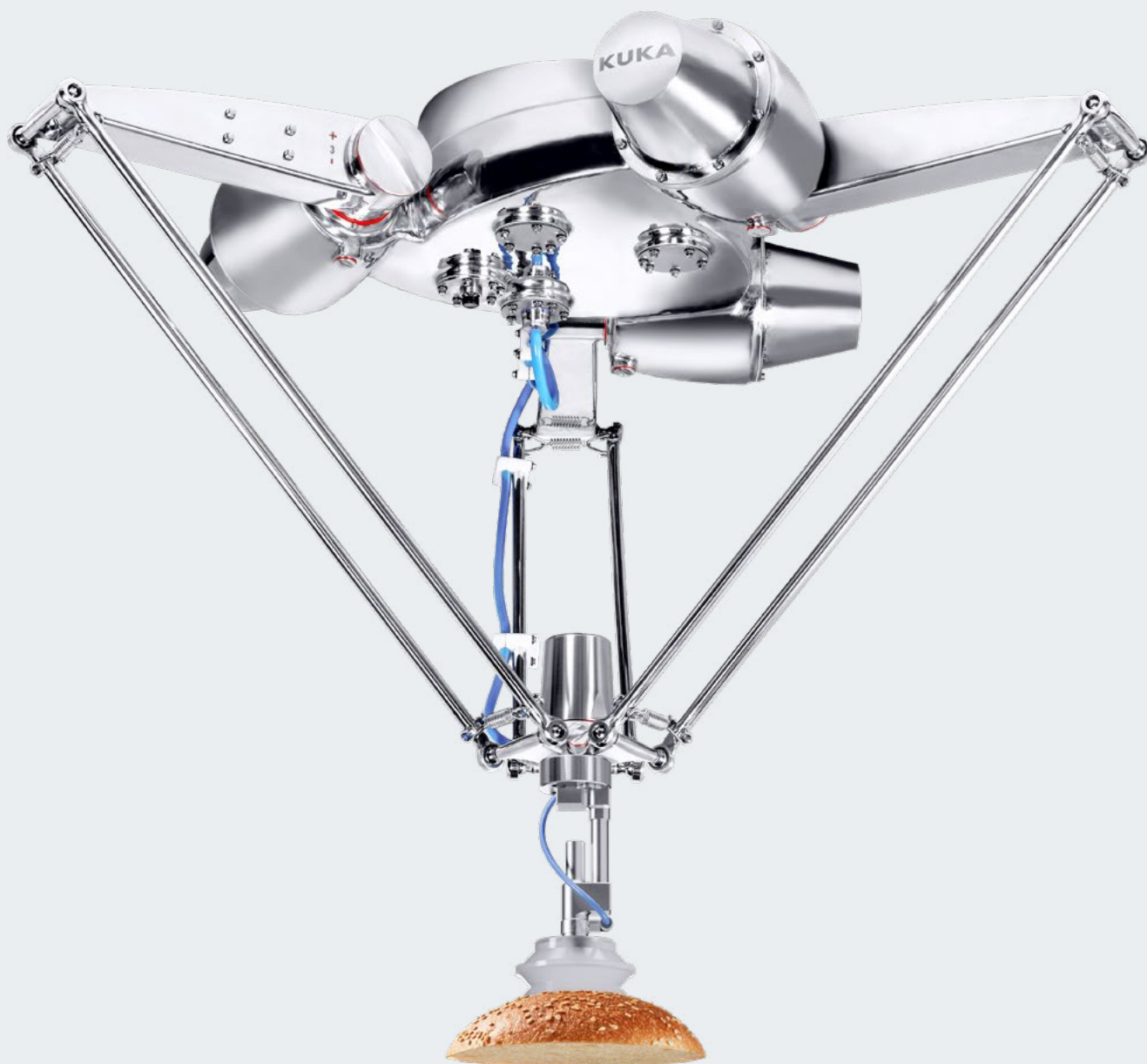


KUKA



Excellently served
_KUKA robots for the food industry





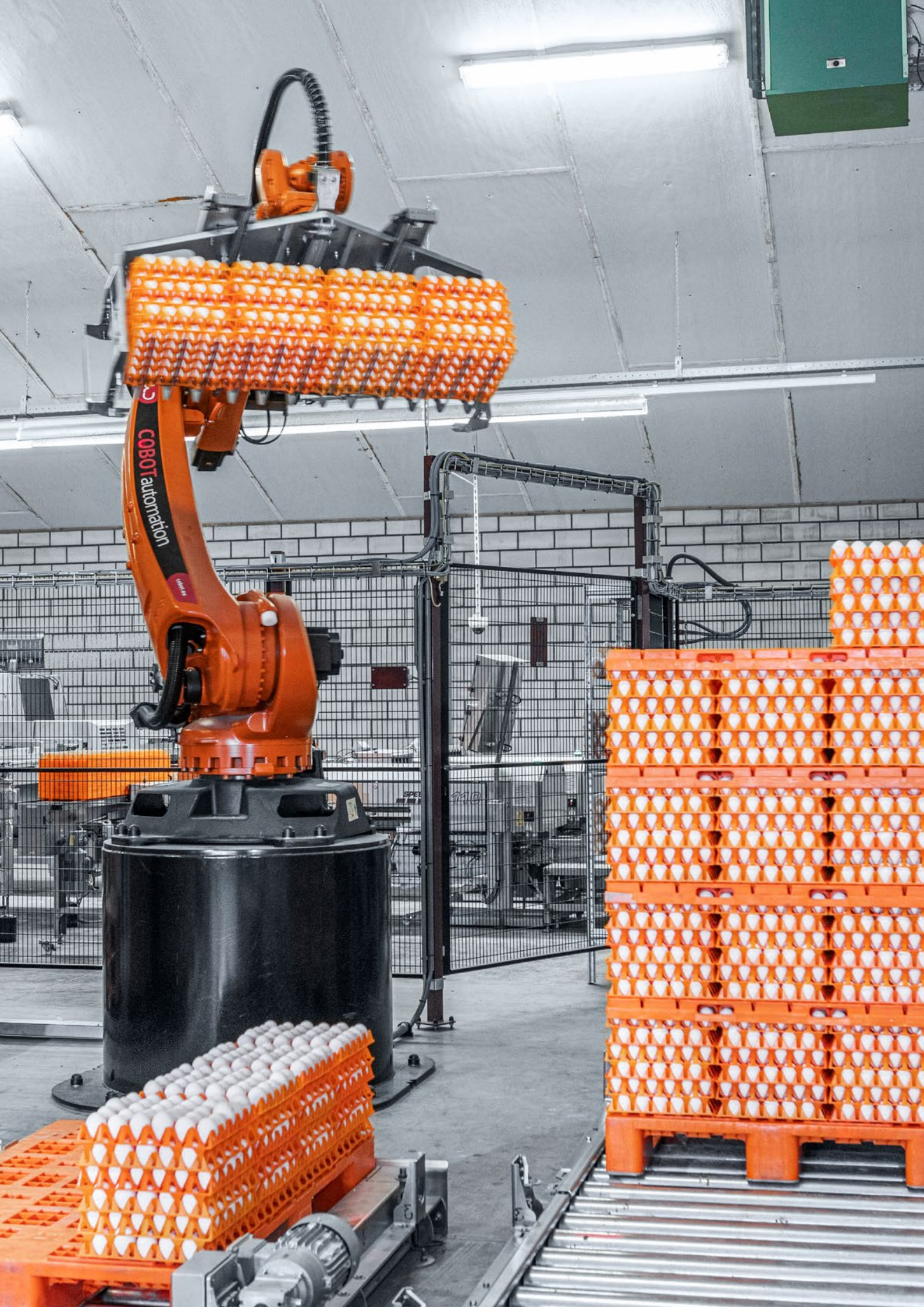
Optimally tapping automation potential.

From secondary to primary applications – ideally equipped with KUKA.

Automation is in greater demand in the food industry than ever before. In particular, the innovative drive and dynamism of the industry are astonishing. As far as relevant criteria, such as availability or energy efficiency, are concerned, it has been possible to achieve significant improvements.

Production meanwhile boasts consistently high product quality that was inconceivable just a few years ago – thanks to the systematic use of robot-based automation solutions.

When it comes to primary and secondary applications, KUKA is one of the pioneering key players in the market. Our intelligent, custom-tailored solutions enable efficient, process-reliable food production and thus considerably greater cost-effectiveness.



Recipe for success to enhance competitiveness.

Flexible and easy-to-operate automation solutions.

All food and beverages require packaging. It protects the contents and informs consumers, contributing to their purchasing decision. That is why this central area meanwhile accounts for more than 40 percent of production costs. The intelligent and flexible automation solutions from KUKA play a significant role in reducing the constantly growing cost block in the overall process chain to a reasonable level, thereby boosting competitiveness.

For every requirement, we offer custom-tailored solutions that are easy to integrate – with permanently available components that harmonize perfectly and with robots that perform convincingly both in the broad range of secondary applications and in primary processing with high hygiene standards.

100 % flexibility

KUKA robots are flexible. Intelligent software allows adaptation to new packaging designs in the shortest possible time. The controller communicates effortlessly with your IT solutions. Batch processing, recipe management or remote monitoring – the possibilities are endless.

High availability

KUKA robots are among the fastest of their class and are characterized by high availability, even at maximum throughput. Qualities which are reflected in low costs and high profitability throughout the entire life cycle. Our success has proved us right: in many different industries, KUKA is one of the world's leading suppliers of robotic automation.

100 % safety

Food safety is subject to increasingly strict legislation. Robots minimize the human workers' direct contact with the product. To this end, KUKA supplies special, easy-to-clean robot variants with surfaces optimized for hygiene. And our solutions also support the traceability of your products in the production process if desired.

Fast, efficient and extremely gentle:
The KR QUANTEC palletizing raw eggs.

The new pace of palletizing.

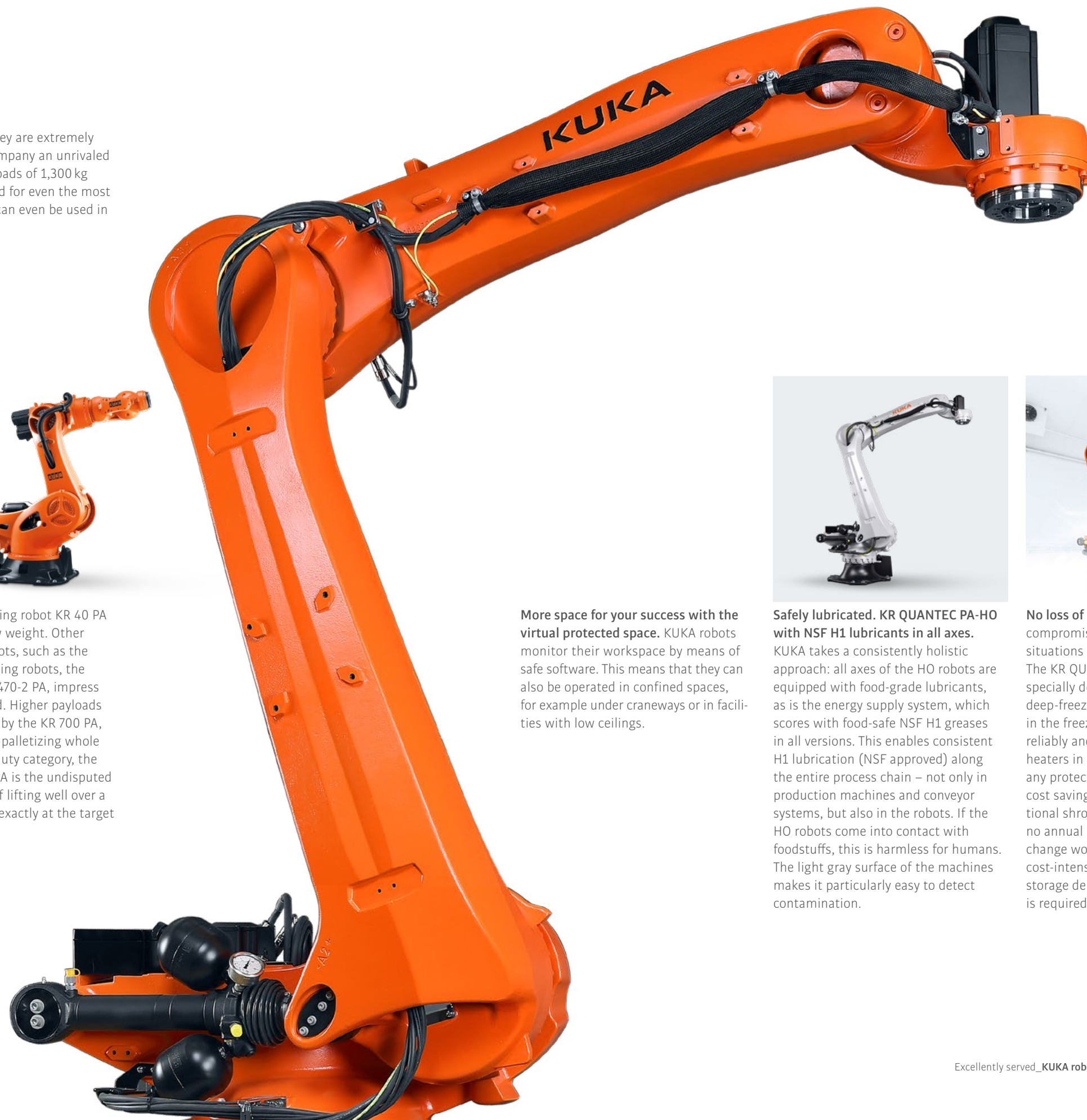
KUKA robots for palletizing applications.

Palletizing robots from KUKA have two convincing arguments: they are extremely fast and embedded in a broad product range that offers every company an unrivaled variety of options. With payload capacities from 40 kg to heavy loads of 1,300 kg and a reach of up to 3,601 mm, an appropriate solution is ensured for even the most specific of requirements – such as the KR QUANTEC PA HO that can even be used in sensitive hygiene areas thanks to its food-compatible lubricants.

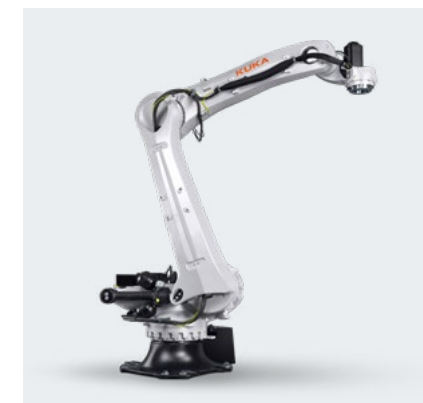


The models of the energy-efficient KR QUANTEC series meet all the needs of future-oriented automation: minimized space requirements, shorter cycles, maximum availability and reduced operating costs. With their streamlined design, they can reach stack heights of over 2,500 mm – and a hollow shaft with a diameter of 60 mm allows protected routing of the energy supply.

The compact palletizing robot KR 40 PA stands out for its low weight. Other KUKA palletizing robots, such as the KR QUANTEC palletizing robots, the KR 300-2 PA and KR 470-2 PA, impress with their high speed. Higher payloads are lifted effortlessly by the KR 700 PA, making it perfect for palletizing whole layers. In the heavy-duty category, the KR 1000 1300 titan PA is the undisputed champion, capable of lifting well over a tonne and placing it exactly at the target position.



More space for your success with the virtual protected space. KUKA robots monitor their workspace by means of safe software. This means that they can also be operated in confined spaces, for example under craneways or in facilities with low ceilings.

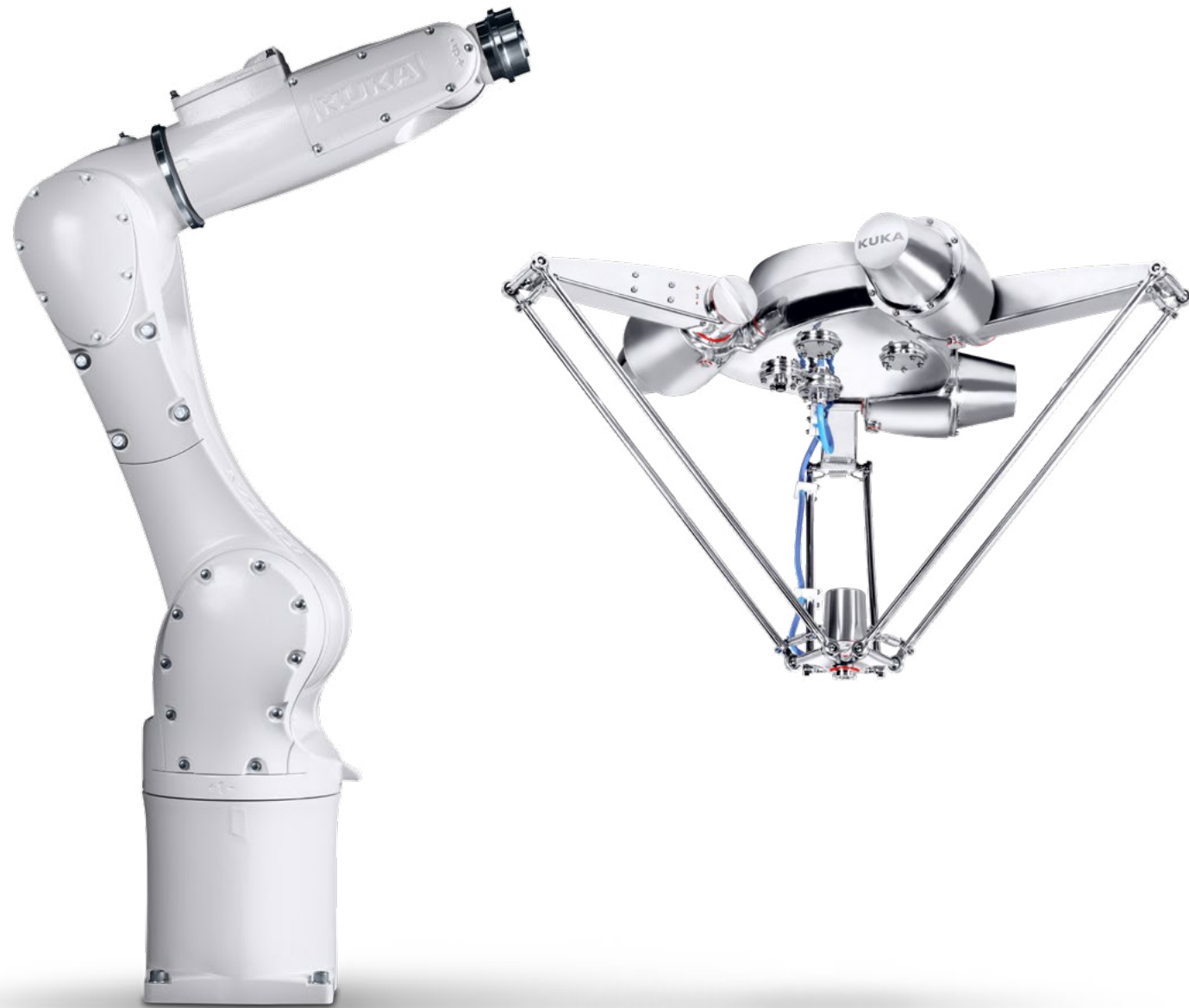


Safely lubricated. KR QUANTEC PA-HO with NSF H1 lubricants in all axes. KUKA takes a consistently holistic approach: all axes of the HO robots are equipped with food-grade lubricants, as is the energy supply system, which scores with food-safe NSF H1 greases in all versions. This enables consistent H1 lubrication (NSF approved) along the entire process chain – not only in production machines and conveyor systems, but also in the robots. If the HO robots come into contact with foodstuffs, this is harmless for humans. The light gray surface of the machines makes it particularly easy to detect contamination.



No loss of quality. A real pro makes no compromises – not even in extreme situations down to -30 °C. The KR QUANTEC PA arctic has been specially designed for palletizing in deep-freeze environments. It can work in the freezing cold: uncompromisingly, reliably and extremely fast, without heaters in the robot arm and without any protective suit. This offers radical cost savings compared with conventional shrouded solutions. For example, no annual costs and downtime for exchange work are required. Furthermore, cost-intensive heat emissions in the cold storage depot are avoided as no heating is required.

Absolutely clean. Lightning fast.
KR AGILUS HM and KR DELTA HM.



In the case of primary processing, in which the machines come into contact with open foodstuffs, stricter hygiene regulations apply. This is thus no place for standard design robots. Special variants suitable for cleanrooms are called for. This is where the KR AGILUS and the KR DELTA really come into their own – as hygienic machines, they are particularly suited to applications that require a sterile environment.

The hygiene concept. The robot's design and materials allow it to be used in applications involving direct contact with foodstuffs and pharmaceutical substances. Corrosion-resistant surfaces, food-compatible lubricants and stainless steel parts ensure the highest level of hygiene.

Easy to clean. Thanks to its hygienic design, deposits cannot form on the surface or screws of the robot. The cleaning-sensitive electrical interface is not located in the primary contact area. Cleaning is possible using industry-standard cleaning agents as well as high pressure.

Impressively harmless.
KUKA Hygienic Oil robots.



The KUKA HO portfolio is the world's most comprehensive robot portfolio for the food industry. The abbreviation HO stands for Hygienic Oil and describes so-called NSF H1 lubricants, which are certified for use in the food sector.

Applications. Classic application scenarios for our HO robots are the handling, sorting, stacking and packaging of foodstuffs or repackaging and palletizing in the secondary food sector.

The HO portfolio is wide-ranging. It covers reaches from 900 to 3,200 millimeters and payloads from 6 to 240 kilograms.

The robots in the HO portfolio combine maximum efficiency with uncompromising hygiene and food safety.

KR C5 controller. The heartbeat of intelligent automation.

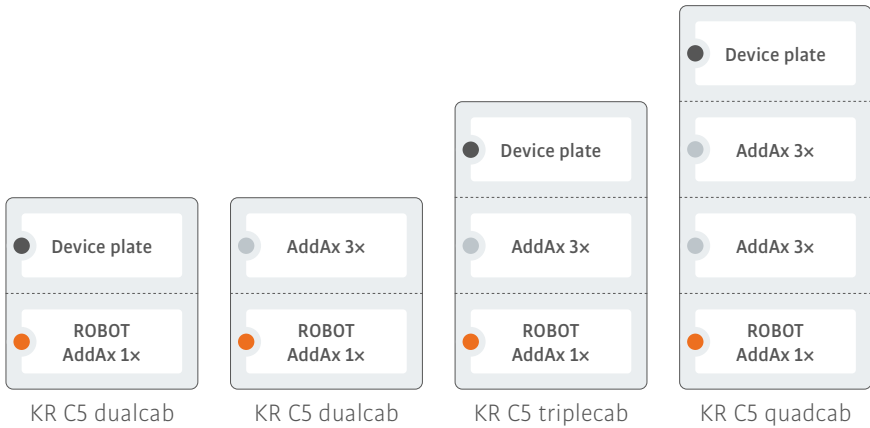
The production of the future is smart and operates on a whole new level with the KR C5. KUKA's latest platform for robot controllers enables space-saving solutions, delivers supremely efficient performance and conserves resources. It can thus also be seamlessly integrated into heterogeneous automation landscapes, enabling a wide variety of robot applications.

The reduced hardware and lower energy requirements offer more application options with maximum cost-effectiveness. And thanks to the interconnectivity of the open platform design, mere data are transformed into valuable information.

Compatibility. The current system software is functionally compatible with the KR C4 and has identical software applications and software technologies.

Low training requirements. The easy integration into control cabinets and the availability of service-proven system software enable fast start-up.

Many control options. Diverse options and hardware expansion possibilities, e.g. various I/O and communication options for a wide variety of system concepts.



The cabinets of the KR C5 are available in different sizes and can be equipped in a modular fashion.

KR C5 micro. Small footprint with big-time performance.

Maximum performance, connectivity and flexibility in the smallest of spaces. This is the new KR C5 micro robot controller for small robots. The KR C5 controller generation from KUKA is programmed for the future. For instance, the KR C5 micro unites robot, PLC, motion and safety control in an ultra-compact housing with a volume of just 16 liters.



Smaller, more flexible, smarter. Developed as an open and flexible platform with no compromises, the KR C5 micro represents the next quantum leap in robot control. The controller can not only be seamlessly integrated into existing automation landscapes, for example, but can also easily take on KR C4 applications as a “functional twin”.

The wide range of technology products enables the quick and easy implementation of robot applications. The controller meets current field bus standards for cell and line integration via software options. At the same time, the KR C5 micro is equipped with the necessary hardware resources and flexible I/O ports in order to adapt quickly to future tasks and standards as well.



- Ready for digital**
- Seamless integration into OT, IT and cloud environments
 - Ethernet and digital I/O interfaces, supports various cloud systems



- Compatibility**
- Simple integration into existing infrastructures
 - Seamless integration into the KUKA robot portfolio
 - Easy and intuitive to operate via the KUKA smartPAD (KSS) and KUKA smartPAD pro (iiQKA.OS)



- Low TCO**
- Reduced energy consumption
 - Minimized complexity
 - Increased reliability



- Ready for use worldwide**
- Meets globally relevant ISO standards
 - 25 languages available, including the most important Asian languages

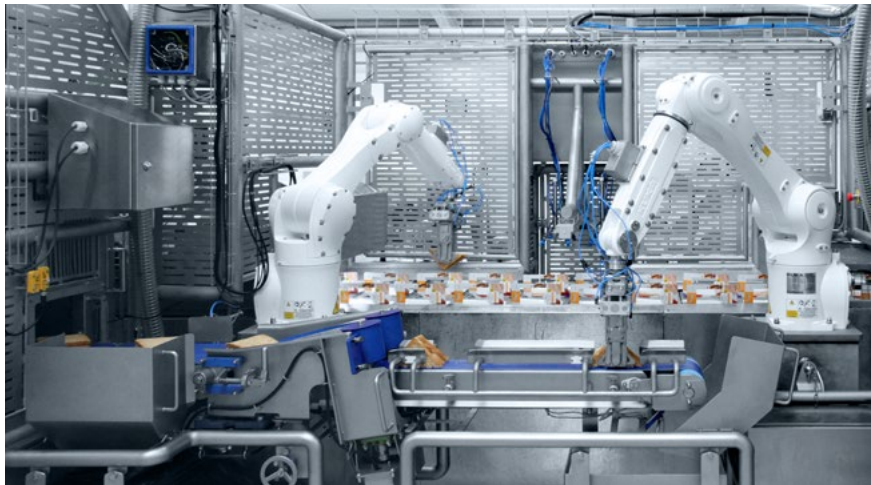
Stacks up success for any company.

The extensive and flexible portfolio convinces throughout the industry.

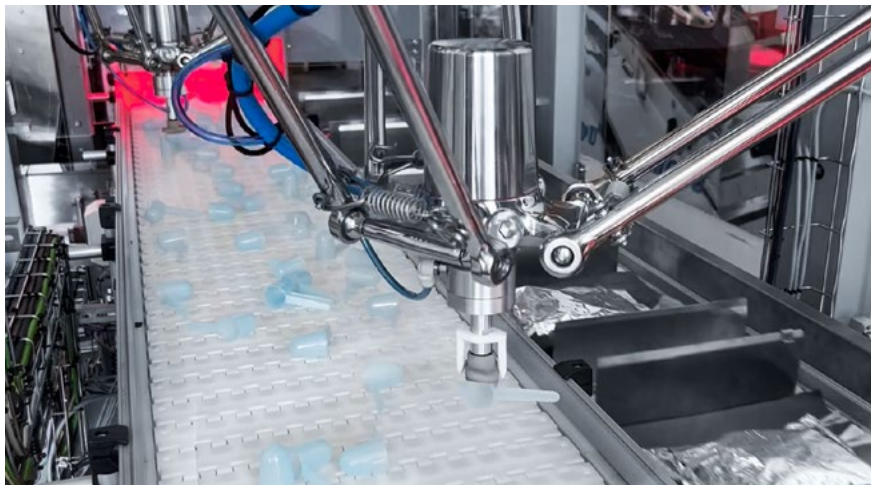
The practical test shows that KUKA robots for the food industry combine everything that is needed for perfect automation. They impress with a maximized work envelope, minimized disruptive contour and utmost robustness. They are fast and designed to master not only demanding palletizing and depalletizing tasks but also processing tasks in the primary area. The result is short cycle times and increased throughput combined with low space requirements and high cost-effectiveness.



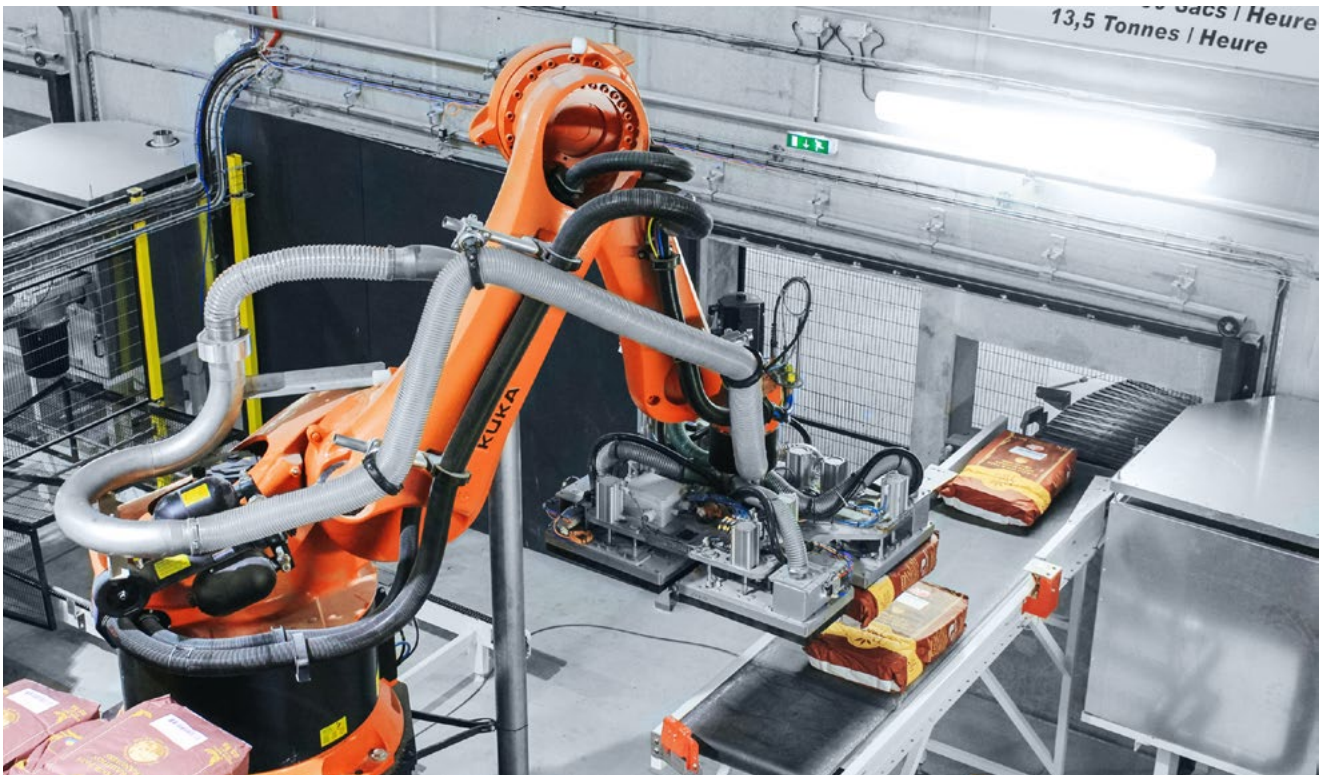
A KR AGILUS robot takes care of processing liquid chocolate.



Hygienic, precise and cost-effective. Two KR AGILUS robots pack sandwiches.



The KR DELTA places the spoons next to the bag with the baby food. In the next process step, both parts are placed in the packaging.



Palletizing sacks of flour: the KR 300-2 PA robot really packs a punch, moving up to 550 sacks per hour.



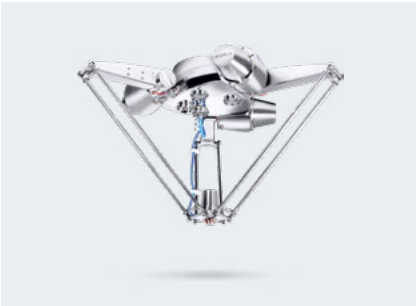
Under Arctic conditions at -25 °C, two KR QUANTEC PA Arctic robots palletize frozen aromatic herbs.

The spectrum of KUKA robots.

The right specialist for every taste.



KR AGILUS HM
Corrosion-resistant surfaces, food-compatible lubricants and stainless steel parts ensure the highest level of hygiene. It is thus perfectly suited for sterile environments.



KR DELTA HM
Thanks to its stainless steel body, ideally suited to operation in hygienically sensitive areas, such as in direct contact with food, medicines or electronic components.



KR AGILUS (HO)
High working speed, protected from dust and moisture and operated with food-safe lubricants: it is predestined for handling as well as pick & place tasks in the food industry.



KR CYBERTECH nano (HO)
The process robots are perfectly tailored to handling small food and packaging items. The diversity of variants enables optimized investment and energy costs.



KR 300-2 PA / KR 470-2 PA
Ideally suited to high-speed tasks in the heavy-duty category, with compact design and low weight.



KR 700 PA
The low weight and powerful motors and gear units make it a real high-speed champion.



KR IONTECH (HO)
The highly flexible robot with the best-in-class work envelope and the ability to fit into any installation position for a wide variety of applications in the payload range of 20 to 70 kilograms.



KR CYBERTECH (HO)
These powerful and compact multi-function robots are specialized in handling applications and impress with greater integration density and minimal disruptive contours.



KR 40 PA
Fast and precise. Its 4-axis kinematic system enables pallets to be stacked up to 1.6 m high.



KR QUANTEC PA (HO)
Maximum dynamism, extreme stiffness and high performance combined with low weight. The series is also optionally available with food-compatible lubricants and as an Arctic variant.



The KUKA HO robot portfolio
Food-compatible H1 lubricants in all axes: the “Hygienic Oil” (HO) variants meet the high requirements of the foodstuffs industry – for hygienic handling with no compromises. KUKA offers outstanding efficiency and the world’s broadest portfolio in this area.



KUKA Service
Working day and night for you. Service quality plays a decisive role in efficient production sequences – over the entire life cycle of the product.

To be able to provide you with this efficiency, we have made Customer Service one of our main disciplines – with global presence, a worldwide network of system partners, proven best practice concepts and 24-hour support.



KUKA.PickControl
The software automatically adapts the robot to the motion of an assembly line / conveyor belt. In this way, parts on the conveyor can be processed and placed on top of one another.



KUKA.PalletTech
The software enables the easy configuration of palletizing tasks with various packing patterns and stations – for large and small packages or beverage crates.

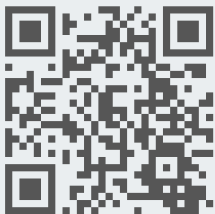


KUKA.ConveyorTech
The technology package with integrated image processing enables automated picking & packing of unsorted parts – for example, fruit on multiple assembly lines / conveyor belts.



KUKA.VisionTech
The high-quality camera in its IP 67 housing ensures accurate 2D object detection even in unstructured environments. Code and optical character recognition (OCR) simplifies traceability and automated controls assure quality.

Even more well-suited software packages
KUKA.Sim
KUKA.PerceptionTech
KUKA.AppTech



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