

**KUKA**



Well-served.

KUKA robots for the  
food industry.



**Bakery and confectionery goods, meat and fish, animal food, dairy products, drinks, cheese – all foods and beverages require packaging. It protects the contents and informs the consumer. But above all, packaging must be eye-catching, designed to jump off the shelf and into shopping carts.**



In other words, packaging is decisive where product safety and consumer behavior are concerned. New packaging designs, ever shorter product cycles and an increasing diversity of variants pose growing challenges to food industry manufacturers.



Intelligent and flexible automation solutions play a significant role in overcoming these challenges both quickly and profitably. Along with packaging machines with automatic format adjustment, highly efficient robots, in particular those equipped with camera systems, have long been established as the backbone of food production.



The packaging of food now accounts for over 40% of production costs. With rising labor costs, frequent sick leave resulting from monotonous motions, and the costly compliance with hygiene regulations, manual packaging means an ever-growing cost pool across the entire process chain. In this context, robots increase productivity in nearly all areas of application, reduce costs and play a key role in competitiveness.

With its network of specialized system partners, KUKA provides tailor-made solutions for every requirement. Our robots carry out the loading and unloading of your packaging machines, not to mention cartoning, labeling, palletizing and order picking. Or they improve efficiency early on in the processing stage.

**The perfect ingredients for maximum efficiency:** KUKA provides robot types for the entire food industry process chain on the basis of a comprehensive control platform.



The recipe for success for  
unparalleled productivity.

Along the entire process chain.

#### **100 % flexibility**

KUKA robots are flexible. Intelligent software allows motions to be adapted 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.

#### **99.995 % availability**

KUKA robots are among the fastest of their class and are characterized by maximum availability, even at maximum throughput. Qualities which are reflected in low costs and high profitability throughout the entire lifecycle. Our success has proved us right. It's no coincidence that KUKA is number 1 worldwide in the automotive industry.

#### **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 robots also support the traceability of your products in the production process if required.



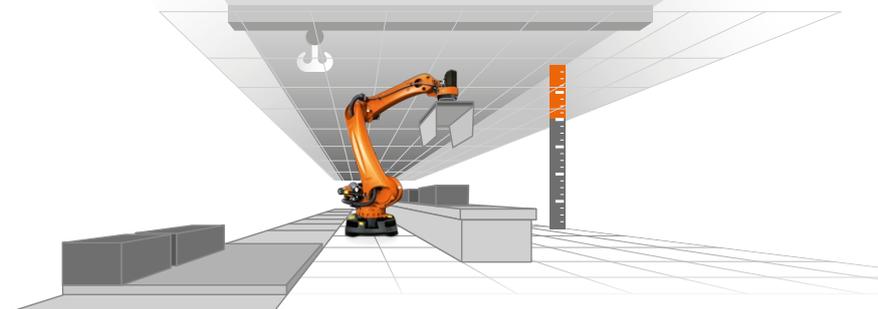
Has a good grip ...

**More space for your success:  
the virtual protected space.**

KUKA robots monitor their workspace by means of safe software. This allows them to also be operated in confined spaces, for example under craneways or in facilities with low ceilings.

**Sacks, boxes, cartons,  
bottles or barrels ...**

... the KUKA palletizing robots really have a grip on things. Small or large, light or heavy, individual products or complete layers. KUKA robots are the key to maximum dynamism – even with a full payload. Offering virtually limitless potential applications.



**Gripping with pinpoint accuracy:**

Image processing which can optionally be integrated compensates for inaccuracies in product feed and can perform quality inspections at the same time.

**Simple change of format:**

Intuitive software for defining packing patterns makes changing formats in production a piece of cake.



... and always lends a

helping hand: the KR QUANTEC

palletizing robot:

**Payloads ranging from 40 kg to heavy-duty loads of 1,300 kg and reaches up to 3,601 mm: KUKA has the optimal solution for every requirement with a unique offering of variants. Even for highly specific requirements.**

**FAST.** Faster, more precise and more powerful than any other palletizing robot in this class – for unprecedented results.

**POWERFUL.** The streamlined, weight-saving design allows greater dynamic performance, shorter cycle times and higher throughput.

**COMPACT.** The KR QUANTEC robots are the most compact in their class, with unrivaled power density, reach and payload.

**OPTIMIZED FOR THE APPLICATION.** Specially designed for demanding palletizing tasks. Power and dynamism for problem-free stacking of multiple pallets to great heights.

**COST-EFFICIENT.** Thanks to the streamlined base frame and small footprint, a minimum of shop space is required.



and chilled out. KUKA robots  
in extreme situations.

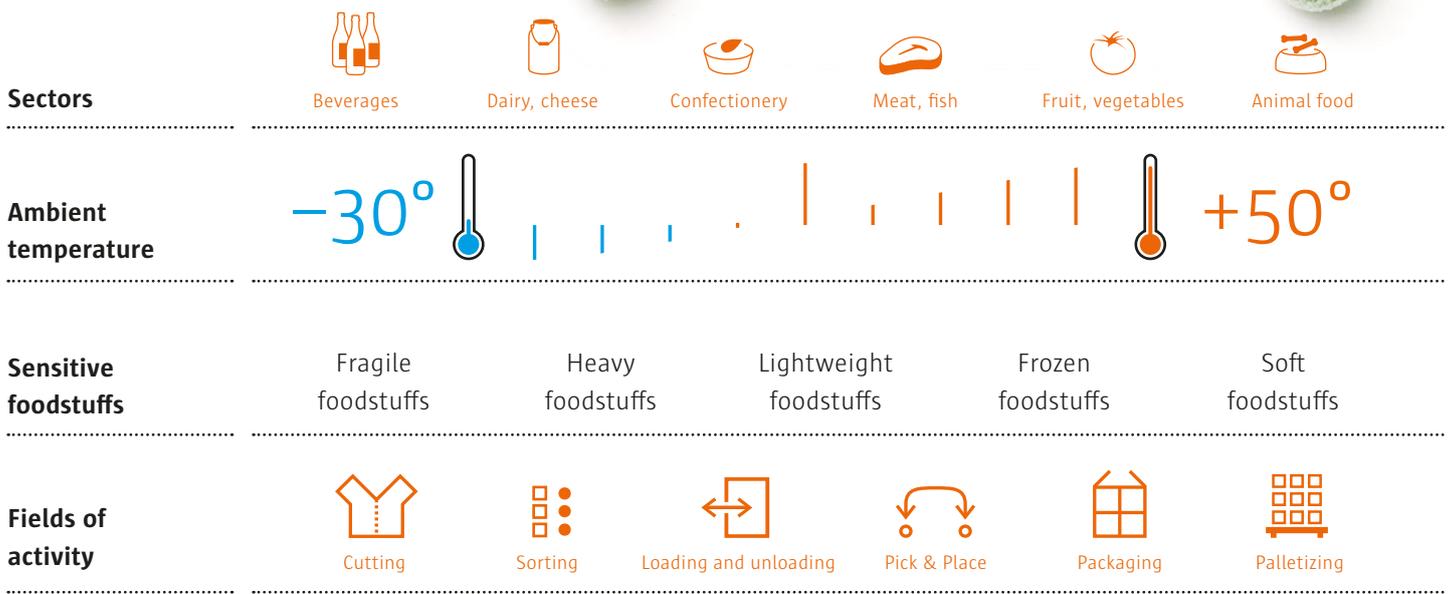
No temperature fluctuations. No loss of quality. No formation of ice on the frozen goods. A real logistics pro doesn't make compromises – not even in extreme situations down to  $-30^{\circ}\text{C}$ . The KR QUANTEC PA arctic has been specially designed for palletizing at extremely low temperatures. 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.



Scan here to see  
KUKA robots in motion:  
[www.kuka-robotics.com](http://www.kuka-robotics.com)



## KUKA robots in the food industry



Uniform and compatible.

The KR C4 controller.

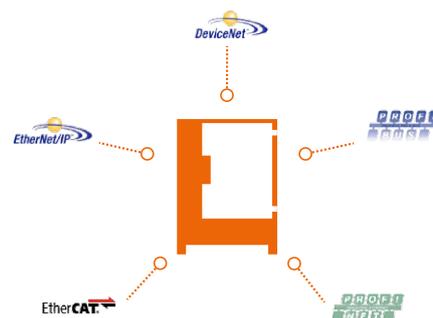
**KUKA KR C4 – one system controls all. Robot, motion, sequence, process and safety control, uniform for all KUKA robots: the KR C4 unites all the control tasks for the efficient use of robots in a single, smart system.**

Whether communicating via field bus systems such as Profinet, Profibus, Ethernet I/P, DeviceNet or Ethercat, or via Ethernet with higher-level systems – the KR C4 is a veritable communication talent. This ensures that the KR C4 can be integrated simply into existing infrastructures. It naturally also makes child's play of controlling external axes and synchronizing external conveyor belts. To round off the package, image processing can be optionally integrated, leaving nothing to be desired.

By the way: with its integrated energy management, the KR C4 enables up to 95 % savings in energy consumption\*.

**Especially low-maintenance – without filter mats.**

The passive heat exchange system of the KR C4, with separate air circulation in the inner and outer zones of the controller, allows low-maintenance operation even in dusty environments. Entirely without filter mats.



\* In standby modes and Eco mode.

# 0% need to adapt.

## Personnel and systems understand

## KUKA robots immediately.

**Operation with little knowledge of robotics: thanks to KUKA.PLC mxA.**

mxAutomation is specifically aimed at manufacturers of packaging machines. With the software, integrating robots into the specific controller of the packaging machine is a snap. KUKA robots are then available and easy to use in the familiar programming and operator control environment. This increases user acceptance and significantly reduces training costs.

INTEGRATED BY **KUKA**  
mxAutomation

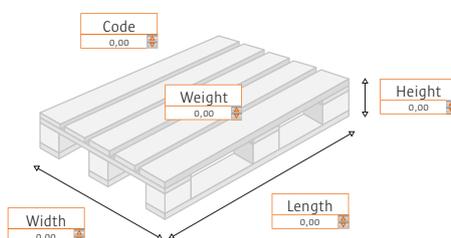
**Comprehensive advice: KUKA Robotic Consulting & Engineering.**

Our Engineering Team supports you in the design and implementation of new automation systems and optimizes existing ones. This way, the systems provide optimal support for your production at all times – even under altered operating conditions.



**KUKA.FlexPal – palletizing the easy way.**

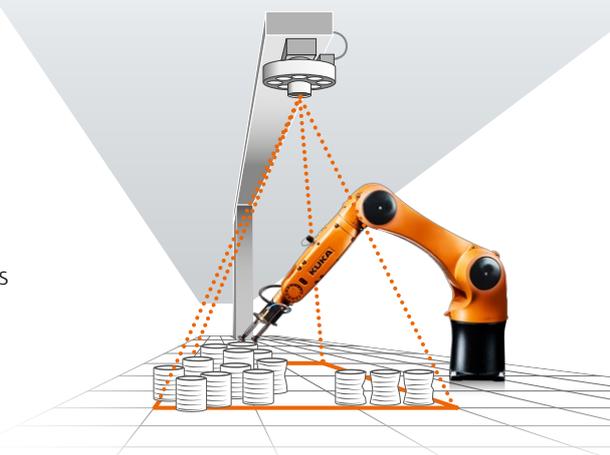
The KUKA.FlexPal Editor allows for the easy definition of packing patterns as well as pallet, pickup/setdown and slipsheet stations. The specific program code is generated at the touch of a button. And the best part? On request, you can easily have full access to even the smallest detail.



**Robotics training in over 20 training centers worldwide.**

The KUKA College in your vicinity provides first-hand practical experience and teaches the necessary technical knowledge for working with the robot.

**KUKA**  
**COLLEGE**



Technology package

### KUKA.VisionTech

An “onBoard” vision system is part of the package. KUKA supplies you with robots and image processing from a single source. KUKA.VisionTech provides powerful tools for 2D object recognition, quality control as well as code and optical character recognition (OCR).

With the high-quality camera in its IP67 housing, object recognition enables flexible robot operation, even in unstructured environments. Code recognition simplifies the traceability of your products and is able to safeguard quality in the long term due to automatic checks.

# 8

KUKA robot families.

The right specialist for every taste.



### KR AGILUS series

The small robot series with unparalleled performance at the highest of speeds is also available as a waterproof variant.



### KR 40 PA

Fast and precise. Its 4-axis kinematic system enables pallets to be stacked up to 1.8 m high.



### KR 16 series

With its minimized disruptive contour and streamlined design, it saves valuable space and reaches any point, even in confined spaces.



### KR 30-3 und 60-3 series

It masters payloads up to 60 kg and a pose repeatability of  $\pm 0.08$  mm. Precision handling of even heavy workpieces is thus no problem.



Productivity gain across the entire process chain.

KUKA robot portfolio

### Processing



Entire KUKA robot portfolio, generally with a protective suit

### Packaging

Picking



KR AGILUS series

Automation from a single source – across the entire process chain. This unique comprehensiveness gives you the freedom to use the robot that is specially designed for each task at every point in the production process. No matter whether it's for processing, loading and unloading, sorting, pick & place,

or for packaging, stacking, palletizing and order picking. KUKA makes the switch to automation very simple. With components that combine perfectly. With one another, with machines, with vision systems, with conveyor systems or with higher-level PLC systems.



**KR QUANTEC PA**

Maximum dynamism, extreme stiffness and high performance combined with low weight. The series is also available with food-suitable lubricants and as an arctic variant.



**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.



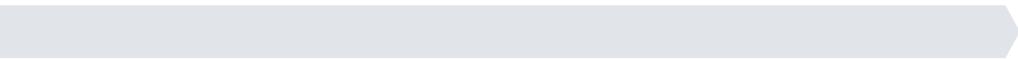
**KR 700 PA**

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



**KR 1000 titan PA**

The KR titan PA is the world's first robot for payloads up to 1,300 kg – with excellent dynamic performance and short cycle times.



**Distribution**

Packing



Palletizing



KR AGILUS series  
KR 16  
KR 30  
KR 60

KR QUANTEC PA  
KR 300 / KR 470  
KR 700  
KR 1000 titan

KR QUANTEC PA  
KR 300 / KR 470  
KR 700  
KR 1000 titan

**KUKA – Your strong partner.**

Quality made in Germany, creativity and the utmost commitment to customers: at KUKA, this has been the basis for decades of exceptional technology, helping you to decisively optimize your processes. We were the pioneers in the world of robotics, and now we are global leaders in innovation. Our passion is finding future-oriented solutions to make even complex automation tasks simple. Whatever you want to do, and whatever the specific task involved: you can implement it with KUKA. And thanks to close cooperation with our experienced KUKA system partners, that applies to every industry. We strive to turn your ideas into reality. Use our edge to drive your success.



**KR AGILUS series**

**KR 16, KR 30/60**

**KR QUANTEC PA series**

Number of variants	7	10	3
Max. reach	706.7 mm to 1,101 mm	2,002 mm to 3.102 mm	3,195 mm
Rated payload	6 kg to 10 kg	30 kg to 60 kg	120 kg to 240 kg
Rated suppl. load on arm / link arm / rot. column	-/-/-	35 kg/-/-	50 kg/-/-
Pose repeatability	±0.03 mm	±0.05 mm to ±0.08 mm	±0.06 mm
Number of axes	6	6	5
Mounting position	floor, ceiling, wall	floor, ceiling	floor
Variant	waterproof <b>WP</b> , cleanroom <b>CR</b>	cleanroom <b>CR</b>	Arctic, food-suitable lubricants <b>HO</b>
Robot footprint	209 mm x 207 mm	500 mm x 500 mm to 928 mm x 928 mm	830 mm x 830 mm
Weight (excluding controller), approx.	48 to 54 kg	600 to 700 kg	1,103 to 1,093 kg
Ambient temperature	+5 °C to +45 °C	+10 °C to +50 °C	+5 °C to +55 °C

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