KUKA

Automation with collaborative robots

Cobots as a simple & cost-effective automation solution.



Facts & Figures | Accessible automation solutions for beginners | 10 reasons for automation | Is it worth it? | Applications | Calculation example | Cases & application areas | Robot colleague | Cobots from the robot expert

E-Paper Cobots_© KUKA AG 2023

Simple human-robot collaboration without a safety fence

Facts & Figures on the impact of cobots on the global economy

- Growth: The market for cobots is growing rapidly. According to the Global Cobot Market Report 2021, the market is expected to grow at an average annual rate of over **40%** in the coming years.
- Jobs: According to a study by the International Federation of Robotics (IFR), the use of cobots is expected to lead to net job growth of around **1.4 million** worldwide by 2025.
- Cost savings: According to a study by the Boston Consulting Group (BCG), companies can reduce their labor costs by up to **30%** by automating work processes with cobots.
- Productivity: According to the IFR Annual Report 2020, companies that integrate cobots into their production processes have seen productivity increase by an average of **50%**.
- Ergonomics: The use of cobots can improve ergonomics in the workplace. According to a study by the Fraunhofer Institute IAO, cobots in the automotive industry led to a reduction of musculoskeletal disorders among employees by up to **25%**.
- Potential: According to the German Robotics Association, less than **5%** of activities in small and medium-sized companies in the manufacturing sector are currently automated.







Accessible automation solutions:

» Simple commissioning enables cobots even for beginners.

Dear Reader,

the use of robots is not a new concept. Industrial robots have been finding their way into many production environments for years, helping to increase productivity and improve working conditions. However, classic industrial robots operate behind protective fences and are often reserved for robotics experts due to their size, speed and complexity.

That‘s where cobots come in: a new generation of robots designed to work safely and effectively with humans. With their advanced sensors and intelligent control systems, cobots can directly support human workers. They take over repetitive and monotonous tasks, freeing up employees‘ potential.

In this e-paper, we present the many advantages of collaborative robots. KUKA cobots are designed for user-friendly and intuitive operation. From simple configuration and good value for money to flexibility and adaptability, we take a detailed look at the strengths of cobots.

We show how collaborative robots not only increase productivity, but also improve product quality, reduce costs, increase safety in the workplace and promote employee satisfaction. We prove these advantages with concrete practical examples of successful applications. Our goal is to help you to make the right decisions for your business. If you need support with the integration of your cobot, just contact us. We will be happy to put you in touch with one of our certified system partners.

We want to provide you with valuable information and inspiration, and encourage you to explore the possibilities of cobots for your specific needs.

We wish you an informative read and will be happy to answer any questions you may have.

With kind regards

G. Müller

Gerhard Müller
Chief Regional Officer DACH, KUKA





10 reasons why you should automate

1. **Defying the shortage of skilled workers:**
   Stay productive in times of skills shortage – and even attract new employees with a modern company.

2. **Future-proof positioning:**
   Using robotics is easier than you think – this applies to the integration as well as the configuration and control of robots.

3. **Gain flexibility:**
   Flexible production that can quickly adapt to new orders with different batch sizes makes your company attractive to customers and ensures your competitiveness.

4. **Upgrade the company:**
   Applicants find employers who invest in progress attractive. And the image of being prepared for the future impresses potential investors.

5. **Relieve employees:**
   Robots take on physically difficult tasks, which improves working conditions in the company. The result: satisfied staff as well as less sick leave and fluctuation.

6. **Increase efficiency:**
   The precise and consistent operation of robots reduces the number of defective products and thus the number of rejects.

7. **Increase in productivity:**
   Robots can complete tasks quickly and efficiently, resulting in an increase in overall productivity. Automation reduces costs because robots can work 24/7 and do not need breaks.

8. **Improvement of product quality:**
   Robots operate with high precision and consistency, resulting in improved product quality and lower defect rates.

9. **Optimization of delivery times:**
   Automation shortens production cycles and enables faster delivery of products to customers.

10. **Small risk, big opportunity:**
    Automation pays off. The short time to return on investment makes it more cost-effective than many believe. Talk to us. Together we will find your perfect solution.

If you answer at least 3 of these questions with „Yes“, a cobot is just right for you!

1



Do you need a robot that is quick to commission and easy to operate, even for beginners?

2



Would you like to get a robotics solution from a brand manufacturer at a favorable price?

3



Do you need a product that pays for itself within a short time?

4



Do you have limited space in your production?

5



Do you want to automate processes without installing protective fences in your production?

6



Do your production processes require a speed that exceeds that of a human worker?

7



Is a flexible product that can switch between different tasks important to you?

8



Would you like to relieve your employees of monotonous and unergonomic tasks and defy the shortage of skilled workers?

Impressively flexible

» These diverse possibilities are offered by the LBR iisy and the operating system iiQKA.OS.



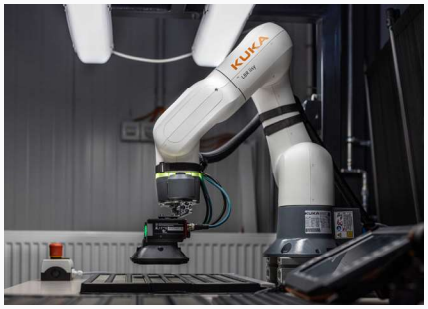
Palletizing:

efficient & flexible



Machine loading/ unloading:

reliable & intuitive



Quality inspection:

fast & precise



Assembly, e.g. of printed circuit boards:

relieving & cost saving



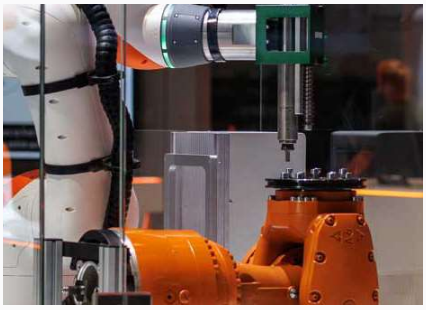
Pick-and-place/Handling:

maximum fast & productive



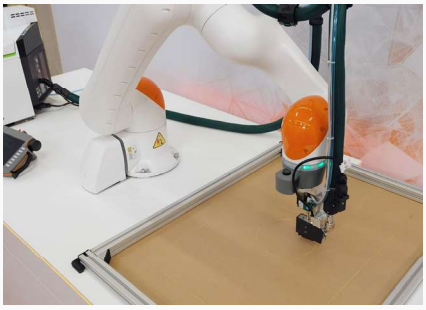
Thread testing:

true to the millimeter & reliable



Screws:

process-safe & easy to integrate



Gluing:

Cost effective & functional

Applications in action: Learn more in our YouTube playlist now!

Calculation example: This is how quickly an automation solution with the LBR iisy* pays for itself

*This is an example of an automation solution with the LBR iisy. The actual costs may vary depending on the exact design of the solution.



- Costs for the LBR iisy cobot as the basis for an exemplary automation solution**:
  from approx. 20.000 Euro
- Possible integration costs by □U□A partner***:
  around 30.000 Euro
- Cost of one employee, who is often impossible to get at all, per shift:
  35.000 to 45.000 Euro/year
- Automation runs in two shifts
- Personnel costs for two-shift operation:
  2 x 40.000 Euro = 80.000 Euro
- Payback of the investment costs from 7 months
  (depending on the consideration of the residual value and the average annual return)

**Individual costs such as maintenance and energy costs for operating the LBR iisy are not included here.
***Costs may vary depending on the application.





Fast and flexible thanks to cobots

Quality control with the KUKA LBR iisy

75 employees and „too many“ orders: The family-owned company FMO Surface relies on the LBR iisy cobot with the intuitive iQKA.OS operating system for plastics finishing. Now Managing Director Bastian Fest looks back on the change-over – balance: positive!

Increased precision through the cobot

A cobot now takes over manual quality control at FMO Surface. DataMatrix codes on plastic bus connectors, each with an eight-digit sequence of numbers, are checked for correctness and completeness. The LBR iisy avoids costly errors – and employees can be deployed for more pleasant tasks.



This convinced Bastian Fest of the cobot:

- Convenient order
- Ease of use & programmability
- Flexibility with new tasks
- Collaborative operational readiness
- Features for best possible safety

Positive experience throughout the company

The managing director of the family business sums up: The LBR iisy not only saves an enormous amount of time, but there is also no fear of contact among the employees. On the contrary, they perceive the cobot as a relief. The experience has been so positive that a second LBR iisy has already been added – further additions by cobots are in the planning stage. FMO Surface benefits from the high degree of flexibility: Numerous work steps can be carried out with the LBR iisy without any problems – depending on which tool is attached at the front.





The flexible entry into automation

Automated machine loading with cobots

Using cobots for machine loading can help companies achieve greater efficiency, productivity and quality. That‘s why KUKA worked with technology and automation developer MAIROTEC to develop a modular automation cell that can be used in machine loading – cost-effectively and intuitively.

Machine loading with the LBR iisy

Based on the KUKA LBR iisy cobot, MAIROTEC created the MAIROFlex iisy. Its goal: a uniquely cost-effective and effortlessly easy entry into automation. The first practical application of the cobot is the automated loading and unloading of a lathe with small hexagonal steel blocks. This is an everyday task for a metalworking company, which the collaborating robot performs efficiently, precisely, reliably and independently.

That‘s what cobots do in machine loading:

- Continuous & fast material flow to the machine
- Consistent & accurate positioning of workpieces
- Reduced labor costs in the long term
- Minimized scrap
- Easy integration & scalability

Automation as a chance

„Particularly in small and medium-sized businesses and handicraft enterprises, the need for automation is increasing for many recurring work steps,“ says Andreas Mathes, founder and CEO of MAIROTEC. „To get started, this calls for a dedicated, highly flexible solution that everyone can afford.“



What is a cobot?

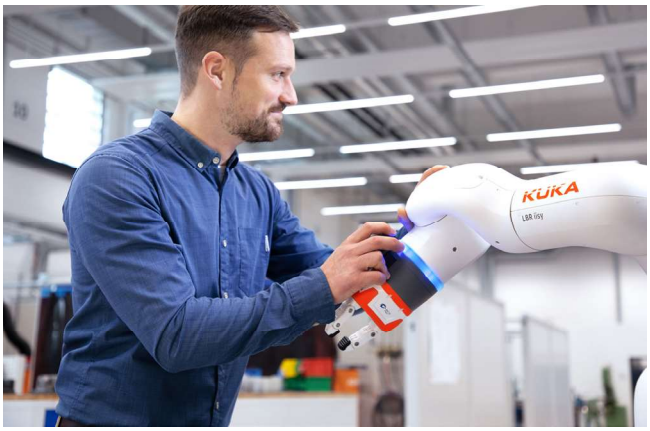
Colleague Robot introduces himself.

Cobots are collaborative robots designed to work together between humans and machines. Unlike traditional industrial robots that work behind protective fences, cobots are designed to **interact easily and effectively with humans**. They are designed to support human workers rather than replace them.

A special feature of cobots is their ease of configuration, because cobots are **user-friendly and intuitive**. The setup usually requires less prior knowledge than the operation and maintenance of classic industrial robots. Cobots often have a graphical user interface that makes programming possible even for inexperienced operators. Extensive training is not mandatory and **rapid implementation in different work environments** is possible. And if support is required for the integration of a cobot, KUKA will be happy to put you in touch with a certified system partner.

Another advantage of cobots is the **price-performance ratio**. Compared to traditional industrial robots, cobots are often less expensive and still offer high performance. This makes them particularly attractive for small and medium-sized companies. Cobots also enable companies with limited resources to enter robotics. Automation solutions cost less today than they did in their early days, and initial investments usually pay for themselves quickly.

Cobots are enormously versatile. They can be used in a variety of industries and applications, from manufacturing to logistics to healthcare. They take over repetitive and monotonous tasks to relieve human workers. At the same time, they enable employees to focus on more demanding and creative tasks.







Why are cobots from KUKA the best choice?

Experience, precision, sustainability.

KUKA is a renowned manufacturer of industrial robots and has many years of experience in the robotics industry. The KUKA brand stands for high-quality and reliable robots. With a KUKA cobot, you get a product based on **proven technology and many years of expertise**.

The KUKA cobot portfolio includes various collaborative robots that are suitable for a wide range of applications and industries. The cobots are characterized by **high performance, precision and durability**. They can be adapted to different tasks and offer advanced hardware, easy-intuitive configuration and collaborative capabilities.



Integration made easy

Benefit from the large KUKA system partner network. Simply contact us if you need support integrating your automation solution. We will be happy to put you in touch with one of our certified system partners. Find a system partner now.

KUKA

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Automation with collaborative robots

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