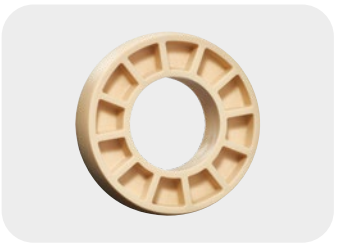
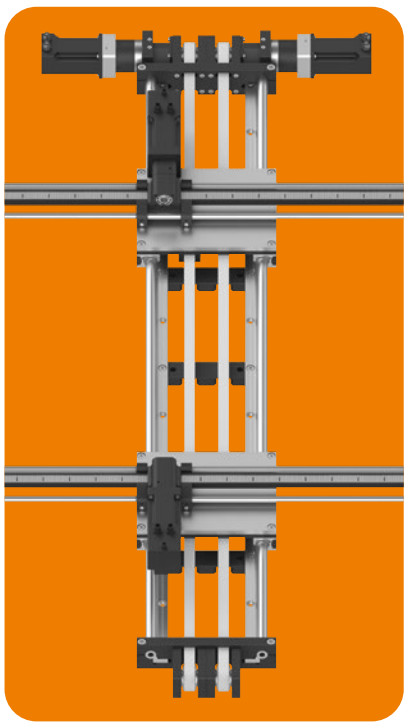
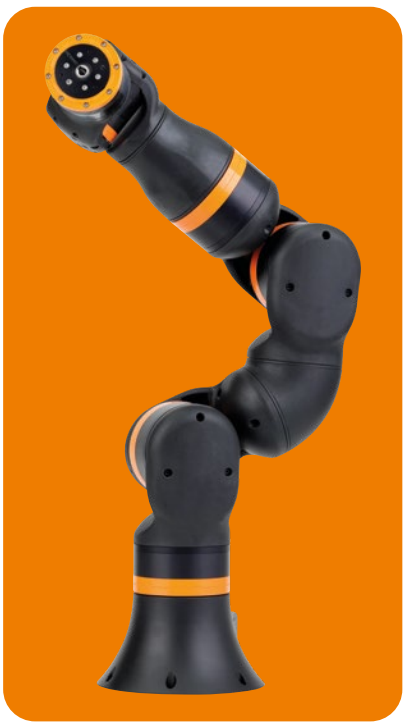
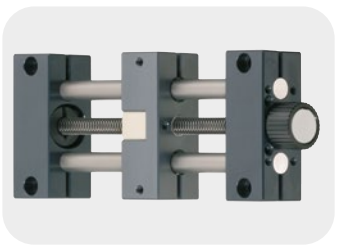
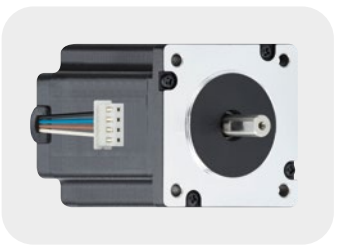
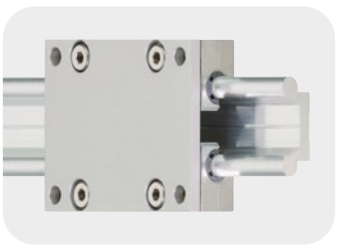
Low Cost Automation







Articulated arm robots

Page 22

Cost-effective robotics that collaborate - get to know the ReBeL®

Linear robots

Page 30

Line robots with two axes, flat linear robots with three axes or room linear robots with four axes

Further kinematics

Page 38

Delta and Scara robots, control systems and much more...

motion plastics® catalogues

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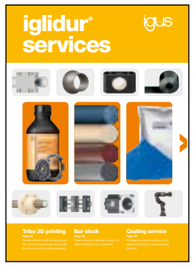

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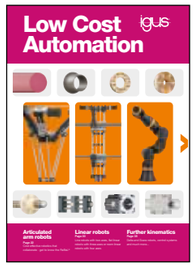

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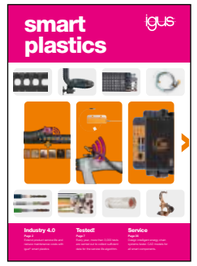

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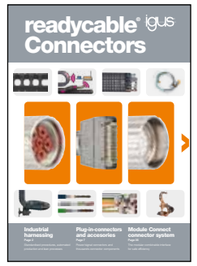

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Low Cost Automation

Company

Low Cost Automation

Tech up

Cost down

Proof

Sustainability

Digital

Facts

The story behind igus®

"Give me your most difficult part and I will give you a solution", said Günter Blase. He had to take a risk in order to win over Pierburg, his very first customer. There were two children at home who needed to be cared for. Money was in short supply. He had just set up igus® with his wife (tax consultant) and the first injection moulding machine still had to be bought. The order from Pierburg was urgently needed.

And Günter Blase received that enquiry from Pierburg. Their complicated problem part was a valve cone for a carburettor. In 1964, no-one would have come up with the idea of using plastic to make this small metal component and, what's more, to do so with an injection-moulding machine.

The manufacturing process was simply too complicated. For Günter Blase, this was no reason to lose heart. He went into his double garage and experimented until the first perfect plastic valve plug emerged from the injection-moulding machine.

The double garage in Cologne-Mülheim soon became too small. Just like the new location in Bergisch Gladbach. Today, the headquarters of igus® are still in Cologne but accommodates over 800 injection-moulding machines in an area of over 200,000m^2. In addition, igus® has over 30 locations worldwide. The business areas have expanded, from plastic energy chains and plain bearings to other components for moving applications and complex automation solutions. The core philosophy is still the same as in 1964, improve anything that moves.

"Give us your most difficult moving part and we will give you a solution."

motion plastics® ... improve what moves

igus® facts at a glance

4,600 employees worldwide

€1.115 billion turnover

31 locations + distributors in over 80 countries

188,000 customers

243,000 parts from stock

800 injection-moulding machines

Our test laboratory

Materials are manufactured by igus® in accordance with the motto “Tech up, Cost down”. Our products are designed with great passion to extend the service life of machines and applications, eliminate maintenance and reduce costs. For our engineers, the quality and reliability of parts, i.e. their resilience and service life, are vital factors in development. Every igus® product is tested thoroughly before it is made available for sale. To this end, we have been operating our own test laboratory since 1985. It's not only the largest test laboratory for tribopolymers in the industry in terms of area, but it also conducts the highest number of product tests and test procedures.

What is tested and how?
Our facilities for testing applications and materials cover a total of 3,800m². Every business sector has its own test laboratory. However, we test some products together in one area. For example, 1,500m² is dedicated to testing chainflex cables in our own energy chains. For especially long travels, 2,000m² of outdoor space is available. iglidur® plain bearings, drylin® linear bearings, and our Low Cost Automation components are tested in an area of over 300m². The latter partly under real conditions in quality assurance. To be able to develop new cleanroom-compatible products faster, we operate our own cleanroom laboratory with an ISO Class 1 cleanroom system in cooperation with the Fraunhofer IPA. An outdoor testing area, a laboratory for noise tests and the climatic chamber with -40°C completes our test area. To achieve maximum realistic conditions, we also test customer applications and conduct standard industry tests.

We would love to test your application
You don't want to test and would like to subject your application to a material test before using it? Or do you have an unusual application for which you need a suitable component? No problem. We will test your application in our test laboratory and use our know-how to find the best igus® solution for you. Regardless of whether it is a plain bearing, energy chain, cable, linear technology, bar stock or Low Cost Automation.

How many tests are conducted in the test laboratory?
Annually, a large number of tests and material examinations are conducted in the numerous test facilities.

Laboratory facts

- Total area of igus® test laboratory: 3,800m²
- More than 15,000 tests, about 4,000 of them for e-chains® and chainflex® and around 11,000 of them for dry-tech® (rotating, pivoting, linear, tumbling, heated, underwater, and so on.)
- 450 test rigs for plain bearings
- 10 billion e-chain® cycles
- 3,500 tested cables
- 400 customer-specific tests

igus.eu/testlab

What happens to the test data?
Use of testing data does not stop after development. We have been developing innovative online tools since 2001 and sensor-based smart plastics since 2016, which are based on the database of our test laboratory results.With these online tools, the economic efficiency and reliability of our products can be determined quickly and very easily online 24/7. This means a high degree of transparency for our customers, enabling engineers to find the most cost-effective, functioning solution to their problem.More than 40 tools are available to you free of charge.

Sustainability

Sustainable product developments

Plastic is a much-discussed material. We know that high-performance plastics can contribute to protecting resources and the environment, and we have made this the focus of our activities.

We look at plastics in three phases: during their production, in use and at the end of the product's life. We will give you our answers to sustainability questions for both our products and everyday life at igus®. Not everything has been answered yet, and for some things, especially with regard to sustainable production, we are still working on answers and solutions.

igus® has been focusing more and more on sustainability in manufacturing and products since 2018. As a result, we are now also able to state the carbon footprint of a large number of our iglidur® plain bearings. In addition, there are new products that are largely or completely made from recycled material from our own production. And these are also tested in the laboratory and have a predictable service life.

Certified according to ISO 14001
In order to make our environmental policy transparent and comprehensible, we have been certified according to ISO standard 14001 since 2019, a recognised basis for environmental management systems. This helps us towards having a CO_2 neutral factory.

Power consumption
We purchase 100% green electricity and reduce the consumption of our machinery and equipment. We acquire injection moulding machines that are 40% more energy efficient. The power consumption was reduced by 11% in 2021, while increasing production.

99% recycled
99% of our rejects in injection-moulding production (sprues, defective parts) are recycled and reused in the manufacturing process.

clean igus® programme
Mechanical measures such as magnetic foils and guide plates prevent parts from falling out of the machines in the production process and becoming waste. The waste ratio (production waste + processed material) could be reduced by 21% in 2021 due to these and other measures.

CO_2 emissions
In 2021, we achieved 31.2% less CO_2 emissions than in 2020.This figure relates to Scope 1 and Scope 2 emissions. The switch to green electricity in mid-2021 and to climate-neutral gas in October 2021 played a key role here.

The circular economy goes digital

Chainge
engineering plastics recycling

igus®

95t
of material returned as part of the chainge® recycling program since 2019

31.2%
CO_2
CO_2 savings 2021 compared to 2020

reguse **150**
renewed IT equipment sold internally and proceeds donated in 2022

196
new energy-efficient injection moulding machines, 275 old machines exchanged for new ones between 2021 - 2022

64,409
trees planted since 2020

igus® services

Harnessed for you: readycable® and readychain®

Ready-to-install readychain® - Energy supply systems
Energy chains from igus® are already being reliably used in hundreds of thousands of applications all over the world. From small devices up to steelworks, from very simple linear applications up to the most complicated task - igus® offers thousands of options for all types of applications. With more than 1,350 chainflex® cables from stock, igus® offers the largest range of cables specifically for the energy chain. Thanks to the industry's largest test laboratory, igus® is the only supplier in the market able to offer a 4-year guarantee on its chainflex® cables. All common plug-in connections and more than 5,000 drive cables suitable for 34 manufacturer standards are available.

igus.eu/ready-to-install

Ready-to-connect readycable®
readycable® harnessed cables are ready-to-connect cables for use in energy chains. As a manufacturer and harnesser, igus® offers everything from one source, reducing throughput times and the number of suppliers. The portfolio includes an extensive range of catalogue products, including cables harnessed suitable for 34 manufacturers' standards and various industrial standards as well as customised components produced singly or in volume. Numerous cable types and qualities, with different approvals and certifications of conformity are available. All components are subjected to extensive quality checks and function tests.

igus.eu/readycable









igus® project

Custom-solutions

Tech up, Cost down: we take the difficulty out of even the most complex energy supply systems.
Conversion or new installation - special solutions do not need to be expensive. With more than twenty years of experience in project work and more than 1,000 projects each year, we have a rich modular system that makes it very easy for us to assemble customer-specific solutions. Our focus during these efforts is always to avoid over-engineering. We consistently develop technically precise solutions at the best price. If our customers want, we add installation and maintenance service and an individual guarantee.

Conversion project or new development – we provide you with on-site support
Whether you are working with an initial design or modernising an existing system, igus® specialists will give you on-site or remote assistance. Our goal: Tech up, Cost down. It's our job. You receive a free design proposal.

Project planning and quotation phase
If you find our design attractive, we will work out further details with you. We will discuss all necessary solution components: accessory parts and services. We will use this basis to quote a fixed price.

Project phase
Our project team prepares detailed drawings with all components and interfaces. Once they are approved, work begins in our 32,000m² production plant. The energy supply system is assembled precisely for shipment, with all its components and attachments, ready to connect and including documentation.

Delivery and assembly
The pre-assembled energy supply is now delivered to the installation site. Here it can be installed by your fitters, optionally with an igus® supervisor. Alternatively, installation and commissioning can also be carried out by the igus® installation service. You can find more information about our after-sales services here:
igus.eu/engineering

igus® services

Made for you: 3D printing and CNC service

3D printing with abrasion-resistant polymers plastics
Abrasion and wear-resistant tribo-plastics for additive manufacturing via selective laser sintering (SLS), with filament (FDM/FFF) or resin (DLP) allow you to use the printed component or to test the function of the part reliably and completely from the prototype or production batch onward.

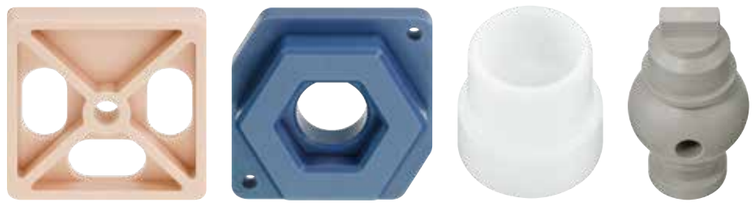
- Abrasion-resistant
- Lubrication and maintenance-free
- No tooling costs
- Design freedom
- 3D printing of parts on site
- Can be processed by commercially available 3D printers
- Predictable service life
- 3D printing service in 1 to 3 days

igus.eu/3D

Individual machined parts
Configure your wishes and receive direct price feedback. A large number of different iglidur® high-performance polymers are available to you. The ideal iglidur® material can be found for almost every application, from high temperatures to sea water, from food to automotive. Various online tools and our experts are on hand to help for the selection of materials.

Assign priority to your order:
If things have to go faster: select our express option and your components will be ready to ship in 3 days.

igus.eu/cnc



igus® Test & Integrate

From the idea to production

Industrial robots have their price. The payback period for traditional robot systems are three to four years. But for small and medium-sized companies that want to manufacture more product types with small batch sizes, the requirements are very different. Entry into the world of automation is often considered to be complex and time-consuming. With Low Cost Automation we want to prove the opposite to you. Our goal is to make cost-effective and user-friendly automation solutions accessible to everyone. Developed and produced by igus® for the whole world. All of this is made possible by motion plastics®.

Do you want to be on the safe side when it comes to implementing your application?
You are welcome to visit our customer test areas. We will show you the world of Low Cost Automation in more than 400m². As a proof of concept, we will perform a free handling test. Just send us your workpiece/object. In return, you will receive a video of the test, or we will show you your application's feasibility live.

The Low Cost Automation integration network
Do you need additional specialist knowledge and manpower for integration? Our integrator network gives you access to experts familiar with our products. Each integrator brings experience in customer project implementation and has access to igus® project experience. This is how we work with you to find the best possible solution.

Typical integration services are:

- Integrating a control system into existing machines
- Setting up and commissioning a robot
- Integrating vision and image processing systems
- Assessing security measures and safety precautions
- Individual project work

igusGO® - revolutionary AI product search

Design lubrication-free applications in seconds

1. Take a photo of the real application

2. Choose from recognised suggestions

3. Browse through motion plastics® applications

4. See a detailed motion plastics® solution

5. Buy parts directly in the shop

Would you like to discover the optimisation potential for thousands of machines in just a few seconds?

Experience a revolutionary way of searching for products with igusGO® - our cloud platform with artificial intelligence.

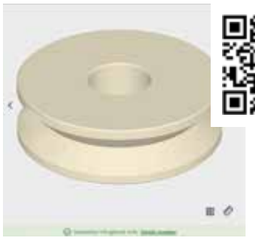
Just take a picture of the existing application and its surroundings, and the igusGO® intelligence will show you which igus® products can help in your application so that it requires no lubrication. The app also shows where there is more potential to improve your machine's technology and even reduce costs at the same time. You will find out more about applications that have already been optimised on comparable machines and components and be taken directly to the shop, where you can find more information and submit orders or queries directly.

Learn more about it and Download the app:

igus.eu/igusgo

iguverse®
Virtual engineering

kopla®
Software platform



speediPrint
3D printing service

speediCut
CNC service

Tolerance check

igus:bike®

Online configurator tools

iDentify AI spare parts service

Augmented Reality

RBTX®
Marketplace for Low Cost-Robotics

smart IIOT
Condition monitoring

igumania®
Game

Customised ... free of charge ... according to your requirements

Roadshow truck ... Trade show on wheels with products of your choice

With products of your choice.

- Your employees can find out for themselves
- No cost for travel or accommodation
- Time-independent, fits your daily routine
- Individual application advice and general innovation presentation – anything is possible
- Groups can be customised

Experience motion plastics® live

On-site exhibition

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.

With 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.

Virtual/real trade show

igus® motion plastics® show

- Browse our trade show stand & get more information without leaving the website.
- Clear listing of new products in the menu.
- Book a guided news presentation with an igus® expert LIVE at the trade show at any time.
- Use our watch list function. Add news products to your watch list and receive more information via e-mail.

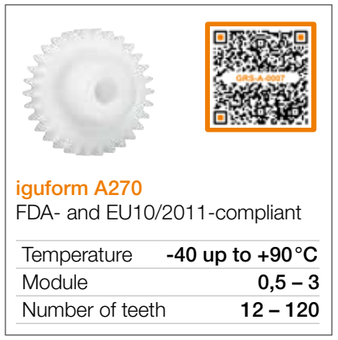
igus.eu/imps

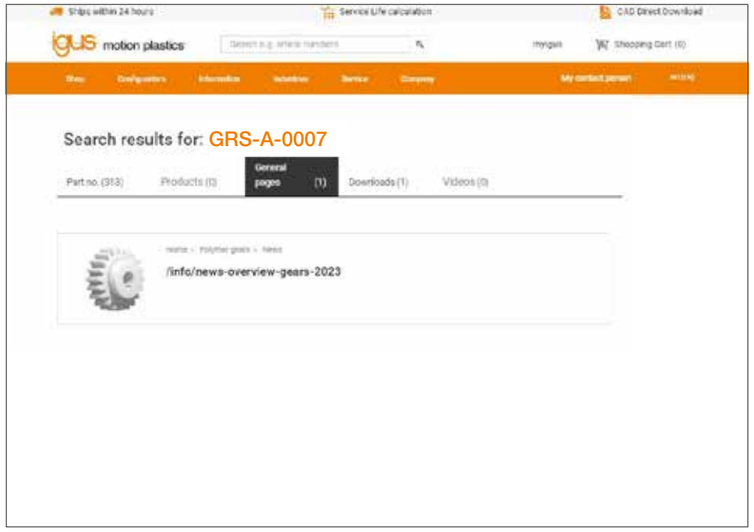
Print2Digital ... made easy

The QR code will take you directly to the relevant category and/or to the product‘s shop page.

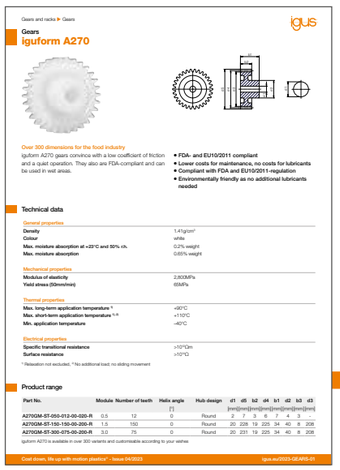
GRS-A-0007

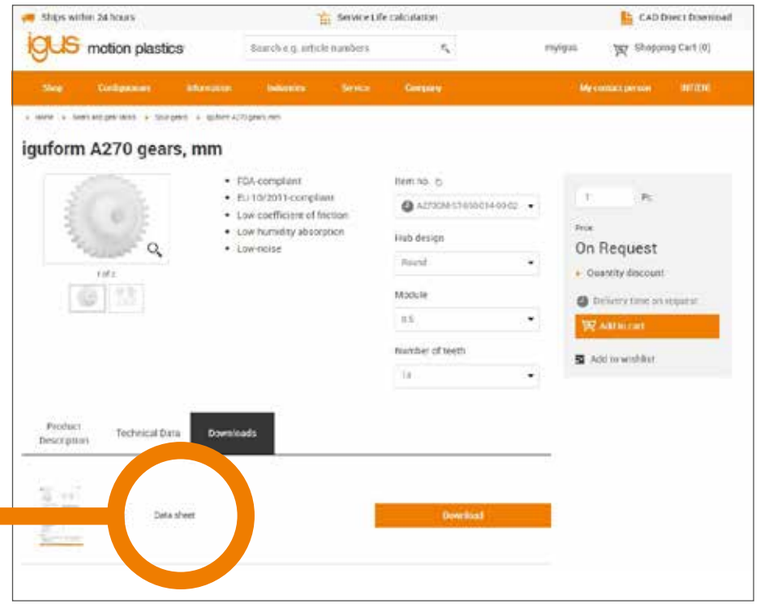
No mobile device to hand?
No problem.
You can also use the text code to go directly to the product page via the search function on our website.





In addition to the detailed technical information in the shop, you can also access it in compact form as a „factsheet“ in PDF format.



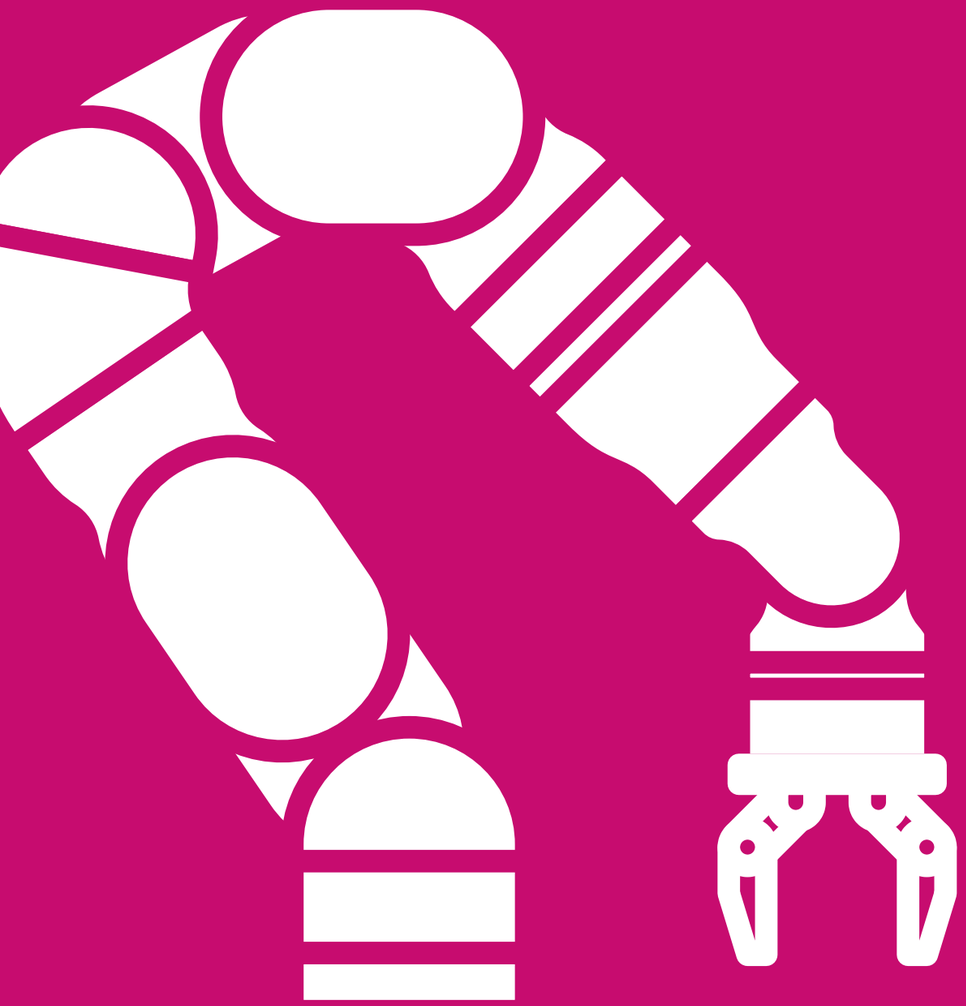


All igus® catalogues online at:

igus.eu/online-kiosk

Automation for companies of all sizes

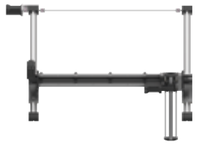
Low Cost Automation



igus.eu/LCA

LCA-A

Articulated arm robots



LCA-B

Linear robots

LCA-C

Delta robot

LCA-D

SCARA robot

LCA-E

Modular robotics

LCA-F

Further kinematics

LCA-G

Control systems

LCA-H

Accessories and services

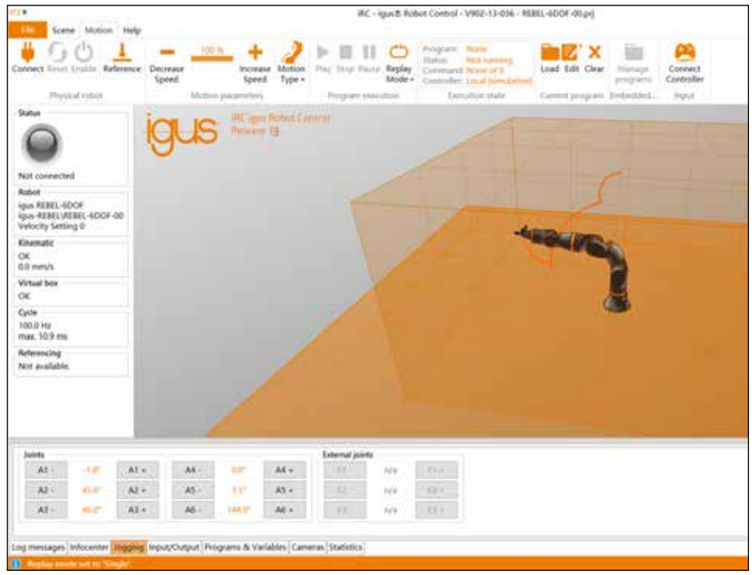
Articulated arm robot

Affordable robotics from Cologne thanks to the use of plastic

Agile development approaches that focus on customer requirements are not exclusive to software companies. In mechanical engineering, too, developers and designers are largely dependent on feedback from their customers. The development of the RebeL® is an example of how agile development works at igus®.

- 8.2kg lightweight robot with 2kg payload
- Can be controlled with the free igus® Robot Control software
- Tested in the Low Cost Automation lab
- Low Cost Automation products are completely maintenance-free
- Smart features include condition monitoring

Cost-effective robotics that collaborate - get to know the ReBeL®



Can be controlled with igus® Robot Control. One robot control system for all kinematics, from page 48

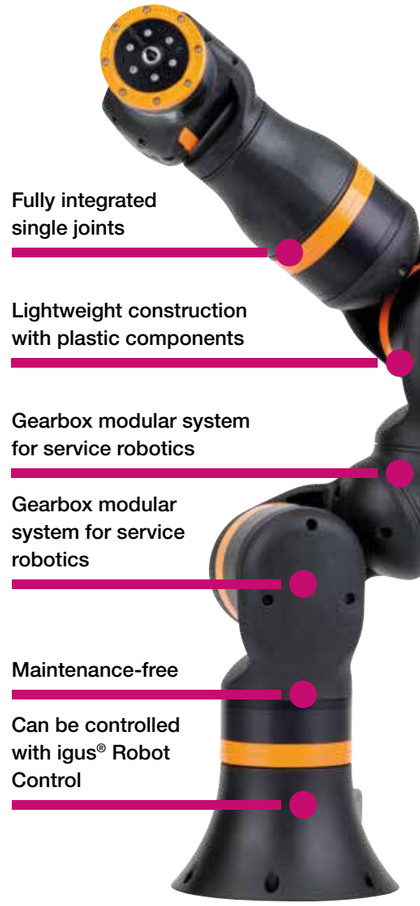
Benefits
- Maintenance-free dry operation
- Quiet and corrosion-free
- Resistance to dust and dirt
- Standard product range available in within 24hrs
- Free consultation and installation at your premises
- Feasibility check in the Customer Testing Area (CTA)

Typical application areas
- Pick & place, sorting machines
- Measurement and testing
- Labelling technology
- Component marking
- Assembly cells
- Safety systems

Low Cost Automation stands for significant increase in productivity processes with the help of a simple and affordable automation in the form of robotics components. Depending on the application, automation processes can be automated in whole or in part. At igus®, you have everything you need for cost-effective process automation from one source: whole robot arms, individual components for customised solutions or to expand existing applications, and a control system suited to robolink® with intuitive software.

ReBeL® lightweight robot prepared for human-robot collaboration applications

The name ReBeL® stands for "Robotic embedded BLDC and electronics Link". The robot is perfectly suited for cobot applications due to its compact and lightweight design. This makes it particularly suitable for assembly tasks, quality inspection tasks and the service area. The ReBeL® can lift a payload of up to 2kg. Each of its individual joints can be rotated through almost 360°. Optionally, we offer the robot with four or six degrees of freedom, as well as with or without a control system. The ReBeL® is the first robot made of high-performance plastic. At just 8kg, it is the lightest in its class: a real lightweight robot. The compact, space-saving design with an integrated control system in the base opens up completely new fields of application for service robotics. In collaboration with people, the ReBeL® takes on tasks in the event and gastronomy environment, for example as a reliable coffee enricher or as a machine loader in production. The ReBeL® offers freedom of choice: the robot is available as a plug-and-play version with integrated control system and robot software, or as an open source version. In addition, users can choose between four or six degrees of freedom and thus adapt the ReBeL® to their individual application scenario.



Low Cost Automation

From draw-wire robots to collaborative six-axis robot arms

Flexible all-rounders with up to six degrees of freedom
The articulated arm robots from igus® can be used flexibly in a wide variety of application scenarios. From overhead labelling to pick and place to quality assurance - the igus® articulated-arm robot reliably takes on monotonous and time-consuming tasks. The robot consists of tribologically optimised plastic and is therefore particularly inexpensive. You can combine grippers from different manufacturers with the arm robot and design it in a colour of your choice.

- Plug-and-play control hardware including free software
- Housing in the colour of your choice
- Short delivery times

ReBeL® configurator
Get tailor-made products with the Low Cost Automation configurators. Discover the ReBeL® configurator now.
igus.eu/rebel-configurator

igus® Robot Control - the free software without a licence

The "forefather" of today's articulated arm robots

The igus® articulated arm robots are compatible with the robot control system, igus® Robot Control. You can download and try out the associated software free of charge in advance. Easily program your articulated arm robot solution.

Low Cost Automation education program
The Low Cost Automation education program gives you an insight into the programming of your articulated arm robot with the free "igus® Robot Control" software, so that your automation project gets off to a smooth start.

robolink® RL-DP - multi-axis articulated robot complete module five degrees of freedom
Our robolink® DP articulated arm robots can be used individually and flexibly have five degrees of freedom and can be equipped with or without a control system. The robolink® DP can be used for applications with precision requirements of +/-0.5mm with a load of up to 3kg. This type of articulated arm robot is typically used with cycle times of > 7s. The robot is available in the standard colour black, other colour selection is possible. The suitable igus® Robot Control software can be downloaded free of charge in advance and is available as a version with control system in the control cabinet or as a top-hat (DIN) rail version. Our robolink® robotic components consist largely of our tribologically optimised plastics and enable significant cost savings. They also ensure a long service life and require no maintenance.

Application examples
Typical applications for our robolink® DP multi-axis articulated robots are pick & place applications, quality checks and loading processes.

Optional accessories
Substructure for robolink® DP, robolink® RL-DP energy chain set, but also robolink® DP with driverless transport system from MiR | Plug & play kit.

If you are not sure whether the robot is right for your application, feel free to contact us for a demo.

Appointment for demo
In the free video call, you can discuss your questions directly with an automation expert and experience the articulated arm robots live.

LCA-A-0003

ReBeL® cobot
- ReBeL® robot arms 6/5/4 DOF with a wide range of accessories
- The most affordable robot in its class

LCA-A-0029

robolink® DP
- 5 DOF with up to 790mm reach
- Individual colour selection possible

LCA-A-0030

robolink® DP-SW
- Splash-proof
- Protection class: IP 44
- Joining links made of stainless steel

LCA-F

Further kinematics
- Modular system

Ideal for service robotics: plastic robots with up to six degrees of freedom

Application example

Automate cost-effectively

In nursing, in dispensing machines, in the field or in factories, collaborative lightweight robots can help automate monotonous tasks. To enable interactive service robotics concepts to be implemented quickly and inexpensively, igus® has developed the new generation of the ReBeL® The lightweight plastic robot has a fully integrated strain wave gear with motor, encoder, force control and controller. Electronic components in the fully integrated strain wave gear allow human-robot collaboration to be possible (HRC). This is because the encoder technology enables forces and torque to be determined and limited via the motor current in combination with the angle measurement. For this, igus® relies on a double encoder, in which a measurement is carried out in front of and behind the joint. This detects forces and torque levels and responds accordingly.

Plastics is a game changer in automation
Using plastic in the ReBeL® results in an extremely compact, lightweight design. The robot weighs less than ten kilogrammes, making it the lightest cobot on the market. Its load capacity is two kilograms and its range amounts to 700 millimetres.

Thanks to the low starting price of well under €4,000 including control system even for small quantities in addition to the low maintenance requirements of the lubrication-free parts, the ReBeL® can even be used in areas where the use of robotics was not previously worthwhile. Many new innovative ideas are now becoming feasible: from automated guided vehicle systems to bartenders. "Many young companies are currently showing what is possible with Low Cost Automation," says Alexander Mühlens, Head of Automation Technology at igus. "An example in the textile industry is ADOTC. Here, an igus® articulated arm robot takes over the automatic feeding and removal of textile pieces to and from the sewing machine. As the energy prices for robots are comparable worldwide, this automated production made in Germany is worthwhile."

Entry barriers for robotics continue to fall
In addition to the price, igus® also lowers other entry hurdles such as complexity. For example, the new ReBeL®, like the other articulated-arm, delta or linear robots from igus®, can be tested and operated very easily. For this purpose, igus® offers free control software. It is easy to define and simulate the movements of the robot quickly. This saves companies commissioning costs and makes them less dependent on integrators. Those who require further support can also make use of the new RBTXpert service, which helps in the selection of the right Low Cost Automation solution. After a free online consultation with the RBTXpert, the suitable automation system can be tested. Based on the tests, the RBTXpert can then quote the customer with a price. This is made possible by the low cost automation marketplace RBTX.com where components, hardware and software from different manufacturers can be found. They have been tested in combination and work perfectly together. Among them are various robot kinematics, cameras, GUIs, grippers, power electronics, motors, sensors and control systems. In line with the "Build or Buy" approach, customers can configure individual components for their robot or ready-made robotics solutions and order them directly

LCA-A-0003

ReBeL® cobot
Low-cost industrial robot

Payload	**2kg**
Speed	**7 picks/min.**

ReBeL® cobot, strain wave gear, environment

ReBeL® Cobot

REBEL-4DOF-OS
ReBeL® cobot 4 DOF
495mm reach

Payload	**3kg**
Speed	**7 picks/min.**

REBEL-5DOF-OS
ReBeL® cobot 5 DOF
617mm reach

Payload	**2.5kg**
Speed	**7 picks/min.**

REBEL-6DOF-OS
ReBeL® cobot 6 DOF
664mm reach

Payload	**2kg**
Speed	**7 picks/min.**

REBEL-KID-OS
ReBeL® KID
313mm reach

Payload	**0.5kg**
Speed	**7 picks/min.**

ReBeL® Strain wave gear

RL-SE-105-70-0xxx
ReBeL® fully integrated strain wave gear installation size 105

Rated torque	**15.0Nm**
Speed	**6rpm**

RL-SE-80-50-0xxx
ReBeL® fully integrated strain wave gear installation size 80

Rated torque	**2.0Nm**
Speed	**6rpm**

ReBeL® Environment

ZLW-20200S-7TH-IO-01-xxx
7th axis for ReBeL®
and other robots

Max. travel length	**3,000mm**
Max. speed	**0.3m/s**

REBEL-EDUCATION-XXXX
ReBeL® education kit

Compatibility	**REBEL-6DOF-01**

REBEL-BASE-0300
ReBeL® Base

Compatibility	**ReBeL® 4 DOF, 5 DOF, 6 DOF**

RBTX-IGUS-0007
Energy supply for ReBeL® cobot

Compatibility	**ReBeL® 4 DOF, 5 DOF, 6 DOF**

REBEL-SKIN-XXXX
ReBeL® skin, protective cover, versions include antistatic, fire-resistant, suitable for food processes or fire protection

Compatibility	**ReBeL® 4 DOF, 5 DOF, 6 DOF**

RBTX-TRUP-0001
ReBeL® cobot workstation

Length x width x height	**900 x 1,800 x 1,100mm**
Weight	**80kg**

REBEL-EQU-SLZ-100
ReBeL® gripper set - Schmalz CobotPump

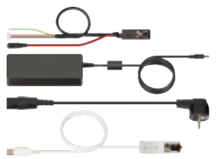
Compatibility	**ReBeL® 4 DOF, 5 DOF, 6 DOF**

REBEL-EQU-SNK-XXX
ReBeL® gripper set - Schunk EGP

Compatibility	**ReBeL® 4 DOF, 5 DOF, 6 DOF**

0-REBEL-HAND
Simply mount the ReBeL® gripper

Compatibility	**ReBeL® 4 DOF, 5 DOF, 6 DOF**



RL-SE-EC-0118
Adapter kit for ReBeL® gearbox

Compatibility	**RL-SE-XXX**

7th axis, switch cabinet integration
ReBeL® version

Compatibility	**ReBeL® 4 DOF, 5 DOF, 6 DOF**

ReBeL® connecting cable
to M8 four-pin socket (2x DOUT)

Compatibility	**ReBeL® 4 DOF, 5 DOF, 6 DOF**

REBEL-TCP-0100
ReBeL® adapter ISO-50

Compatibility	**ReBeL® KID, 4 DOF, 5 DOF, 6 DOF**

RBTX-IGUS-0010
Cobot cable clip with hoop and loop strip

Compatibility	**ReBeL® KID, 4 DOF, 5 DOF, 6 DOF**

4 DOF

Articulated arm robot, 4 DOF, 5 DOF

REBEL-4DOF-OS
ReBeL® cobot 4 DOF
495mm reach

Payload	**3kg**
Speed	**7 picks/min.**

RL-DP-4
robolink® RL-DP-4, four degrees of freedom (DOF), 790mm reach

Payload	**3kg**
Speed	**7 picks/min.**

RL-DP-4-SW-24
robolink® RL-DP-4-SW, four degrees of freedom (DOF), 790mm reach, splash-proof

Payload	**2kg**
Speed	**7 picks/min.**

RL-DCi-4S-M-B-00
robolink® RL-DCi-4S-M, four degrees of freedom (DOF), 510mm reach

Payload	**1kg**
Speed	**6 picks/min**

RL-D-RBT-5532-BF
robolink® RL-DC, four degrees of freedom (DOF), 710mm reach

Payload	**3kg**
Speed	**7 picks/min.**

RL-D-RBT-3322-BF
robolink® RL-DC, four degrees of freedom (DOF), 510mm reach

Payload	**0.5kg**
Speed	**6 picks/min.**

5 DOF

REBEL-5DOF-OS
ReBeL® cobot 5 DOF
617mm reach

Payload	**2.5kg**
Speed	**7 picks/min.**

REBEL-KID-OS
ReBeL® KID
313.6mm reach

Payload	**0.5kg**
Speed	**7 picks/min.**

RL-DP-5
robolink® RL-DP-5, five degrees of freedom (DOF), 790mm reach

Payload	**3kg**
Speed	**7 picks/min.**

RL-DP-5-SW-24
robolink® RL-DP-5-SW, five degrees of freedom (DOF), 790mm reach, splash-proof

Payload	**2kg**
Speed	**7 picks/min.**

RL-DCi-5S-M-B-00
robolink® RL-DCi-5S-M, five degrees of freedom (DOF), 680mm reach

Payload	**0.5kg**
Speed	**6 picks/min**

Articulated arm robot, 6 DOF, accessories

RL-D-RBT-5532S-BF
robolink® RL-DC, five degrees of freedom (DOF), 790mm reach

Payload	**2.5kg**
Speed	**7 picks/min.**

RL-D-RBT-3322S-BF
robolink® RL-DC, five degrees of freedom (DOF), 680mm reach

Payload	**0.5kg**
Speed	**6 picks/min**

6 DOF

REBEL-6DOF-OS
ReBeL® cobot 6 DOF
664mm reach

Payload	**2kg**
Speed	**0.2m/s**

Accessories for articulated arm robots

RL-DP-5532-BX
Base for robolink® DP

Compatibility	**RL-DP-4, RL-DP-4-SW, RL-DP-5, RL-DP-5-SW**

DLE-MIR-0001
Plug & play kit, robolink® DP to AGV from MiR

Compatibility	**RL-DP-4, RL-DP-4-SW, RL-DP-5, RL-DP-5-SW**

RBTX-IGUS-0007
Energy supply for ReBeL® cobot

Compatibility	**ReBeL® 4 DOF, 5 DOF, 6 DOF**

RL-DP-CROT-TRI
robolink® RL-DP
energy chain set

Compatibility	**RL-DP-4, RL-DP-4-SW, RL-DP-5, RL-DP-5-SW**

RL-D-50-A0210
robolink® D, external rotary axis, RL-D-50-A0210 module

Max. tightening torque	**20Nm**
Compatibility	**1 DOF**

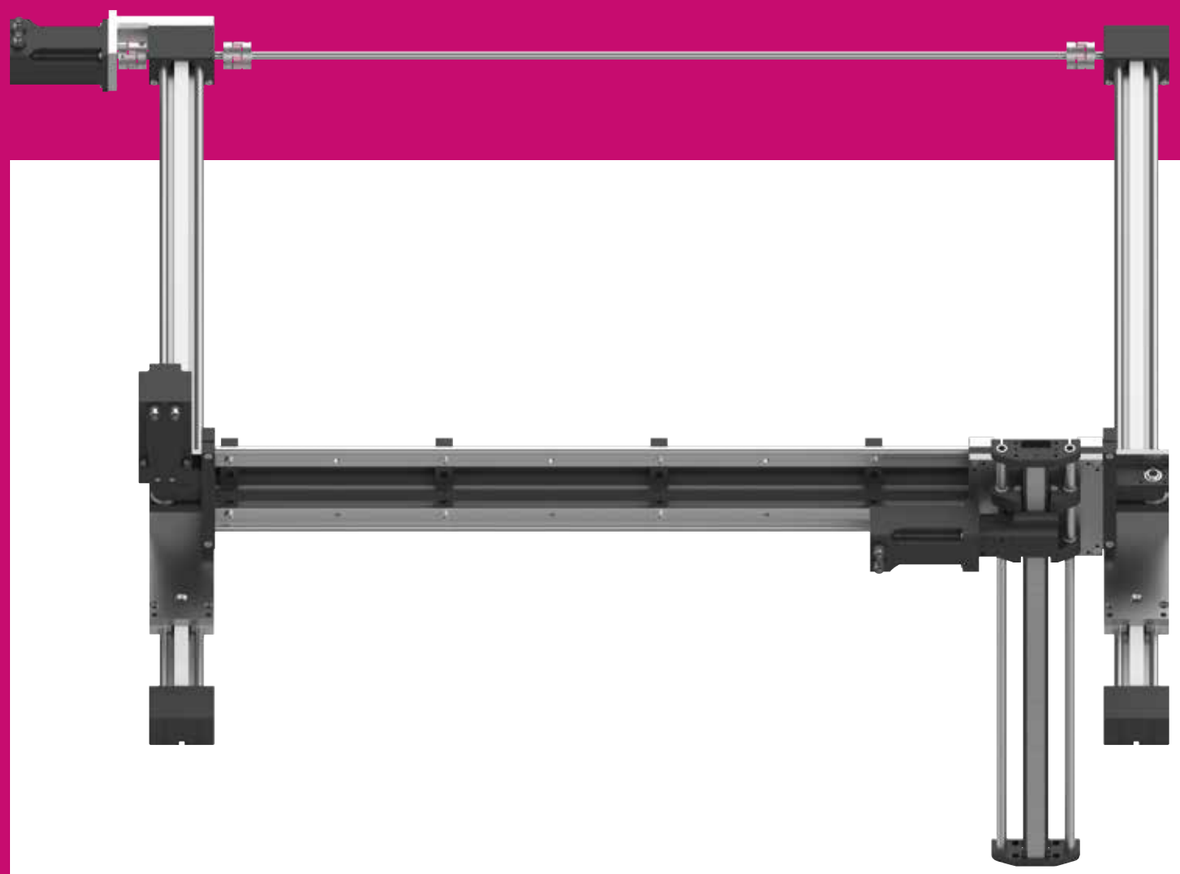
AK-DR-0044-x
Robot cable set
for 4-axis kinematics

Cable length	**3, 5, 10m**
Other cable lengths	**On request**

AK-DR-0045-x
Robot cable set for
five-axis kinematics

Cable length	**3, 5, 10m**
Other cable lengths	**On request**

Linear robots



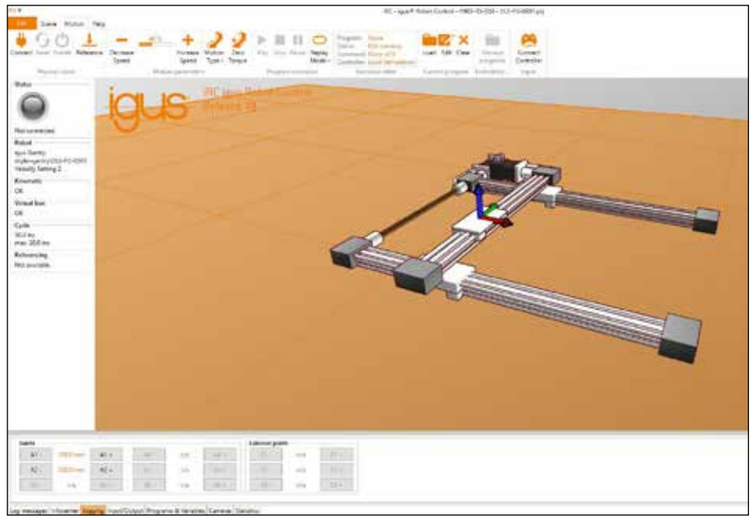
Standard linear robots from stock

Driven by a flat toothed belt drive, the igus® linear robots move absolutely lubrication-free and meet hygienic standards. The linear robots are offered with motors, couplings and other accessories with cost-effective complete systems. We would also be happy to create the suitable solution for your application. Feel free to use our following two configuration options.

- No downtime due to maintenance as no lubrication or maintenance required
- Pre-assembled system
- Linear systems already tested extensively in the igus® laboratory
- 100% lubrication-free due to "sliding instead of rolling"

Introduction

Line robot with two axes, flat linear robot with two axes or room linear robot with three axes



Can be controlled with igus® Robot Control. One robot control system for all kinematics, from page 48

Benefits
- Up to 85kg payload
- Up to 3,000 x 3,000 x 1,000mm reach
- Up to three degrees of freedom
- Speed max. 20 picks/min.
- Repeatability: ± 0.5mm
- Ambient temperature: 0-50°C

Typical application areas
- Automation
- Measuring stations
- Positioning

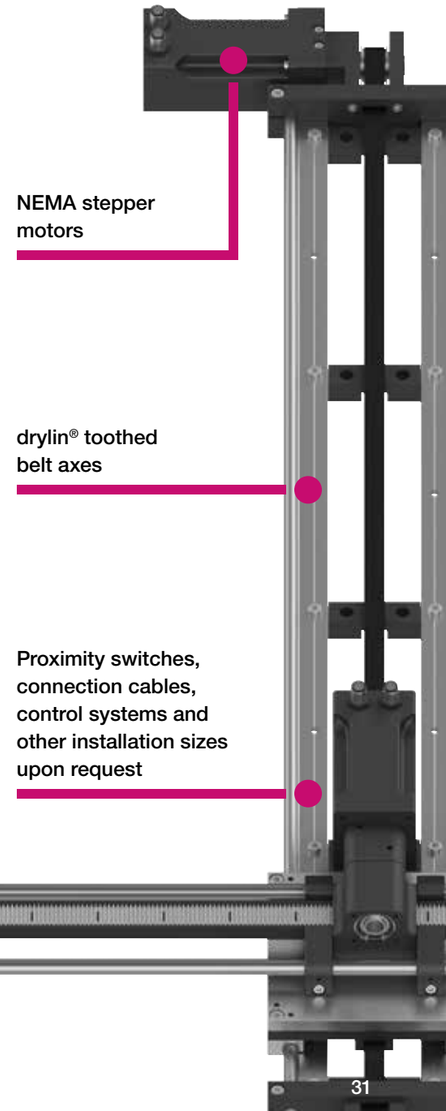
The igus® linear robots consist of pre-assembled drylin® linear axes and igus® stepper motors. According to the build-or-buy principle, you decide for yourself whether you want to receive a pre-assembled linear robot or would prefer to assemble it yourself. Another advantage of igus® linear robots: the control system is available as a complete control cabinet or as a top-hat (DIN) rail version - depending on your needs. The areas of application range from palletising applications with high load capacities, to quick pick-and-place and precise gluing applications.

- Plug-and-play control hardware including free software
- Standard or customised linear robots
- Short delivery times

Standard linear robots from stock
Sometimes, things have to happen quickly. And for this case, a range of pre-assembled linear robots in the most common sizes is available from stock.

What this means for you: your linear robot will be ready to ship within 24 hours and will be on its way to you.

Low Cost Automation education program
The Low Cost Automation education program gives you an insight into the programming of your linear robot with the free "igus® Robot Control" software, so that your automation project gets off to a smooth start.



Introduction to the world of automation

Linear robots from igus®: part of the linear technology modular system for infinite varieties of application
"We need a linear robot for this application." When I heard this term for the first time, I was just starting out at igus®, and I had no idea what it meant. What is that supposed to be? A door? A software? Or is it an igus® product? "Quite likely", I thought, and entered the world of igus® linear technology. igus® linear technology provides one of the large product ranges - we give a solution to almost any problem. Sometimes, I think that we have reached a point where we can do so much that we don't even know how much we can do. Does that make sense? I hope so: from individual shafts and linear plain bearings to profiles, carriages, and driven axes (manual or by machine) to multi-axis kinematics and delta robots, we offer a modular system that prompts creative dreaming.

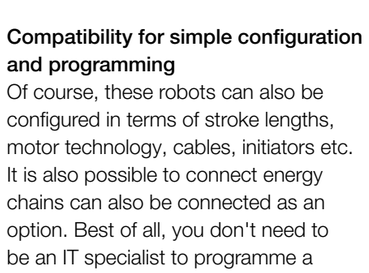
Examples of possible applications:
- Applying glue beads to assemblies
- Welding point setting
- Performing typical pick-and-place tasks
- And many, many more.

At igus®, we make a basic distinction among three primary types of (multi-axis) linear robots:

Line robots
The linear robot consists of two axes: X and Z. This means that applications can be realised that operate vertically to the working plane and move horizontally. An example is sorting systems that pick defective parts from the conveyor belt.

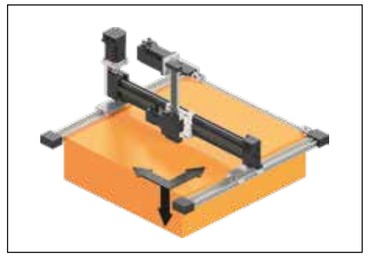
Workspace of a line robot in two-dimensional space

Flat linear robots
The low-profile linear robot for X-Y movements to reach predefined surfaces. Typical application examples are automatic measuring and testing equipment.



Workspace of a flat linear robot in two-dimensional space

Room linear robots
Three-dimensional solutions are feasible with the room linear robot. The system is based on a low-profile linear robot with the associated cantilever axis. This means that it allows movement in the X-Y-Z directions.



Workspace of a room linear robot in three-dimensional space

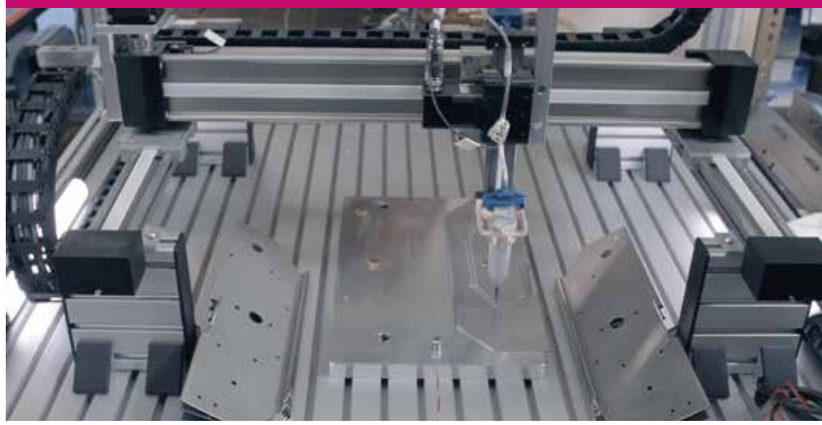
Compatibility for simple configuration and programming
Of course, these robots can also be configured in terms of stroke lengths, motor technology, cables, initiators etc. It is also possible to connect energy chains can also be connected as an option. Best of all, you don't need to be an IT specialist to programme a linear robot. Simply use our igus® Robot Control system with free software. If you require a little more flexibility, use our D1 control system.

Line robots
- For loads up to 2.5kg
- For precision requirements of 0.2mm
- For speeds up to 1m/s

Flat linear robots
- With a load capacity of up to 80N
- For precision requirements of 0.5mm
- For speeds up to max. 1.5m/s

Room linear robots
- For loads up to 2.5kg
- For precision requirements up to approx. 0.8mm
- For speeds up to max. 0.5m/s

A gluing robot for only €8,000



Linear robots are predestined for repetitive processes with high precision. The example here shows them in use while gluing.

The dream flat has been found. But before moving in, one has to renovate. Apply paste to the wallpaper metre by metre, smearing hands and clothes. tapo-fix GmbH & Co. KG doesn't like it either. The company from Wolfsburg has developed a wallpapering device for this unpleasant job. It can be attached to the end of the trestle table, some models stand on their own base. If the user now clamps the end of the wallpaper into the roller system, he can pull the wallpaper over a roller through a stainless steel tub filled with paste. The adhesive is already applied evenly. A solution that is particularly popular with craftsmen. For 60 years, the small family business with 25 employees has been manufacturing around 150 devices in different series every week. Some work steps in the production of tapo-fix are already automated with CNC machines, and others are done manually. For example, the spot welding of the side parts of the stainless steel tub. An employee has to balance the tub in the air for several minutes in order to place the spot welds precisely. Up to 400 times a week. This is not only strenuous and time-consuming due to the rework such as removing the tempering colours, but also only masters the task after a lot of experience. All the more problematic when the employee is ill. It is difficult to find a replacement for his expertise. There is a risk of lost productivity. "We therefore decided to replace spot welding with gluing. And to automate the process at the same time in order to further support employees," explains Moritz Hohenhövel, CEO of tapo-fix.

Fast and secure: tapo-fix configures automation solutions online
Hohenhövel and his father, former CEO of the family business, engineer and designer, configure their gluing robot online on the RBTX platform. The centrepiece: a linear robot that moves over three linear axes, driven by toothed belts and NEMA stepper motors. Mounted on the carriage: a cartridge that dispenses adhesive via a fine nozzle. The automation novices were able to determine the exact dimensions of the system with just a few clicks on the computer and thus adapt the linear robot to the size of the component to be bonded like a tailor-made suit. "When it came to automation, we used to be put off by the fact that we had to collect and coordinate components such as linear axes, stepper motors, cables, energy supply systems and control systems," Hohenhövel recalls. "We were all the happier that at RBTX all the ingredients for an individual automation solution are already coordinated and tested." Another decision-making aid: an online tool that uses a digital twin to visualise the movement options of the configured room linear robot. "After we had configured the linear robot online and convinced ourselves of the functionality, we could order with a clear conscience." The hardware components were installed. Hardly more complicated is the programming of the movement sequence. With the igus® Robot Control software, Hohenhövel was able to define the adhesive path without any programming knowledge. Even the positions where the nozzle of the adhesive cartridge opens and closes. The system was ready for use after three days. This marked the end of spot welding. Instead, employees now place the side parts of the stainless steel tub on a platform under the room linear robot. A push of a button later, the robot starts moving. And draws the adhesive path that corresponds to the side contours of the stainless steel tub. More precise than anyone, with a repeatability of 0.02 millimetres. For comparison: human hair is between 0.05 and 0.08 millimetres thick. After gluing, the employee only has to press the side part against the tub.

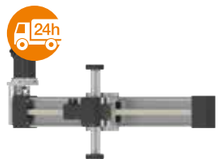
Cost savings of around 8,000 euros per year
The gluing robot has now been in operation at tapo-fix for a few months. An investment that has paid off. "Not only have we supported our employees, we have also achieved cost savings of around 8,000 euros per year," says Hohenhövel happily. The system hardly costs more. The linear robot around 8,000 euros, the control system just under 380 euros. For comparison: many PLC control systems are oversized for simple automation tasks and quickly incur costs of over 10,000 euros including the licence. The project proves once again that, thanks to low-cost robotics, it is now possible to automate monotonous processes cost-effectively and with little risk.

DLE-RG-0001
Room linear robot
Workspace 500 x 500 x 100mm

Payload	**2.5kg**
Speed	**1.0m/s**

Linear robots, flat linear robots

Linear robots

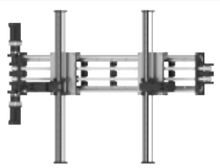


DLE-LG-0001
Line robots
Workspace 500 x 150mm

Payload	**2.5kg**
Speed	**1.0m/s**

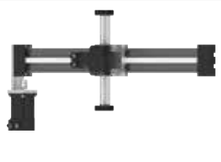
DLE-LG-0002
Line robots
Workspace 800 x 500mm

Payload	**5kg**
Speed	**1.0m/s**



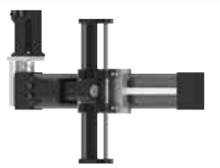
DLE-LG-0009
Line robots
Workspace 1,000 x 750mm

Payload	**5kg**
Speed	**1.0m/s**



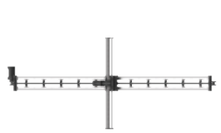
DLE-LG-0010
Line robots
Workspace 500 x 150mm

Payload	**2.5kg**
Speed	**1.0m/s**



DLE-LG-0012
Line robots
Workspace 1,000 x 400mm

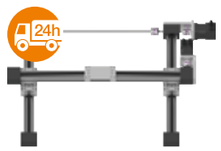
Payload	**5kg**
Speed	**1.0m/s**



DLE-LG-0013
Line robots
Workspace 2,500 x 500mm

Payload	**5kg**
Speed	**1.0m/s**

Flat linear robots

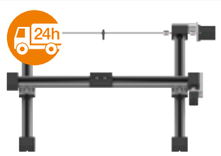


DLE-FG-0001
Flat linear robots
Workspace 300 x 300mm

Payload	**8kg**
Speed	**1.5m/s**

DLE-FG-0002
Flat linear robots
Workspace 300 x 300mm

Payload	**8kg**
Speed	**1.5m/s**



DLE-FG-0003
Flat linear robots
Workspace 500 x 500mm

Payload	**1kg**
Speed	**1.0m/s**

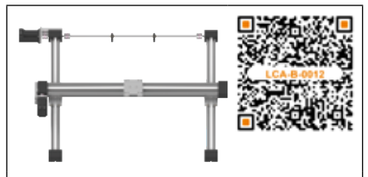
DLE-FG-0004
Flat linear robots
Workspace 800 x 400mm

Payload	**15kg**
Speed	**1.5m/s**

Room linear robot, accessories

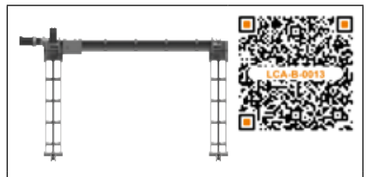
DLE-FG-0005
Flat linear robots
Workspace 1,000 x 500mm

Payload	**15kg**
Speed	**1.5m/s**



DLE-FG-0006
Flat linear robots
Workspace 650 x 650mm

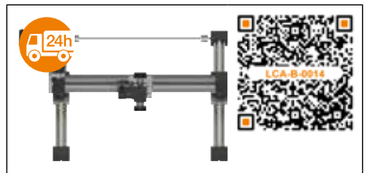
Payload	**15kg**
Speed	**1.5m/s**



DLE-FG-0014
Flat linear robots made of stainless steel
Workspace 1,000 x 1,000mm

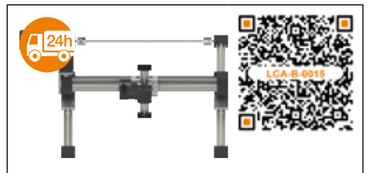
Payload	**8kg**
Speed	**0.5m/s**

Room linear robot



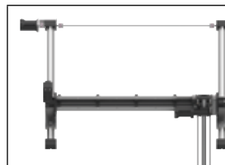
DLE-RG-0001
Room linear robot
Workspace 500 x 500 x 100mm

Payload	**2.5kg**
Speed	**1.0m/s**



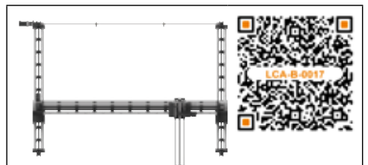
DLE-RG-0002
Room linear robot
Workspace 400 x 400 x 150mm

Payload	**2kg**
Speed	**1.0m/s**



DLE-RG-0003
Room linear robot
Workspace 800 x 800 x 500mm

Payload	**5kg**
Speed	**1.0m/s**

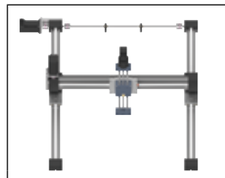


DLE-RG-0004
Room linear robot
Workspace 2,000 x 2,000 x 1,000mm

Payload	**10kg**
Speed	**0.5m/s**

DLE-RG-0012
Room linear robot
Workspace 800 x 800 x 500mm

Payload	**5kg**
Speed	**1.0m/s**



DLE-RG-0014
Room linear robot
Workspace 500 x 500 x 200mm

Payload	**10kg**
Speed	**1.0m/s**

Accessories for linear robots

AK-00xx
drylin® mounting bracket for drylin® ZLW

Dimensions	**60 x 70-104mm**
Compatibility	**SAW(C) & ZLW**

Linear robots

RL-P-17-MW-02
drygear® planetary gear adapter for linear robots

Dimensions	**60 x 55mm**
Assembly	**Without drilling**

RL-X0223
Pneumatic rotary union with lifting suction cup

Degrees of freedom	**1 DOF**
Max. rotation	**Can be rotated 360°**

Education kit
Linear robot education kit

Compatibility	**For all linear robots**
Dimensions	**X x Y**

PACK.DLE.RG
e-chains® set for room linear robots. Pre-assembled for your robot

AK-DR-0042-x
Robot cable set for 2-axis kinematics

Cable length	**3, 5, 10m**
Other cable lengths	**On request**

AK-DR-0043-x
Robot cable set for 3-axis kinematics

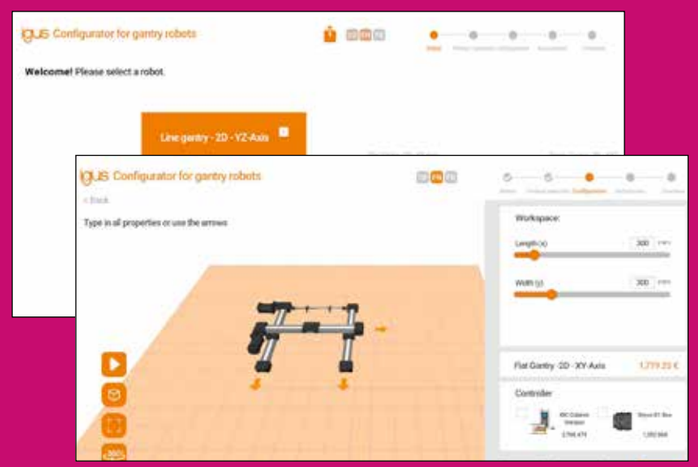
Cable length	**3, 5, 10m**
Other cable lengths	**On request**

Linear robot configurator

Design it yourself quickly and easily

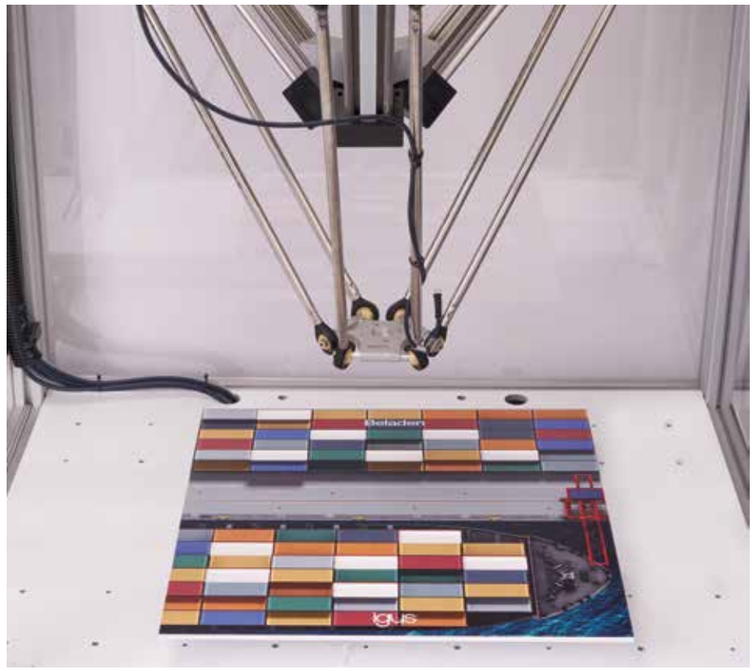
Get tailor-made products with the Low Cost Automation configurators.

Discover the linear robot configurator now. Customised solutions including price and CAD data in just a few clicks.



igus.eu/gantry-configurator

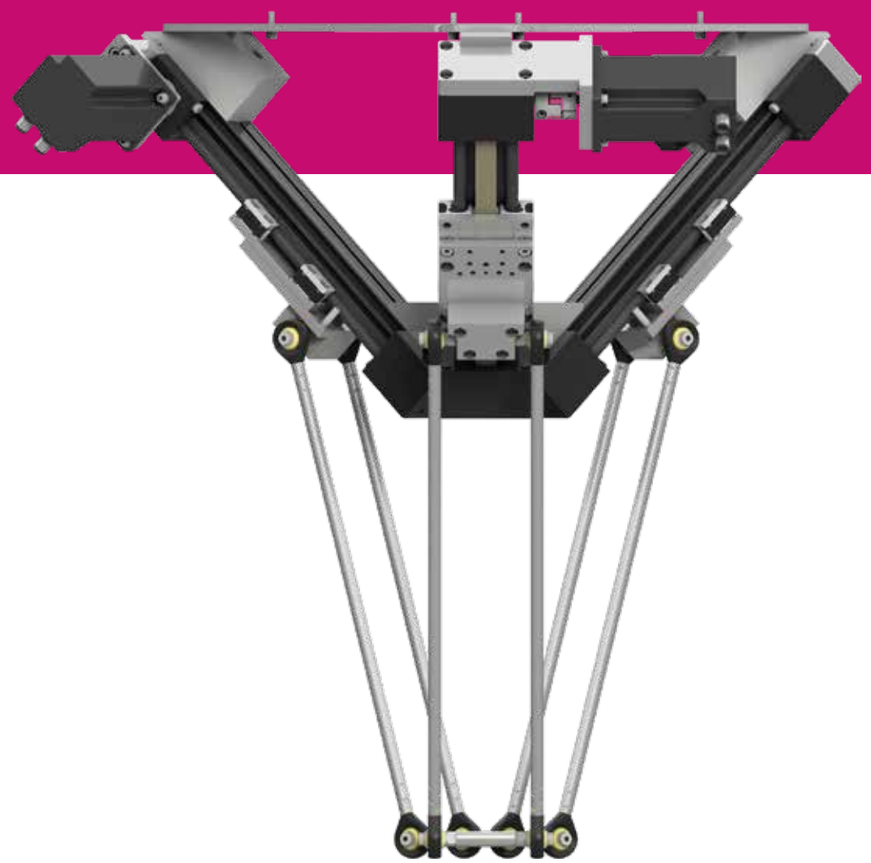
Education kit for linear robots - learn to programme by playing.



Robotics education program
The education kit is now also available for linear robots and delta robots. You can try out the programming of your robot on the basis of factory scenarios.

- Ready desktop learning system
- Including free of charge and license-free software
- Tested in the Low Cost Automation test lab
- Retrofittable, modular system
- Free video tutorials and practice exercises are available online

Delta robot



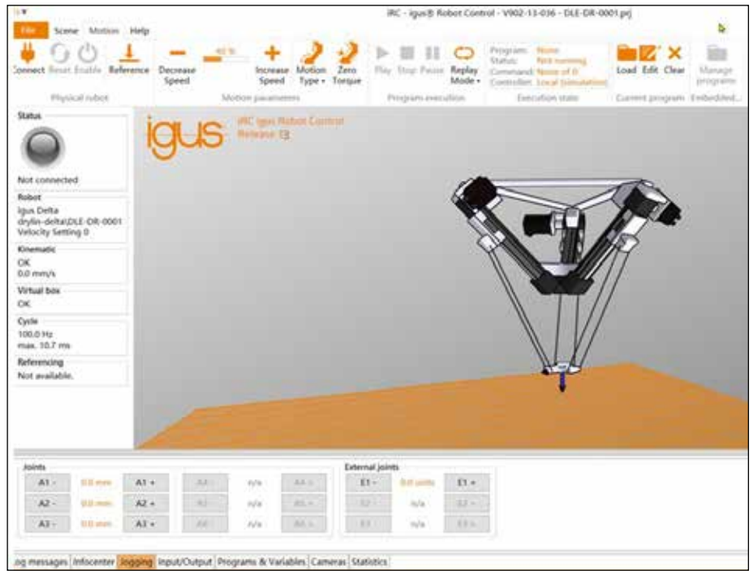
With two or three axes for quick pick & place tasks

igus® offers delta robots for a wide variety of tasks. igus® delta include preconfigured drylin® linear modules and linear axes (ZLW-1040S, incl. replaceable bearings) with igus® stepper motors (NEMA 24 with encoders) and all components necessary for self-assembly.

- No downtime due to maintenance as no lubrication or maintenance required
- Pre-assembled system
- Standard delta robots have already been extensively tested in the igus® laboratory
- No washing out of grease and oil in the cleaning process

Introduction

Delta robots for fast pick & place tasks



Can be controlled with igus® Robot Control. One robot control system for all kinematics, from page 48

Benefits
- Up to 100 picks/min
- Up to 5kg payload
- Max. acceleration: 60m/s²
- Speeds up to max. 3.0m/s
- Repeatability up to approx. 0.5mm

Typical application areas
- Pick & place
- Conveyor picking
- Sorting tasks
- Positioning

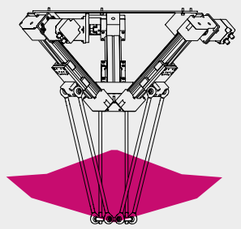
With two or three axes for quick pick & place tasks
The delta robots from igus® are available with both two- or three-axis kinematics and therefore offer you the advantage of choosing between different sizes for the workspace. According to the build-or-buy principle, you can decide for yourself whether you want to receive the delta robot as a modular kit or pre-assembled. Due to the very fast picking rate of 100/60 picks/min., typical areas of application for this type of robot are fast conveyor belt picking or sorting applications.
- Plug-and-play control hardware including free software
- As two- or three-axis kinematics
- Short delivery times

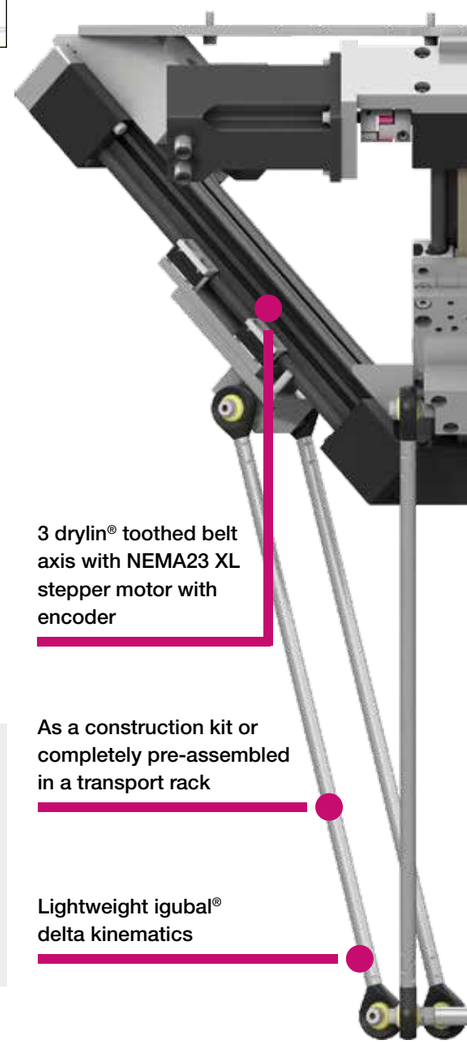
Delta robot - three degrees of freedom 360mm
The 3-axis delta was specifically developed for fast pick & place tasks and is delivered in two different sizes with suitable control systems.

Technical details
- 360mm workspace diameter with 180mm of working height
- Pick rate of max. 60/min.
- Self-lubricating, maintenance-free drylin® ZLW toothed belt axes

Free live demo by our expert.

Get to know the world of igus® robots and the associated software igus® Robot Control.





Delta robot

Delta robot

DLE-ZR-0001
2-axis delta robot,
workspace 400mm

Payload	**5kg**
Speed	**100 picks/min.**

DLE-ZR-0002
2-axis delta robot,
workspace 700mm

Payload	**5kg**
Speed	**50 picks/min.**

DLE-DR-000x
Three-axis delta robot,
working diameter 360mm

Payload	**5kg**
Speed	**60 picks/min.**

DLE-DR-005x
three-axis delta robot,
working diameter 660mm

Payload	**5kg**
Speed	**30 picks/min.**

FDA delta
Three-axis delta robot with
FDA-compliant components

Payload	**0.3kg**
Speed	**500 picks/min.**

AK-DR-0042-x
Robot cable set
for 2-axis kinematics

Cable length	**3, 5, 10m**
Other cable lengths	**On request**

AK-DR-0043-x
Robot cable set
for 3-axis kinematics

Cable length	**3, 5, 10m**
Other cable lengths	**On request**

Accessories for delta robots

ETY-DR-0016
Accessories, calibrating pin

Material	**Polymer**
Compatibility	**Two- and three-axis deltas**

ETY-DR-0017
Accessories, cable clip

Material	**Polymer**
Compatibility	**Two- and three-axis deltas**

RL-X0223
Pneumatic rotary union with
lifting suction cup

Degrees of freedom	**1 DOF**
Max. rotation	**Can be rotated 360°**

PACK.2DR
e-chains® set for 2-axis delta robot

Pre-assembled for
your robot

PACK.3DR
e-chains® set for 3-axis delta robot

Pre-assembled for
your robot

Without chemicals: delta robot destroys weeds with a zapper

The world's first non-chemical weed control robot for cereal crops, manufactured by agri-tech start-up Small Robot Company, has successfully identified and controlled weeds in a field trial in Hampshire. The wheeled robot uses delta robot arms to position a "zapper" and use "lightning strikes" to kill weeds. The drylin® delta robots were selected due to their precision, cost-effective and lubrication-free technology. The weed-killing robot, called "Dick", works in conjunction with a monitoring robot, "Tom", to identify weed patches and kill individual plants with a zapper device.

Low Cost Automation

SCARA robot

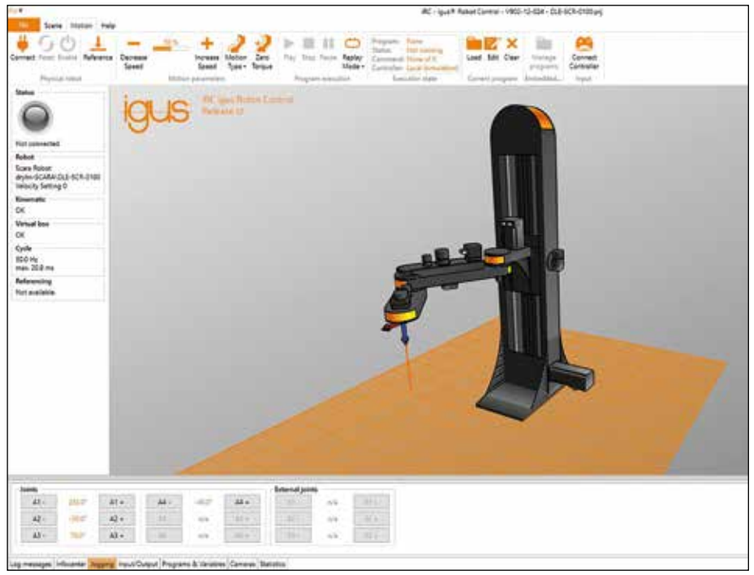
With three or four axes for reliable work in the laboratory

The SCARA robots from igus® are available with three- or four-axis kinematics and therefore offer you the advantage of choosing between different sizes for the workspace. The robots are available with compatible control hardware as a control cabinet or top-hat (DIN) rail version. A typical area of application for SCARA robots is pick-and-place tasks in laboratory applications.

- No downtime due to maintenance as no lubrication or maintenance required
- Protection Class IP 45 taken into account by default
- SCARA robots already tested extensively in the igus® laboratory
- No washing out of grease and oil in the cleaning process

Introduction

Fast, flexible and configurable: SCARA robots



Can be controlled with igus® Robot Control. One robot control system for all kinematics, from page 48

Benefits
- Up to 15 picks/min.
- Up to 5kg payload
- IP protection class: IP 45
- Minimum service life: 10 million cycles
- Repeatability up to approx. 0.5mm

Typical application areas
- Laboratory applications
- Pick and place
- Sorting tasks

Our SCARA robots can be used individually and flexibly. The SCARA can be used for applications with precision requirements of 0.5mm with a load of up to 2kg. This type of robot is typically used at cycle times of > 30 picks/minute. The suitable igus® Robot Control software can be downloaded free of charge in advance and is available as a version with control system in the control cabinet or as a top-hat (DIN) rail version. Our SCARA robots consist largely of our tribologically optimised plastics and enable significant cost savings. They also ensure a long service life and require no maintenance.

SCARA robot 4 DOF with cladding
It has four degrees of freedom and can be equipped with or without a control system. The SCARA can be used for applications with precision requirements of 0.5mm with a load of up to 2kg. This type of robot is typically used at cycle times of > 30 picks/minute.

Robot control system for an easy introduction to automation
The SCARA is compatible with the igus® Robot Control system for SCARA robots. igus® Robot Control allows for simple, intuitive robot programming and control, making it easy to get started with automation. The modular design makes it possible to control various igus® kinematics, such as delta robots. The SCARA robot can be controlled with all its advantages using our igus® Robot Control.

With and without protective housing

For process speeds starting at two seconds

Individual z-axis lengths for RL-SCR-0101 available

SCARA robot

SCARA robot

RL-A9.0216
SCARA robot three DOF, Size S, for laboratory applications

Payload	0.5kg
Speed	6 picks/min

RL-SCR-0102
SCARA robot, 3 DOF, M size, 560mm reach

Payload	2kg
Speed	30 picks/min.

RL-SCR-0101
SCARA robot 4 DOF without cladding, M size, 560mm reach

Payload	2kg
Speed	30 picks/min.

RL-SCR-0100
SCARA robot 4 DOF with cladding, M size, 560mm reach

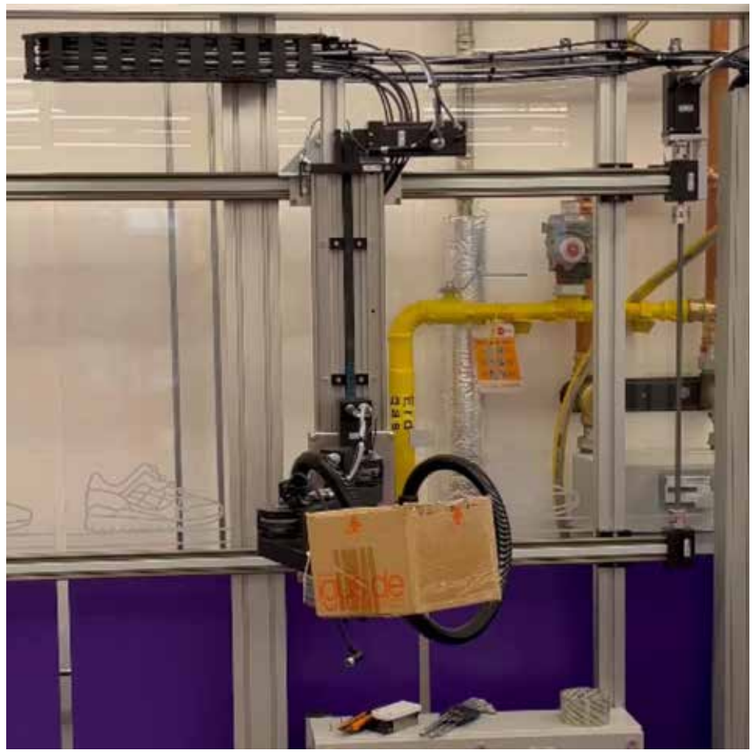
Payload	2kg
Speed	30 picks/min.

RL-SCR-3101
SCARA robot, 4 DOF, L size, 600mm reach

Payload	3kg
Speed	20 picks/min.

Handling cardboard boxes with igus® SCARA robot and flat linear robot

Combine several robots
In this application, an igus® SCARA robot was extended by two degrees of freedom, resulting in a significantly larger workspace and greater flexibility of the robot. This means that various handling tasks previously carried out manually can be automated. The low investment costs also lead to a return on investment within a short time.



Talk to our experts free of charge in a video call

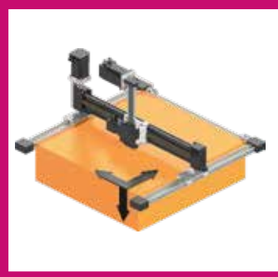
Free live demo by our experts

Get to know the world of igus® robots and the associated software igus® Robot Control. See for yourself how easy it is to program the robot.

iRC
igus® Robot Control

ReBeL®

Articulated arm robot



Linear robots

Delta robot

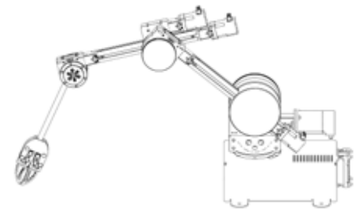
SCARA robot

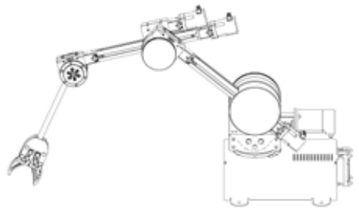
7th axis

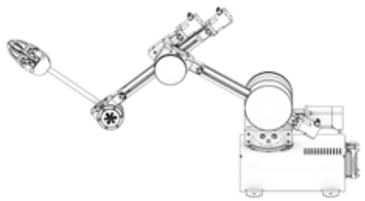
LOW COST AUTOMATION by igus®

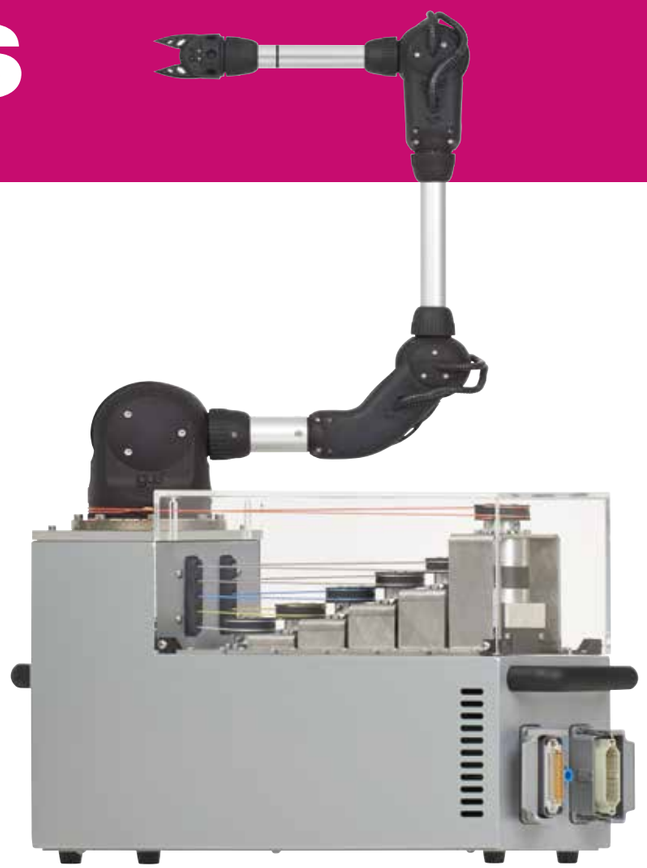
Presentation of Low Cost Automation

Modular robotics









As specific as your needs - modular igus® assemblies

igus® specialises in developing robotics components made of durable, wear-resistant plastics. The basic idea of modular robotics is that various modules and components can be combined to create customised automation solutions. This enables companies to react flexibly to different requirements without the necessity of expensive, time-consuming new developments. Using low-cost components that still deliver high quality enables companies to implement automation solutions at lower costs.

- Thanks to the rope hoists, the robot can be used in combination with people
- Cost-effective customisation thanks to variable arm length
- Draw-wire robots already extensively tested in the igus® laboratory
- No washing out of grease and oil in the cleaning process

Further kinematics

Apiro® gearbox

RL-A-Starterkit
drygear® Apiro® starter kit

ReBeL® Strain wave gear

RL-SE-105-70-0xxx
ReBeL® fully integrated strain wave gear installation size 105

Rated torque	**15.0Nm**
Speed	**6rpm**

RL-SE-80-50-0xxx
ReBeL® fully integrated strain wave gear installation size 80

Rated torque	**2.0Nm**
Speed	**6rpm**

Further kinematics

HSQ-10-1440-A-xxx-17-L-11-L
drylin® HSQ, Lift/turn unit, stranded wire version

Stroke length	**50-200mm**
Linear speed	**0.5m/s**

HSQ-10-1440-A-xxx-17-L-11-E
drylin® HSQ, lift/turn unit, encoder version

Stroke length	**50-200mm**
Linear speed	**0.5m/s**

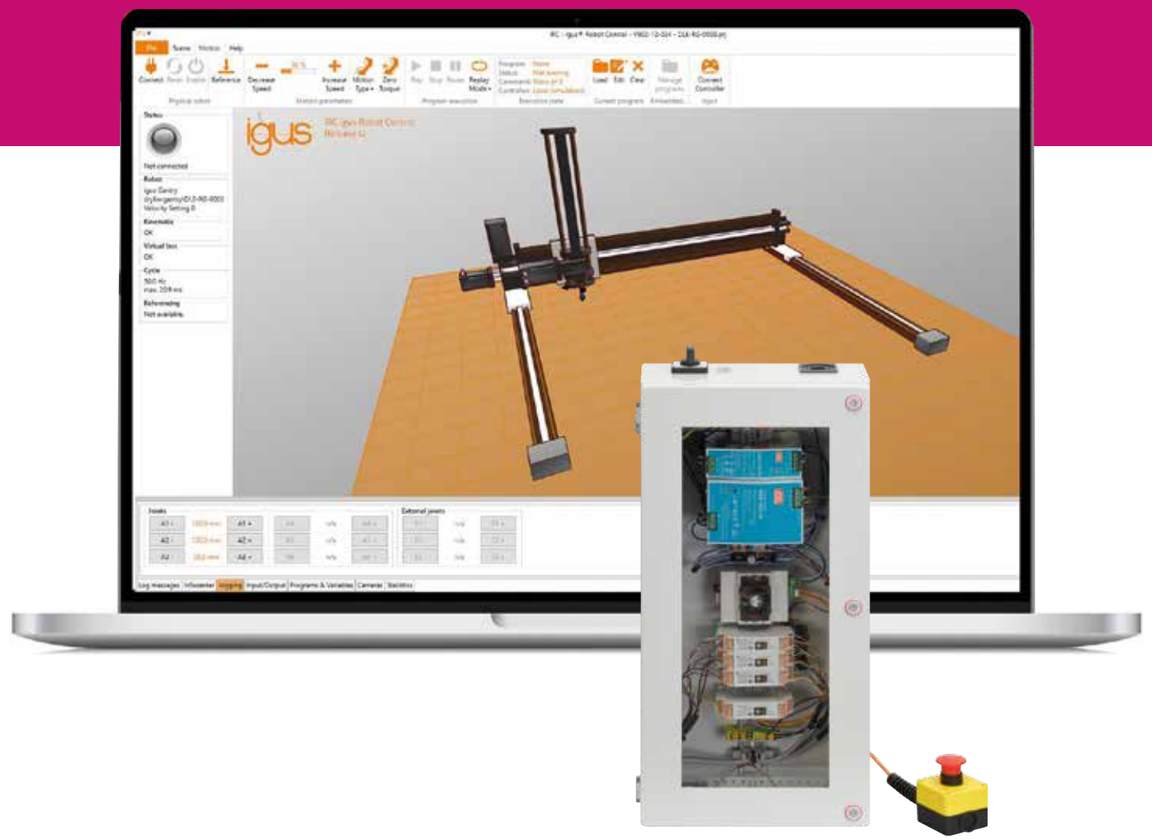
SLQ-121012-A-E-0020-176-100
drylin® SLQ, linear module

Stroke length X	**176.00mm**
Stroke length Z	**100.00mm**

RL-B10301-DU3623
robolink® W draw-wire robot

Payload	**0.5kg**
Speed	**6 picks/min**

Control systems



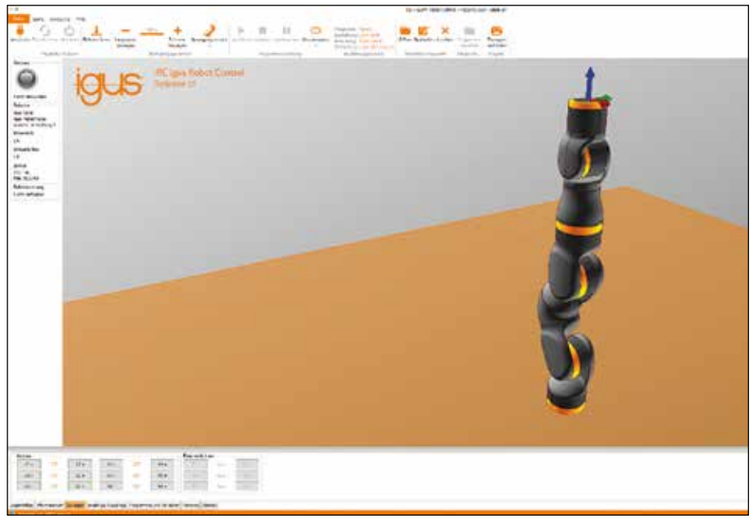
Robot and motor control systems

igus® Robot Control enables simple and intuitive robot control and programming for an effortless introduction to automation. It is compatible with different robot kinematics, for example delta robots, linear robots or multi-axis robots. igus® offers you free software to go with the control system, which allows you to test your application in advance without any risk.

- Software with intuitive user interface
- Use free of charge and without a licence
- Used in thousands of projects
- One software for all igus® robots, saving resources

Introduction

The perfect addition to igus® robots: igus® Robot Control



All igus® robots are easy to control with the igus® Robot Control thanks to their digital twin.

igus® Robot Control wiki
One place - all details. In our Wiki, which we developed specially for the igus® Robot Control, you will find all the information you need for your daily operations.

The igus® Robot Control is the first choice to flexibly and efficiently solve automation tasks in the lower and medium performance range. Communication between the control system and the software of the same name takes place via Ethernet or Wi-Fi. In addition, the control system offers several interfaces via different communication protocols through integrated functions, such as the Modbus or the CRI interface developed in-house. The integrated I/O modules and powerful communication interfaces make both simple and sophisticated machine concepts possible. igus® Robot Control allows a simple, intuitive robot control and programming system giving easy entry into automation. With the modular design, users can control various igus® kinematics, such as delta robots, linear robots or articulated robots.

Plug-and-play solution for a quick start
igus® Robot Control allows for simple, intuitive robot programming and control, making it easy to get started with automation. After a short learning phase, your employees can control and programme simple applications. With the modular design, users can control various igus® kinematics, such as delta robots, linear robots or articulated robots.

Your benefits:
- Cost-effective
- Compact and light
- No unnecessary components in the system

Modular design

Top-hat (DIN) rail version (integration into your control cabinet) or control cabinet version (stand-alone solution) available

As if made from one piece: the igus® Robot Control software

One robot control system for all kinematics
The igus® Robot Control is available as a top-hat (DIN) rail version (integrated into your control cabinet) or as a control cabinet version (stand-alone solution). All versions can be controlled with our developed igus® Robot Control software. With the modular design, users can control various igus® kinematics, such as delta robots, linear robots or articulated robots.

Teach-in: handheld control functions
Interfaces: Modbus TCP/IP, 7 digital I/Os, Ethernet CRI, ROS and many more
Communication: Ethernet or Wi-Fi
Motion sequences: circular movement, velocity commands, if-then-else, matrix calculation, etc.
Sample programs: over 100 sample programs for igus® linear robots, delta robots, articulated arm robots, Scara, etc.

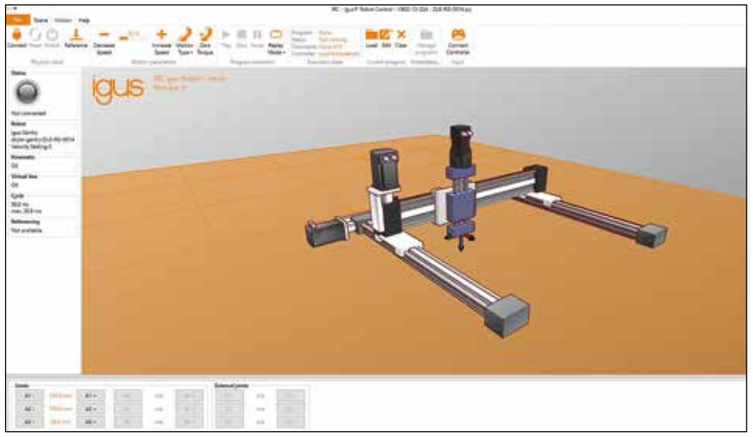
Includes integrated control software
The free-of-charge, licence-free igus® Robot Control software is integrated into the control system and thus makes use of a uniform operating concept and consistent communication services for many components of a system. This reduces project planning effort and facilitates commissioning.

- Test all igus® kinematics in the software in advance
- With pre-programmed projects for all igus® robots, single axes and AGV
- Intuitive 3D interface with simulation of the robot

Sample programs
Save time and money with our sample programs:
Faster integration of igus® Robot Control for your machines by combining simple components and igus® sample programs.

- On-demand training videos
- Media library with many training videos
- Videos on each robot kinematics application
- All content available on demand

From small to large: even single axes can be controlled with the igus® Robot Control software



Thanks to digital twins, controlling the robots is child's play

In the digital interface, the robot moves synchronously to the real robot

As versatile as your project: the interfaces of the igus® Robot Control software

Solve automation tasks efficiently

Control the 4th axis of your delta robot with the igus® Robot Control System
igus® offers delta robots for a wide variety of tasks. Typical drylin® delta robot applications are pick & place, conveyor belt picking, and stacking tasks in three-dimensional space. In combination with a gripper or suction cup, picking tasks can be implemented very quickly. The delta robots can be used for applications with a precision requirement of 0.5mm with a load of up to 5kg and a max. speed of up to 3m/s. Our delta robots consist largely of our tribologically optimised plastics and enable significant cost savings. igus® delta robots are compatible with the igus® Robot Control system. The igus® Robot Control is the first choice to flexibly and efficiently solve automation tasks in the lower and medium performance range. Communication between the control system and the software of the same name takes place via Ethernet or Wi-Fi. In addition, the control system offers several interfaces via different communication protocols through integrated functions, such as the Modbus or the CRI interface developed in-house. igus® Robot Control allows for simple, intuitive robot programming and control, making it easy to get started with automation. The modular design makes it possible to control various igus® kinematics.

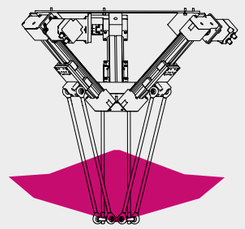
Payload: 5kg
Max. speed: 3m/s
Repeatability: 0.5mm

DLE-DR-000x
Three-axis delta robot, working diameter 360mm

Payload	**5kg**
Speed	**60 picks/min.**

Free live demo by our expert.

Get to know the world of igus® robots and the associated software igus® Robot Control.



Robot and motor control systems

igus® Robot Control **Hardware**

RL-IRC-SJ-0003-48-01-00-0
The robot control system igus® Robot Control for delta and linear robots

Addition of seven digital I/Os
Cable length **10m**

RL-IRC-SJ-0005-48-01-00-0
The robot control system igus® Robot Control for Scara and articulated arm robots

Addition of seven digital I/Os
Cable length **10m**

AK-DR-0034
D7 control system set for 2-axis kinematics

Without connecting cable
Set consists of 2x igus® D7 dryve

AK-DR-0035
D8 control system set for 2-axis kinematics

Without connecting cable
Set consists of 2x drylin® D8

AK-DR-0036
D9 control system set for 2-axis kinematics

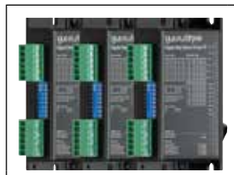
Without connecting cable
Set consists of 2x drylin® D9

igus® Robot Control **Accessories**

RL-MAT0196
igus® Robot Control handheld enables commissioning and movement of the robot

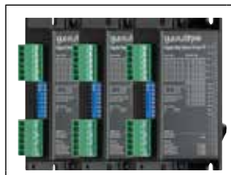
RL-MAT0199
igus® Robot Control I/O module

Addition of seven digital I/Os
Plug & play solution



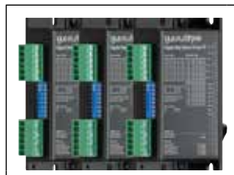
AK-DR-0037
D7 control system set for 3-axis kinematics

Without connecting cable
Set consists of 3x drylin® D7



AK-DR-0038
D8 control system set for 3-axis kinematics

Without connecting cable
Set consists of 3x drylin® D8



AK-DR-0039
D9 control system set for 3-axis kinematics

Without connecting cable
Set consists of 3x drylin® D9

RL-MAT0247
igus® Robot Control motor module

Addition of a motor module
Plug & play solution

Motors control systems

AK-DR-0009
D1 assembly kit for 2-axis kinematics

Without connection cables
Set consists of 2x igus® D1 dryve

RBTX-BASICS-0016
Complete motor control system package for individual PLC

With connecting cable
For linear and delta robots

AK-DR-0027
D1 control system set for 2-axis kinematics

Without connection cables
Set consists of 2x igus® D1 dryve

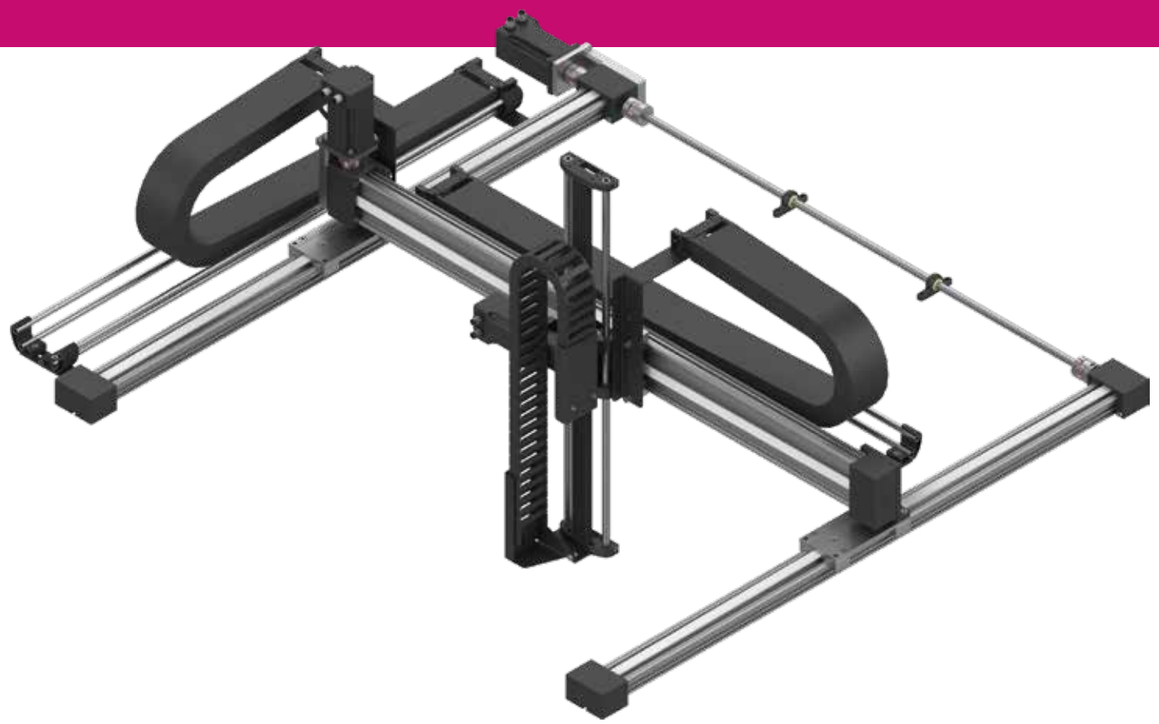
AK-DR-0011
D1 assembly kit for 3-axis kinematics

Without connection cables
Set consists of 3x igus® D1 dryve

AK-DR-0026
D1 control system set for 3-axis kinematics

Without connecting cable
Set consists of 3x igus® D1 dryve

Accessories and services



Ready to start in no time

We make it easy for you: book our setup and commissioning service when you purchase your automation solution and just sit back. For a fixed price, our experts take care of the complete initial installation, including functional checks at the destination. To get you started on your own after commissioning, you will receive instructions from our experts. If there is then a need for further integration services, we also take over the coordination with the integrator here. It couldn't be easier!

- Useful accessories for your robots
- Affordable and durable thanks to motion plastics®
- All components are extensively tested in the igus® test laboratory
- Lubrication- and maintenance-free

Everything from a single source - installation and commissioning service

Full commitment: our installation and commissioning service is an "all-round carefree service" for our customers

Benefits
- On-site assembly at your destination
- Delivery and assembly at a fixed price
- Ready for use in a short time thanks to our experts
- Including instruction regarding your robot
- Coordination of further integration partners if required
- Positioning

This is how the service works
Step 1: Delivery
Your safely packaged order will be sent to you. Depending on stock levels, this takes place within a few days. Cost-effective automation starts with the first step: simple and cost-effective ordering and delivery of components.

Step 2: Setup
Here we go! Our experts start with the assembly of the mechanical components. Robots, housing, end effectors - everything is connected to each other to guarantee a smooth movement.

Step 3: Commissioning
To check the functionality, the robot is started with a standardised test program. However, this does not yet represent your specific movement sequence.

Step 4: Inspection
At the end everything is checked. Both the response via the PC and the mechanical movements and the smooth running of the movements. Every little detail is checked before real use.

Step 5: Ready to start
Your kinematics and accessories are now ready for use in their intended environment. From here you have two options: you can handle the integration yourself or you can rely on an integration expert. Here too we offer competent support with our partner network.

Hands-on support for smooth automation
Do you need additional specialist knowledge and manpower for integration? Our integrator network gives you access to experts familiar with our products. Each integrator brings experience in customer project implementation and has access to igus® project experience. This is how we work with you to find the best possible solution.

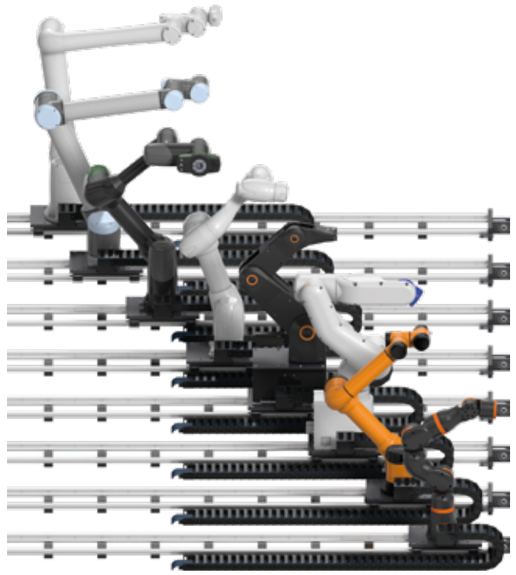
Typical integration services are:
- Integrating a control system into existing machines
- Setting up and commissioning a robot
- Integrating vision and image processing systems
- Assessing security measures and safety precautions
- Individual project work

All kinematics can be integrated into cells

The installation and commissioning service guarantees a smooth installation

Accessories

Expansion of the workspace



By using a 7th axis from igus®, you can extend the working area of your robot many times over.

Easy expansion of the workspace for all lightweight robots
With the 7th axis, you can expand the workspace of your robot by a factor of four. The linear axis performance is enhanced by using tribologically optimised plastics, allowing for significant cost savings. For an easy integration, suitable adapter kits for igus® robots, Universal Robots, Epson, Omron, Franka Emika, Doosan, and many more are available. Control takes place via digital I/Os, URCap or the igus® Robot Control system.

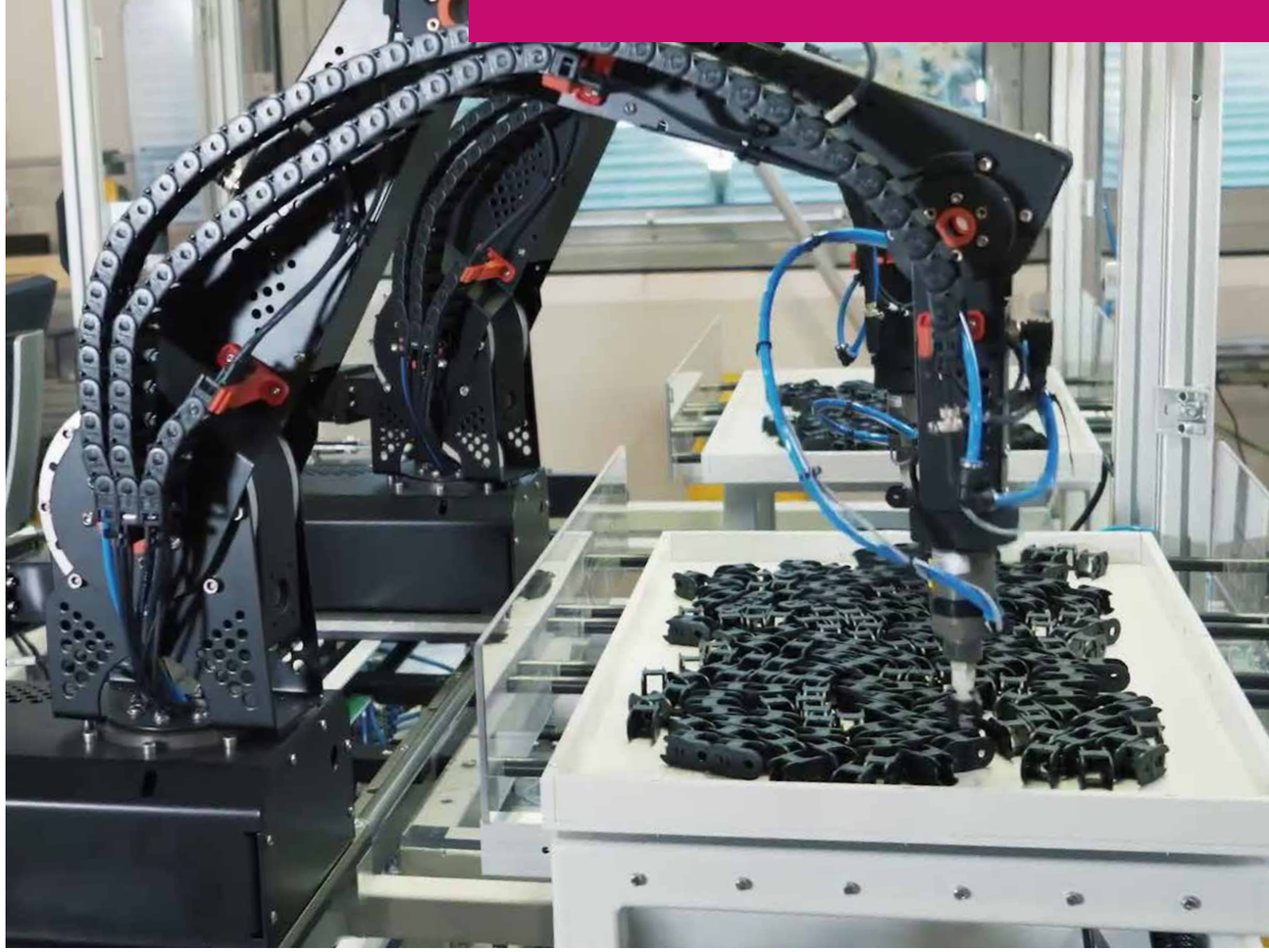
Stroke lengths of up to 6,000mm
Precision of 0.3mm
Payload of up to 55kg

LCA-H-0001

7th axis
- Available up to 3m as standard
- Available up to 6m upon request
- Lubrication- and maintenance-free as always

LCA-H-0002

AGV
- The future of mobile robotics
- Can be used autonomously thanks to various sensors
- Move the robot around in the room



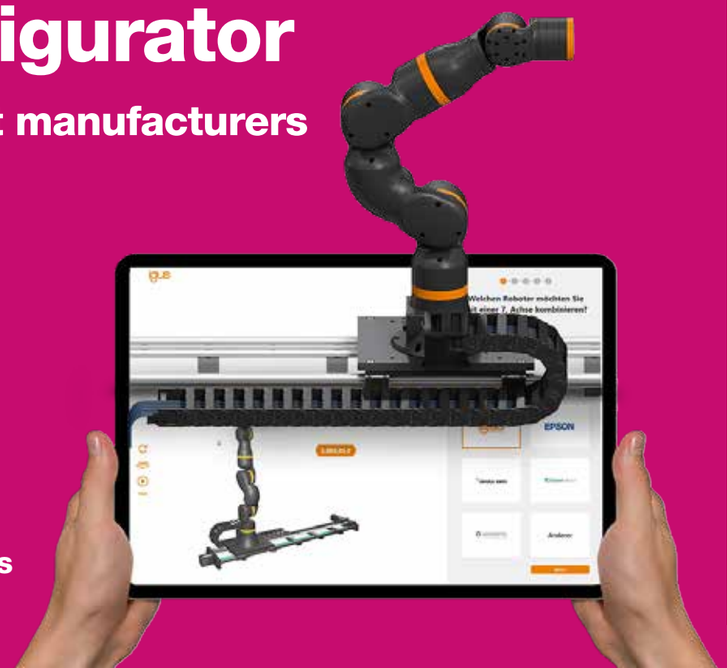
Our automation solutions are also used in our own production: chain assembly at igus®

7th axis configurator

For robots from different manufacturers

Expand the workspace of your robot with a linear module. Fast, individual and with a fixed price.

robot-configurator.igus.eu/7thaxis



Application example

igus® chains assembly

Articulated arm robot supports work preparation in assembly

The assembly of energy chains is a complex process. The in-house engineering team at igus® has made the process more efficient by automating sub-processes. A three-axis delta robot takes the individual parts from a vibrating table and places them on a conveyor belt in the correct direction. In a further step, the robot picks up a part of the energy chain and places it down again at a different location so it can be picked up by a gripper.

Hardware price: €28,306.26
Project costs: €45,000
ROI: 10 months
Precision: 0.5mm

LCA-H-0003

drylin® ZLW
Toothed belt axis as 7th axis on the robot

Max. payload	**55kg**
Speed max.	**0.6m/s**

Accessories and services

Robot cells

ROBOCUBE-0101
Robot cells for all igus® robots

Compatibility	**For all igus® kinematics**

ROBOCUBE L
Robot cells for all igus® robots

Dimensions	**800 x 1,600 x 2,010mm**
Compatibility	**For all igus® kinematics**

7th axis for all robots

ZLW-20200S-7TH-REBEL-01-500
7th axis for ReBeL®

Reach	**up to 6,000mm**
Speed	**up to 0.3m/s**

ZLW-20200S-7TH-DCUR-01-500
7th axis for Universal Robots up to 0.3m/s

Reach	**up to 6,000mm**
Speed	**up to 0.3m/s**

ZLW-20200S-7TH-DCUR-02-500
7th axis for Universal Robots up to 0.6m/s

Reach	**up to 6,000mm**
Speed	**up to 0.6m/s**

ZLW-20200S-7TH-EPSON-01-1000
7th axis for EPSON

Reach	**up to 6,000mm**
Speed	**up to 0.3m/s**

ZLW-20200S-7TH-DP-01-500
7th axis for robolink® DP

Reach	**up to 6,000mm**
Speed	**up to 0.3m/s**

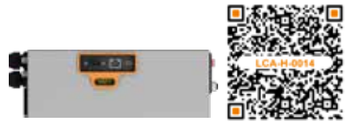
ZLW-20200S-7TH-IO-01-500
7th axis for other robots

Reach	**up to 6,000mm**
Speed	**up to 0.3m/s**

7th axis control systems

DLE-UR-0001
7th axis, URCap + control cabinet integration, 0.3m/s version

Plug & play solution ready for connection	
Cable length	**3m**



AK-DR-0043-x
7th axis, URCap + control cabinet integration, 0.6m/s version

Plug & play solution ready for connection	
Cable length	**3m**

DLE-UR-0002
7th axis, URCap + control cabinet integration, rotational axis

Plug & play solution ready for connection	
Cable length	**3m**

DLE-EPSON-0001
7th axis, EPSON Cap + Control cabinet integration

Plug & play solution ready for connection	
Cable length	**3m**

DLE-IO-0001
7th axis, control cabinet integration, IO version

Plug & play solution ready for connection	
Cable length	**3m**

Improve what moves

motion plastics®

- iglidur® plain bearings
- iglidur® more products
- iglidur® slewing ring bearings
- iglidur® bar stock
- iglidur® gears
- iglidur® 3D printing
- igubal® spherical bearings
- xiros® ball bearings
- drylin® linear technology
- dryspin® lead screw technology
- drylin® drive technology
- Low Cost Automation
- Bicycle components
- e-chains® and e-chain systems®
- smart plastics
- chainflex® cables
- readycable® readychain®
- Connectors

Everything at a glance

dry-tech® bearing technology

iglidur® plain bearings

Sleeve bearings

Flanged bearings

Thrust washers

iglidur® more products

Two hole flange bearings

Guide rings

Clip bearings

Guide rollers

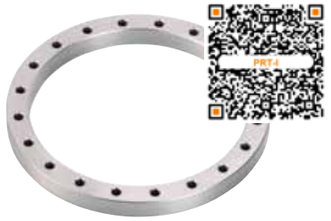
Knife edge rollers

Coating powder

iglidur® slewing ring bearings

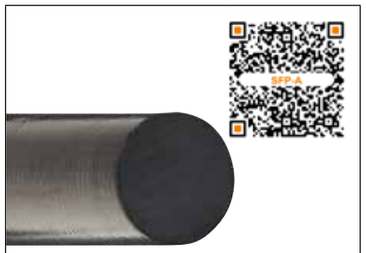
Slewing rings

Toothed slewing rings

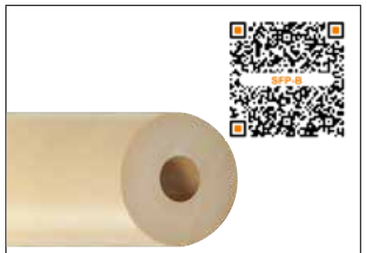


Accessories

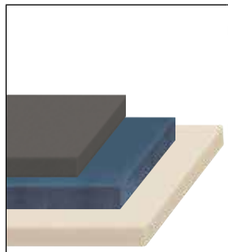
iglidur® bar stock



Round bars



Hollow bars



Plates

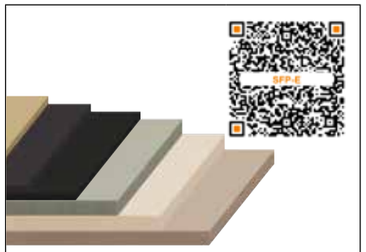
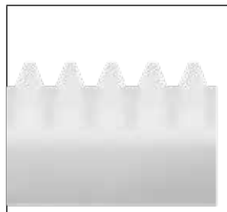


Plate strips

iglidur® gears

Spur gears



Racks

Bevel gears

Angular gearbox

Modular gearbox system

iglidur® 3D printing

Filaments

Selective Laser Sintering

Resin

Accessories

igubal® spherical bearings

Rod end bearings

Spherical balls

Spherical insert bearings

Double joints

Coupling joints

Clevis joints

Flange mounted bearings

Flanged ball bearings

Ball transfer units

Conveyor rollers

Thrust bearings

Pillow block ball bearings

Slewing ring ball bearings

Spherical bearings

Pillow block bearings

Angled and in-line ball and socket joints

Accessories

xiros®
ball bearings

Radial deep groove ball bearings

Other types

drylin®
linear technology

W profile guides

N low-profile linear guides

T rail guides

R shaft guides

Q square linear guides

NT telescopic rails

Complete systems with measuring technology

Electric motors

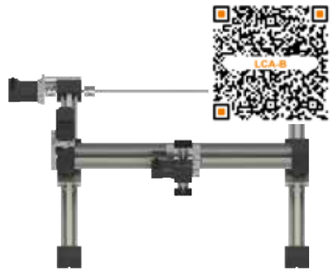
Low Cost Automation

Articulated arm robot

dryspin® lead screw technology

Lead screw nuts

Lead screws



Linear robots

Further kinematics

Accessories

Accessories

drylin® drive technology

Linear modules with lead screw

Linear modules with toothed belt

Linear modules with racks

XY-tables

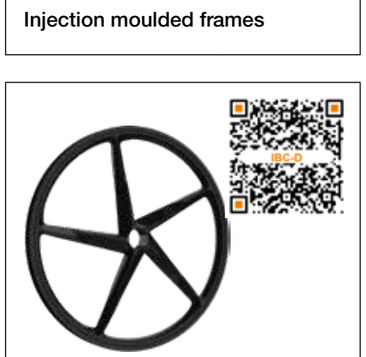
igus® bicycle components

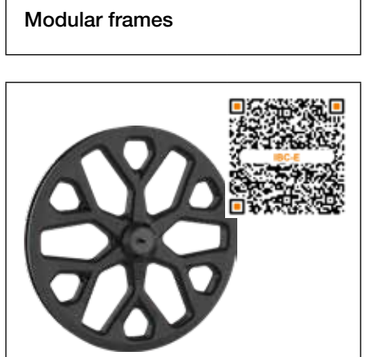
Bicycle components


Injection moulded frames

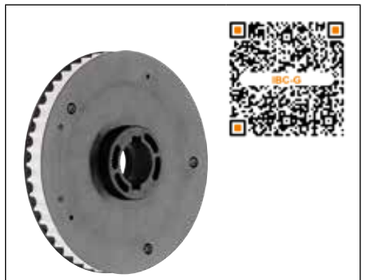

Modular frames


Rotomoulded frames


Injection moulded wheels

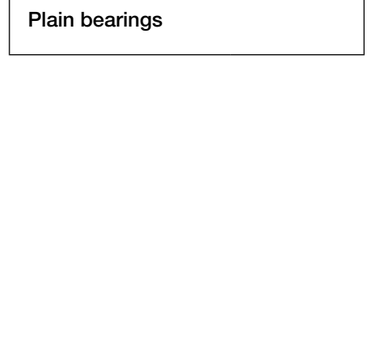

Rotomoulded wheels


Handlebars


Freewheeling


Planetary crank gearbox


Plain bearings


Pulleys

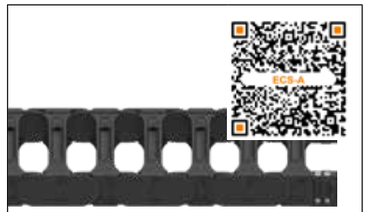
Bicycle wheel bearings

Pedal cranks

Everything at a glance

e-chains® and e-chain systems®

e-chains® and e-chain systems®



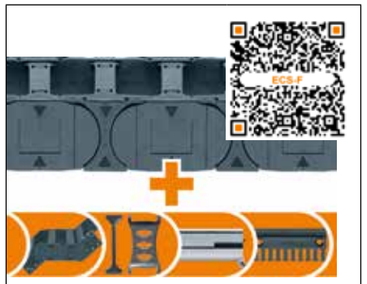
Energy chains for linear motion

Special solutions

Rotary movements

triflex® multi-axis energy chains for robots

Accessories



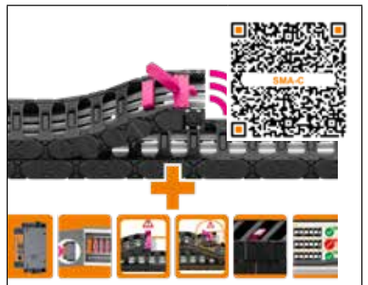
Complete set

Project planning / Engineering / Installation

smart plastics

Condition monitoring | i.Sense

Predictive maintenance | i.Cee



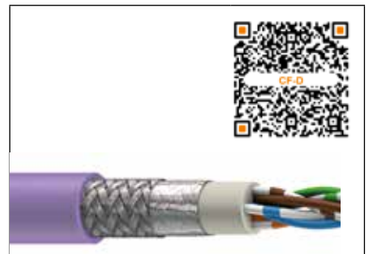
Complete system solutions

chainflex® cables

Control cables

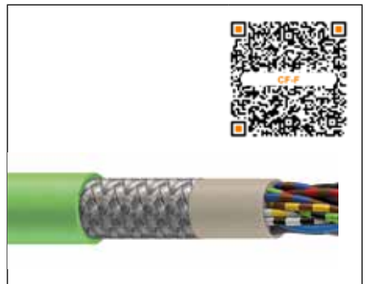
Data cables

Coaxial cables



Bus cables

Fibre Optic Cables



Measuring system cables

Servo cables

Hybrid cables

Motor cables

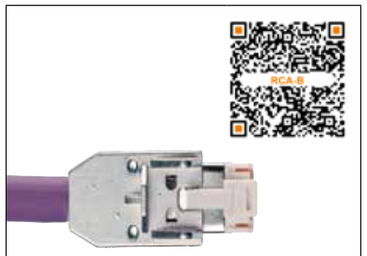
Robot cables

Special cables

Clean room elements

readycable®
readychain®

Drive cables suitable for
34 manufacturer standards



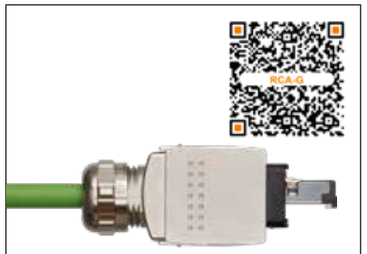
Network, Ethernet,
fieldbus cables

Video, vision, bus technology

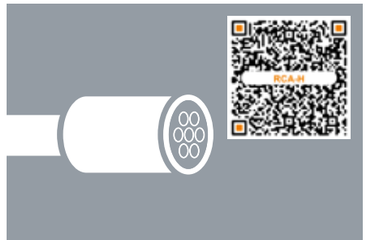
Sensor and actuator cables

Cables with HARTING industrial
plug-in connectors

Cables for robots



AIDA Standard



Connectors

Plug-in connectors
(signal and power)

Tools, accessories

igus® Corner

motion plastics® sample box

Equipped with igus® samples on site as required

Would you like to always have the latest igus® products on hand to try out? Then simply order the igus® corner for your premises. A sales colleague will bring the display unit to you, set it up on request and equip the compartments with the products of your choice.

You can use the corner as a permanent exhibition or for a limited period of time. We will also pick it up again or refill it if you need supplies or want to try other products.

Learn more about it and
order your own igus® Corner:

igus.eu/igus-corner

Everything at a glance

Catalogues and online tools

Catalogues

dry-tech® bearings technology
MAT0075591.20

dry-tech® linear technology
MAT0075592.20

e-chains® catalogue
MAT0072320.20

chainflex® catalogue
MAT0070582.20

Spring new products journal
MAT0075538.20

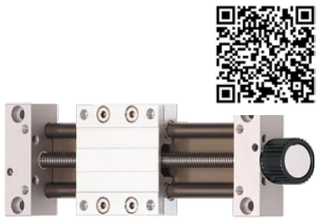
Autumn new products journal
MAT0075602.20

igus® online kiosk

Online tools

Energy supply systems

Cables



Linear technology

Electric motors

Bearing technology

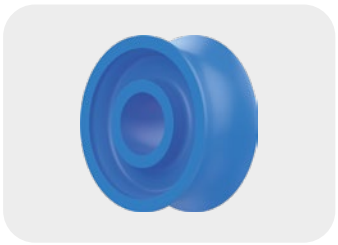
Gears

Robotics and automation

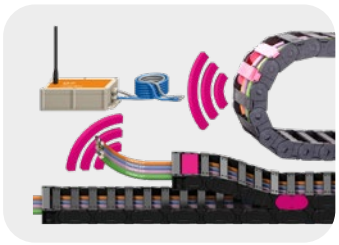
Coating

Individual components

motion plastics®



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