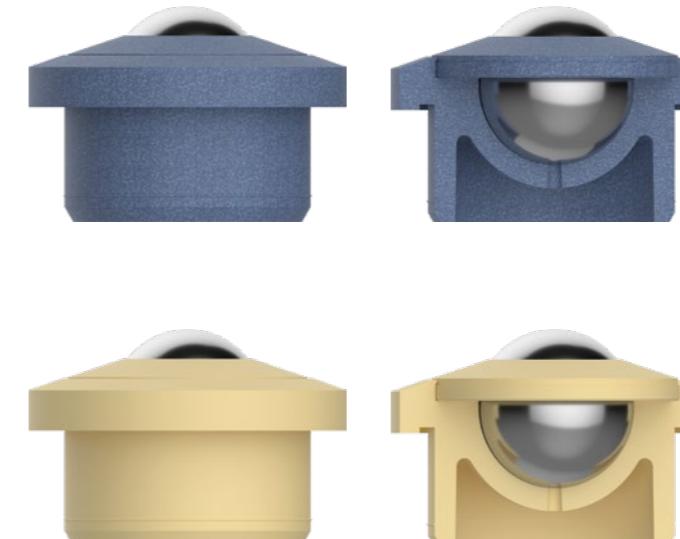
- ▲ Up to 50% shorter shafts and weight reduction
- ▼ Ready-to-install system eliminates expensive in-house production
- Tested and developed thanks to specific customer request
- 100% lubrication and maintenance-free
- Online purchase advice: [igus.eu/xre](https://igus.eu/xre)



Plus

## For temperatures up to +120°C

Product range addition of sliding ball transfer units



- ▲ Loads of up to 1,500N possible

- ▼ Cost-effective high-temperature material

- Tested on our xiros® ball transfer unit test rig: at 50N/0.15m/s drop of 0.1mm after 500hrs
- No external lubrication, environmentally friendly
- Online purchase advice: [igus.eu/xlr](https://igus.eu/xlr)





GO ZERO Lubrication ... save lubrication time and costs

# drylin® linear technology



**104**

Made from stainless steel: for the food and pharmaceutical industry

Miniature guide carriage

**105**

Flexible designs for quick cleaning

drylin® W linear guide systems for the food technology

**106**

PTFE-free locking carriages for adjustments in the interior area

drylin® WWP-06-20-04-LM / 10-30-06-LM

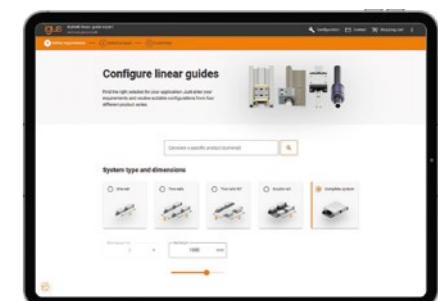
**108**

PTFE-free telescopic rails up to 2,000mm

Telescopic slides in size 60 drylin® NT-60-4

## Blog topics

- #food, page 21 motion plastics® for the food industry
- #PTFE, page 22 motion plastics® for PTFE-free applications



## Online tool

drylin® linear guide expert  
[igus.eu/dlx](http://igus.eu/dlx)



## Catalogue

Find out everything you need to know about drylin® linear technology.  
Take a look at application examples and additional information. MAT0075657.20

**igus.eu/news-drylin-linear**



# FDA-/EU10/2011-compliant



New #food

**Made from stainless steel:  
for the food and pharmaceutical industry**

Miniature guide carriages drylin® WW-06-20-T415-ES-A160

The FDA-compliant and corrosion-resistant linear carriage, size 0620, is made of high-quality stainless steel.

With compact connection dimensions that are identical to those of the miniature recirculating ball bearing, size 15, it offers a wide range of possible applications and is ideal for applications in the food, medical and pharmaceutical industries.

- ▲ The hygienic components are easy to clean and ensure maximum cleanliness and hygiene
- ▼ Suitable stainless-steel rails WS-06-20-ES are available in customised lengths
- WS-06-20 with carriage WW-06-20-06, load 50N, speed 0.04m/s, acceleration 0.5m/s<sup>2</sup>, rail length 400mm, 2,820,000 double strokes
- The linear carriage allows for dry operation without external lubrication and is therefore maintenance-free
- Predictable online in the linear guide expert: [igus.eu/dlx](http://igus.eu/dlx)



igus

Update

**Flexible designs for quick cleaning**

drylin® W linear guide systems for the food technology

Large flushing grooves and rounded corners and edges ensure easy cleaning processes. The bearing, the seal and the M4 threaded insert are made from FDA-compliant materials.

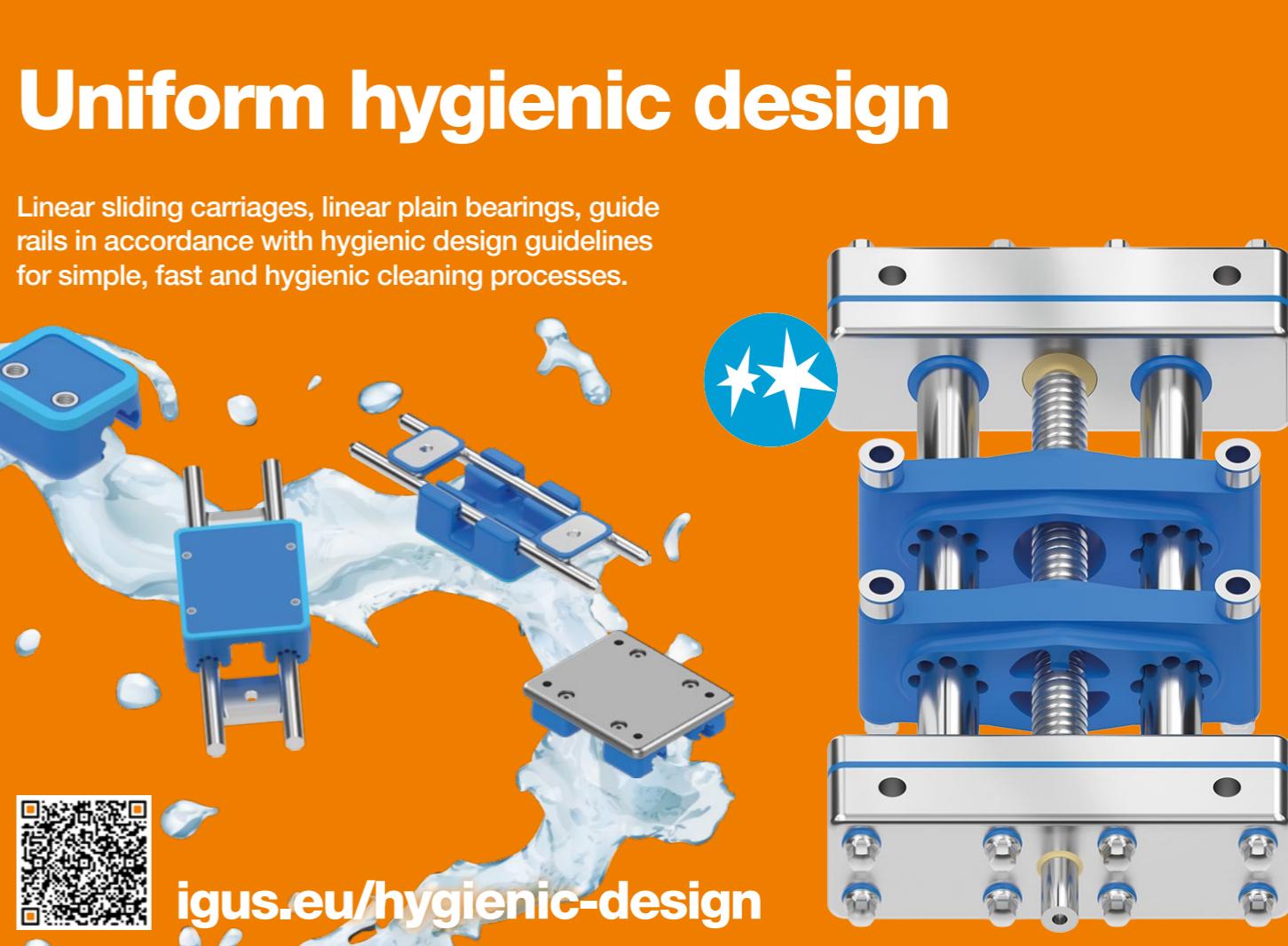


▲ Single bearing for variable bearing spacing

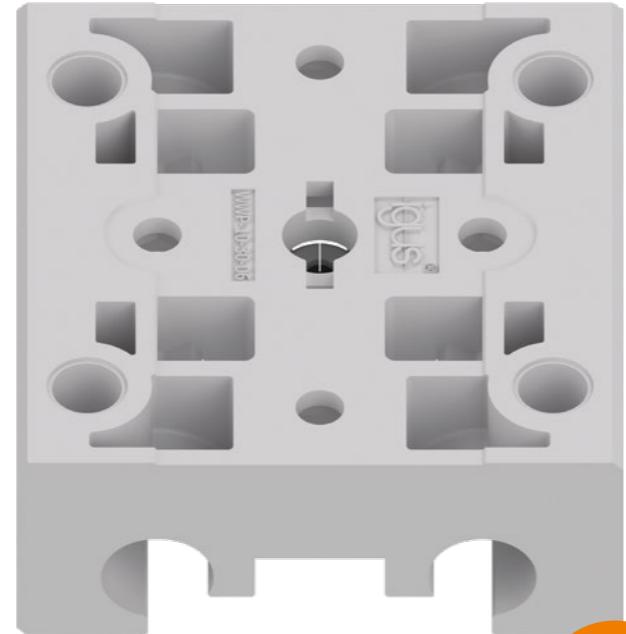
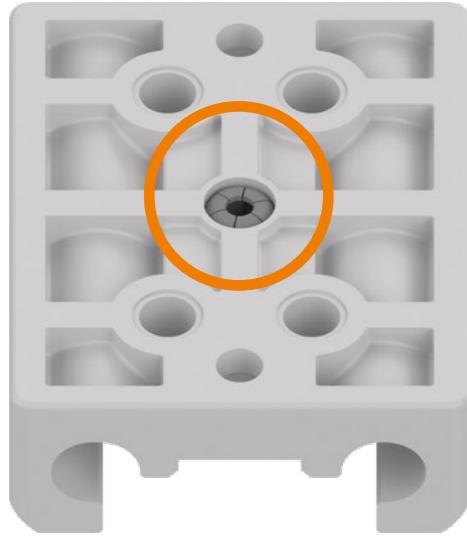
▼ Including stainless-steel mounting plate as a ready-to-install linear carriage

■ Hygienic design of all components: drainage areas, flush through gullies, large radii Gap-free design based on EHEDG guidelines or DIN EN 1672-2

● Dispense with lubrication



# Linear guide with snap function



PTFE  
FREE

New #PTFE

## PTFE-free locking carriages for adjustments in the interior area

drylin® WWP-06-20-04-LM / 10-30-06-LM

The drylin® W linear guides with locking carriages combine linear adjustment with support at defined latching points. The very lightweight design of the clean and hygienic components makes them ideal for demanding environments such as railway technology or aircraft interiors.

- ▲ The locking carriage, installation size 1030, can be supplemented with a selectable pretension (optional)
- ▼ The standard rails are available as hard-anodised, silver and black clear-anodised versions and up to a length of 3,000mm. We offer rail profiles without holes for customised drilling patterns
- PTFE-free, PFAS-tested thanks to iglidur® RN403. Centre of gravity 10N, rail length 300mm, speed 0.002m/s, acceleration 0.1m/s<sup>2</sup>, running performance 16,936km
- The linear guide allows for dry operation without external lubrication and is therefore maintenance-free

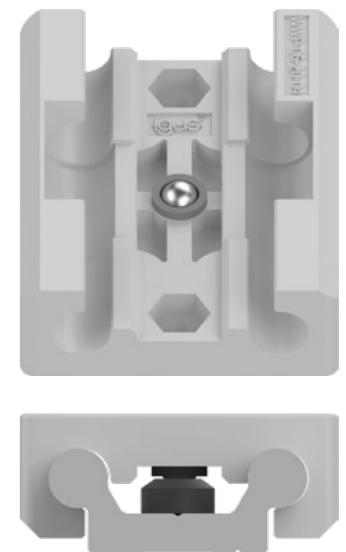


## Stop motion Precise adjustment

Positional systems are used for specific positioning and height adjustment in various industries such as aircraft interiors, mobile homes, automotive and furniture construction. In aviation, positional systems are crucial for safety and efficiency. They enable precise adjustment of seats, tables and other components that need to remain steady during the flight. In mobile homes, positional systems provide flexible and safe adjustment options for furniture and fixtures. They make it possible to adjust tables, beds and other pieces of furniture easily and lock them in the desired position. Positional systems ensure that these components remain securely and steadily in the desired position, which increases both comfort and safety. They are indispensable, especially in modern vehicles with many adjustment options. In furniture construction, offering flexible and stable adjustment options for various pieces of furniture such as desks, chairs and shelves. They make it possible to tailor furniture to the individual needs of the user and at the same time ensure safety and stability. This is particularly important in office environments where ergonomic adjustments are required. The positional systems operate completely without lubrication and are maintenance-free. All surfaces are clean and hygienic and the absence of balls makes them robust and quiet. The plastics used are PTFE-free and meet the low-fogging requirements in the automotive sector.



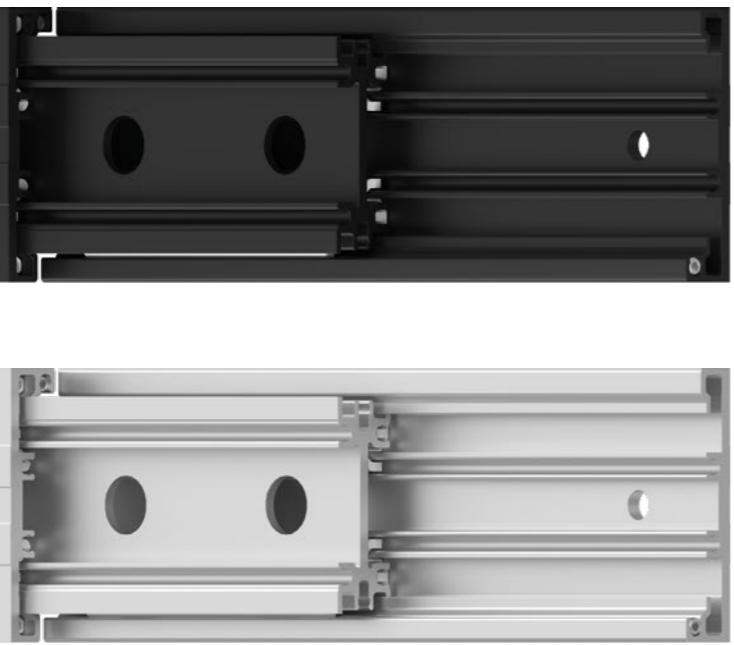
WWP-10-30-06-LM



WWP-06-20-04-LM



# Telescopic up to 2m



Plus #PTFE

## PTFE-free telescopic rails up to 2,000mm

Telescopic slides in size 60 drylin® NT-60-4

The sliding elements are made of the PTFE-free material iglidur® RN403, which ensures smooth and quiet operation.

- ▲ The rail profiles are available in silver and black anodised, and we offer flat (NTKA-60) and high end caps (NTKB-60) as edge protection
- ▼ Dry operation without external lubrication makes the telescopic rails maintenance-free and fail-safe
- Tested in the igus® laboratory: drawer assembly with 2x NT-60, vertical installation position, centric load 200N, requirement of 25,000 cycles (opening and closing) achieved
- Lubrication-free and quiet
- Our NT telescopic rails can be configured online so that they can be customised to your needs and ordered directly: [igus.eu/dtc](http://igus.eu/dtc)



Extension of the PTFE-free drylin® W linear system

**Lightweight, quiet, can be configured online**

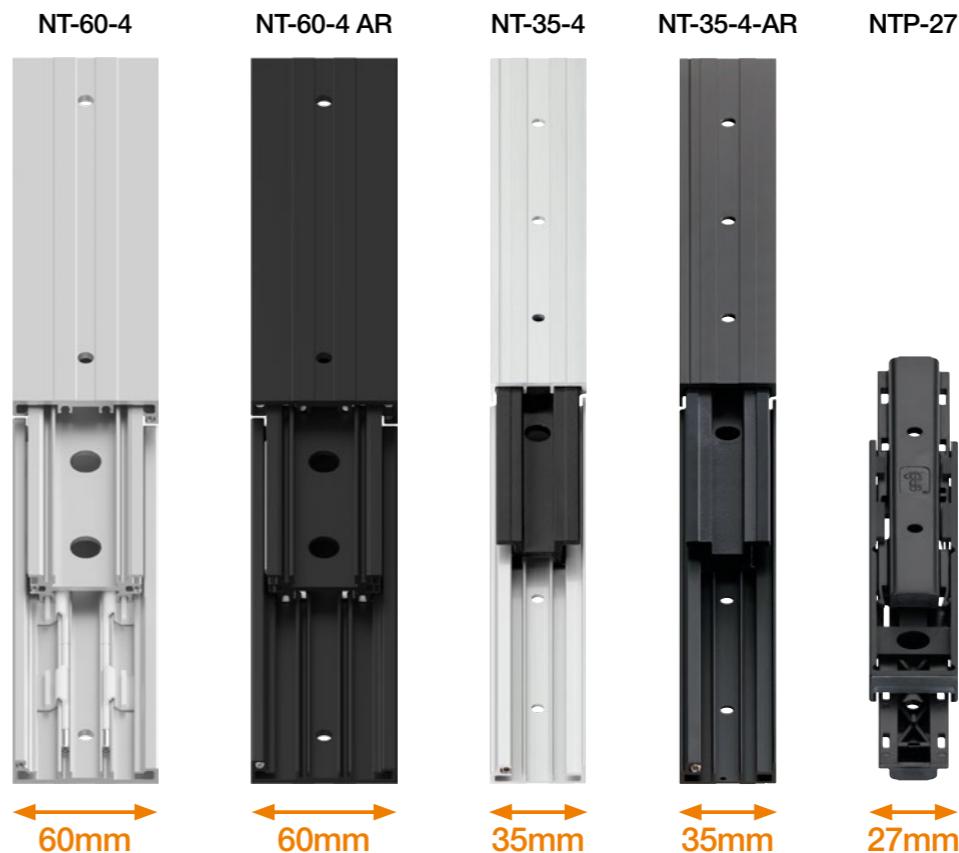
The igus® NT telescopic rails, installation size 60, allow for infinitely varying extension lengths of up to 2,000mm. They are available both as full-extension and partial-extension units. With a compact design that is 60mm wide and 24mm high, they are extremely versatile. The silver or black anodised rails slide quietly on PTFE-free sliding segments made of iglidur® RN403. The rail profiles are available in silver and black anodised, and we offer flat (NTKA-60) and high end caps (NTKB-60) as edge protection. Dry operation without external lubrication makes the telescopic rails maintenance-free and fail-safe.

### PTFE-free, PFAS-tested

igus® is taking an innovative approach to PFAS with its drylin® linear technology product range and is increasingly focussing on PTFE-free and PFAS-tested materials as linear carriages and sliding elements for shafts and rails. These materials enable low-wear and low-friction running without the need

for additional lubrication or seals. PTFE-free alternatives to PTFE-lubricated recirculating ball bearing guides are becoming increasingly important in various industries, from medical technology to automotive and aircraft interiors. PTFE is still not considered harmful to health or the environment. The legal situation regarding PFAS is also still unclear. In order to be able to offer customers the safest and most transparent solution possible right now, igus® is testing its own materials according to the SQP M1227 (LC-MS/MS and GC-MS) / SOP M1227 (LC-MS/MS and GC-MS) test methods for approximately 100 of the most important PFAS compounds that it believes are likely to be subject to future restrictions.

The new NT-60 telescopic rail enhances the product range of PTFE-free extensions by a further wide installation size. The narrow installation size NT-35 and the metal-free telescopic extension NTP, both of which use the material



iglidur® GLW for sliding elements, were presented in the spring.

In addition to the telescopic rail series, the entire PTFE-free product range of drylin® linear technology also includes drylin® W all-plastic carriages, flat, pre-loaded NWW prism carriages from the drylin® N family and drylin® T carriages, which can also be retrofitted with PTFE-free sliding elements in existing systems.

- Compact design: 60mm wide, 24mm high
- Sliding elements made of the PTFE-free material iglidur® RN403
- Rail profiles available in silver and black anodised
- No balls, fail-safe and quiet
- Clean and hygienic, easy to clean



Space-saving and maintenance-free, e.g. in drawer extensions in the campervan



Flat (NTKA-60) and high end caps (NTKB-60) as edge protection

GO ZERO Lubrication ... save lubrication time and costs



# dryspin® lead screw technology



**112**

**Save costs with lead screw systems**  
New dryspin® dimensions: extension of the product range

**114**

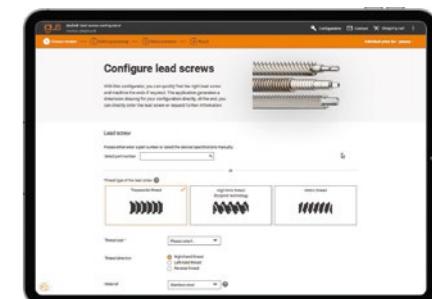
**Lead screw nuts made from bar stock**  
New pitches DS6.35x25.4 LH and DS32x5 RH

**114**

**Injection-moulded lead screw nuts with machined thread**  
New pitch DS6.35x25.4 LH

## Blog topics

#heavy-duty, page 18  
motion plastics® for heavy-duty applications



## Online tool

**dryspin® lead screw configurator**  
[igus.eu/dsk](http://igus.eu/dsk)



### Safety on roller coasters

dryspin® lead screw technology scores points in the hydraulic locking system for safety bars

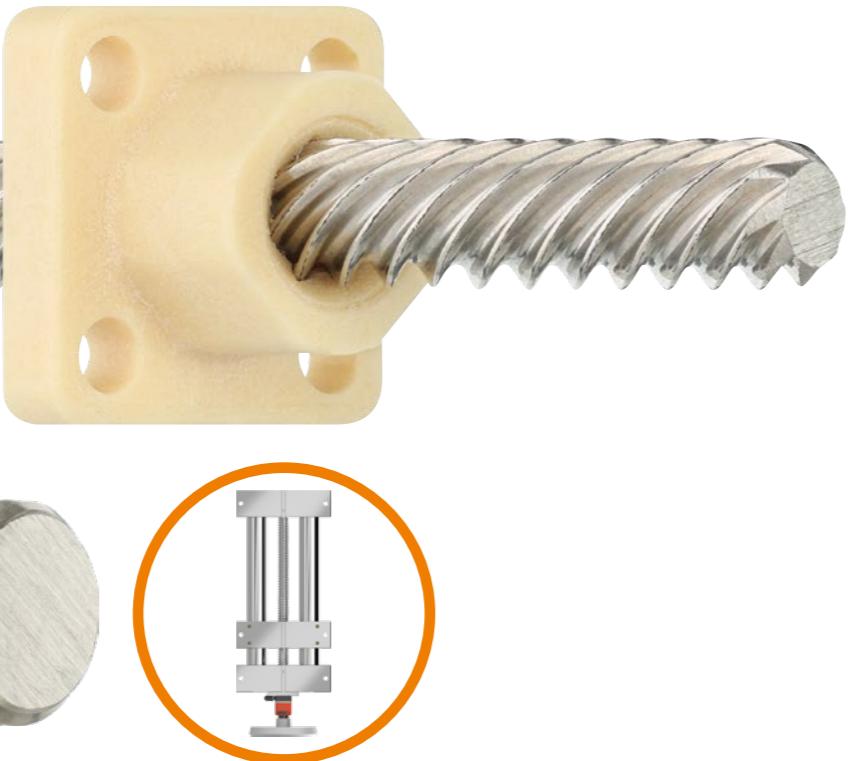


### Catalogue

Find out everything you need to know about dryspin® lead screw technology. Take a look at application examples and additional information. MAT0075658.20

**[igus.eu/news-dryspin](http://igus.eu/news-dryspin)**

# Smooth, quiet, long service life



New #heavyduty

## Save costs with lead screw systems

New dryspin® dimensions DS6.35x25.4 LH and DS32x5 RH: expansion of the product range

All dryspin® lead screws can be custom-machined. Configure online or send us your drawing. We can quickly provide you with a quotation. The new DS32x5 is used in particular in our new SLR linear axis.

- ▲ Quiet due to thread geometry, longer service life
- ▼ Up to 30% longer service life
- Ongoing test program in the in-house test laboratory: [igus.eu/dryspin-testreports](http://igus.eu/dryspin-testreports)
- Lubrication-free operation and clean
- Free online tool for lead screw machining with instant price: [igus.eu/dsk](http://igus.eu/dsk)



### Background

## dryspin® thread geometry

Smooth operation, less vibration - THE alternative to trapezoidal threads

**What does lead screw technology mean and what can I imagine it to mean?**

The lead screw technology is a sub-area of drive technology and, roughly speaking, describes the repetitive conversion of a rotating movement into a linear movement within regular cycles. The dryspin® lead screw technology was patented in 2014 by the development team. Particular emphasis was placed on increasing service life and improving efficiency. The dryspin® product portfolio includes high-helix lead screws made of stainless steel or aluminium and the matching lead screw nuts made of igus® high-performance polymers. They are available from 1mm to 100mm pitch. The dryspin® thread geometry is an extension of conventional thread technologies such as metric and trapezoidal threads. dryspin® lead screw technology has many advantages over conventional lead screw geometries.

### Let us take a closer look:

In contrast to a metric or trapezoidal thread, the high helix thread has a higher pitch. Thus, a significantly increased linear feed is carried out with one revolution of the lead screw. dryspin® offers better efficiency due to the specifications and geometries tailored to the plastic nut and lead screw. Efficiencies of up to 82% and a longer service life are achieved compared to metal lead screw drives. In combination with an igus® lead screw nut, clean and dry operation is possible, without dust and dirt sticking.

### We have tested it!

Our dryspin® lead screw geometry is an excellent alternative to conventional trapezoidal threads. The specifications and geometries of our dryspin® lead screw technology, which are tailored to the iglidur® plastic nut and lead screw, guarantee the well-known advantages: tighter manufacturing tolerances, rounded teeth geometry, optimised flank angle and the asymmetry ideal for plastic nuts compared to DIN 103. Our dimensions are suitable for 1:1 replacement: DS10x2, DS10x3, DS12x3, DS14x4 and DS18x4.

tighter manufacturing tolerances, rounded teeth geometry, optimised flank angle and the asymmetry ideal for plastic nuts compared to DIN 103. Our dimensions are suitable for 1:1 replacement: DS10x2, DS10x3, DS12x3, DS14x4 and DS18x4.

**Tighter manufacturing tolerances - improvement by a factor of three**

Trapezoidal threads according to DIN 103 (TR18x4) are tolerated with up to -0.3mm on the outside diameter. Excessive radial clearance can lead to noise and vibration. Our dryspin® technology guarantees a maximum tolerance of -0.1mm with the same diameter and identical pitch. We improve the outer diameter tolerance by a factor of three and thus optimise smooth operation and precision, especially at high speeds.

**Quiet and vibration-free operation and higher speeds thanks to the rounded tooth profiles of the dryspin® thread geometry**

The rounded tooth flanks and tighter manufacturing tolerances of the dryspin® thread geometry reduce noise between the lead screw and the nut. This is due to the fact that the greater the contact of two surfaces moving against one another, the more vibrations are transmitted, which can be perceived as a rattle or squeak. This means that higher travel speeds can be achieved without causing the corresponding noise.

Up to 30% longer service life

Due to the larger distances between the individual dryspin® thread turns, the thread perfectly matches the specifications of the lubrication-free igus® high performance polymers. The proportion of the tribologically optimised polymer in the thread turns can be enhanced by a factor of 1.3. More wear-resistant material and higher levels of efficiency are crucial for a service life that is up to 5 times longer compared to standard thread geometries.

[igus.eu/dryspin-test-reports](http://igus.eu/dryspin-test-reports)

## Get to know the variety of dryspin®



**Simply request a free sample card.**  
[igus.eu/dryspin-sample-request](http://igus.eu/dryspin-sample-request)

New

## Lead screw nuts made from bar stock

New pitches DS6.35x25.4 LH and DS32x5 RH

The new dryspin® lead screw nuts made from bar stock in a cylindrical, flange or spanner flat version.

- ▲ Quiet operation due to tighter manufacturing tolerances and rounded tooth geometries by default
- ▼ Up to 50% lower cost than metallic lead screw nuts
- Up to 25% less wear compared to POM+PTFE (size 10x3): [igus.eu/dryspin-testreports](https://igus.eu/dryspin-testreports)
- No lubricating grease or oil in the lead screw drive
- Online calculation tool for service life: [igus.eu/dge](https://igus.eu/dge)



New

## Injection-moulded lead screw nuts with machined thread

New pitch DS6.35x25.4 LH

The new dryspin® injection-moulding lead screw nuts in cylindrical or flange version including spanner flats.

- ▲ Quiet operation due to tighter manufacturing tolerances and rounded tooth geometries, lead screw nuts including spanner flats by default
- ▼ Cost-effective production with injection moulding
- Up to 25% less wear compared to POM+PTFE (size 10x3): [igus.eu/dryspin-testreports](https://igus.eu/dryspin-testreports)
- No lubricating grease or oil in the lead screw drive
- Online calculation tool for service life: [igus.eu/dge](https://igus.eu/dge)



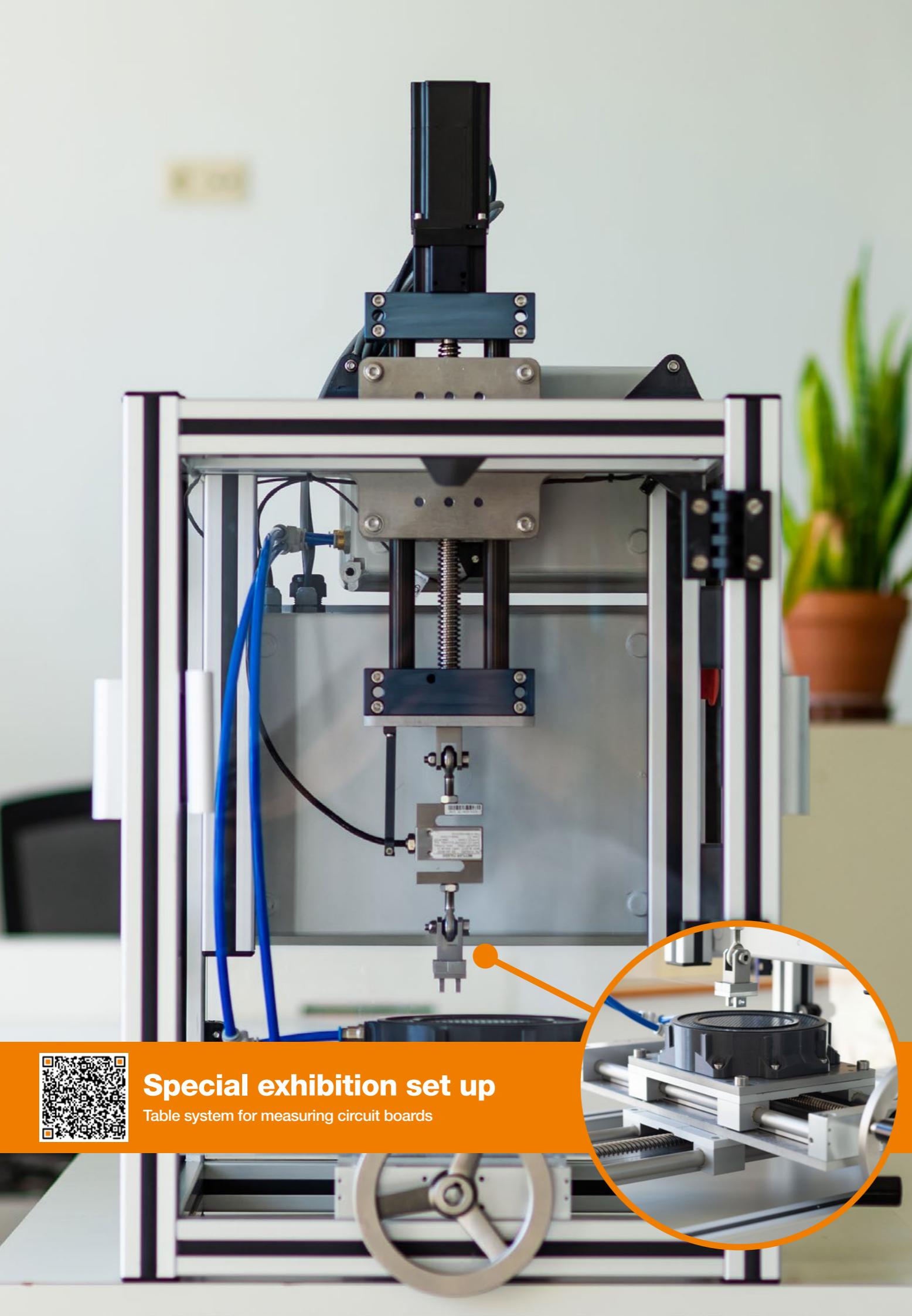
# dryspin® lead screw configurator

From the idea to the configured lead screw in less than five minutes

- Includes plausibility check
- Individual pin machining without CAD software
- 2D dimensioned drawing and 3D step file, generated directly online
- Immediate price calculation with online ordering
- Time savings thanks to clear drawings and fast delivery times



[igus.eu/dsk](https://igus.eu/dsk)



## Special exhibition set up

Table system for measuring circuit boards

GO ZERO Lubrication ... save lubrication time and costs

# drylin® drive technology



**118**

**FDA-compliant miniature lead screw axes**  
Miniature linear axis with lead screw motor  
SLWC-0620-FL-ES

**119**

**Miniature linear module for  
small installation spaces**  
drylin® SLW-BB-0620-FLZ lead screw axis  
without bearing clearance

**120**

**Strong linear module holds up to 625kg**  
drylin® SLR-60 linear module in new size 60

**123**

**For large workspaces up to  
500mm x 500mm**  
Double axis system DLE-DA-ZLX

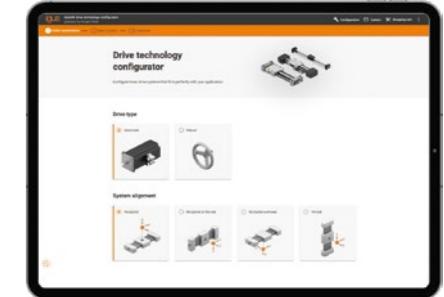
**125**

**Damping force transmission**  
Coupling for torque transmission



## Blog topics

- #food, page 21  
motion plastics® for the food industry
- #heavy-duty, page 18  
motion plastics® for heavy-duty applications
- #assembly, page 24  
motion plastics® for easy installation



## Online tool

**drylin® drive technology configurator**  
[igus.eu/ddx](http://igus.eu/ddx)

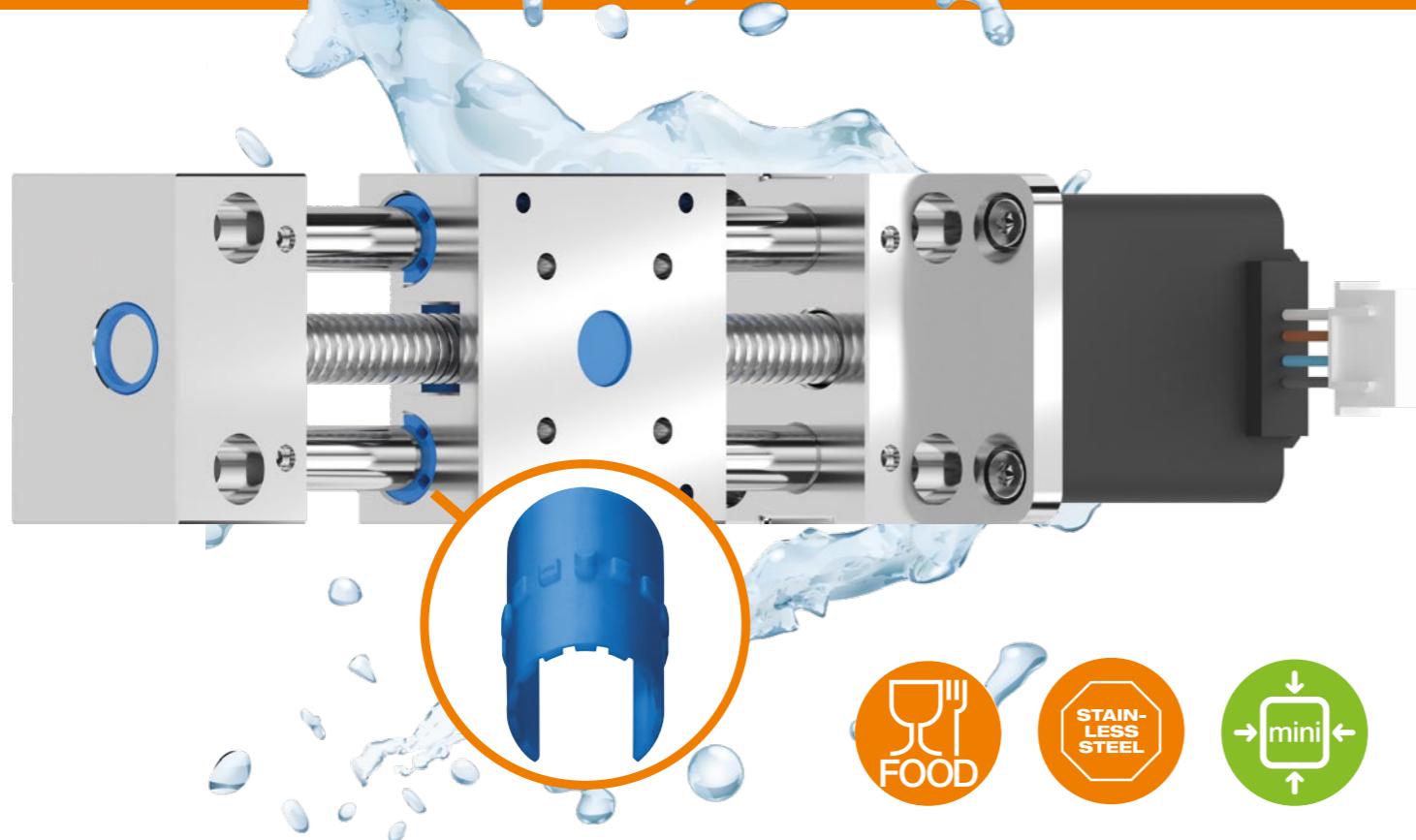


## Catalogue

Find out everything you need to know about drylin® drive technology.  
Take a look at application examples and additional information. MAT0075659.20

**[igus.eu/news-drylin-drive](http://igus.eu/news-drylin-drive)**

# Made of stainless steel



New #food

## FDA-compliant miniature lead screw axes

Miniature linear axis with lead screw motor SLWC-0620-FL-ES

The compact linear module from the drylin® SLW series impresses with its dimensions of 22x32mm, making it ideal for small installation spaces. Equipped with an efficient dryspin® high helix thread DS6.35, it allows for long-lasting, smooth and precise adjustment.

- ▲ FDA/EU10/2011-compliant thanks to liners and lead screw nut made of iglidur® A160
- ▼ The module is ready for connection with drylin® E lead screw motors
- Tested: load 10N, stroke length 25mm, pitch 6.35x2.54, speed 0.008m/s, acceleration 0.9m/s<sup>2</sup>, running performance min. 6,355 double strokes
- No lubrication and maintenance
- Service life can be calculated online: [igus.eu/ddx](http://igus.eu/ddx)



Compact linear module with lead screw

## Dimensions of 22x32mm for small installation spaces

The miniature linear module from the drylin® SLW series is compact, making it ideal for small installation spaces. Equipped with an efficient dryspin® high helix thread 6.35 (lead screw and lead screw nut), it allows for long-lasting, smooth and precise adjustment. The system can be configured. It is available for manual operation with position indicator and hand wheel as well as for electric operation with drylin® E electric motors and motor controls. The shaft end supports, the carriage housing and the linear rails are made of either silver or black anodised aluminium. The torsion-resistant drylin® W aluminium profile ensures an extremely robust construction. Thanks to the dry-running operation without external lubrication, the module is completely maintenance-free. The hygienic components are easy to clean.

The service life of the module can be calculated online: [igus.eu/ddx](http://igus.eu/ddx).

- Efficient dryspin® high helix thread 6.35: durable, smooth-running and precise
- Suitable for manual and electrical operation
- Shaft end supports, carriage housing and linear rails either silver or black anodised aluminium
- Extremely robust thanks to torsion-resistant drylin® W aluminium profile
- Dry operation without external lubrication
- Clean and hygienic components

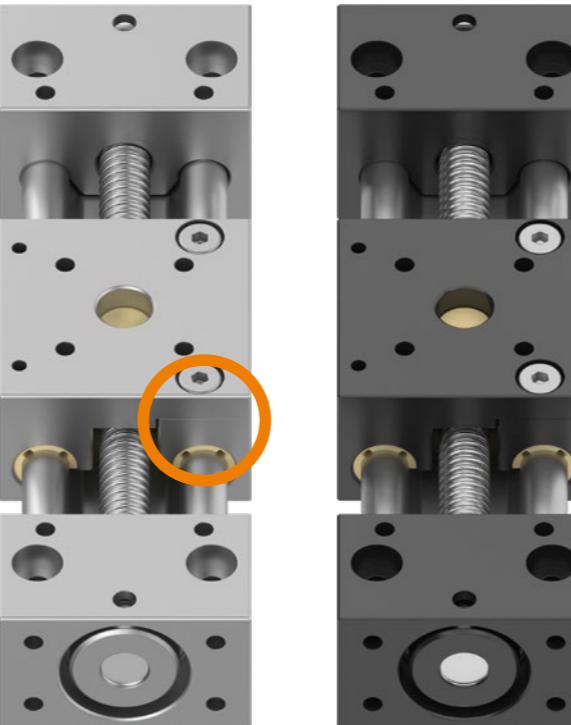


## New

## Reduced bearing clearance, high precision

drylin® SLW-BB-0620-FLZ lead screw axis without bearing clearance

The two-part design of the linear carriage reduces bearing clearance to a minimum, which makes it ideal for applications where high precision and positioning accuracy are required.



- ▲ dryspin® high helix thread 6.35 (lead screw and lead screw nut) for smooth and precise adjustment

- ▼ Shaft end supports, carriage housing and linear rails are made of either silver or black anodised aluminium

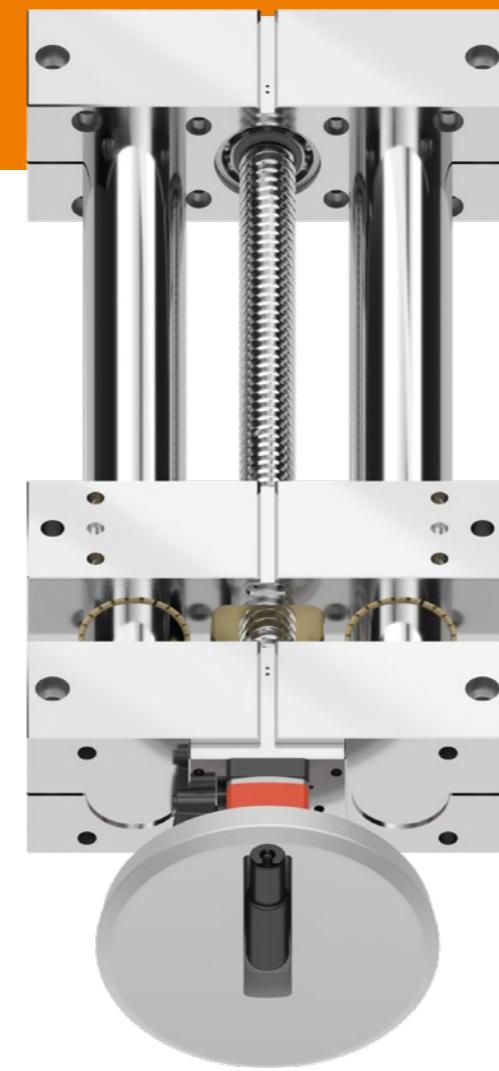
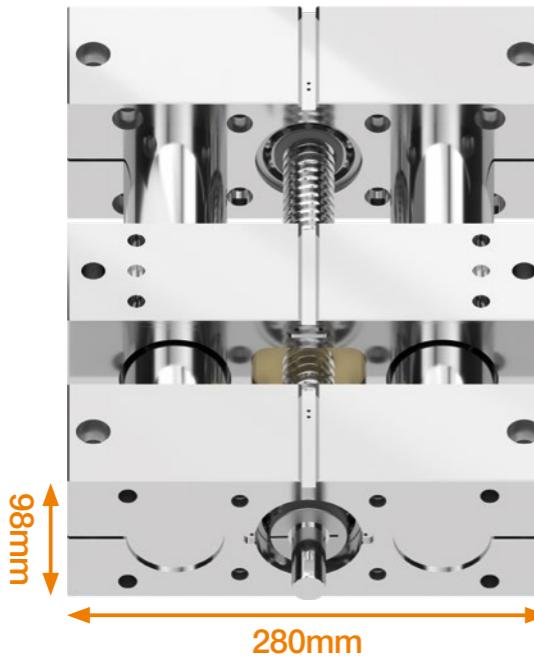
- Tested: horizontal installation position, load 20N, stroke length 100mm, pitch 6.35x6.35, speed 0.05m/s, acceleration 0.5m/s<sup>2</sup>, running performance min. 1,476 double strokes

- Dry operation without external lubrication

- Service life can be calculated online: [igus.eu/ddx](http://igus.eu/ddx)



# Withstands up to 625kg



Plus **#heavyduty**

## Powerful linear module, installation size 60

### drylin® SLR-60 linear module

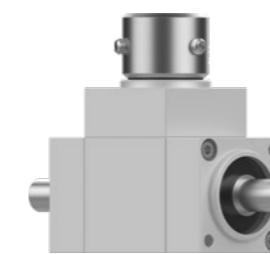
The robust and strong linear module is now available in installation size 60 and is characterised by a dirt-resistant drylin® R round shaft guide. Its modular design allows for fast assembly and flexible constructions.

- ▲ The assembly can be carried out with single, multiple or assembly carriages, which gives you numerous combination options
- ▼ Alignment is straightforward using dowel pins, without the need for additional bottom clamps. Limit switches are attached directly to the shaft end support so that additional spacers are no longer required
- The SLR consists of two Ø60mm guide shafts, a DS32x5 lead screw as drive in addition to shaft end supports and linear carriages made of aluminium. It offers a radial load of up to 2.5t and a vertical load of up to 625kg
- Thanks to the dry-running operation without external lubrication, the module is completely maintenance-free
- The service life of the module can be calculated online at [igus.eu/ddx](http://igus.eu/ddx)



Manual accessories for linear module series SLR

## Expanding the modular kit



### Angular drive:

For improved usability, igus® offers manual accessories for the SLR linear module series. The compact and modular angular drive is suitable for both manual and electrical adjustments. It is available complete with position indicator, lead screw clamp and hand wheel and has bevel gears. The electric version is available with a suitable mounting kit including drylin® E electric motor.

- Angular drives offer ergonomic and user-friendly adjustment
- Space-saving alignment of controls and motors
- A shaft output from both sides (through drive) allows for the synchronised control of two linear units.



### Position indicator:

You can adjust recurring settings quickly and reliably with position indicators. Particularly on machines where formats or containers can vary, the indicators help reduce downtimes when changing formats. The position indicator is equipped with a continuous hollow shaft and has a display with five digits. The reading goes up to 99999 with a digit height of 5.5mm. The housing is made of impact-resistant and self-extinguishing plastic and offers IP54 protection at a maximum temperature of 70°C.

- Reproducible settings
- Simple setting via display
- Free choice of display orientation (especially for vertical installation direction)



### Hand wheel:

A robust hand wheel with a folding handle makes it easier to adjust the linear tables to the desired position. The hand wheel is made of silver plastic-coated die-cast aluminium.

- Easy adjustment
- Handle can be folded away
- Secure fastening via feather key groove in accordance with DIN 6885-1

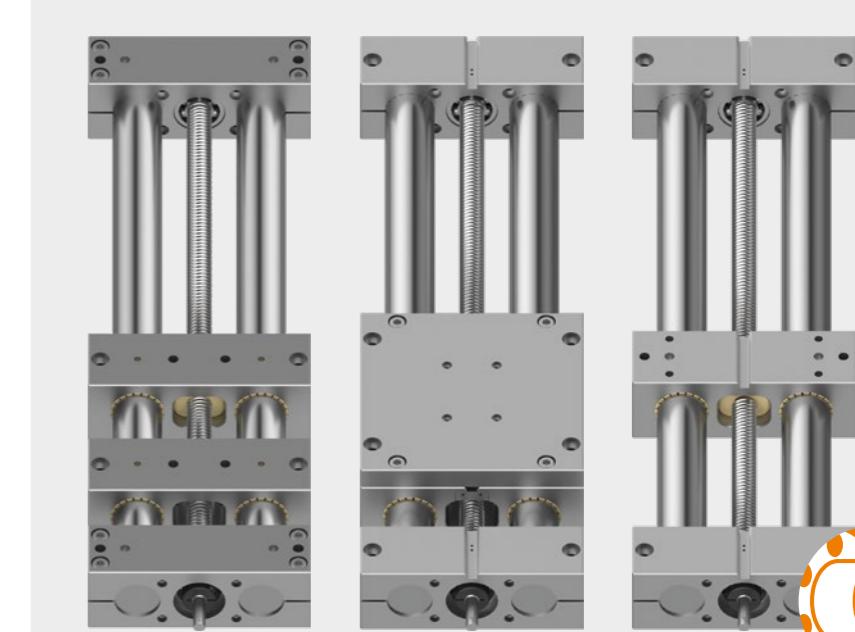
SLR and accessories can be configured online at: [igus.eu/ddx](http://igus.eu/ddx).



### Manual clamp:

The manual clamp includes a clamping flange suitable for SLR mounting shaft end supports and a handle for secure clamping of the lead screw.

- Protection against unintentional adjustment of preset positions
- Clamping the lead screw



Simple modular design available in three sizes

New #food

## Narrow, FDA-compliant

drylin® ZLW-1050-ES-FDA toothed belt axis

The drylin® toothed belt axis ZLW-1050-ES-FDA offers high dynamics for fast acceleration. Its narrow design with an axis distance of 50mm makes it perfect for small installation spaces. The stroke length can be adjusted up to 2,000mm.

- ▲ Liners, toothed belts, ball bearings made from FDA-compliant materials
- ▼ Transparent, lightweight design for fast cleaning processes and reduced downtimes
- Tested: load 15N, stroke length 800mm, speed 1.0m/s, acceleration 2.0m/s<sup>2</sup>, running performance min. 13,196 double strokes
- No lubrication and maintenance
- Can be configured and ordered online, including service life calculation: [igus.eu/ddx](http://igus.eu/ddx)



# GO ZERO Lubrication

Zero Lubrication

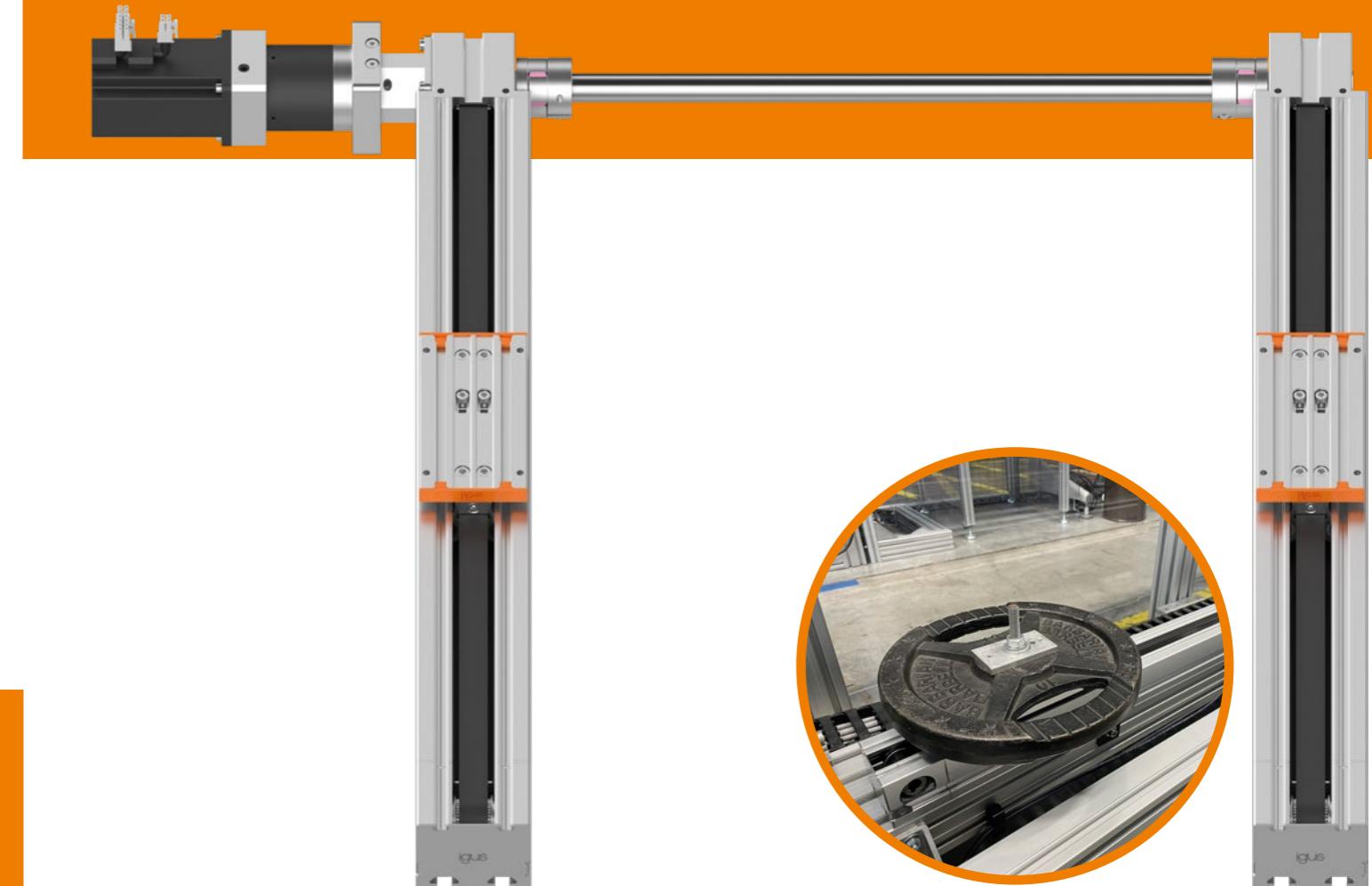
27 million tonnes of lubricants end up in the environment every year. Why? GO ZERO Lubrication! With AI!

igus®



Double axis system DLE-DA-ZLX

# Fast double axis



New #assembly

## For large workspaces up to 500mm x 500mm

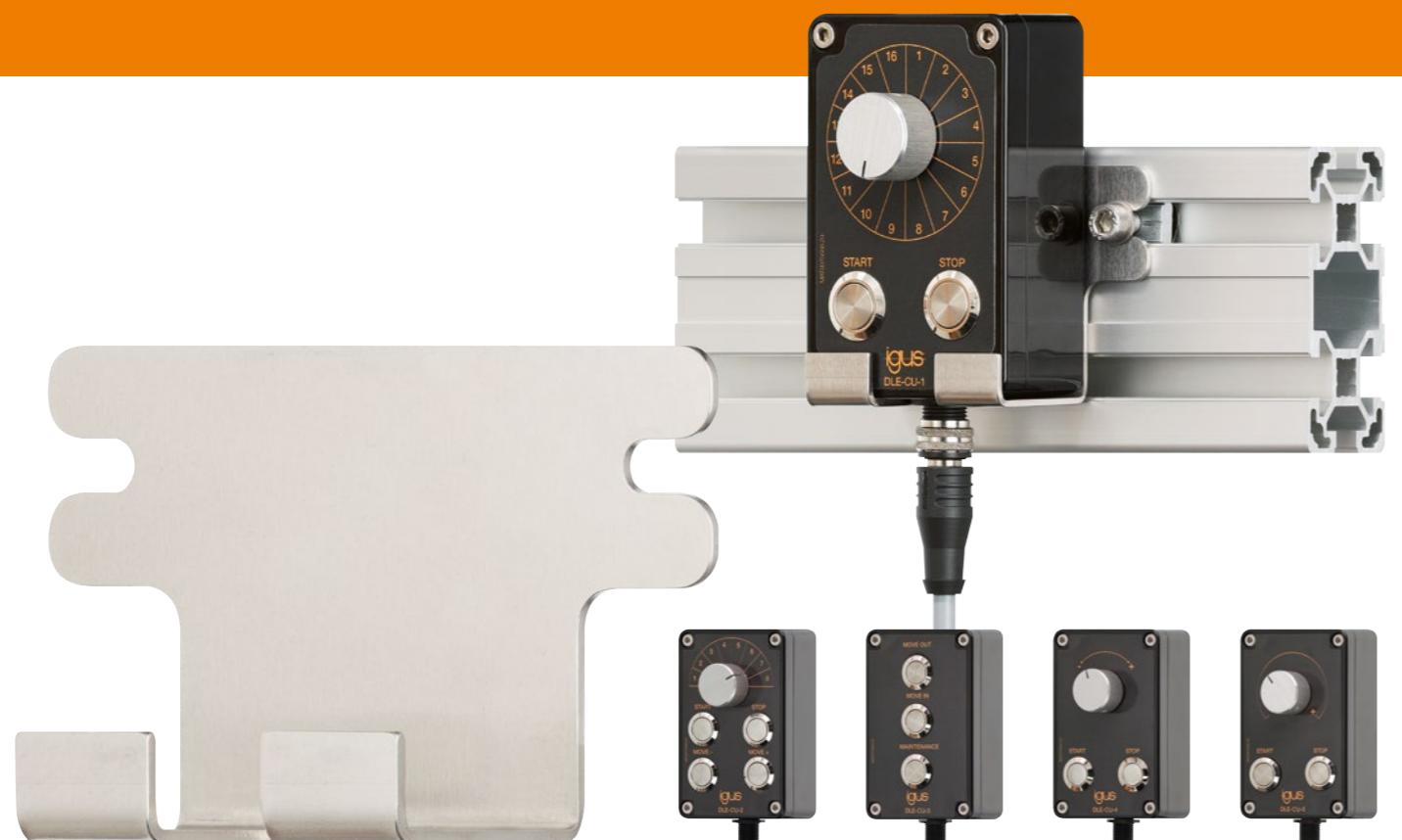
Double axis system DLE-DA-ZLX

The compact, robust drylin® ZLX high-performance series is characterised by a newly developed anodised aluminium profile. igus® now offers a ready-to-connect double-axis system with gearbox and electric motor that can master a stroke of 500mm when synchronised. Numerous grooves make it possible to attach accessories and simplify installation.

- ▲ drylin® W guide systems work over a large surface area on the rail or shaft, which allow for a lighter and quieter design
- ▼ Ready-to-connect system consisting of two ZLX linear axes, motor and gearbox kit as well as connecting shaft (hollow shaft AWMR-20)
- ZLX-8060-16 in long-term test, load 100N, speed 1,700mm/s, stroke 3,500mm, test cycle 200,000 double strokes
- 100% lubrication-free operation
- Can be calculated online: [igus.eu/ddx](http://igus.eu/ddx)



# Always at hand



New

## Stainless steel holder for control units

Holder for control units

Motorised movements can be selected, started and stopped using the five control units matching the D1 motor control system. The matching stainless-steel bracket can be attached to all standard aluminium design profiles.

- ▲ Quick attachment and removal of the control units
- ▼ Suitable for various mechanical-engineering profiles
- 80% of time saved thanks to ready-made design, direct availability, assembly and digital machine planning (3D CAD)
- Corrosion-free, durable and recyclable
- 3D CAD file for download

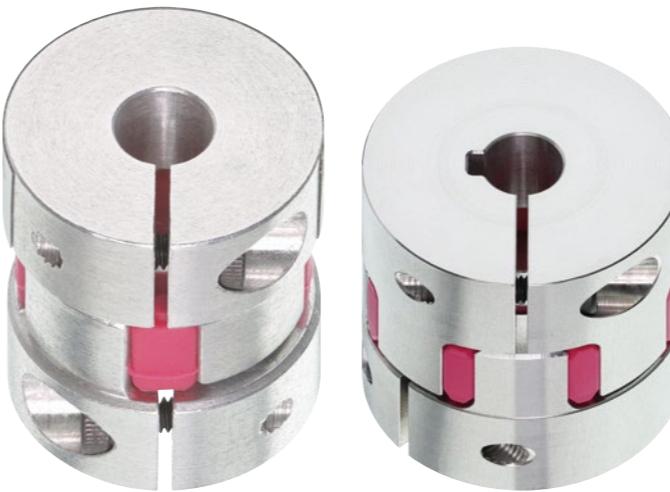


Plus

## Damping force transmission

Coupling for torque transmission

The jaw couplings transmit torques in a damping manner. Two aluminium clamping hubs are attached to the input and output shafts using an H7 hole. An elastomer star in the centre transmits the torque in a damping manner and also enables lateral, angular and axial compensation movements



- ▲ Damping, compensating power transmission, hollow coupling for shaft length compensation
- ▼ Extension of the standardised coupling series
- 50% installation time saved thanks to shaft length compensation
- Reusable and durable
- 3D CAD file for download



New

## Cost-effective coupling

Cost-effective couplings for small installation spaces



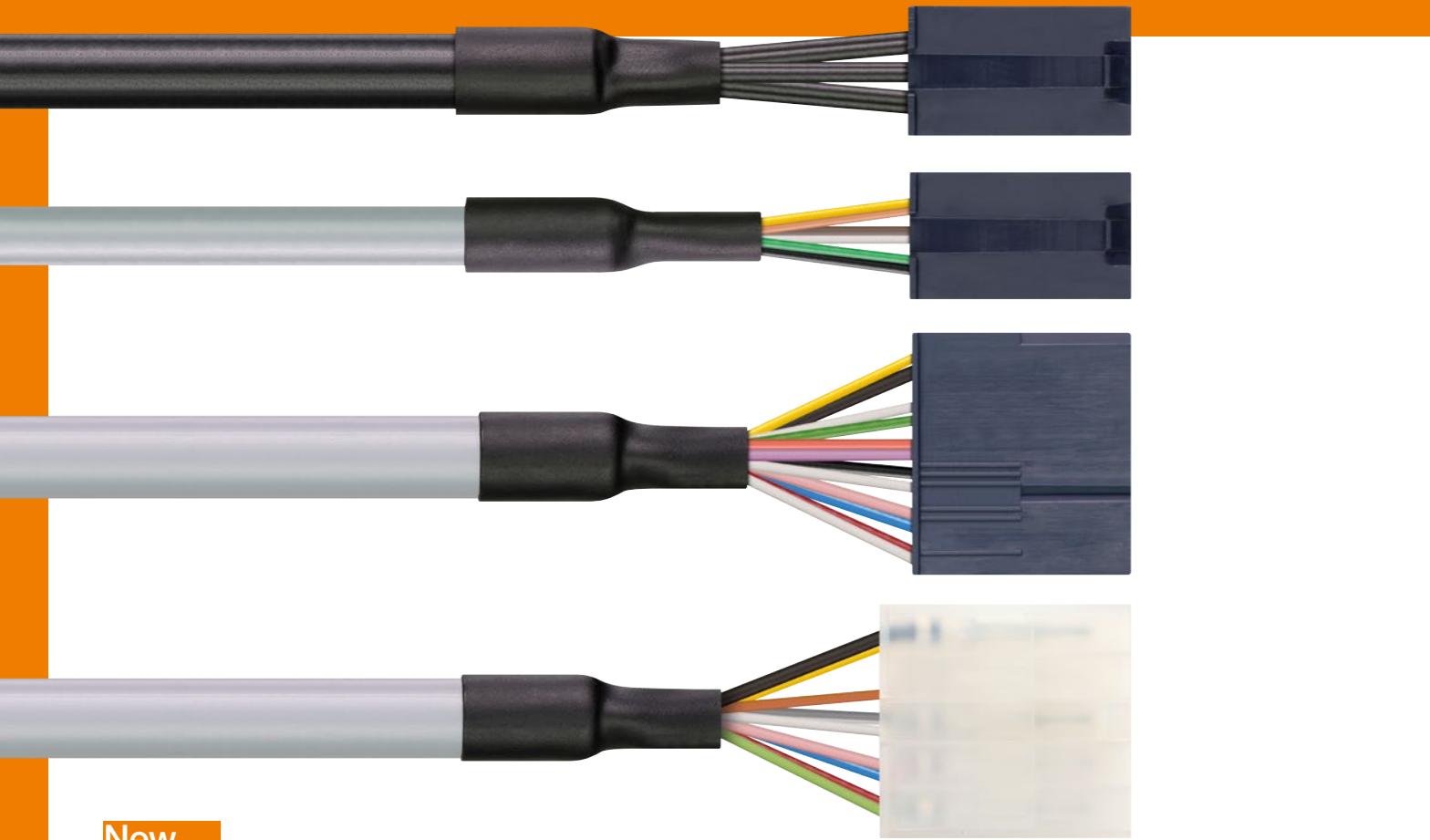
The shaft coupling transmits torque between two shafts, such as a lead screw linear unit and a motor. The cost-effective and space-saving aluminium couplings are mainly used in miniature drive technology. The rigid coupling can absorb both axial and radial forces.

- ▲ Coupling for radial and axial force absorption
- ▼ Cost-effective coupling due to one-piece design
- 50% more cost-effective than jaw couplings
- Recyclable
- 3D CAD file for download



Motor connection cables, 20m

# Longer connection routes



New

## Easy extension

Motor connection cables, 20m

20m cables have been added to the range of connection cables for all igus® motors. The extension cables consist of chainflex® cables with a connector and open cable end. All cables are flame-retardant, silicone-free and suitable for moving applications.

- ▲ Product extension by 20m cables
- ▼ Scalable cable product range
- 30% longer connection routes possible
- Durable, flame-retardant, silicone-free
- Online service: e-plan macros, 3D CAD



# Experience drylin® drive technology in your company

Drive technology roadshow free of charge

- All drylin® drive technology products including all innovations in your company
- drylin® linear axes, motors and motor controls you can try out directly
- Individual on-site consultation
- 100% free service



Further information and booking  
[igus.eu/drylin-roadshow](http://igus.eu/drylin-roadshow)



## Small, compact, cost-effective

Quick ROI with automated parts handling for injection moulding machines



GO ZERO Risk ... lubrication-free & cost-effective automation

# Low Cost Automation



## 130

**ReBeL® Cobot: from Cologne to the world**

Made in Cologne

## 132

**Get started now: Automation made easy!**

Robotics starter set

## 136

**Python library for a dynamic control system**  
CRI Python Library

## 141

**Bigger, faster, further**  
XXL Delta robot

## 142

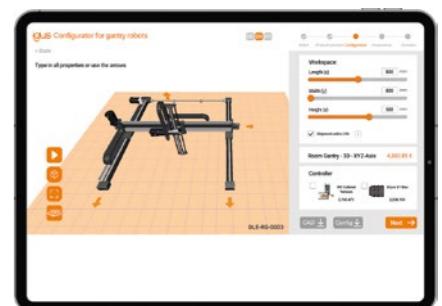
**Complete energy chain sets**  
Flat linear and line robots with customised energy chain sets



## Blog topics

#assembly, page 24

motion plastics® for easy installation



## Online tool

**Configure linear robots**

[igus.eu/linear-robot-configurator](http://igus.eu/linear-robot-configurator)



## Catalogue

Find out everything you need to know about Low Cost Automation. With many application examples and additional information. MAT0075660.20

**igus.eu/news-LCA**

Made in Cologne

# ReBeL® production



New

## ReBeL® Cobot: from Cologne to the world

Made in Cologne

From development to circuit board assembly to final assembly: the only cobot with complete vertical integration in Germany.

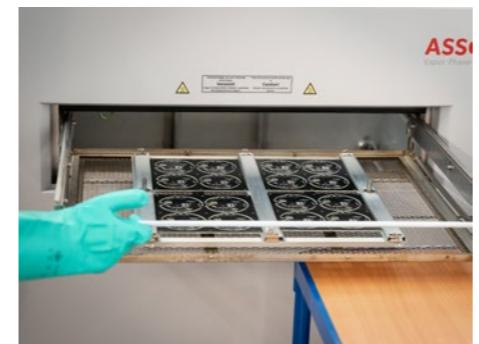
- ▲ Know-how and manufacturing expertise from Germany
- ▼ The most cost-effective cobot from Europe
- Over 2,000 robots in the field
- Very short transport and delivery routes



Made in Cologne

## It can also be cost-effective: robot production entirely in Germany

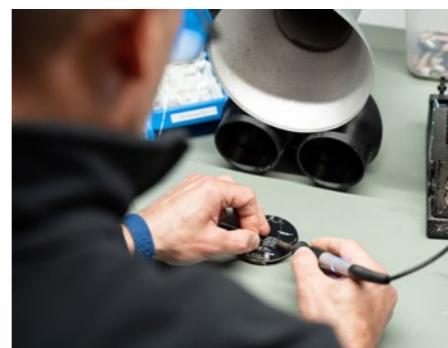
You'd have to be a fool to develop AND manufacture a complete robot in Germany. Yes, only a Cologne-based company like igus® can do something as foolish as this - Cologne being the hotspot of carnival fools. Why do we do this? Because in addition to German quality standards and short distances, we also want to offer you a fast and secure supply chain. We would like to welcome you warmly to our transparent factory to show you the processes our robots go through - from the circuit board to final assembly and delivery - using our cult robot ReBeL® as an example.



Circuit boards in the soldering oven

We start with the circuit board assembly, a process consisting of six carefully executed steps. First, the soldering paste is applied in the soldering paste printer with templates and distributed evenly. The components are then placed by an automatic pick & place machine, followed by a run through the soldering oven. After this stage, the first quality check takes place, which includes a functional test. As soon as the circuit boards pass these tests, the remaining THT components are soldered on by hand. Finally, a visual inspection is conducted. All these steps take place exclusively here on site, carried out by igus® employees who are happy to do this for you.

A video of our Customer Testing Area:  
[igus.eu/customer-test-area](http://igus.eu/customer-test-area)



Assembly of the circuit boards

After this, assembly begins: the ReBeL® is created bit by bit starting at the centre and working outwards. The circuit boards are integrated into the axes and all cables that run through the gearboxes and connecting elements are laid by hand with great care. This requires a great deal of dexterity. Of course, all mechanical components such as gearboxes and connecting parts are also manufactured directly in Cologne from igus® high-performance plastics.



Cables are laid through the gearboxes

Once the mechanical and electrical components have been integrated, the next phase starts: the software installation, the digital pulse of the ReBeL®, breathes life into the system. The subsequent adjustment of the robot is critical in order to guarantee precise function despite minimal manufacturing tolerances. This adjustment is carried out

by the igus® Robot Control (iRC) software and is monitored by means of various measuring instruments to ensure accurate positioning. Barely launched, the ReBeLs® start their training at the robot boot camp.



Equipping the axes with circuit boards

After the adjustment and the definition of individual axis offsets, they undergo rigorous testing. As part of quality assurance, they complete a 30-minute test program, in which axis temperatures are continuously monitored. The results and essential data are documented in a quality report. Once they have passed these tests, they are ready to be prepared for shipping and to revolutionise the world of automation.



Quality assurance of the ReBeL®

We are convinced that this effort is not foolish. You are worth it!

# Automate out of the box



New

## Get started now: Automation made easy!

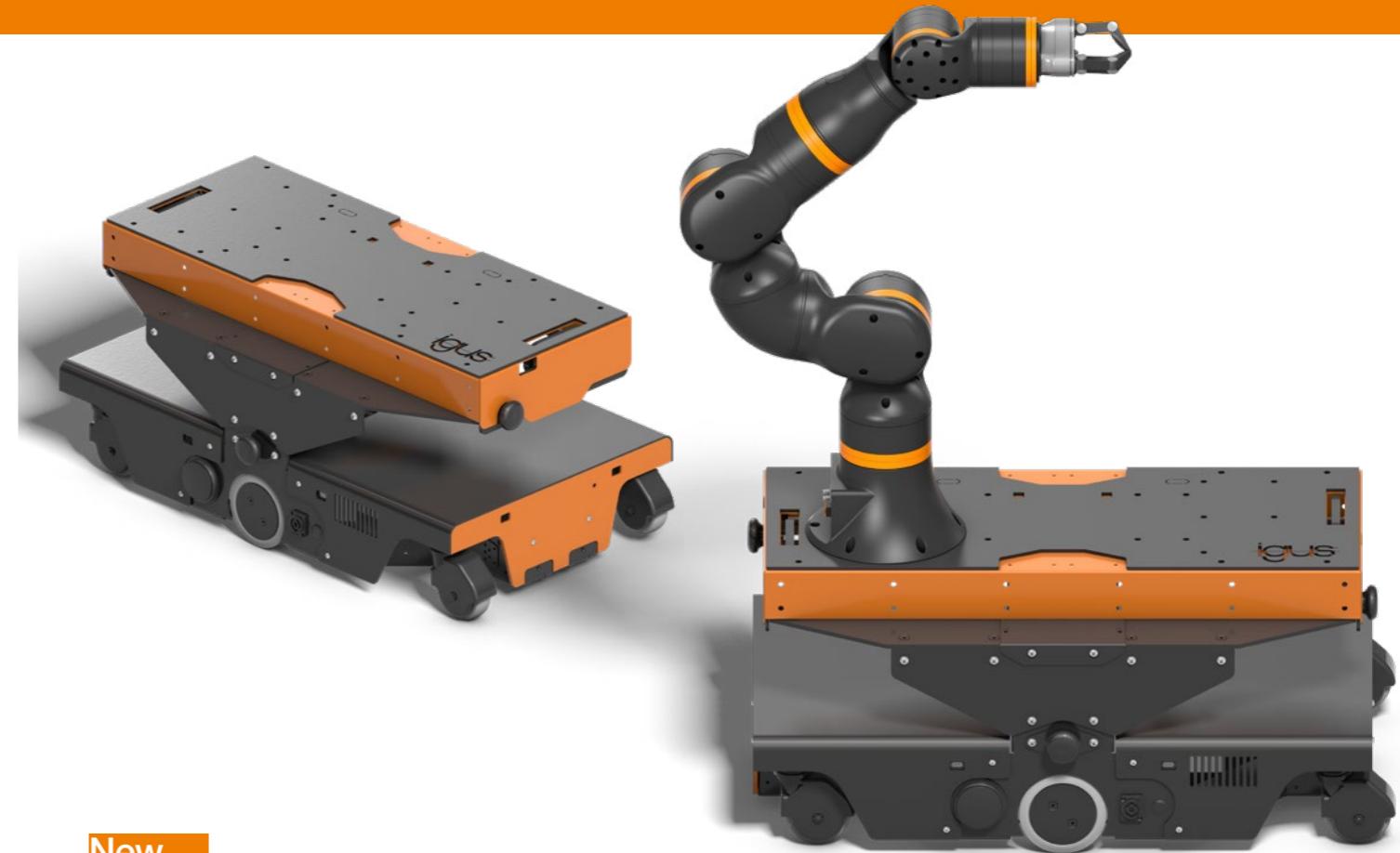
ReBeL® Environment

The robotics starter set offers an ideal introduction to the world of automation: from simple pick & place applications to advanced component recognition with a camera. This versatile set is ideal for all those who want to get into robotics or expand their existing systems.

- ▲ Wide range of applications and areas of use
- ▼ Wide range of applications at a favourable price
- Extensive testing in the Low Cost Automation test laboratory
- Includes free software for easy integration and handling



# ReBeLMove



New

## The nimble helper with and without cobot

ReBeL® Environment

The autonomous mobile robot is tailored to the needs of medium-sized companies and moves loads of up to 35kg. Available with ReBeL® cobot (optional). Typical applications: supplying and emptying machines, supplying manual workstations, transporting material with Euro containers and much more.

- ▲ Can be combined with cobots and extended with accessories for machine supply, tensile strength up to 120kg with order picking trolleys, IoT connection
- ▼ Quickly set up in just 15 minutes
- Extensively tested in the Low Cost Automation test laboratory
- The ReBeLMove has a decentralised fleet management and can therefore be scaled flexibly - starting from one robot
- Integration into existing processes using IoT devices, without software interfaces.



## Update

### Gripping made easy

#### ReBeL® Environment

The ReBeL® gripper impresses with its flexible 100mm opening range, including adapter plate.



- ▲ Simple control via the igus® Robot Control
- ▼ Flexible use due to large opening range of 0 to 100mm
- Extensive testing in the Low Cost Automation test laboratory
- Durability thanks to igus® motion plastics®



## Update

### Powerful suction!

#### ReBeL® Environment

With the new lightweight fixtures for the ReBeL® CobotPump, you now have even more options for your component handling - without the need for an external vacuum.



- ▲ One CobotPump for different applications
- ▼ Extended application areas
- Extensive testing in the Low Cost Automation test laboratory
- Durable materials



## Update

### Dexterity

#### ReBeL® Environment

Easily grip round or angular components with the new gripper fingers from the REBEL-EQU-SNK series.



- ▲ Made of aluminium for more load capacity, for gripping round and square components
- ▼ Simple assembly, suitable for every gripper
- Extensive testing in the Low Cost Automation test laboratory
- Everything from one source



New

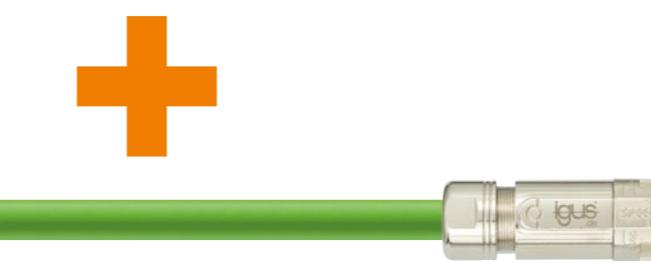


## New

### Additional axis of rotation in front of the robot

#### ReBeL® Environment

Easy expansion of the workspace, without additional control system. Only for the ReBeL-7TH.



- ▲ More workspace
- ▼ No additional control system
- Only gearbox and connection cable required
- Durability thanks to igus® motion plastics®



# AI application via Python



New

## Python library for dynamic control

ReBeL® Environment

A Python library is a collection of tools for programmers. The new Python library simplifies the integration of the ReBeL® into AI applications and enables flexible control of the igus® robot via a network connection.

- ▲ Easy integration into existing applications
- ▼ Reduced development effort thanks to programming modules
- Used and tested in the igus® Low Cost Automation test laboratory for test set-ups
- Control directly via the computer, no PLC required
- Available as open source: [igus.eu/python](http://igus.eu/python)



igus

# AGV with cobot & track guidance



New

## ReBeL® EduMove extension with magnetic tracking

ReBeL® Environment

EduMove is a versatile mobile platform that enables precise navigation thanks to a magnetic tracking sensor. It supports a wide range of applications and can be flexibly programmed with the iRC software. In preparation, a magnetic strip is placed on the floor, which is detected by the sensor to guide the platform. These strips provide central guidance for the platform. In addition, marker strips can be used for stops or branches, after which specific robot programmes are executed. The platform is used in various areas, including edutainment, research and development (R&E) and Industry 4.0. It is suitable for programming scenarios with a Windows GUI as well as under ROS2.

- ▲ Modular design that can be expanded to include additional functions, e.g. Lidar, camera technology, slam algorithm
- ▼ One control system for robot arm, gripper and platform
- Tested in the Low Cost Automation test lab
- Manufactured and developed in Germany



# Quiet please!



## New

### Noise emission tests

#### Low Cost Automation test laboratory

We have tested various robot types and accessories with regard to their noise emissions. This is crucial for different application scenarios such as laboratories, manual workstations and production environments.

- ▲ Precise data on noise emissions simplify decisions concerning application scenarios
- ▼ Own tests are no longer necessary as comprehensive testing has already been carried out
- The continuous sound levels determined are between 58.2 and 79.3dBA
- Low-noise operation protects people's health



## Shhh ... we are testing here

Welcome to the heart of igus® robotics - the internal test laboratory for cost-effective automation. Here, on an area of 400m<sup>2</sup>, every robot and every gearbox is intensively tested. This means you can always rely on the quality and technical information of your igus® robots.

The laboratory is independent of the equally spacious test laboratories of e-chains® and plain-bearing technology. The reason is that robots need their space. The facts:

- 400m<sup>2</sup> laboratory space at two locations
- 35 testing machines
- 500 tests per year
- 250 million cycles per year

This year, the focus of an extensive series of tests is on noise emissions. We pretend to be a fly on the wall and listen to what the tests from the igus® sound laboratory have revealed.

#### Delta robot

The noise emission of the delta robot type "Reach: 260mm" is tested for two programs:

- Program 1 - separate control of the robot axes (occasionally)
- Program 2 - parallel control of all robot axes (together)

The robot speed is at its maximum (100% speed for axis movements, 2,000mm/s for linear movements, 100% global speed). The Delta robot is not loaded.

**Result:** the parallel control of the axes produces the highest measured values on average: maximum 68dBA, average 63dBA. This is slightly quieter than a hoover.

#### ReBeL® Cobot

Based on the VDI guideline 2058 "Assessment of noise at the workplace taking into account different activities", the aim was to analyse the noise emission with different test parameters such as speed and load. The equivalent continuous sound level was determined for the individual parameters in accordance with DIN 45 641. (see diagram 1)

**Result:** the equivalent continuous sound level of the ReBeL® with six degrees of freedom is 58.2dBA, which corresponds to the noise emission of a conversation. The ReBeL® is therefore quieter than lightweight robots from other manufacturers!

#### Spiral bowl conveyor

Three sound measurements were carried out for the following loads:

- Idle
- Plastic product
- Metal screws

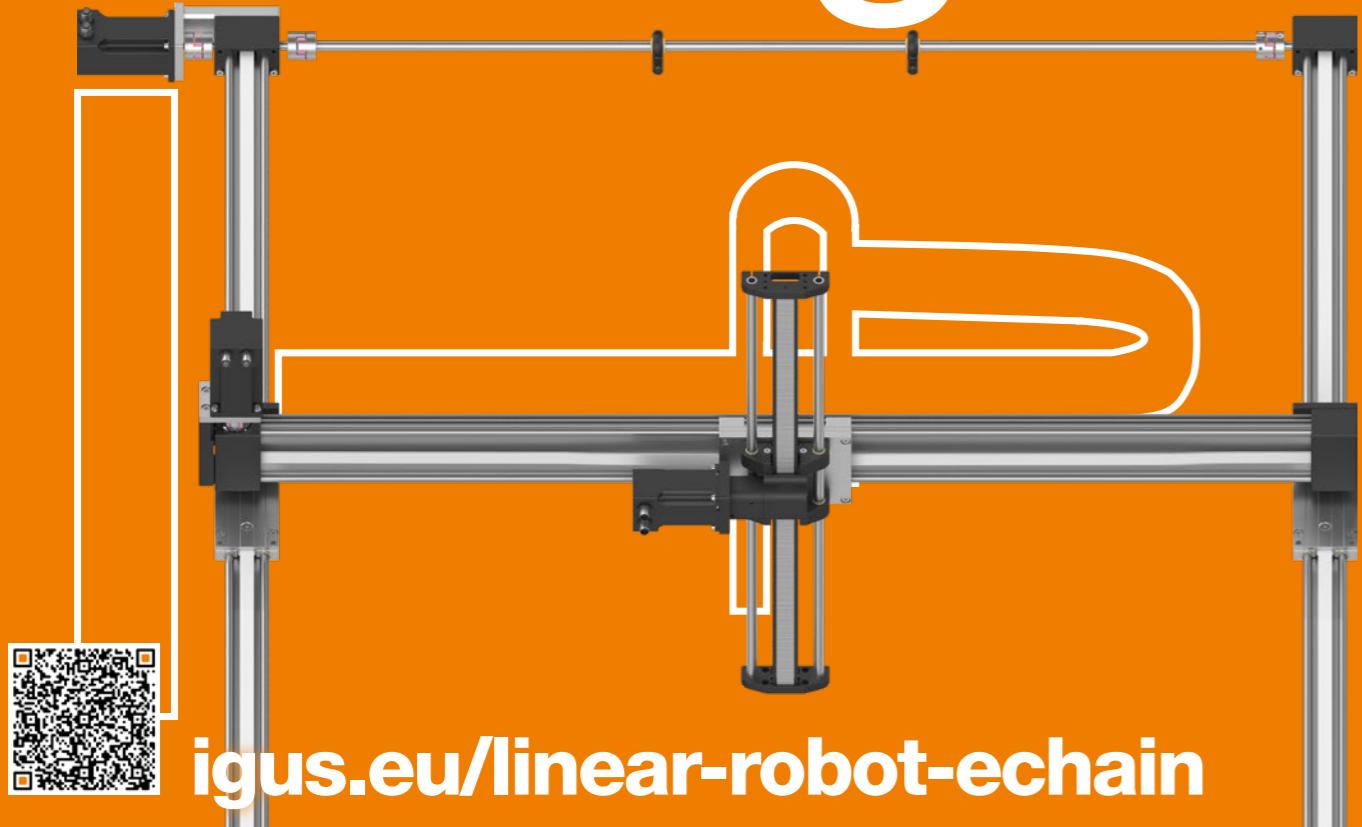
The same amplitude and frequency parameters were used for all measurements. These were selected in such a way that the widest possible measuring range is covered and at the same time the workpieces are conveyed efficiently through the vibrating bowl. The parameters are: [measurement duration 30s]; [amplitude 20 to 30mm]; [frequency 45 to 35Hz].

**Result:** an idle state results in the highest noise emission.

System	ReBeL® 6DOF	ReBeL® single axis	Delta robot	Linear robot	RBTX® spiral bowl conveyor	RBTX® rotary conveyor
Part number	ReBeL-6DOF-01	RL-SE-105-70-0110	DLE-DR-0001	DLE-RG-0001	RBTX-BASICS-0006	RBTX-BASICS-0039
Diagram						
Maximum measured sound level (worst case)	60.7dBA	55.0dBA	68.0dBA	58.3dBA	79.3dBA	83.9dBA
Worst case scenario	pick+place v = maximum payload 0.5kg	90° swivelling v = maximum payload 8Nm	pick & place v = maximum payload 0.0kg	Space diagonal v = 255mm/s payload 2kg	Idle product 35 to 45Hz A = 20 to 30mm	Loading with 0.5kg slot nuts (steel parts)
Medium sound level	58.5dBA	52.5dBA	63.0dBA	54.5dBA	69.2dBA	61.9dBA
Measured values from ... to ...	38.1-60.7dBA	47.2-55.0dBA	56.0-68.0dBA	51.5-58.3dBA	59.1-79.3dBA	45.8-83.9dBA

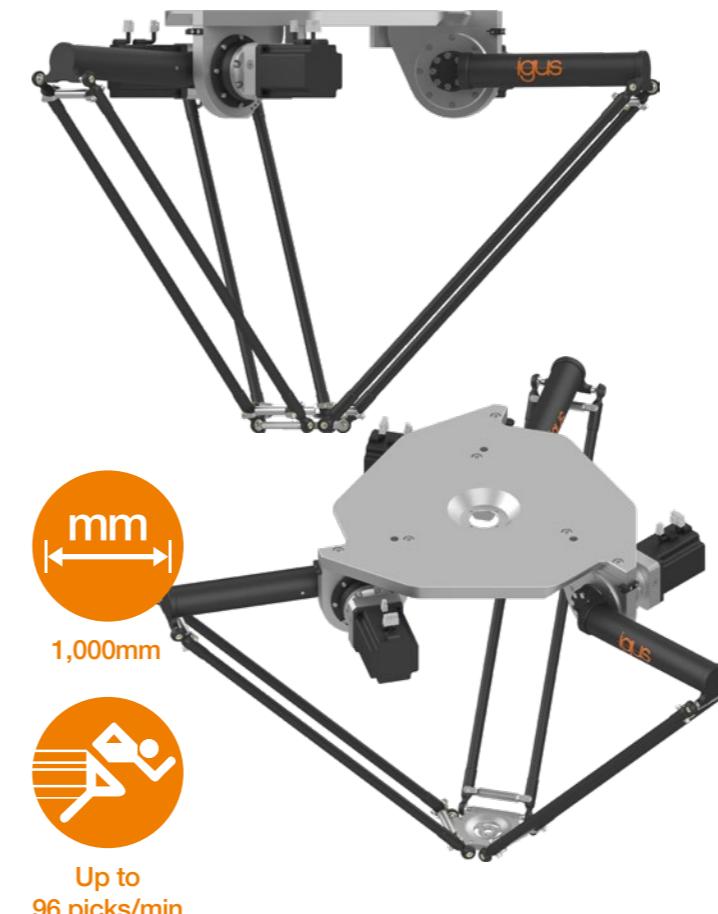
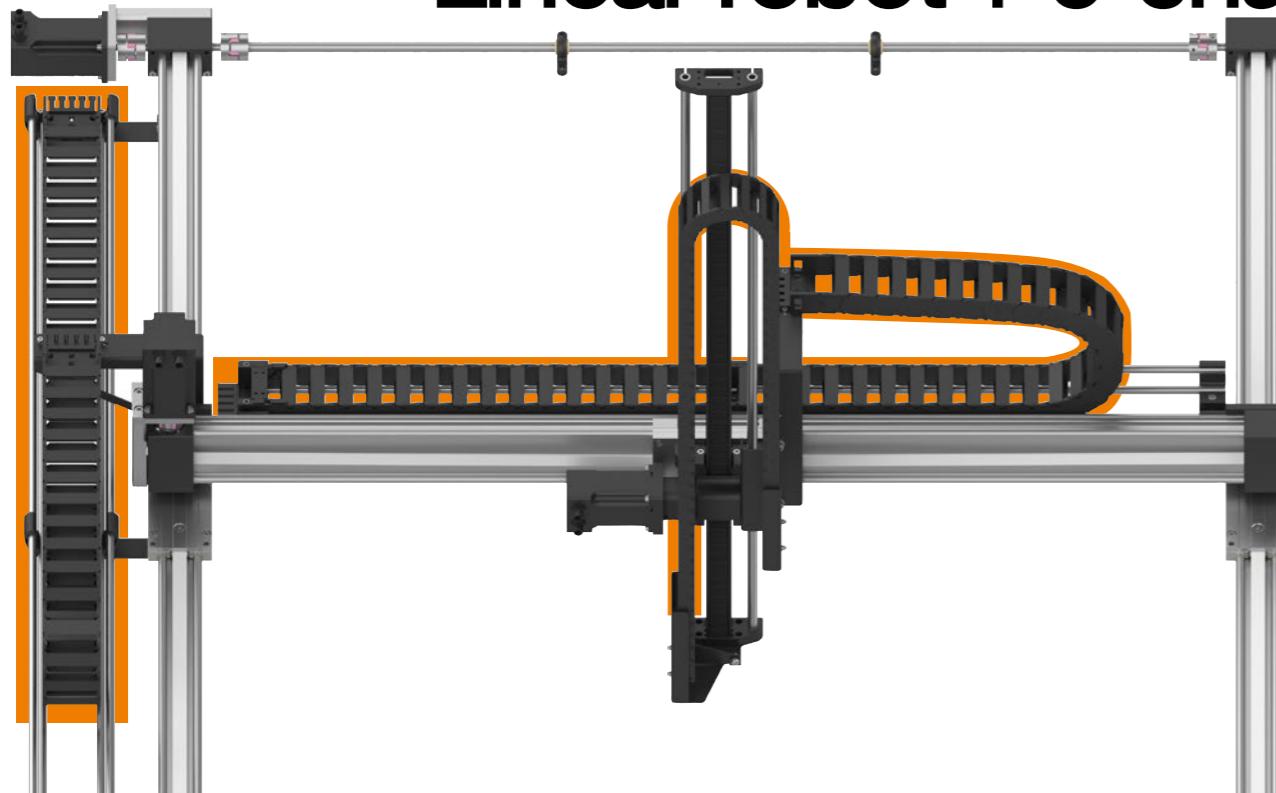
Noise emissions of other systems at a glance

# Missing?



[igus.eu/linear-robot-echain](http://igus.eu/linear-robot-echain)

## Complete! Linear robot + e-chain®



New

### In no time at all

XXL Delta robot with 96 picks/minute

The new low-cost delta robot LCA-DR1000-03 with a reach of 1,000mm and a pick rate of 96 picks/minute sets new standards for cost-effective automation. The combination of precision and speed makes this robot ideal for end-of-line applications.

▲ Even greater reach of 1,000mm and fast pick rate of 96 picks/minute for the delta robot segment

▼ Higher speeds can shorten production times and increase throughput rates

■ Tested in the Low Cost Automation test lab

● Thanks to its long reach, the delta robot can take on the tasks of several robots



New

### One more degree of freedom

XXL delta robot with additional rotary axis

This robot is an extension of the XXL delta with an additional rotary axis. Thanks to the additional degree of freedom, components can not only be gripped but also orientated.

▲ All in one: fast picking and additional turning of products with one robot

▼ No more need for an additional expensive system for parts orientation

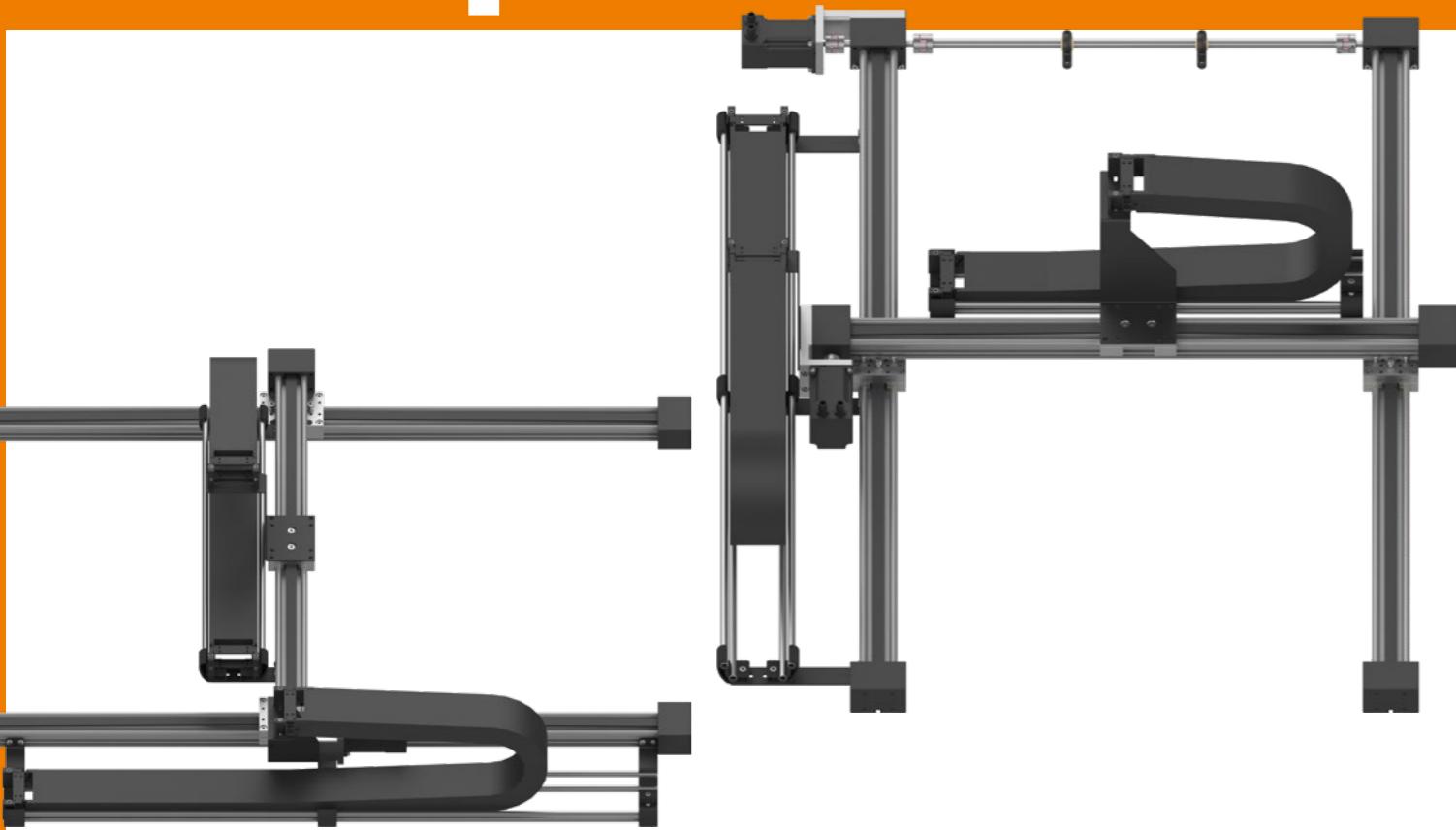
■ Tested in the Low Cost Automation test lab

● One robot for several process steps saves resources



Flat linear and line robots with customised energy chain sets

# Missing? Complete!



Plus #assembly

## Complete energy chain sets for linear robots

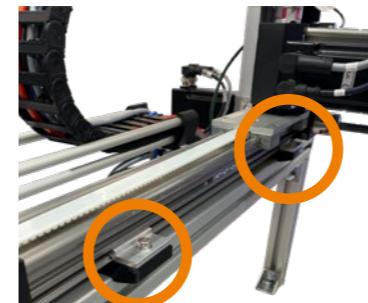
Flat linear and line robots with customised energy chain sets

Developed from lightweight components, thanks to compact plastic holders and aluminium tubes with variable length, for high dynamics and secure cable guidance.

- ▲ Especially compact, lightweight modular system
- ▼ No need to design yourself - simply use standard systems
- Tested in the Low Cost Automation laboratory
- Lightweight construction reduces material usage



24-LCA-44



New #assembly

## Mounting bracket for linear robot axes on 40mm T-slot profile

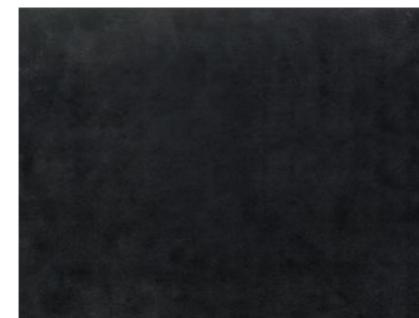
Facilitates the fastening of the axes of linear robots



- ▲ Alignment is simplified by a one-sided form-fit between the bracket and frame
- ▼ Cost savings through accelerated assembly
- Practical test with a room linear robot in the Low Cost Automation test laboratory
- The bracket is suitable for various axis types and uses existing parts so that the old brackets do not have to be discarded



24-LCA-45



New #assembly

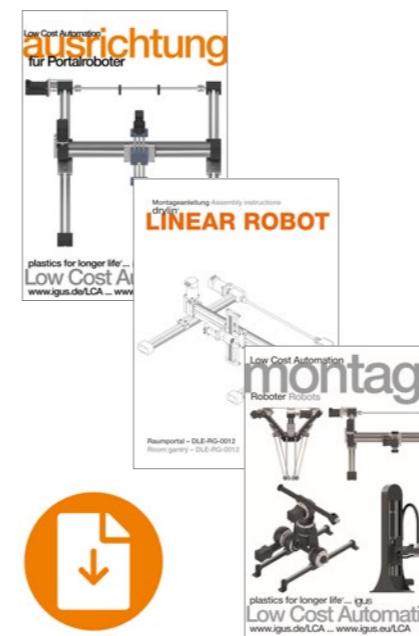
## Height levelling with elastomer pad

Elastomer pad (300mm x 200mm x 3mm) for easy linear robot orientation wherever you want to level out unevenness

- ▲ The rubber base facilitates the alignment process
- ▼ Can be modified with scissors, no CNC required
- Practical test with linear robot in the Customer Testing Area
- Reduces the amount of resources required to compensate for unevenness



24-LCA-47



New

## Knowledge on demand

Declaration of incorporation, assembly instructions and information sheet on substrate conditions

- ▲ Optimised assembly and alignment result in up to 30% higher performance from the linear robot
- ▼ Fast installation and commissioning
- Extensive testing in the Low Cost Automation test laboratory
- Saving resources thanks to DIY mentality
- All files are available in the download area: [igus.eu/portal-downloads](http://igus.eu/portal-downloads)

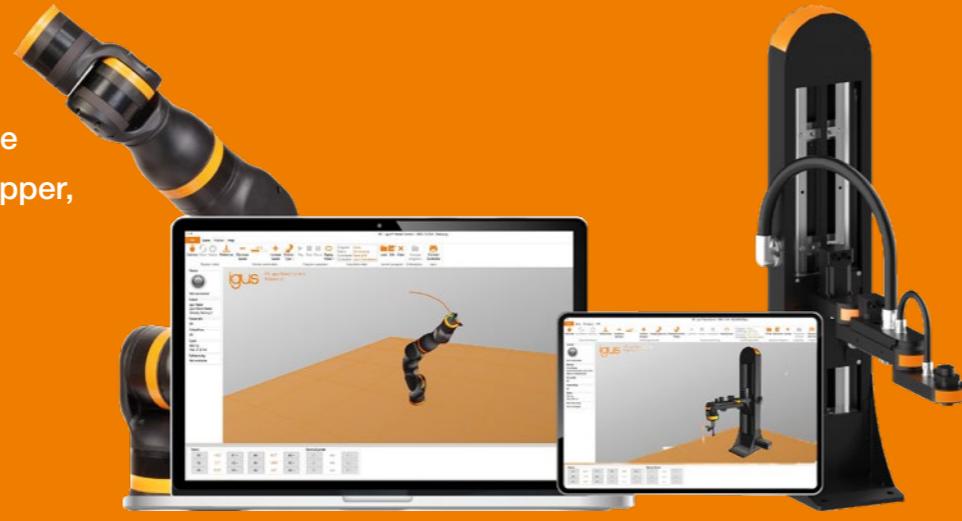


24-LCA-59

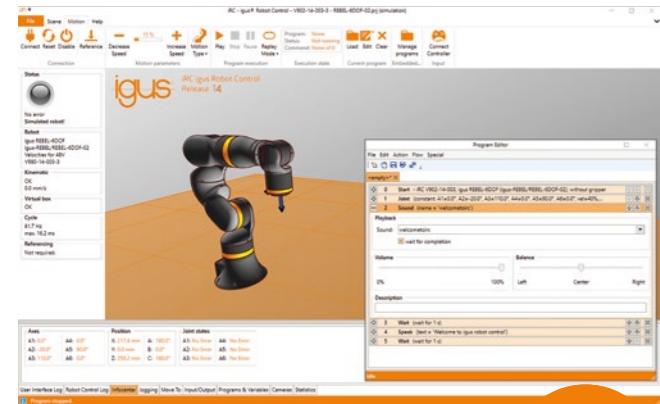
# Program, simulate and control robot.

Download the complimentary and licence-free igus® Robot Control software.

- Test all igus® kinematics in the software in advance
- With pre-programmed projects for all igus® robots, single axes and mobile robots
- Simple and intuitive 3D interface with simulation of the robot, gripper, cameras and much more.



[igus.eu/robot-software](http://igus.eu/robot-software)



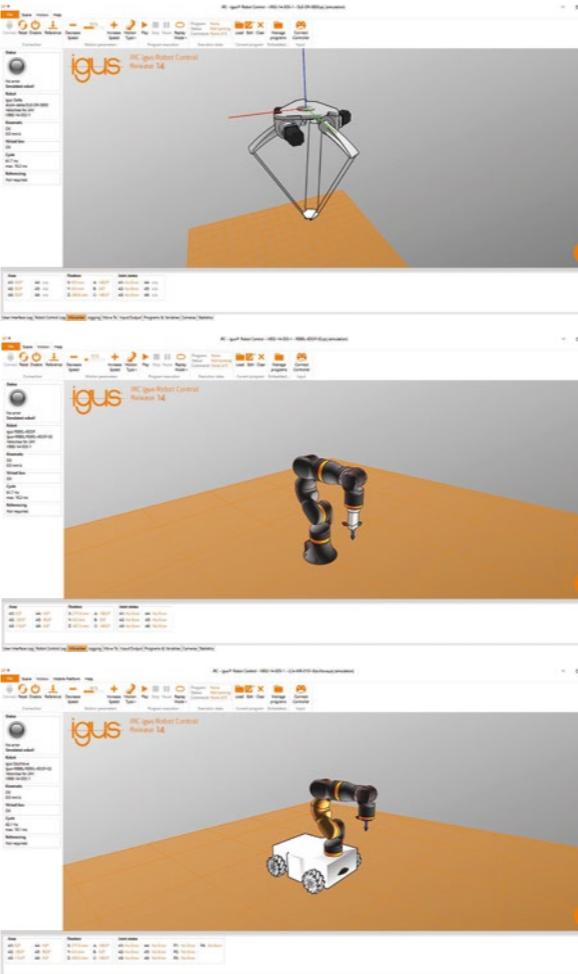
## New

### Sound-controlled

igus® Robot Control (iRC)

The igus® Robot Control has an audio output command. The EmbeddedControl can be equipped with a loudspeaker to play sounds and texts.

- ▲ Possibility of human-robot interaction
- ▼ No additional software necessary
- Tested in the Low Cost Automation test lab
- Continuous further development of new functions



## Plus

### Other kinematics and grippers

igus® Robot Control (iRC)

The igus® Robot Control now offers new robot kinematics and grippers in the operating interface that give the user even more options - from delta robots to mobile robots.

- ▲ These functions make complex robot programs simpler and easier to understand.
- ▼ Time savings through visual representation and improved understanding
- Tested and used in our own production
- Free updates make new grippers and robots available in the software interface.

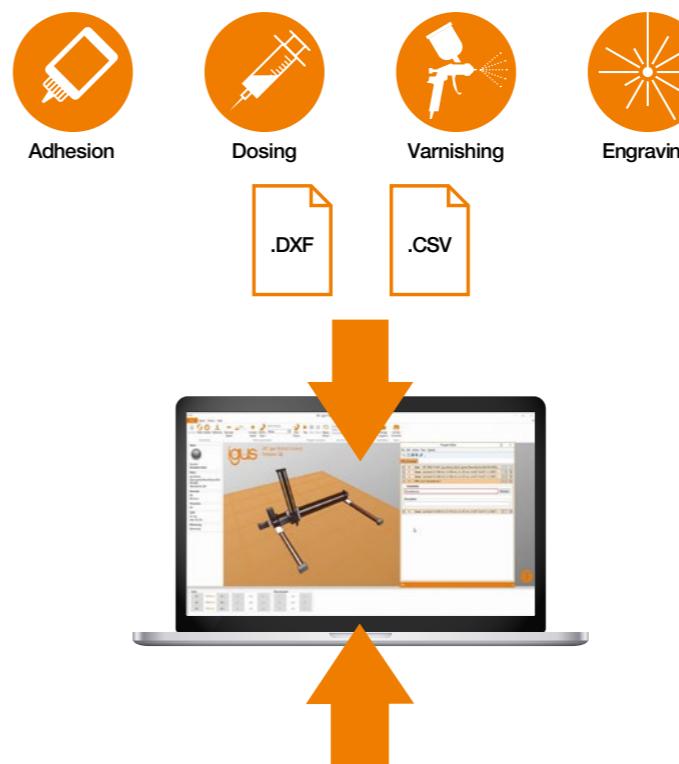


## Update

### CAD import

igus® Robot Control (iRC)

The path command facilitates programming for gluing, dosing or painting applications. A DXF file can be created with Autodesk, SolidWorks, FreeCAD, OpenScad or LightBurn and uploaded into the igus® Robot Control via drag & drop.



FreeCAD  
LightBurn  
SolidWorks  
OpenScad  
Autodesk



## Gentle grippers

The GorillaFingers are ideal for net products such as potatoes or apples and enable pasta to be gripped carefully.

GO ZERO Risk ... automate your factory from €2,000

# RBTX®



Tech up



Cost down



Proof



Sustainability



Digital

# 149

RBTX®

Tested, tested, tested

# 150

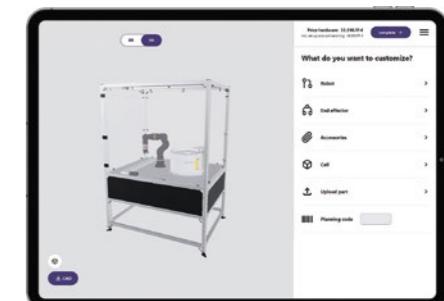
RBTX® Academy

Practice-oriented training with state-of-the-art robot technology

# 151

Suitable substructure for every robot

Machine planner



## Online tool

Machine planner

[configurator.rbtx.com/mp](http://configurator.rbtx.com/mp)



## Catalogue

Find out everything you need to know about RBTX® and Low Cost Automation. With many application examples and additional information. MAT0075660.20

**igus.eu/news-LCA**

# Test before invest



## Update

### Customer Testing Area

RBTX®

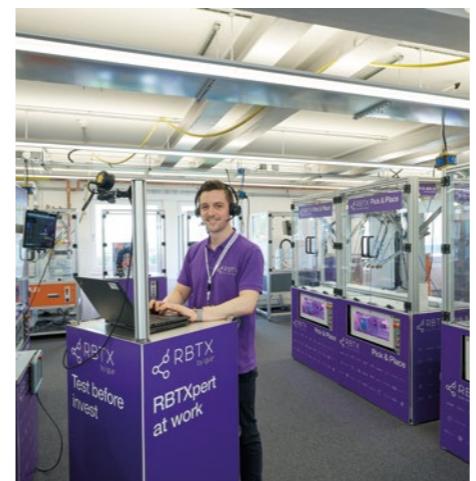
We exhibit robotics products from leading manufacturers in the worldwide Customer Testing Area and put your desired application through its paces.

- ▲ RBTX® allows you to carry out tests with the latest hardware and software from leading robotics manufacturers
- ▼ Reach your destination faster with the help of robot experts
- 20 tests per week in Germany alone
- No resource consumption due to unnecessary hardware investments



### Your room for testing

There is hardly any discipline that we pursue as passionately as testing - not only for us, but also for our customers. Testing literally takes up space: in Germany alone, we dedicate 400m<sup>2</sup> exclusively to the feasibility testing of customer applications. We now operate 14 customer testing areas worldwide and their number is growing steadily.



You are welcome to visit us at any time! And if the nearest Customer Testing Area is too far away, you can always book a free video call. In addition to personalised advice, you will also get a live view of the testing area, which is always in motion. New robots from different manufacturers might be moving in or users may be on site because they want to try implementing their application in person.



Basic	Extended	Premium
Free	€500	€1,000
<ul style="list-style-type: none"> <li>● We test simple applications such as pick &amp; place systems</li> <li>● You will receive a video, a quotation including a fixed price and cycle time</li> </ul>	<ul style="list-style-type: none"> <li>● We test customised applications</li> <li>● You will receive a video, a quotation including a fixed price and cycle time</li> <li>● We will credit €500 if you order a robot</li> <li>● Order at <a href="http://rbtx.com">rbtx.com</a></li> </ul>	<ul style="list-style-type: none"> <li>● We test customised applications</li> <li>● We test with image-processing systems</li> <li>● You will receive a video, a quotation including a fixed price and cycle time</li> <li>● We will credit €500 if you order a robot</li> <li>● Order at <a href="http://rbtx.com">rbtx.com</a></li> </ul>

#### Test before you invest

Nothing is more annoying than investing a lot of money without being sure whether the project can be realised. For this reason, we test your application for you in the Customer Testing Area without you having to pay for new robotic components or an entire machine in advance. Depending on the effort involved, you pay €0, €500 or €1,000 for your individual feasibility test. Simply describe to us in advance what you are planning and, if necessary, send us your workpiece. We will set up your application in the Customer Testing Area and film the test process. You will receive a video of your test as well as an offer without obligation for all required components. And the best thing is that we will credit €500 when you order a robot.



**Robin Trute**  
RBTXpert  
Low Cost Robotix [rbtx.com](http://rbtx.com)

# Learn with the RBTX® Academy! 1,001 robots solution



New

## RBTX® Academy

Practice-oriented training with robots and components from a wide range of manufacturers

Discover comprehensive robot training courses for all levels of experience! We offer practical courses for users of igus® robots and well-known partner robots in our new, state-of-the-art training room. Experienced trainers impart in-depth knowledge and practical skills to operate and program the robots efficiently. Whether you want to take your first steps or extend your knowledge - you will find the right offer here. Register now and get started!

- ▲ Robot-oriented training, manufacturer-independent
- ▼ Faster to the desired robot solution
- Realistic tests and exercises on site
- Sustainable learning environment avoids material waste and promotes efficient knowledge transfer
- Digital learning materials allow for flexible knowledge sharing: [igus.eu/rbtx-academy](https://igus.eu/rbtx-academy)



Update

## Suitable substructure for every robot

Machine planner - create the right robot solution online

You can choose from new substructures such as tables or bases in the configurator. New grippers and robots are also available - compatibility guaranteed.

- ▲ The right structure for every application: from cobot tables to cells to movable bases
- ▼ Save expensive construction time by relying on prefabricated and customisable designs
- Already in use by over 5,000 igus® customers
- Additions can be made to the systems at any time
- [configurator.rbtx.com/mp](https://configurator.rbtx.com/mp)



# motion plastics®



## e-chains® and e-chain systems®

Page 28



## smart plastics

Page 38



## chainflex® cables

Page 44



## readycable® readychain®

Page 56



## Bicycle components



## iglidur® plain bearings

Page 62



## iglidur® rollers

Page 68



## drygear® gear and gearbox technology

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## iglidur® slewing ring bearings

Page 76



## iglidur® bar stock

Page 80



## iglidur® 3D printing

Page 86



## igubal® spherical bearings

Page 90



## xiros® ball bearings

Page 98



## drylin® linear technology

Page 102



## dryspin® lead screw technology

Page 110



## drylin® drive technology

Page 116



## Low Cost Automation

Page 128



## RBTX® market place

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## e-chain® and e-chain systems®



New 10/24

24-ECS-52

CFX strain relief configurator

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New 10/24

24-ECS-49

Study: Extender crossbar clip for E2(i).26/ E2(i).38 / E2(i).48 series

Page 31



New 10/24

24-ECS-46

Study: Extender crossbar clip for E4Q.64L / E4.64L

Page 31



New 10/24

24-ECS-53

Study: YE.28 / YE.32

Page 32



New 10/24

24-ECS-47

guidelok swing GLO.S.E2i.21.038

Page 33



New 10/24

24-ECS-50

e-skin® soft SKS28.100.02.1

Page 36



New 10/24

24-ECS-49

e-skin® flat layer holder

Page 37



New 10/24

24-ECS-42

C6.38 cleanroom e-chain® with opening tool

Page 37



New 10/24

24-ECS-48

New e-chain® guarantee

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New 10/24

24-ECS-51

Office Chain Oval OCO.32.37.0

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New 10/24

24-ECS-52

E2C.38 one-piece e-chain®

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New 10/24

24-ECS-42

Mounting brackets for E2.26 and E2.38

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New 10/24

24-ECS-44

Damper clip for E2i.48

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New 10/24

24-ECS-55

Magsnap for E2i.15

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New 10/24

24-ECS-51

New crossbars E2.26F and E2.38F

Page 37



New 10/24

24-ECS-47

Study: Multicable e-spool® / SPMC e-spool®

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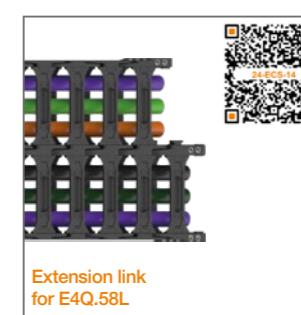


New 10/24

24-ECS-13

E4Q.58L e-chain system®

Page 37

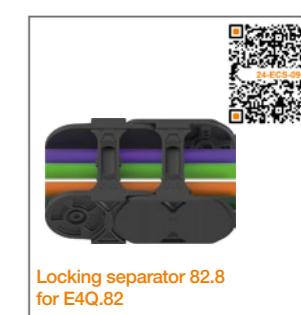


New 10/24

24-ECS-14

Extension link for E4Q.58L

Page 37



New 10/24

24-ECS-49

Locking separator 82.8 for E4Q.82

Page 37



New 10/24

24-ECS-42

TUB for E4Q.44/ E4Q.58 and new SHM.60 hose holder



New 10/24

24-ECS-12

Universal interior separation for E4Q.64



New 10/24

24-ECS-14

64Q.5 notch separator for E4Q.64



New 10/24

24-ECS-49

Strain relief system C825.075.ZS and C1132.080.ZS



YR.42 / YR.56



YEHD.108 / YEHD.112 mounting brackets



guidelok swing - self-adhesive version



Study: e-tract DC



## smart plastics



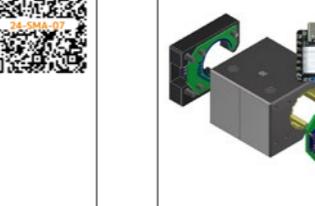
New 10/24



EC.WLC status indicator



New 10/24



IS.BLE predictive maintenance concept Page 41



New 10/24



igubal® spherical bearings with predictive maintenance Page 41



Study: e-tract 3.0 retraction unit



e-skin® flat single pods in six sizes



Mounting bracket for e-skin® flat single pods



Study: e-skin® soft ESD



New 10/24



iglidur® ball coupling



EC.IT



superwise iComm box



i.Sense module GEN II



e-skin® ring interior separation SK24.3.H.5



Reinforced mounting bracket for e-skin® soft 20



Study: e-skin® SKS24 / triflex® CSCS



triflex® R TRC fibre-rod system | ESD



superwise integrated i.Cee module



CF.D module for bus cables



DriveCliq extension for CF.D module



## chainflex®



triflex® R TRE.85.135.0.C



Robot equipment configurator



Study: e-spool® 4.0 for crane systems



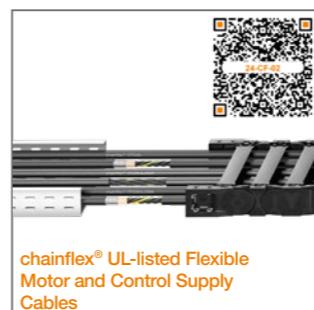
Study: e-spool® flex light 2.0



New 10/24



chainflex® product range extension - available from 12 November 2024



chainflex® UL-listed Flexible Motor and Control Supply Cables



chainflex® CFSPECIAL.572



New chainflex® PVC cables



Smart support plates / floating moving end



e-loop® retrofit mounting console



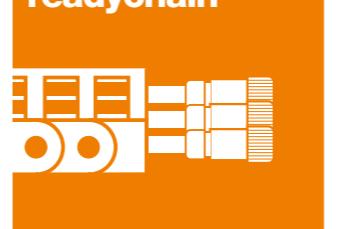
SRM-L Steel Rotation Module Light



iRM igus® Rotation Module Online Configurator



## readycable® readychain®



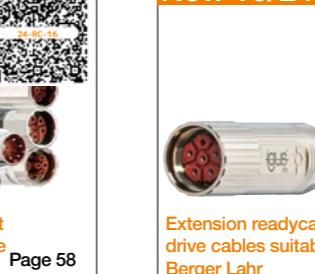
New 10/24



Drive technology product range expansion, suitable for 40 manufacturers



New 10/24



Extension readycable® drive cables suitable for Berger Lahr



New 10/24



Drive technology additions suitable for Siemens S200



Study: TRM triflex® rotation module



e-spool® theatre 10m and accessories



Low-cost zig-zag



e-spool® microphone and e-spool® microphone stereo



New connector HARTING T1 for Single Pair Ethernet



Update to the EDS24 standard



CAT8 connectors for the data transmission of tomorrow



New Connector for SPE readycable® cables



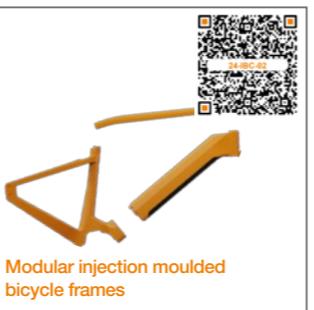
Attachment housing  
for Module Connect



## Bicycle components



Bike frame made  
of solid plastic



Modular injection moulded  
bicycle frames



iglidur® AX500



Calculate the CO<sub>2</sub> footprint  
for each component



iglidur® Q2LW



econ materials



Modular performance  
bike frame



Rotomoulded  
bicycle frame



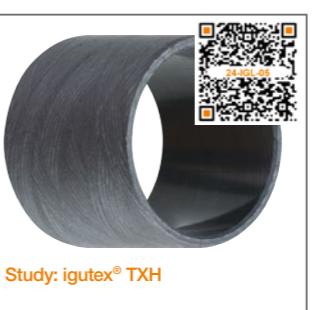
Solid plastic wheels



Rotomoulded wheels



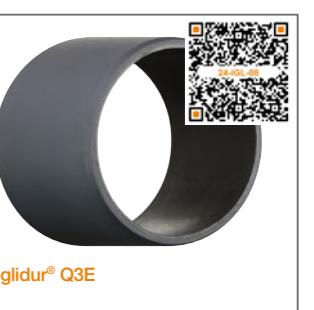
Study: iglidur®  
large bearings



Study: igutex® TXH



igutex® TX3



iglidur® Q3E



Tribo-optimised plastic  
handlebar



Freewheel made of  
solid plastic



Plastic bicycle  
pedal crank



Belt tensioner with  
xiros® ball bearing



## iglidur® rollers



New 10/24



Knife edge rollers made  
of iglidur® W301



New 10/24



Guide rollers made of  
iglidur® W301



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Plain bearings



Pulleys



Planetary crank gearbox



Bicycle wheel bearings



Skate wheel made  
of iglidur® J



Roller adapter made  
of iglidur® P360



Roller adapter made  
of iglidur® A500



## drygear® gear and gearbox technology



## iglidur® plain bearings



iglidur® W300PF

Page 64



iglidur® K230YM

Page 66



iglidur® C160

Page 66



drygear® Apilo®

Page 74



drygear® universal joint

Page 75



drygear® flexible shaft

Page 75



iglidur® AD210



iglidur® SRSG03

Page 67



iglidur® JPF



iglidur® FPF



iglidur® IC-05PF



Large machined gears



drygear® planetary gearbox  
DG-PLI-56-AD-AST

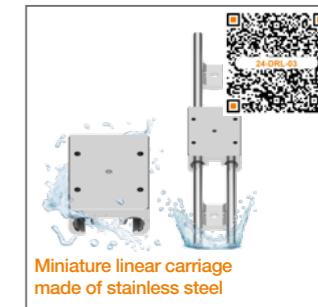
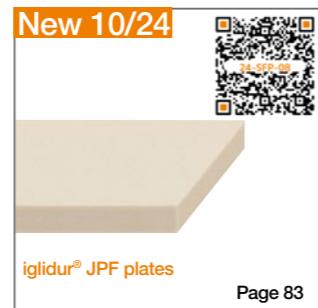
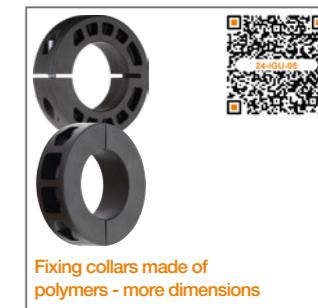


drygear® evoloid  
gearbox DG-EVO-42-18



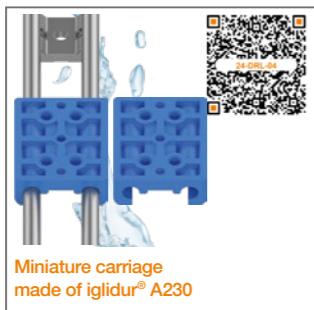
## iglidur® slewing ring bearings







Double rails WS-06-20-ES



Miniature carriage made of iglidur® A230



Solid plastic carriage made from iglidur® RN403



Narrow linear housing WE7UMS-01-0



Double axis system DLE-DA-ZLX



Holder for control units



Claw coupling for torque transmission



Cost-effective couplings for small installation spaces

Page 125



drylin® rails, ROHS-3 REACH-compliant



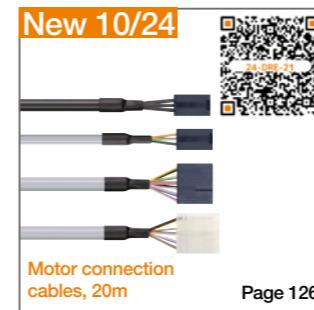
NWW prism carriages, PTFE-free



High performance carriages, PTFE-free



Telescopic rails with PTFE-free centre-rail



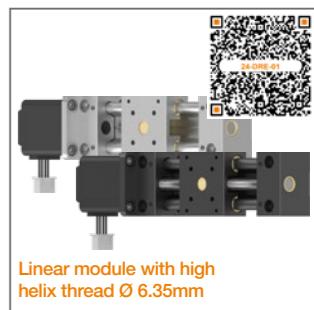
Motor connection cables, 20m



Specialists for drive technology



Miniature XY table in two versions



Linear module with high helix thread Ø 6.35mm



Three-part polymer extension, PTFE-free



drylin® W tandem roller bearings



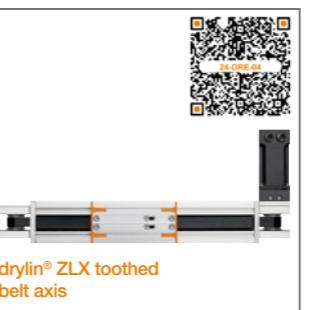
drylin® W-HYD modular system



Linear carriage in hygienic design



drylin® SLR - new standard for linear systems



drylin® ZLX toothed belt axis



Linear module with hygienic design



D1 motor control system with PROFINET



Pre-assembled carriages



dryspin® lead screw technology



New dryspin® lead screw dimensions



New dimensions: lead screw nuts



Control units for D1



Lead screw motors in installation size NEMA 8



Stepper motors with encoder in IP65



Double axes space-saving stepper motors



New dimensions: lead screw nuts with machined thread



Low Cost Automation



Threaded system solutions for 3D printers



iglidur® R lead screw nut material, PTFE-free



drylin® drive technology



ReBeL® Cobot: from Cologne to the world



Get started now: Automation made easy!



The nimble helper with and without cobot

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Miniature linear axis with lead screw motor SWC-BB-0620-FL-ES



ReBeL® Environment, ReBeL® gripper



ReBeL® Environment, REBEL-EQU-SNK series

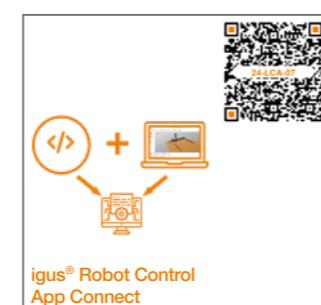
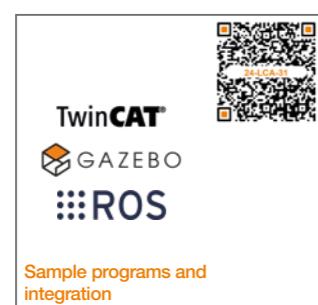
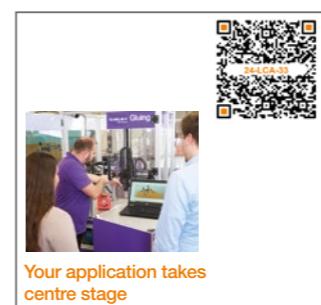
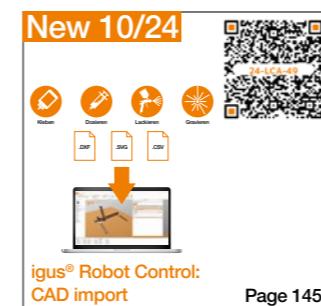
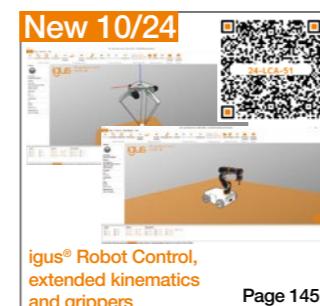
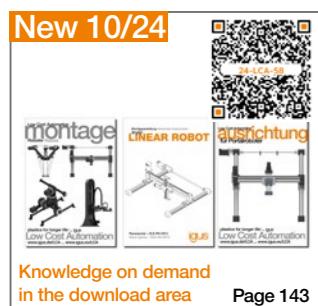
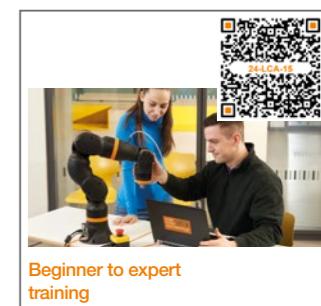
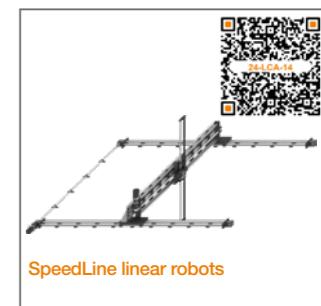


ReBeL® Environment, REBEL® CobotPump



Additional axis of rotation in front of the robot

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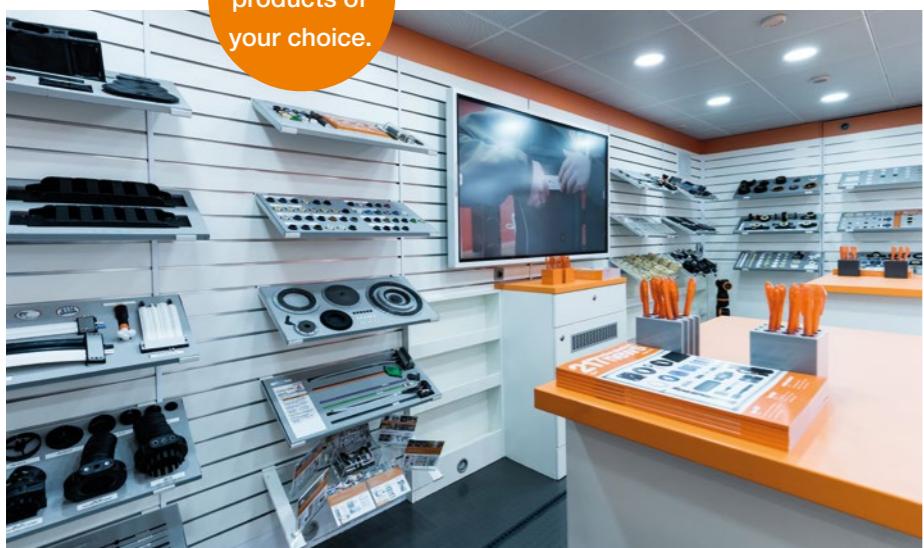


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products of  
your choice.



With  
products of  
your choice.

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- Time-independent, fits your daily routine
- Individual application advice and general new products presentation - anything is possible
- Groups can be customised

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For 22 years, we have been visiting you with our mobile pop-up trade show stand. We will show you our latest products, and together we can find the best solution for your application.

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products of  
your choice.



### Low Cost Automation roadshow

We adjust our presentation to the customer visit, much like our mobile in-house exhibition. The Low Cost Automation roadshow focuses on direct implementation of an application at the customer's site with a quick return on investment.

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- Use our watch list function. Add news products to your watch list and receive more information via e-mail.

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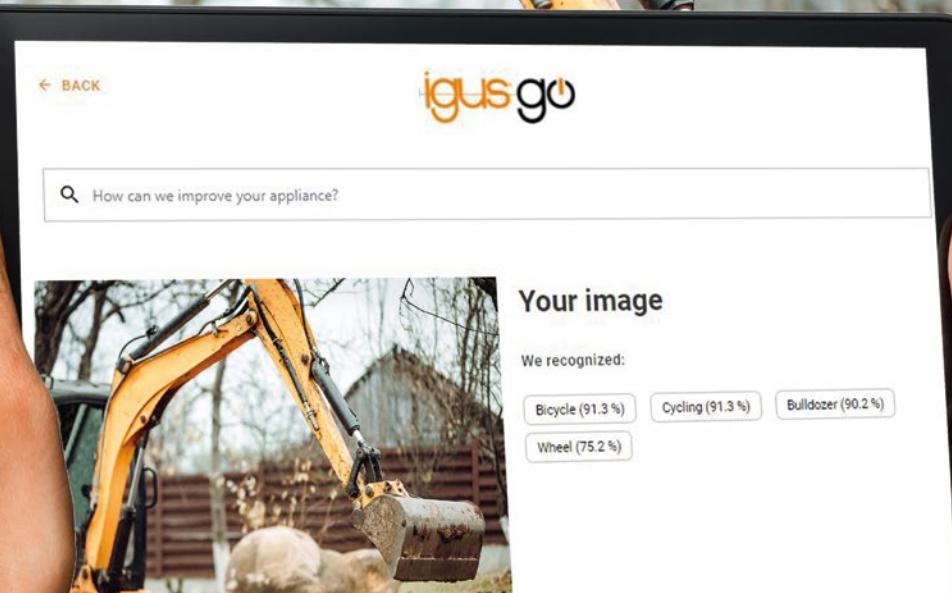


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