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

Low Cost Automation

Tech up · Cost down · Proof · Sustainability · Digital

Quick consultation anywhere at any time

In person
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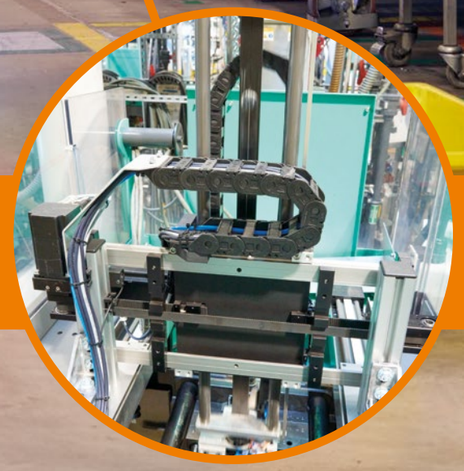
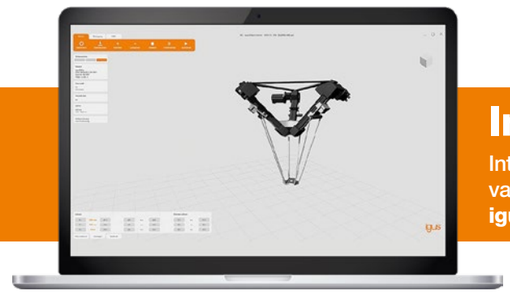
On site
Sales representative
Roadshow/Trade show
igus.eu/lca-roadshow



igus® in-house automation

2,500 automation systems at igus®: from autonomous robots to injection-moulding automation - let us inspire you!



Intuitive robot programming

Intuitive software for programming and controlling robots that supports various kinematics such as delta, linear and multi-axis articulated robots.
igus.eu/irc

igus.eu/news-LCA

In-house automation at the motion plastics® specialist igus®

Shh ... behind the scenes

New

igus® automates igus® - over 2,500 own solutions in production

In-house automation at the motion plastics® specialist igus®

We use our cost-effective robot solutions in production to automate monotonous tasks and reduce the workload of our employees. This allows them to concentrate on more demanding activities. Let us inspire you - perhaps we have the right solution for your production.

- ▲ More consistent results and increased product quality
- ▼ Cost-effective automation solutions with a fast return on investment (ROI)
- ■ Over 2,500 internal solutions in the areas of injection moulding, tapping, assembly and much more.
- ● Reduced consumption of resources and minimisation of waste
- Easy integration and programming of processes thanks to free igus® Robot Control

25-LCA-01

igus® production system: application of lean principles

No boring jobs: we make short work of routine tasks

What if robots could take over the boring, repetitive tasks - and we could concentrate on exciting activities? This is exactly our vision at igus®! And we don't just talk about automation - we live it. In our own production facilities, we use over 2,500 robot solutions to automate our production and support our employees. The origins of automation at igus® lie in our endeavours to make processes more efficient. However, the robot solutions available on the market were too expensive. The pressure to find a solution was high, so we started developing our own products and systems.

Robots in action - how we relieve our employees

What does that mean specifically? Let's take a look behind the scenes of the factory together. We will show you what automation looks like in practice and present some exciting examples from our production, including ROI, i.e. the time it takes for the investment to amortise. Spoiler alert: it's not as expensive as you might think, but incredibly useful for your production!

Injection moulding: robots remove sprue

One example of cost-effective automation at igus® is the removal of sprue from around 1,000 injection-moulding machines. What was originally done by hand has been automated with solutions such as the standard sprue picker and gantry robots. Sounds expensive? Not at all! A complete solution costs just €10,000 - only a fraction of the usual automation costs. ROI is usually achieved after just six months.
Price: €10,000
ROI: 0.5 years

ReBeL® cobot: the saviour for "boring jobs"

The ReBeL® cobot is a real game changer and used in various areas of the company. A prime example of a "boring job" is downstream thread cutting. Here, the cobots safely handle the workpieces and drill the threads - over 20,000 times a day. What used to be monotonous manual labour is now done by cobots. The best thing about it is that programming is child's play thanks to the igus® Robot Control software! Without any programming knowledge! The result is improved work safety, increased production speed and less scrap. The cost of this automation is €50,000 with a payback period of just 0.7 years.
Price: €50,000
ROI: 0.7 years

Delta robot Robofeed: faster than any human hand

Attention, here comes a special insider: Did you know that we originally developed our own robots because conventional solutions were simply too expensive? Exactly, we wanted to automate the assembly of our famous energy chains. That's how igus® Low Cost Automation came to life. Today, our delta robots support the assembly process by guiding the chain links to the automatic assembly machine, which connects the individual chain links. The price for the system is just under €40,000. The highlight? ROI is usually achieved after just 0.9 years.
Price: €40,000
ROI: 0.9 years

Room linear robots: no more waiting times at the injection-moulding machine

Inserting drylin® linear carriages into injection-moulding machines used to be a real ordeal for our employees. They had to be inserted hundreds of times a day, followed by a waiting time of 40s per cycle. Today, our low-cost linear robot iSPEL performs this task in record time. The project costs for this robot solution, including step conveyor, camera and suction gripper, total around €22,000. ROI is 0.7 years.
Price: €22,000 ROI: 0.7 years

Fancy benefiting from low-cost automation yourself? Take a look at our products and solutions and discover how easy automation can be - even for small budgets! One thing is clear: boring jobs are a thing of the past.
Feel free to contact us if we have inspired you for your production:
igus.eu/lca-contact

Alexander Mühlens
Head of the Low-Cost-Automation Business Unit
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Update

ReBeL® 03: new features and improvements

ReBeL® Environment

The ReBeL® 03 comes with new encoder technology and improved gearing. These innovations ensure an increased repeatability of at least ±1 mm. The ReBeL® 03 also works more quietly, offers LED feedback and is equipped with a connector in the base for a seventh axis. Efficiency has been increased by 30%.

- ▲ Referencing accuracy improved by a factor of six
- ▼ Most cost-effective cobot - made in Germany
- ■ Over 1,000 robots in use by customers
- ● Service life has been increased six-fold through the use of new materials and optimised components
- ◞ Over 50 digital interfaces

25-LCA-09

Update #compact

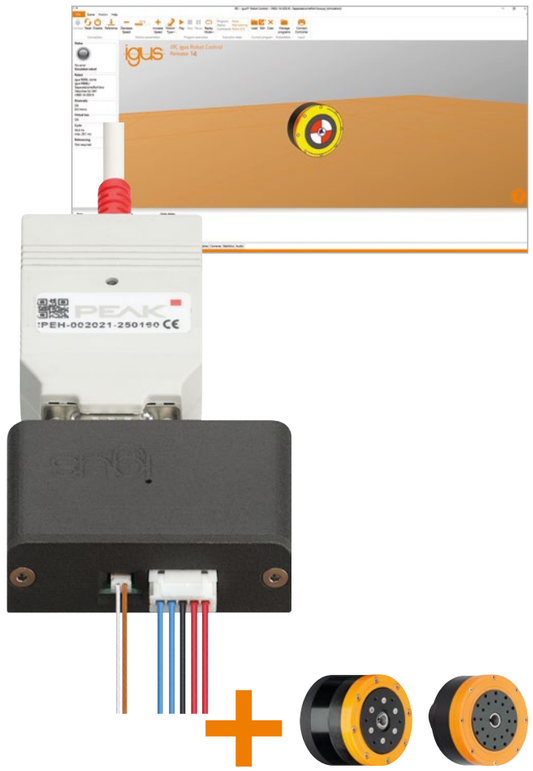
Firm grip guaranteed!

ReBeL® Environment

The new "plug & program" ReBeL® gripper set with the GEP2006IO1 Zimmer ensures a secure hold. Thanks to the self-locking mechanism, the gripper does not lose components even in the event of a power failure.

- ▲ Safety through self-locking mechanism
- ▼ Plug & program set for direct installation and control via the ReBeL®
- ■ Compatibility tested by RBTX®
- ● Flexible use thanks to different gripper fingers
- ◞ Control via the igus® Robot Control

25-LCA-04



Update #modular

Plug them together and get started!

ReBeL® Environment

The RL-EC-SE-0118 adapter kit is the ideal solution for anyone who wants to easily connect ReBeL® shaft gearboxes in sizes 80mm and 105mm. It makes programming child's play: Simply plug them together and control them via the igus® Robot Control software or directly via CAN Bus.

- ▲ New plastic adapter in 3D-printed housing for greater stability
- ▼ Free igus® Robot Control software
- ■ 24-hour use in the individual gearbox test rig of the Low Cost Automation test laboratory
- ● Durability thanks to replaceable individual parts
- ◞ Free advance testing in the software

25-LCA-03

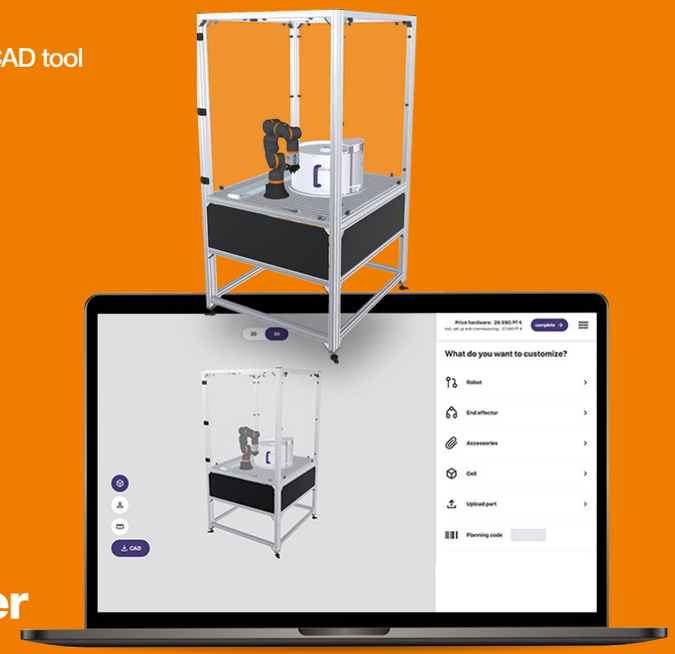
As easy as planning a wardrobe

Plan your machine around the ReBeL® online

- CE documentation
- Directly in the browser, without an expensive CAD tool
- Always with instant price

CAD

Free
CAD download



igus.eu/machine-planner

Study

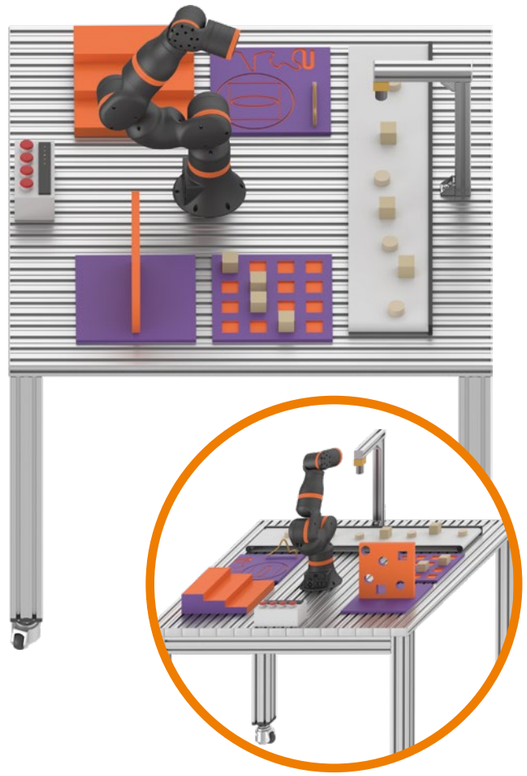
Imitation allowed: Show to program

ReBeL® Environment

The Cobot ReBeL® can be teleoperated and programmed using a hand-controlled miniature version. The movements of the miniature ReBeL® are transmitted to the robot control system of the life-size ReBeL® via an interface.

- ▲ Programming without prior knowledge
- ▼ No time-consuming learning of programming languages or environments required
- ■ Study presentation at the Hannover Messe
- ● Simple teaching of new applications
- Interface to the igus® Robot Control (iRC)

25-LCA-05



Plus

Training with real industrial robotics

ReBeL® EduLab

The new EduLab provides a fun way to get started with robotics. Program a realistic cobot with a user-friendly interface to give your facility a technological edge.

- ▲ With real-life relevance for perfect integration into lessons, also suitable for larger groups
- ▼ Free-of-charge, licence-free software for learning robotics skills effortlessly
- ■ Other education kits, learning materials, programming tutorials etc. are already being used successfully at schools and universities
- ● 100% lubrication-free robot
- Free learning resources, programming tutorials and training software online

25-LCA-10

amazon alexa · CAN · EtherNet · JS · python · ROS · 2 · Shelly cloud · unity · MathWorks · MATLAB SIMULINK

Plus

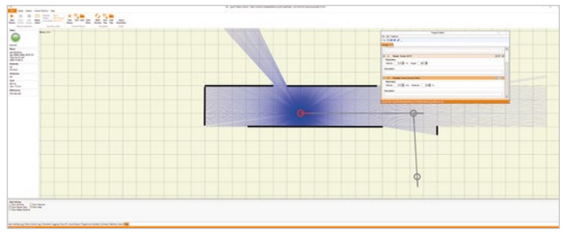
Sample programs and integration

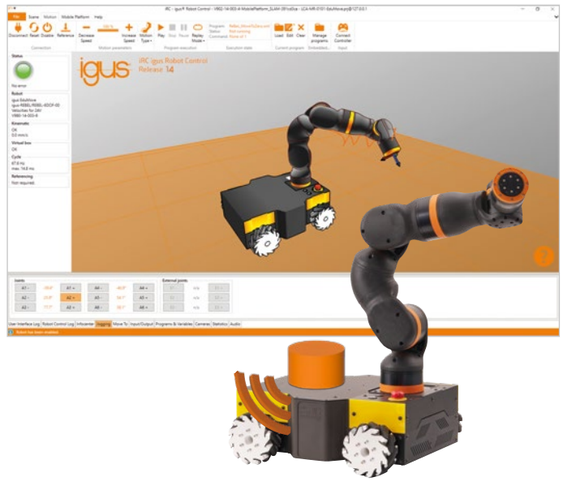
ReBeL® Environment

The integration of the ReBeL® is made even easier by sample programs for Matlab and Simulink.

- ▲ New sample programs for ROS, ROS 2, Java Script, Ethernet, CANopen and Unity Package
- ▼ Reduce time and costs with easy integration
- ■ Tested in the Low Cost Automation test lab and already used by customers
- ● Saves development resources

25-LCA-06





Update

Map and navigate: Just keep mapping!

ReBeL® EduMove

The ReBeL® EduMove maps its surroundings with an optional LIDAR sensor, precisely determines its position and navigates on this map. Simpler and clearer planning of missions.

- ▲ SLAM technology makes it easy to create maps and routes
- ▼ Easy programming of complex tasks
- ■ Extensive test drives in rooms with a static environment
- ● Another platform can be added to ReBeL®
- Mobile programming and mission planning via integrated WLAN

25-LCA-03

I like to move it, move it ...

New #modular

Autonomous mobile robot (AMR)

ReBeLMove

The ReBeLMove offers a cost-effective and flexible solution for optimising logistics processes. It performs tasks such as supplying and emptying machines, supporting manual workstations, transporting empties and picking trolleys as well as quality and replenishment processes and the provision of tools. The LIDAR technology ensures precise navigation and safe logistics processes.

- ▲ Optimise logistics processes, ready for use in 30 minutes
- ▼ Cost-effective solution without great effort and with rapid amortisation
- ■ 40% cost advantage compared to other mobile robots
- ● Enables employees to concentrate on more value-adding activities
- Intuitive app for quick set-up and simple operation

25-LCA-07

Versatile helper for modern production environments

Getting started in a cost-effective way with automating logistics processes

Imagine a well-organised production environment in which the ReBeLMove transports small load carriers (SLCs) completely independently. It glides through the hall, loads and unloads machines, supplies manual workstations or transports order picking trolleys. Its greatest strength? Flexibility. Whether transporting empties, providing tools or carrying out quality processes - the ReBeLMove adapts easily to every new task.

By reliably taking over time-consuming transport tasks, it allows employees to concentrate on more value-adding activities. This represents a considerable competitive advantage, especially in times of a shortage of skilled labour and increasing cost pressure.

Get an insight into the many possibilities that ReBeLMove offers you.

Convincing figures

With an all-inclusive price of €30,703.30, the ReBeLMove offers a 40% cost advantage compared to other mobile robots - and pays for itself after just 12 months. Its load capacity of 50kg (with a tensile weight of up to 100kg) and battery life of eight hours make it a robust all-rounder. And best of all, thanks to the simple implementation and intuitive app, you can program the ReBeLMove within half an hour and use it immediately.

Automation at the touch of a button

Setting up the ReBeLMove is as intuitive as using it. Think of it like a smart robot vacuum cleaner: the operator moves a hand control unit around the work areas while the robot creates a 360° digital map. Workstations, restricted zones and loading areas can be conveniently defined with a tablet. Laborious floor markings or complex installations? Superfluous. After this initial mapping trip, the operator can define individual stations for working, waiting and charging. Thanks to SLAM technology and a camera, the ReBeLMove recognises target locations and reflectors all by itself.

Smart software for maximum integration

A real team player: the integrated software allows intelligent fleet management and simple integration into existing systems. Virtual interfaces (REST API) ensure efficient communication between robots, machines and the infrastructure - from automatically opening doors to replenishment requests. The integrated fleet management is compatible with VDA5050 and works seamlessly with platforms such as Idealworks fleetexecuter, Kinexon or Naise without incurring additional licence costs for the software and fleet management.

With its combination of flexibility, cost efficiency and simple operation, the ReBeLMove is a forward-looking solution for your company if you want to organise your logistics processes more efficiently.

ReBeLMove	Standard	Pro
Speed	1.2m/s	2m/s
Payload	50kg	200kg
Weight	35kg	60kg
Tensile weight	up to 100kg	up to 900kg

ReBeLMove compared to ReBeLMove Pro, more information on the following page.

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New

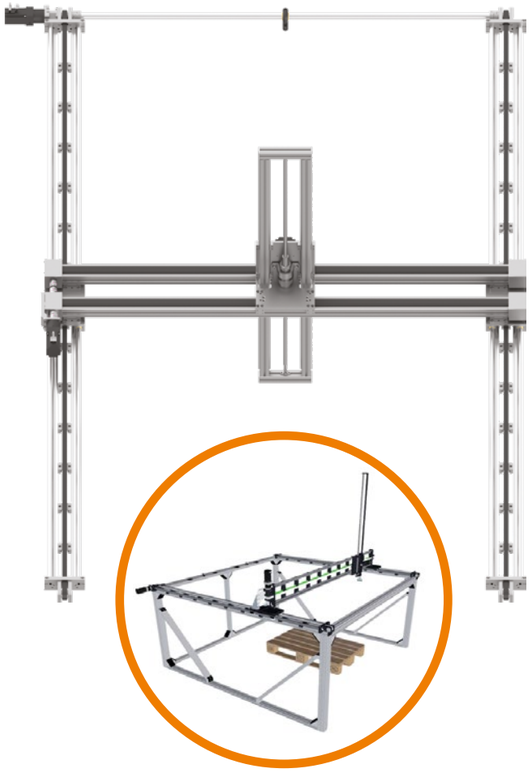
ReBeLMove Pro: more load capacity and higher speed

ReBeLMove Pro

More power for your applications: the ReBeLMove Pro impresses with a speed of 2m/s, 200kg load capacity and 900kg tensile weight. Precise navigation thanks to LIDAR technology increases safety and efficiency in logistics.

- ▲ Optimisation of logistics processes with numerous expansion options
- ▼ Cost-effective solution without great effort and with rapid amortisation
- ■ 25% cost advantage compared to other mobile robots
- ● Enables employees to concentrate on more value-adding activities
- Intuitive app for quick set-up and simple operation

25-LCA-08



New

Think big, lift bigger!

XXL linear robot for up to 25kg

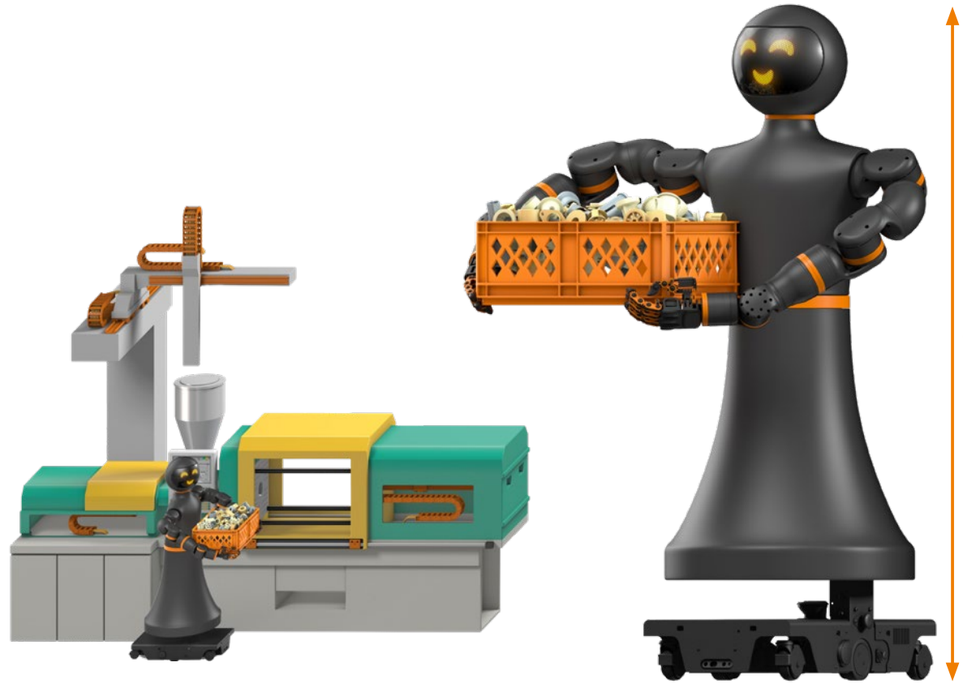
For reliable and flexible palletising applications with a lifting weight of up to 25kg. Build your own robots with the plug & program-ready palletising robot set and save integration costs.

- ▲ The working area can be configured with a max. stroke of 5.5m, ideal for Euro pallets
- ▼ Up to 60% more cost-effective than conventional linear robots, lower maintenance costs and reduced downtimes
- ■ Consists of drylin® linear axes that our customers have been using for 25 years. Service life predictable online
- ● Replaceable linear bearings
- Plug & play solution with the igus® Robot Control software (iRC)

25-LCA-15

Iggy Rob: the first humanoid robot from igus®

Flexible, intelli-gent, humanoid



ROI
< 1 year

Study

The next step in the robotics revolution

Iggy Rob: the first humanoid robot from igus®

We are currently working on developing of our first humanoid robot. This robot integrates ReBeL® cobots for the robot arms and uses the mobile robot® ReBeLMove as a basis to allow for smooth movements and interactions.

- ▲ Flexible and location-independent use at different workstations
- ▼ ROI within one year
- ■ Have your application tested in advance. Please feel free to contact us
- ● Can be used individually
- Test humanoid robots and other mobile robots in the online tool RBTXmobile: rbtx.de/link/mobile

25-LCA-13

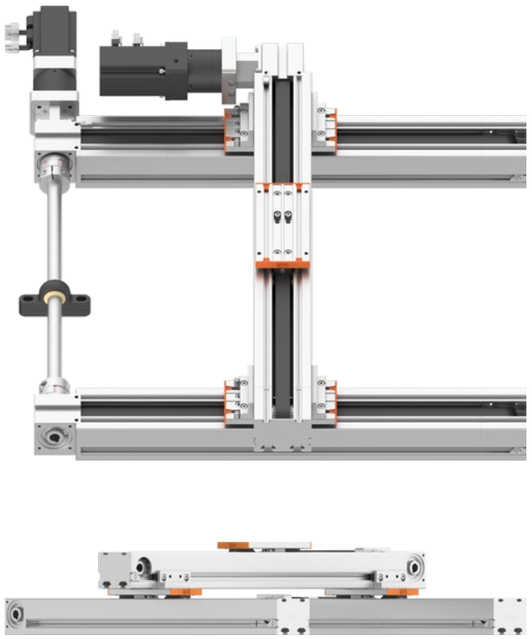
Study

Robust and versatile assembly

Profile axes for linear robots

Thanks to the compact design and the use of T-slots profiles, the linear robot can be easily integrated, which makes it an integral part of the overall construction.

- ▲ Higher performance thanks to internal drive pulleys
- ▼ Simple and cost-saving installation options directly on the axis thanks to T-slots
- ■ Extensive tests in the Low Cost Automation test lab
- ● 100% lubrication-free



Study

Dazzling performance: the new stainless-steel delta robot

Stainless-steel delta robot

A stainless-steel version of the delta robot is now also available. Ideal for fast pick & place tasks.

- ▲ The stainless-steel delta robot offers increased resistance to corrosion and is ideal for sensitive environments
- ▼ The robust stainless-steel construction extends the service life and reduces maintenance costs
- ■ Long service life and replaceable wear-resistant parts
- ● The use of stainless steel in combination with plastic reduces material wear and extends the robot's service life

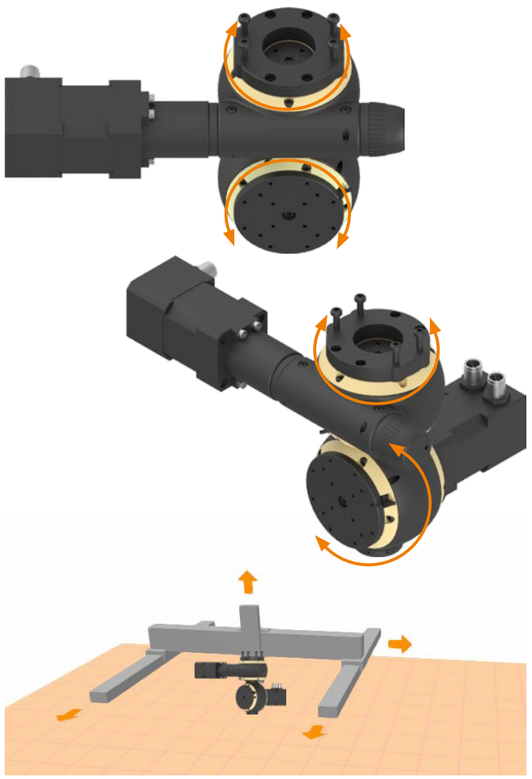
New #modular

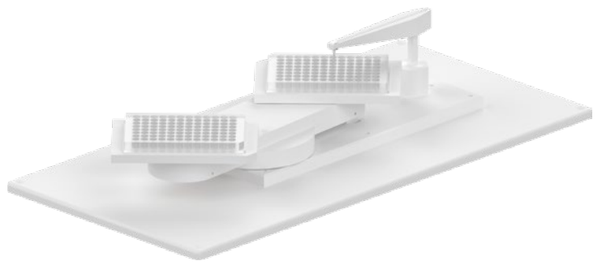
Rotary-drive unit for linear robots

Extending linear robots' degrees of freedom

Cost-effective option for adding more degrees of freedom to multi-axis linear robots. These axes permit end effectors and components to be rotated and swivelled around their own axis.

- ▲ Extension of existing linear robots by 1 to 2 degrees of freedom
- ▼ Cost-effective axes due to plastic components
- ■ Performance data confirmed by extensive tests in the igus® laboratory
- ● Lightweight construction reduces energy consumption
- With the igus® Robot Control, these axes can be operated in combination with an additional motor module and integrated into the program flow





Study #lowcost

Drop by drop

Pipetting robot

The market for automated diagnostics has developed dynamically in recent years - partly due to the corona pandemic. We are therefore developing a low-cost and easy-to-operate pipetting robot for standard applications. Please feel free to contact us if you have questions.

- ▲ Precise approach to the grid positions of a well plate
- ▼ Favourable complete solution, can be configured individually
- ■ Innovative kinematics, patent pending
- ● Long service life and replaceable wear-resistant parts
- Simple programming with igus® Robot Control software (iRC) or igus® Joint Control (iJC)

Build the world to your liking

New #modular

Build your robot: 10 new Apiro® robots

Modular robotics: endless possibilities

Apiro® is a modular gearbox system. Combine Apiro® gearboxes according to your individual requirements or choose from over 20 pre-constructed Apiro® robot systems in our shop.

- ▲ Countless combinations and individual, space-saving kinematics can be implemented
- ▼ Cost-efficient solid-plastic gearboxes with modular design - ideal for retrofitting
- ■ High product compatibility and gearbox performance data thanks to extensive testing
- ● Lubrication-free with wear-resistant parts that are easy to replace
- Configure modular robots in the Apiro® configurator igus.eu/apiro-configurator

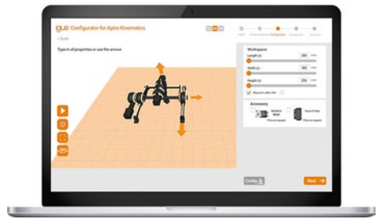
25-LCA-18

A construction kit for industry: modular, flexible and configurable

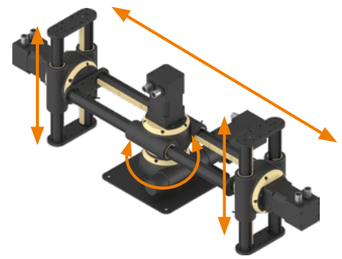
The name "Apiro®" is Greek and means "infinite" - and that's exactly what it means: an infinite number of possible combinations for individual applications that can be realised in a modular and cost-effective way with the Apiro® construction kit. Think of a modular system: different gearboxes, axes and connections that are easy to combine and customise - not for toys, however, but for customised motion sequences in industry. Thanks to interchangeable modules, companies can develop their automation quickly and precisely without having to set up completely new systems.

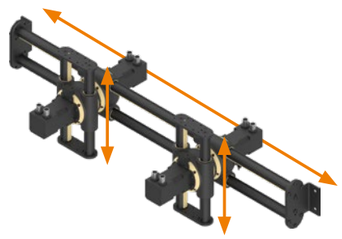
The wide range of possible applications: modular, customisable, efficient

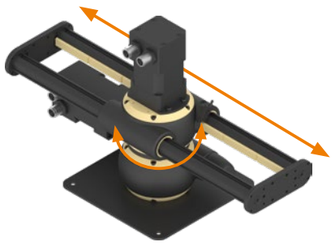
Thanks to Apiro®, several challenges for Seco's frozen-food vending machines have been solved at once: maintenance requirements were minimised, durability maximised and costs significantly reduced compared to similar kinematics. The powerful worm gear made it possible to integrate the opening of the cooling area into the process, eliminating the need for an additional mechanism.

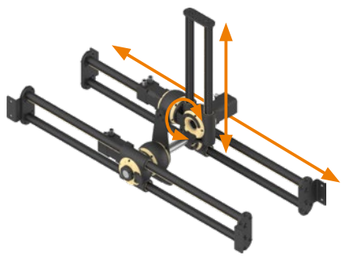


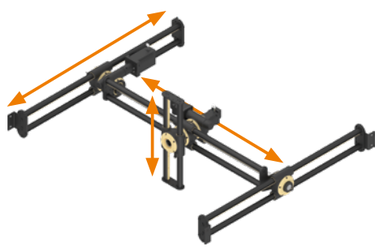
igus.eu/apiro-configurator

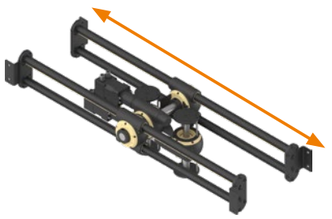












Build your robot

Study #modular

Complete robots as a modular system

RoboBuilder

This is a robot construction kit. While Apiro® is a gearbox construction kit, it can be used to assemble entire robots. The flexible system consists of gearboxes, drives, bearings and rails that can be individually combined to create customised robot solutions.

- ▲ Allows for realising individual robots
- ▼ Quick and easy conversion possible
- ■ High product compatibility thanks to the use of igus® standard components
- ● Lightweight design of components reduces energy consumption

25-LCA-19

Carefree and safe with CE

CE

Plus

CE service for machines

Complete automation cells including CE service

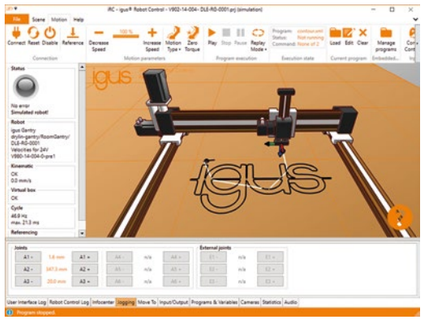
We now offer CE documentation as a service for all complete robot solutions from the machine planner. This service covers all legally relevant topics and is provided in an uncomplicated, cost-effective and secure manner.

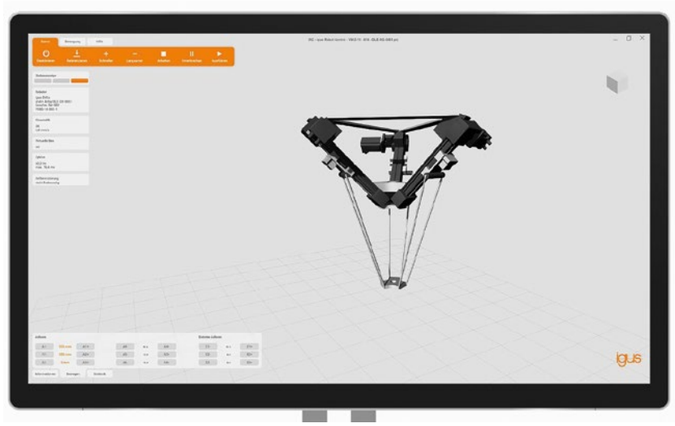
- ▲ Fulfils safety standards through complete documentation and CE certification
- ▼ Always with price transparency
- ■ 2,500 automation solutions in use at igus®
- ● Complete solutions with all components from one source
- Configure your robot solution with the Machine Planner: igus.eu/machine-planner

25-LCA-11

igus® Robot Control

Control robots? Child's play!





New design from summer 2025

Update

Simply program over 100 igus® robots - free of charge and licence-free

igus® Robot Control

With the free robot software, you can now control more than 100 different robot kinematics. The igus® Robot Control enables you to program and test the digital twin even before you buy a robot. The software is compatible with over 250 different grippers, cameras and other sensors.

- Programming and integration for everyone, even without prior knowledge
- Simulate and test robots in the iRC software before purchase
- Over 4,000 robot control systems in use by customers
- One control system for all robots, which can also be retrofitted
- Download and test free software at igus.eu/irc

25-LCA-20

igus® Robot Control Software

Click, code, even more control with the igus® Robot Control

Perfect movement with just a few clicks: the igus® Robot Control software makes robot operation easier than ever. More than 100 different robots - from SCARA to delta to mobile robots - can now be programmed intuitively. Thanks to the user-friendly 3D interface, movements can be simulated, prefabricated projects used and grippers, cameras and other components integrated. The expandable I/O modules and powerful communication interfaces permit both simple and sophisticated machine concepts. To make the application even more efficient and accessible, we have introduced numerous innovations.

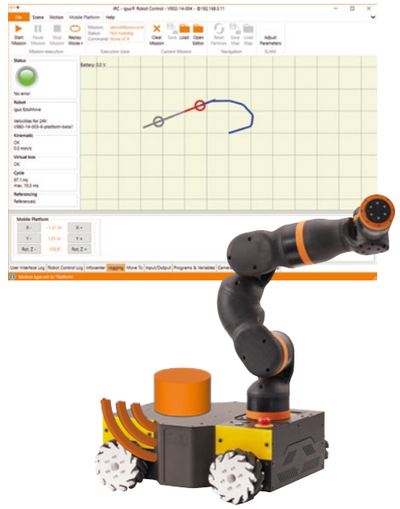
The **path generation from DXF data** makes working with the software particularly efficient: simply upload your desired file and the software automatically calculates the optimum motion sequence. Forget complicated programming with thousands of lines of code for complex contours. The path generator makes programming child's play and efficient. This function is particularly useful for precise welding or gluing applications, for example. The **revised program editor** provides an even better overview and control - instructions can be grouped, scheduled and managed more quickly with a new search function for comments and variables. The **variable explorer** also helps keep track of all relevant parameters at a glance.

The control system has also been further improved. The new **iRC modules**, now also available in the XC version, permit the use of more powerful motors, including NEMA 34 stepper motors. The new **app interface** via Python opens up additional possibilities with maths and timing tools for more precise processes. At the same time, the **AutoConnect function** allows the system to automatically recognise the IP address, even if it has been changed - a real plus for easy commissioning.

Error messages and analyses are now even more precise. The new **error analysis function** helps identify and rectify problems more quickly. Detailed information on the source of the error and possible solutions make the process even more efficient. In addition, the **self-help tools** have been improved so that diagnostics and configurations are more intuitive and downtimes are minimised.

In addition to the software, we have also extended the hardware compatibility. The control system can now control both BLDC and stepper motors, which provides greater flexibility in the choice of drive technology. There is a SLAM (Simultaneous Localisation and Mapping) specifically for the ReBeL® Edumove, which makes training applications for the education sector even easier.

SLAM is a technology that enables a robot or vehicle to simultaneously orientate itself in an unknown environment and create a map of the surroundings. This means that the robot knows where it is and at the same time creates a map that helps it move better and complete tasks more efficiently.



The update is rounded off by a revised design. The software offers improved user guidance so that functions can be found more quickly, processes can be controlled more efficiently and the overall operation is even more intuitive. With all these innovations, we are making automation more powerful, more flexible and easier than ever before. Try it out now and unlock the full potential of the robot control system!

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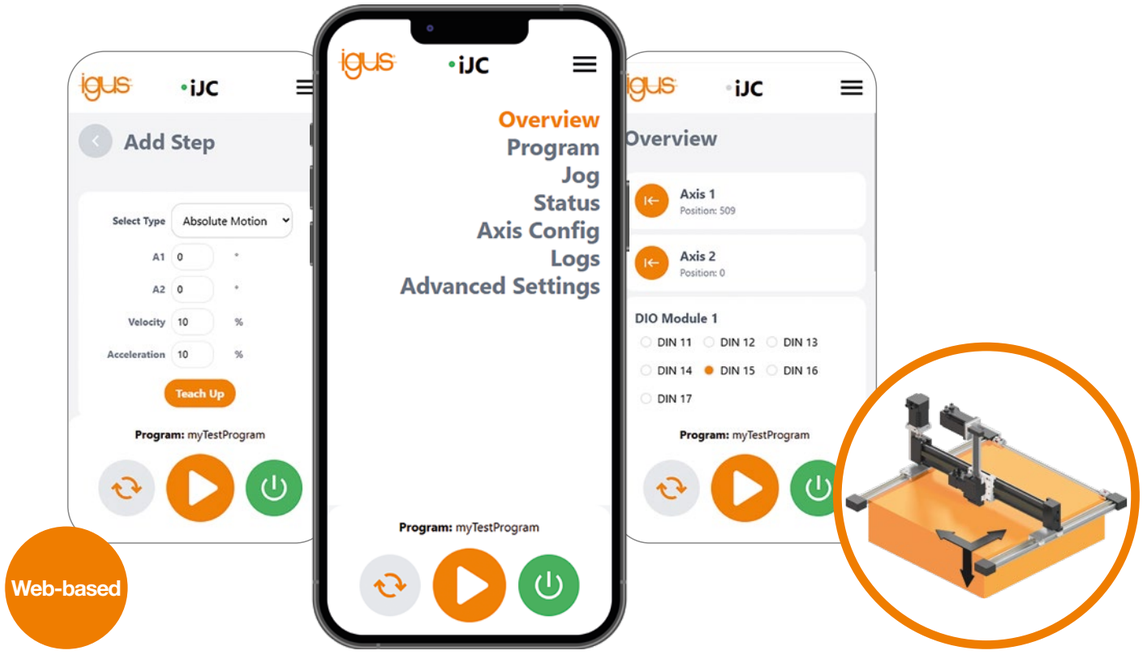
igus® Joint Control (iJC) for kinematics with one to three axes

Smarter control in the browser



Update

Press play: quick start thanks to PLC interface

igus® Joint Control (iJC) for kinematics with one to three axes

With the new PLC interface, it is easy to select and start programs on the iJC using a PLC, switch or button. The inputs of a digital IO module are used for this purpose. The status of the control system can also be displayed via LEDs that are connected to the unit.

- ▲ Select and start programs via PLC, button or switch
- ▼ Quick and easy integration and communication between the iJC and a PLC
- ■ Extensively tested in the Low Cost Automation test laboratory
- ● Optimised processes allow for more efficient use of resources
- Intuitive user interface for smartphone, tablet or PC

25-LCA-21

igus® Joint Control

Direct control - without detours

The igus® Joint Control (iJC) is a compact robot control system that has been specially developed for the simple and intuitive programming of kinematics with one, two and three axes. It is the ideal solution for simple tasks and can be programmed quickly via a browser interface. It is perfect for applications such as vending machines or modular robotics projects without inverse kinematics. We are constantly working on further improving the iJC and its user-friendliness and update it regularly. Get an overview of the latest updates:

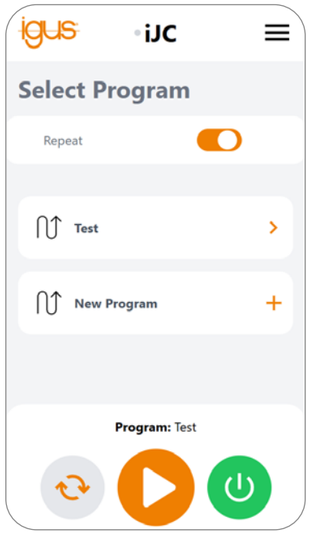
Simple programming and integration
The iJC is programmed via Wi-Fi, which is established by the control system. This means it can be connected to almost any smartphone, tablet or PC. Programming can then be carried out conveniently via the browser. You can choose the name of the Wi-Fi yourself, which makes it very easy to find your control system in the network.

Various playback modes: single or endless loop
Programs can be started via the browser, a button or the joystick. However, if you want a program to start again and again as soon as it has been terminated, this can become very tedious. It is therefore now possible to set the playback mode of the program: either one cycle or repeated cycles for recurring movements. This reduces the effort considerably as programs no longer have to be restarted manually.

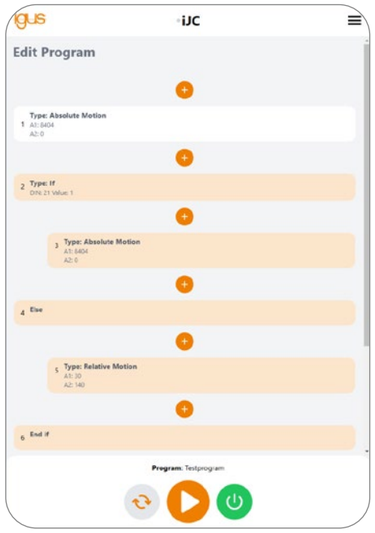
Smarter thanks to "if-then-else" logic
The new if-then-else program step opens up completely new areas of application. Different steps can be carried out depending on the status of a digital input. Thanks to colour coding and clear indentation, the program always remains clear and easy to follow. Complex, expensive control systems are thus now a thing of the past.

Referencing via joystick without Wi-Fi search
After restarting the control system, some axes must first be referenced again. With the convenient little joystick on the module, this can now be done at lightning speed and without the hassle of connecting to the Wi-Fi. A few clicks and your axes are ready to go again.

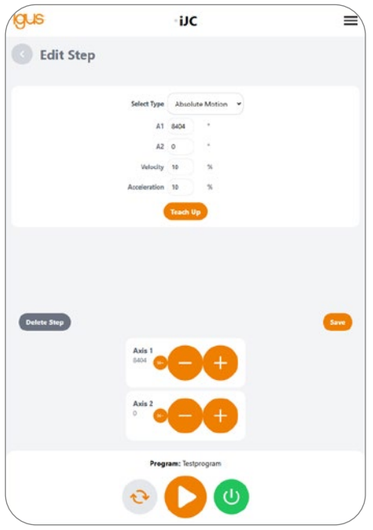
Teach-in programming redefined
Our improvements also make teach-in programming even more intuitive by allowing the current position to be saved via a button when creating programs. The axes can be moved with a button and the point approached can be added to the movement program without having to switch between different pages. This means that a program can be created or improved quickly and easily via smartphone.



Setting the playback mode



"if-then-else" as a logistics instruction



Simplified teach-in programming

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

Low Cost Automation

Tech up | Cost down | Proof | Sustainability | Digital

Quick consultation anywhere at any time

In person
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Chat
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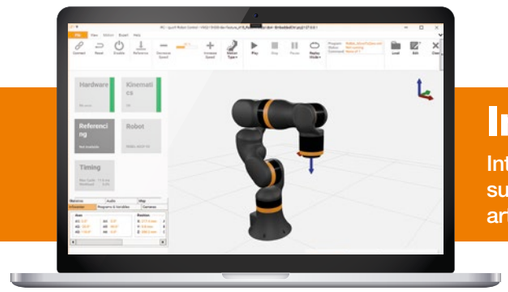
On site
Sales representative
Roadshow/Trade show
igus.eu/lca-roadshow

XXL linear robots
Automated printing press loading at Metaprint

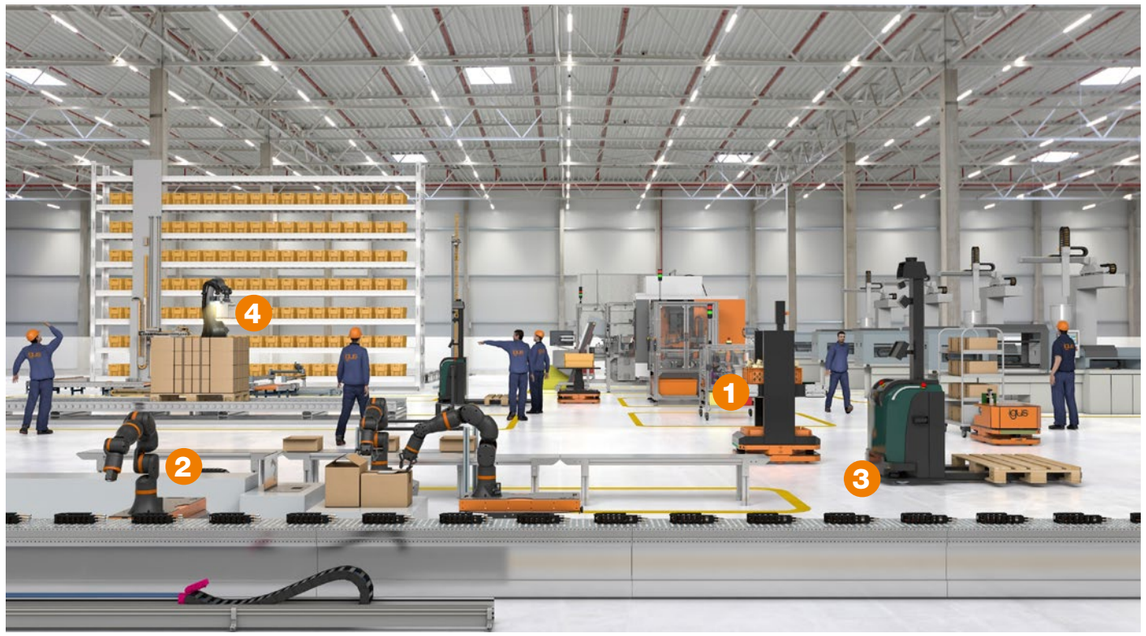


Intuitive robot programming
Intuitive software for programming and controlling robots that supports various kinematics such as delta, linear and multi-axis articulated robots. **igus.eu/irc**

igus.eu/news-LCA

Automation at the motion plastics® specialist igus®

The production of tomorrow



Update

Automation to improve productivity throughout production processes

Automation at the motion plastics® specialist igus®

At igus®, we are already successfully using our cost-effective robot solutions in production to automate monotonous and repetitive tasks. This takes the pressure off our employees and gives them room for more demanding activities. Let's find out together where there is potential for automation in your company.

- ▲ More consistent results and increased product quality
- ▼ Cost-effective automation solutions with fast ROI (return on investment 6-8 months)
- ■ Over 2,500 proven automation applications in use in our own production facilities
- ● Lubrication-free robots thanks to the use of igus® high-performance polymers
- Easy integration and programming of processes thanks to free igus® Robot Control

25-LCA-52

Automation using the example of igus® solutions

Discover the cost-effective automation options in your company

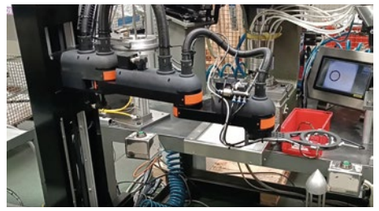
The plastics industry is facing enormous challenges. A shortage of skilled labour, rising quality requirements and cost pressure are increasingly demanding innovative solutions from companies. How can production processes be made more efficient and companies future-proofed? At igus®, one of the world's leading manufacturers of high-performance plastics, we rely on the power of automation.

"With over 800 of our own injection moulding machines, we know exactly what the challenges are. Our automation expertise flows not only into our own processes, but also into individual robot solutions that we use to help other companies optimise their production."
– **Alexander Mühlens**
(Head of the Robotics Automation Technology Business Unit)

The potential of automation: How to optimise your production processes
When people talk about automation, impressive scenarios quickly come to mind - robot arms, conveyor belts and seamlessly networked systems. But how could a production line be optimised through automation? A look into the production hall shows possible approaches:

Linear robot for automated parts handling in an injection moulding machine: from €9,026*

1 After the machine, for example, robots take over the precise handling of parts from €9,026* by placing plastic components on the conveyor belt and preparing them for future processing steps. This is done quickly, error-free and around the clock.



Automated ring insertion and quality control with SCARA robot: from €6,000*

2 In quality assurance, e.g. collaborative robots (cobots) starting at €6,000* analyse the components using intelligent image processing. Defective products are automatically recognised and sorted out before they reach the next production stage. The result: fewer rejects, lower costs and consistent quality.

Mobile robot ReBeLMove in use in igus® production for the supply and removal of small load carriers for €30,703.30*

3 The autonomous mobile robots (AMRs) step in for material transport. Instead of manual transport, these robots for €30,703.30* undertake the to-and-fro transport of boxes and components between stations, thus avoiding wasted time and downtime in production.

4 At the end of the production line, during packaging and palletising, larger cobots ensure efficiency. They stack cartons and secure loads, which not only speeds up processes but also ensures consistent precision.

***The price shown is based on the German price list.**

What automation can do for your company
Automation can be used across all industries and is no longer exclusively relevant for large companies. Whether plastics production, logistics or other industries - the step towards automation is not a vision of the future, but an opportunity that can be realised now.

Start your automation - simple and customised
Do you already have a concrete idea of which processes in your company could be automated? Contact us and get started with automation today:

Automation is worthwhile when:

1. **High quantities are called for**: automation pays off exceptionally quickly from 100,000 units.
2. **Ergonomics should be improved**: your processes contain unergonomic, monotonous or unhealthy tasks.
3. **Quality problems exist**: increases precision, minimises errors and sustainably reduces rejects.

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Humanoid robot: iggyRob

Vision? Reality! Test it today!

Update

Test what a humanoid robot can do today

Humanoid robot: iggyRob

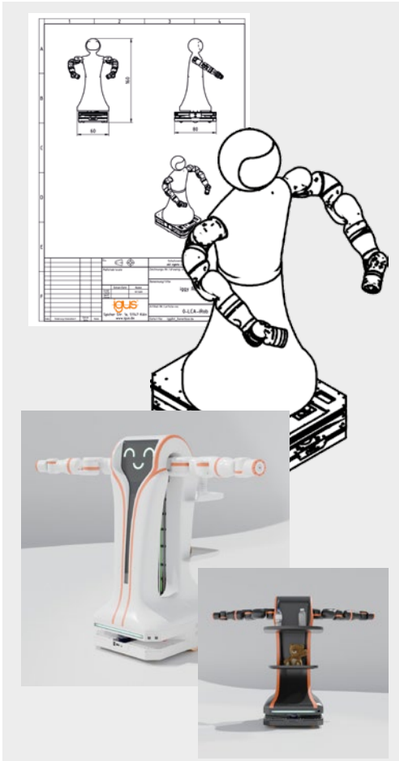
iggyRob stands for the future of automation and robotics. With the ReBeLMove Pro as the basis, iggyRob offers plenty of scope for innovative developments to meet the requirements of modern applications. Whether in catering, retail or as support in everyday life - iggyRob combines versatility and flexibility and is constantly evolving to set new standards in robotics. The iggyRob can be equipped with various cobots, regardless of the manufacturer.

- ▲ Flexible and location-independent use at different workstations
- ▼ Particularly cost-efficient thanks to the use of motion plastics® components
- ■ Test the automation capability of your application with our "Test-before-Invest" service
- ● Planned for flexible use in individual applications
- Simulate and test humanoid robots and other mobile robots online: **rbtx.eu/link/mobile**

Application example

From concept to reality. Testing at your site today.

Every extraordinary idea begins with a vision - a concept whose potential only becomes visible through continuous development. This is exactly how the journey of iggyRob, our humanoid robot, began. It stands for the future of automation and robotics, which we are working on together. From the first line on paper to the current prototypes, iggyRob is the expression of progress and innovation - an evolution that has only just begun.



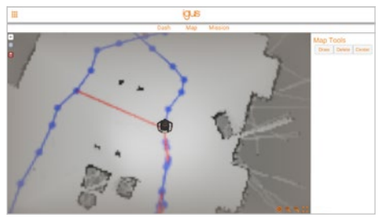
From the first sketch to the iggyRob

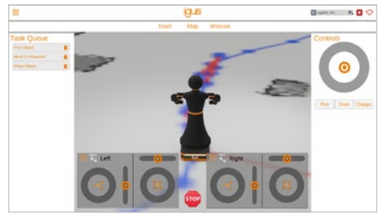
A new era of automation begins
The future of automation is becoming more human, more flexible and more accessible - and iggyRob is our step in this direction. At igus®, we combine proven technology with fresh, innovative approaches at every stage of development to create a humanoid robot that will enrich production facilities, office environments and many other fields of application in the long term.

Humanoid robots like iggyRob epitomise the idea that automation can become more human, more flexible and more accessible. Our vision is a world in which technology supports and inspires people - a world in which robots are not simply tools, but partners that grow with people's needs. Today, iggyRob may still have a lot of development ahead of it, but we firmly believe that humanoid robots will enrich production facilities, logistics environments and everyday life in the future.

From the idea to the technology: what makes iggyRob unique
The two ReBeL® cobot arms from iggyRob offer maximum flexibility with a reach of 664mm. The robot has also been designed so that robot arms from other manufacturers can also be used without any problems. Supplemented by the mobility of the ReBeLMove Pro, iggyRob already provides a solid basis for precise and versatile applications. Its intuitive control system make it easy to operate, even in challenging environments such as narrow aisles. This potential makes iggyRob a promising development that we are driving forward step by step in order to reshape the future of automation.

It is not about perfection in the here and now, but about paving the way for a world in which automation is accessible to everyone, without complexity or high

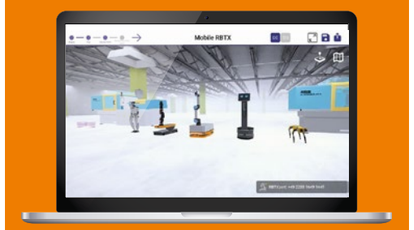




costs. With our "Test-before-Invest" approach, we invite you to try out the possibilities of iggyRob together with us, optimise it and implement individual requirements.

Our focus is not on robots, but on people and the collaboration that makes progress possible. iggyRob is our contribution to a future in which technology does not dominate, but inspires - a future that we shape with vision and determination.

Dimensions	160x60x80cm
Components up to approx	50x30cm
Arm reach	75cm
Reach over chassis	30cm



Test mobile automation of your production virtually and realistically!
Simulate your real production environment with high-bay warehouses and injection moulding machines, choose from over 15 robot models and control them interactively:
rbtx.eu/link/mobile

Mobile robot platform - ReBeLMove Pro

Let's move forward!

New

Cost-effective robot platform for a wide range of applications

Mobile robot platform - ReBeLMove Pro - from €39,800

The ReBeLMove Pro is a mobile robot platform for the automation of transport and handling tasks. Various systems such as Hook, Pick-by-Light, Lifter and Conveyor and Cobot Lifter enable efficient material provision, error-free picking and precise handling. It saves time, reduces errors and optimises production processes.

- ▲ Efficient transport and logistics solutions - safe and CE-certified
- ▼ Approx. 25% more cost-effective compared to other mobile robots
- ■ Simply automate transport/handling from as little as €39,800, with rapid amortisation/ROI
- ● Enables employees to concentrate on more value-adding activities
- Intuitive app for quick set-up and simple operation

25-LCA-40

Autonomous mobile robot

In the fast lane of production with the ReBeLMove Pro

Costs, a shortage of skilled labour and the pressure to be efficient - modern production is demanding. But who says you have to slow down? With the **ReBeLMove Pro**, you can easily switch to the fast lane. Equipped with smart navigation and state-of-the-art SLAM technology, this mobile robot is ready to master your daily challenges with ease.

Its true strength lies in its versatility: whether autonomous navigation of Euro pallets, skilful manoeuvring around obstacles or the safe transport of parcels - the ReBeLMove Pro brings impressive ease to every task. And for changing working environments or demanding transport requirements? No problem! With its maximum freedom of movement and the ability to adapt to your processes without any fixed structures, the ReBeLMove Pro is the perfect companion for dynamic production scenarios. From material handling and order picking to transport work, it completes every task dynamically, quickly and adapted to your processes.

ReBeLMove Pro for €39,800

Dimension	
Length	795.00mm
Width	560.00mm
Height	195.00mm

General properties	
AGV load capacity	250kg
Tensile weight	900kg
Operating time	approx. 8 hrs.
Speed	max. 2m/s

Versatile solutions for your production tasks

The ReBeLMove Pro is more than just a transport robot. With various system bundles, it offers solutions that are specifically tailored to the requirements of modern production environments:

1 **Hook Trolley Bundle:** powerful transport of loads up to 900kg. Optimises routes, speeds up processes and makes order picking easier.

2 **Pick-by-Light Bundle**: the intelligent shelving system uses light signals to indicate the correct picking points and eliminates the need for tedious searching. This saves valuable time, minimises errors and takes your order picking to a new level.

3 **Lifter and Conveyor Bundle**: height-adjustable conveyor belts for effortless material transport with less manual intervention. Ideal for shelving, machines and assembly workstations.

4 **Cobot Lifter Bundle**: a collaborative robot and height-adjustable lifting column for precise handling and safe transport of small load carriers (SLCs). Perfect for assembly environments.

5 **iggyRob**

The mobile robotplatform is the basis of the iggyRob, providing our humanoid robot with the ability to move.

These bundles make the ReBeLMove Pro a versatile tool that fits seamlessly into existing processes and saves both time and money. In addition to process optimisation, the ReBeL® Pro offers another decisive advantage: it takes over physically strenuous tasks such as moving heavy loads and thus provides noticeable relief for employees. This reduces load on the musculoskeletal system and makes the workplace safer and more ergonomic.

Whether in warehouse logistics, just-in-time production, at assembly workstations or within production lines - the ReBeLMove Pro makes your production processes more efficient and flexible. Compared to stationary automation solutions, the mobile robot offers clear advantages. Lower installation costs and state-of-the-art SLAM technology enable it to recognise its surroundings and obstacles autonomously, plan routes efficiently and integrate seamlessly into your processes without the need for costly conversions. The result? Fewer errors, rapid amortisation and noticeable time savings. With the ReBeLMove Pro, you not only secure competitive advantages, but also position your production for the future in the long term. Invest in mobile robotics and benefit from intelligent automation that sustainably improves your work processes. Rely on mobile robotics and accelerate your success!

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New

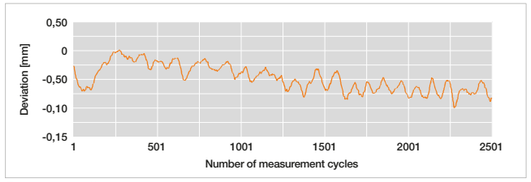
Forklift operation automated

Autonomous forklifts

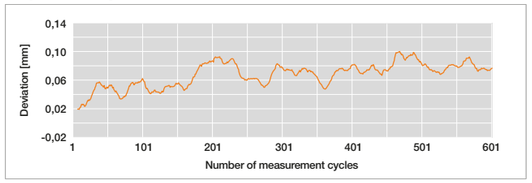
The ReBeL® Pallet Mover autonomous forklifts are specially designed for highly efficient warehouse automation. With advanced navigation systems and intelligent environment perception, they optimise pallet handling, reduce costs and ensure smooth processes in dynamic warehouse environments.

- ▲ Precise pallet handling thanks to intelligent navigation and compact design in three variants, payload from 300-1,500kg
- ▼ High load capacity, fast speed and long operating time maximise efficiency
- ■ Join us at our "Mobile Robots" days and test your application
- ● Energy-efficient for environmentally friendly warehouse logistics
- ◆ Seamless integration and optimised workflows thanks to digital control system

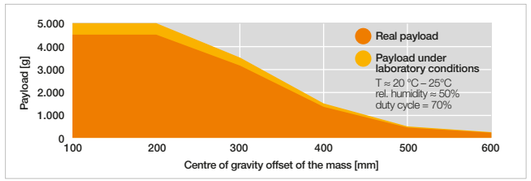
25-LCA-41



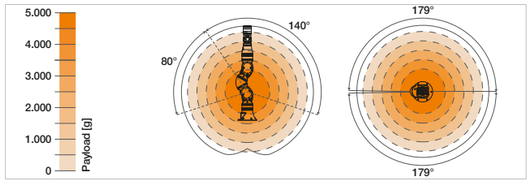
Repeatability



Referencing accuracy



ReBeL-6DOF-03 payload



Payload in views

Update

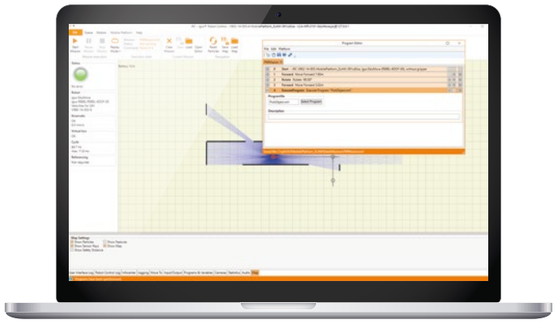
REBEL-6DOF-03 new features and improvements

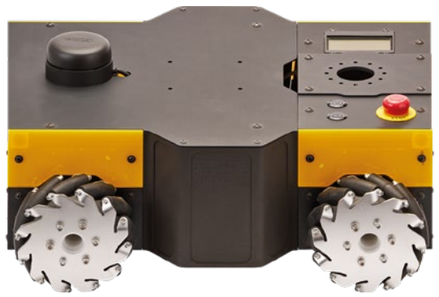
ReBeL®

The REBEL-6DOF-03 has been further optimised and now achieves a referencing accuracy of ±0.3mm (previously ±1mm) thanks to new encoder technology. In addition, extensive load tests enable a more precise representation of its payload capacity - for optimised planning of your applications.

- ▲ Greater precision and performance - service life increased by a factor of 4
- ▼ Most cost-effective European cobot thanks to motion plastics®
- ■ Extensively tested in the LCA laboratory - you can find the results on the left
- ● Lubrication-free, thanks to the use of motion plastics®
- ◆ Over 50 digital interfaces

25-LCA-37





Update

Mobile robot for the education sector

Mobile robot platform ReBeL® EduMove

The EduMove is an open-source learning platform for mobile robotics, ideal for education and research. Quickly programmable with the igus® Robot Control software, it now offers even more flexibility with a version with and without an integrated cobot. The mobile robot platform for educational institutions can be controlled and programmed via the igus® Robot Control. The EduMove can be controlled via LiDAR, sensors and 3D cameras with or without the ReBeL® six-axis robot.

- ▲ Modular design that can be expanded to include additional functions,e.g. Lidar, camera technology, slam algorithm
- ▼ Easy programming of complex tasks
- ■ Cost-effective AMR with industrial robot software
- ● Manufactured and developed in Germany
- ◆ Free control software: igus.eu/irc

25-LCA-53

New

ROS 2 for your igus® robots

ROS 2 packages for ReBeL® and EduMove

For the ReBeL® and EduMove robots from igus®, we offer special ROS 2 packages - software modules that help you, e.g. to develop intelligent robot applications in research and development. This allows you to plan movement sequences with MoveIt2 and equip the mobile EduMove robot with LiDAR technology for navigation (LiDAR sensor sold separately).

- ▲ Direct integration into the ROS 2 ecosystem
- ▼ Packages are available to download free of charge
- ■ Already in use at over 100 universities
- ● Promotion by the open source community
- ◆ Load interfaces and sample programs

25-LCA-54

Plus

Over 100 sample programs and open interfaces

ReBeL® Environment

Quick and easy integration into any automation environment. You can find all resources in our own wiki.

- ▲ Versatile interfaces (PLC, Modbus TCP/IP, CRI, ROS, Python) for easy integration
- ▼ Example projects for igus® kinematics save time and effort
- ■ Over 100 sample programs available for various robot types
- ● Digital simulation and DXF path generation save hardware tests
- Cloud and Python interfaces for remote monitoring and workflows

25-LCA-38

New

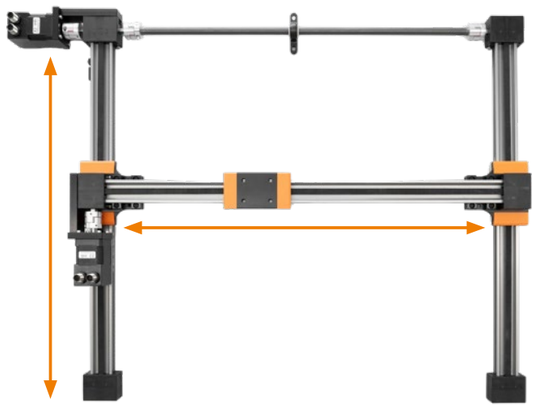
Automate with ease

Operate robot kit with modular system and industrial robot software

Based on a popular plug-in and modular system, a customised "toy" robot was developed for igus®. The igus® Robot Control (iRC) software has been specially adapted and extended for this model. Plug-and-play - simple, direct and intuitive.

- ▲ Clamping modules meet automation: robots with professional control software
- ▼ Free-of-charge and royalty-free software
- ■ Proven modular system - familiar since childhood
- ● Play - learn - program. Everything with one product
- Now flexibly programmable with the iRC software: igus.eu/irc

25-LCA-36



New

Faster assembly and alignment

Linear robots with two or three axes

The modular system has been optimised: slimmer design, standardised components and new accessories. With clear selection, faster alignment and assembly.

- ▲ Improved components for long-lasting use: an optimised drive shaft reduces torsion, improved bearing technology increases performance and new connection options for energy chains and accessories
- ▼ The optimised design with fewer components saves 40% time during assembly
- ■ Extensive tests in the Low Cost Automation test lab
- ● The slimmer design with optimised number of components reduces material consumption
- Configure and simulate online with iRC software at igus.eu/irc and receive a direct quote

25-LCA-43

New

Lift and turn

Rotary-drive unit for laboratory and medical technology

The rotary-drive unit is a two-axis robot kinematic system that enables both lifting and turning. It is lightweight, space-saving and lubrication-free, which means it works without contamination. As a project solution, it is customised to specific applications. The main areas of application are laboratory and medical devices in which liquids or substances can be transported or analysed efficiently.

- ▲ Compact design and reliability thanks to customised project planning
- ▼ Particularly cost-effective thanks to plastic
- ■ Over 10,000 units successfully in use
- ● Optimised number of components saves resources

25-LCA-34

igus® Robot Control - free and licence-free control software

Smart logic for smart projects

Update

Robotics explained clearly: The new wiki for igus® Robot Control

igus® Robot Control - free and licence-free control software

The igus® Robot Control is constantly being improved and simplifies robot programming. In the wiki you will find detailed step-by-step explanations of individual program instructions such as circle commands, matrix instructions or path commands. Supplemented by practical application examples with directly downloadable programs for use on your own robots.

- ▲ New features such as trail colours, constant variables and travel speed
- ▼ Already simulate and test robots in the software before purchase
- ■ Over 4,000 robot control systems in use by customers
- ● One control system for all robots, which can be retrofitted
- Download and test free software at igus.eu/irc

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igus® Robot Control software

Easier programming, more efficient production

With the free igus® Robot Control software, programming and controlling robots has never been easier. Whether SCARA, delta or mobile robots - the software supports over 100 different types and offers intuitive operation via a user-friendly 3D interface. Motion sequences can be precisely simulated, ready-made project templates can be used and additional components such as grippers or cameras can be easily integrated. Thanks to the flexible I/O modules and powerful communication interfaces, both simple automation solutions and complex machine concepts can be easily implemented. A perfect process with just a few clicks - igus® Robot Control makes it possible.

Just like the interplay between the motor and gearbox, the combination of powerful software and high-quality hardware is crucial to the success of an automation project. For this reason, we are always going full throttle to continuously develop the igus® Robot Control and change the world of automation for the long term. Just in time for autumn, we have some exciting news for you - new features that will make programming your robot even easier and therefore make production even more efficient.

New content in the wiki

In the new wiki you will find step-by-step explanations of program instructions such as circle commands, matrix instructions and path commands, supplemented by practical application examples including downloadable programs.

Highlights:

- Pick-and-place with camera support: from camera setup to the finished download code.
- Adhesive applications: Practical descriptions for production processes.
- Pick-and-place with ReBeL®: Examples for the control of several stations and the positioning of laboratory bottles.

An additional added value: videos illustrate the finished applications in detail and make the wiki the central point of contact for robotics programming and inspiration.

Faster troubleshooting - trail colours

Thanks to the new trail colours, commissioning and error correction are now even more obvious. This visual support shows important information at a glance, such as the control of the inputs and outputs, the speed and the orientation of the robot. This allows problems to be identified immediately. If, for example, a gripper is moved too slowly, the corresponding trail colour indicates this directly so that you can rectify the fault quickly and specifically.

Trail colours for troubleshooting

Continue working seamlessly thanks to variables that remain

A power failure can occur at any time - and suddenly all information about the programmed process is lost. But that's now a thing of the past: you can now save additional variables that are retained even if the robot is intentionally or unintentionally electrically switched off. These variables include, for example, data such as positions or the number of objects on different stacks. After an interruption, the robot is therefore able to continue the process seamlessly and continue working without reprogramming. A big step towards greater efficiency and safety.

Simple commissioning and correction

Faster gluing: Travelling speed with the path instruction

The path instruction enables gluing applications to be precisely executed using a .dxf file. With the newly introduced travelling speed function, the entire gluing process can now be significantly accelerated - without increasing/slowing down the speed along the actual gluing path. The robot recognises whether it moves directly on the gluing path or between two path segments within the .dxf file and adjusts the speed accordingly. This intelligent differentiation noticeably increases the process speed, enabling more efficient production and time savings.

Get started now for free - download the igus® Robot Control software

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