



For maximum delight

Automation in the
food and beverage
industry

ABB

Nothing but the finest

Automation ensures first-class quality

Whether it's cakes, pasta or minced meat - demands are high on machines and production systems in the food and beverage industry. Products must reach the market quickly and are subject to strict hygiene regulations. ABB automation solutions provide the perfect solution for these demanding tasks: Whether it's about increasing productivity, optimizing product quality or strictly adhering to hygiene specifications, they perfectly cater to all processes in the food and beverage industry. Drawing on many years of experience in the market and extensive expertise in food production automation, ABB has the right solution for every need.





— Applications: Always the right solution

ABB offers dedicated robotics solutions to four key applications in the food and beverage industry: Packaging, Picking, Palletizing as well as Handling and Processing.

Packaging

Quickly and cleanly
into the box

Packaging freshly produced food is a challenge: Due to strict hygiene requirements, contact between humans and product must be kept to a minimum. A combination of 4-axis high-speed delta robots and small 6-axis robots is ideal for high throughput and consistent quality. Additional delta robots as well as 4- or 6-axis robots with larger payloads, place the already packed products into further packaging, such as boxes, trays, crates or shelf-ready cartons.





Picking

Safe handling even
of sensitive food

Whether it's fruit, tartlets or fish - the FlexPicker can even handle sensitive foods. Using food-compatible lubricants, it is ideal for almost any pick-and-place application in the food and beverage industry. What's more, the high-speed delta robot is fast and available in different versions with payloads of 1 kg, 3 kg, 6 kg or 8 kg.

Palletizing

Packing at top speed

Shorter throughput times, better product quality, more pleasant working conditions and higher company profits: Palletizing robots from ABB offer numerous benefits to companies in the food, beverage and packaging industries. ABB also supplies peripheral products, such as fork and vacuum grippers for bags or cartons, as well as software products that make automation solutions quick and easy to install.





— Handling and processing

How everyone gets the
same slice of the pie

How can thousands of slices of cake per day be cut to exactly the same size? No problem with ABB solutions. Ultrasonic cutting is suitable for cheese, cookies and cakes, and waterjet cutting for breads. ABB also has the right automation solution for pre-picking fish and meat before packaging, for separating baked goods from the mold and for decorating baked goods. Many robots are available with IP67 or IP69K protection, ideally suited for food handling and processing.



Benefits: Robots at an advantage

Automation offers multiple benefits: It improves the freshness of products and their hygienic processing, but it also pays off financially. There are many aspects that boost return on investment (ROI).

A new look at ROI

Higher return on investment from automation

Return on investment (ROI) in the food industry is often judged solely in terms of the extent to which robotic solutions can reduce labor and personnel costs. In fact, automation offers far greater potential. Consider these factors when making an accurate calculation.



EXTENDING SHELF LIFE

Robotic applications speed up food processing, packaging and transportation. Also, food does not come into contact with humans, extending minimum shelf life.



EFFICIENCY

Modernizing equipment and workflows boosts efficiency and production speed. At the same time, it reduces the use of resources and energy for sustainable production.



AUTOMATIC SORTING OF A, B AND C GRADES

Using state-of-the-art image processing, robots quickly recognize how naturally grown products must be classified according to given quality criteria. This helps to automate many processes that are still carried out manually.



CUSTOMIZING

Producing food in batch size 1? This also works in food production. The individual cake, differently topped pizzas or a personalized roll – state-of-the-art automation solutions help manufacturers to produce cost-effectively and to customer demand, while offering added value for the customer and product differentiation.



E-COMMERCE

Online retailing doesn't stop at the food industry and is forcing many retailers and supermarket chains to change their sales and distribution concepts. Manufacturers can adapt to this by deploying flexible solutions in-house that help them scale production volumes and quickly adapt to demand.



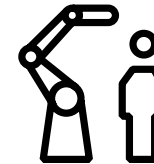
ERGONOMICS

Robots relieve workers of heavy tasks - whether it is palletizing or transporting meat pieces that weigh several kilograms. Many heavy crates are still moved manually, leaving a lot of potential for automation.



SAFETY

Automated processing enhances food safety by reducing manual intervention as a potential source of contamination and error.



LABOR SHORTAGE

Many food processing companies face recruitment challenges, especially when it comes to monotonous and repetitive tasks. This is where robots can be ideal helpers.



— For maximum hygiene Fast and easy to clean

ABB robots are well equipped to meet the food industry's stringent hygiene requirements. FlexPicker, for example, has a special paint finish or is available in stainless steel, making it particularly easy to clean. Robots such as the IRB 1200 boast food-compatible lubrication, also featuring IP67 protection and ISO clean room class 3. No flushing is required for delta robots, and ABB supplies many palletizing robots with food-safe oils and greases.



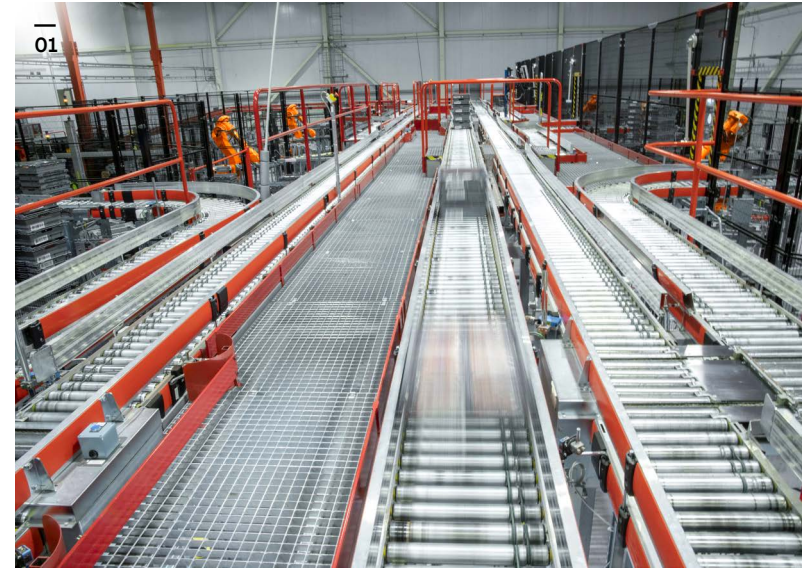
Real-life examples: ABB solutions convince

Whether pastry, meat or salad - every foodstuff has different processing and packaging requirements. As shown in the following examples, ABB has the right automation solution for every purpose.

For perfect hygiene

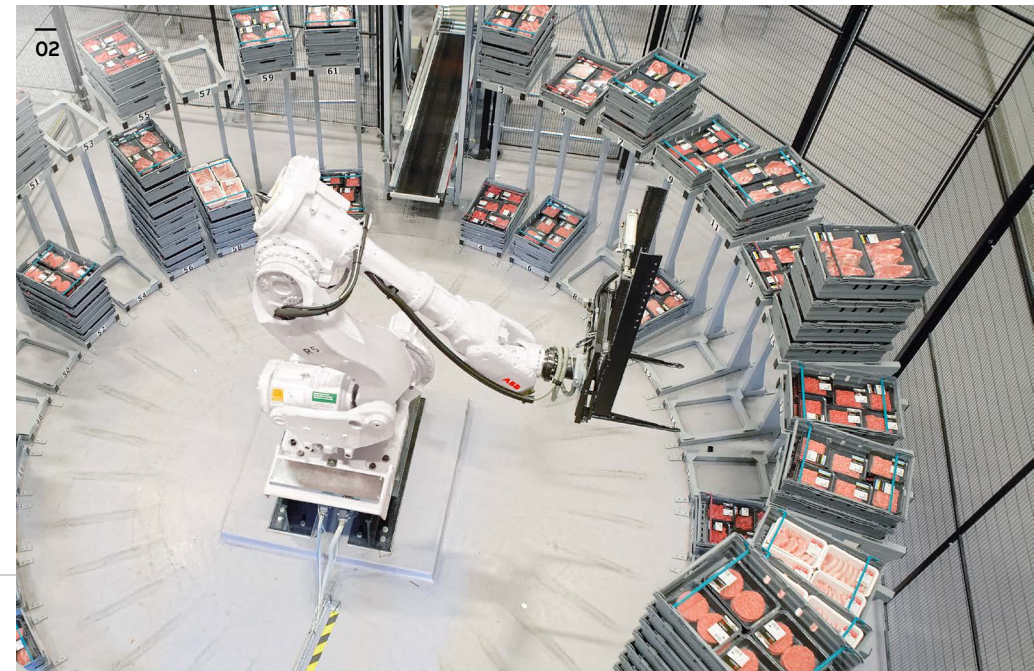
Top speed through high system availability

No other foodstuff has to be packaged and delivered as quickly as minced meat. That's why the ICA Group, one of Scandinavia's largest food retailers, uses IRB 6700 industrial robots in its cold store in Västerås, Sweden. These robots sort vacuum-packed meat at piece rate before it is shipped to the ICA stores. Minimizing interruptions to operations is particularly important to ICA. The IRB-6700 family of robots is ideally equipped to do just that: Their mean time between failures (MTBF) averages 40,000 hours. Longer service intervals, shorter service times and easy spare parts procurement contribute to high system availability.



01
With its new robots, ICA can ramp up capacity on demand at the push of a button.

02
Robots working on a piecework basis: Eight IRB 6700s sort vacuum-packed meat.



Rapidly onto the pallet

Safe operation with SafeMove

Collaborating safely with humans at high speed: Food company Nestlé has increased pallet-loading productivity by 53 % in its Brazilian chocolate factories thanks to a new compact robotic palletizing cell. The cell contains an ABB IRB 660 robot with suction gripper that picks up the boxes at the end of the production line and accurately stacks them on the pallet for a balanced load distribution. SafeMove robot monitoring software ensures the safety of employees. It detects movements and adjusts the robot's speed, maneuverability and positions as soon as people approach. Safety guards, safety switches, doors or barriers are not required.



Grabs boxes powerfully: The IRB 660 with suction pad picks up boxes and accurately stacks them on a pallet.

Tender pastry balls under firm control

Increasing productivity

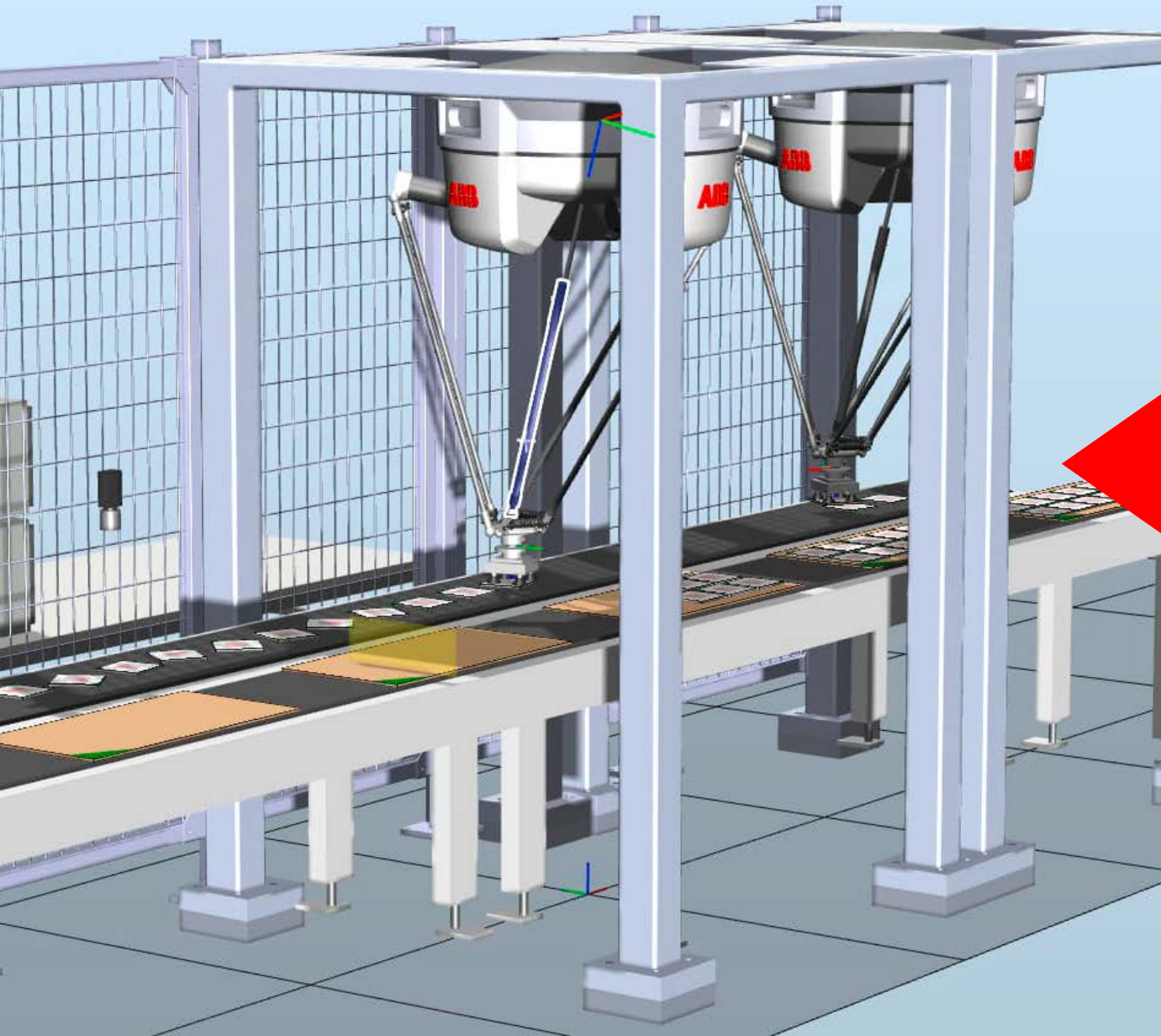
Delicato cookie balls are a well-known specialty in Sweden. To increase the profitability of its production line for the pastry, Delicato, one of the largest manufacturers of fine baked goods in Scandinavia, has purchased four IRB 360 FlexPickers. They manage to precisely pick the delicate balls from the conveyor belt and place them in blister packs without damaging them. Combining the FlexPicker with the PickMaster Vision system also ensures a high-speed workflow. Delicato reduced its labor costs by about 40 percent. Moreover, this eliminated the monotonous tasks previously associated with the production line and the associated risk of injury.



01
A long-time favorite: balls from Delicato, the largest manufacturer of pastry products in Scandinavia.

02
The new, robot-assisted system relieves staff of monotonous tasks.





— Robots and software - the technology behind it

ABB offers the right robot and gripper for every type of application. In addition, ABB software and image processing ensures a smooth process.

Our specialists for food and beverage

The right robot for every application



FlexPacker

- Ideal for handling multipacks and vertically oriented products like juice cartons
- Able to pick products out of lines
- Suitable for use in the vicinity of open products due to food-compatible lubricants



FlexPicker

- High-speed robot for pick-and-place tasks
- Flexible in tight spaces
- Exceptional motion control, short cycle times and highest accuracy



IRB 120

- Versatile for various industries such as food and beverage, pharmaceuticals and research
- ISO clean room class 5 version suitable for use in environments with high cleanliness standards



IRB 1200

- When supplied with NSF H1 class food grade lubrication, it features IP67 protection and ISO clean room class 3
- Ideal for hygienic handling and processing of foodstuffs

Delta robots in Hygienic Design

Meeting highest hygienic standards

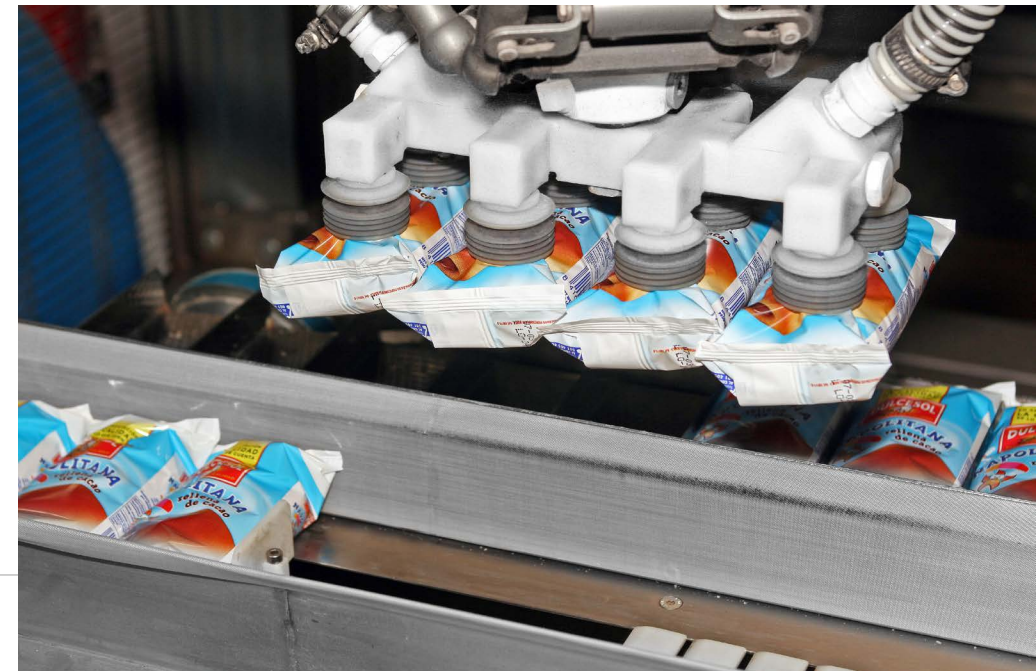
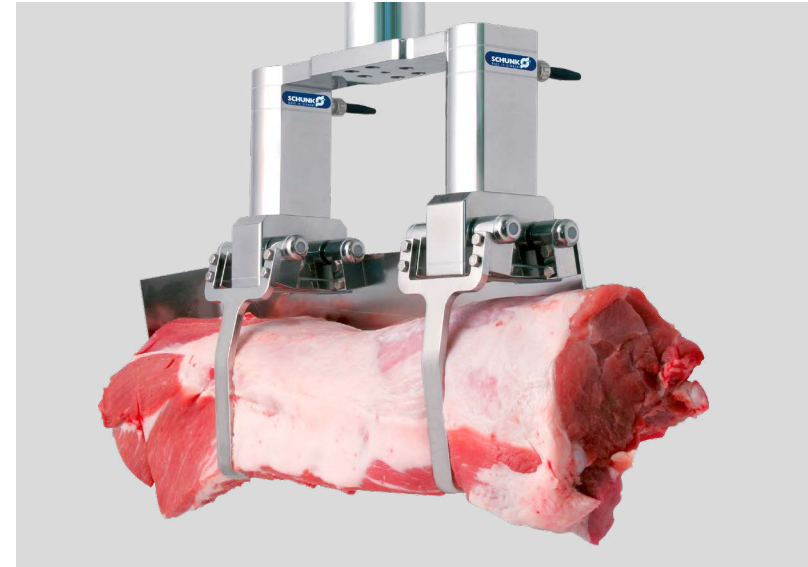
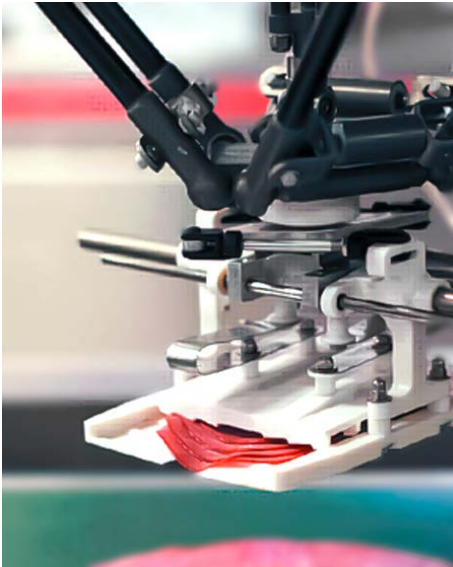
The demand for pick-and-place robots specifically designed to meet high hygiene requirements is increasing. Automation options that help plants maintain supply chains while protecting employee health are in particular demand. ABB's purchase of Codian provides high-precision pick-and-place robots for applications requiring highest hygiene standards, such as safely handling open food.

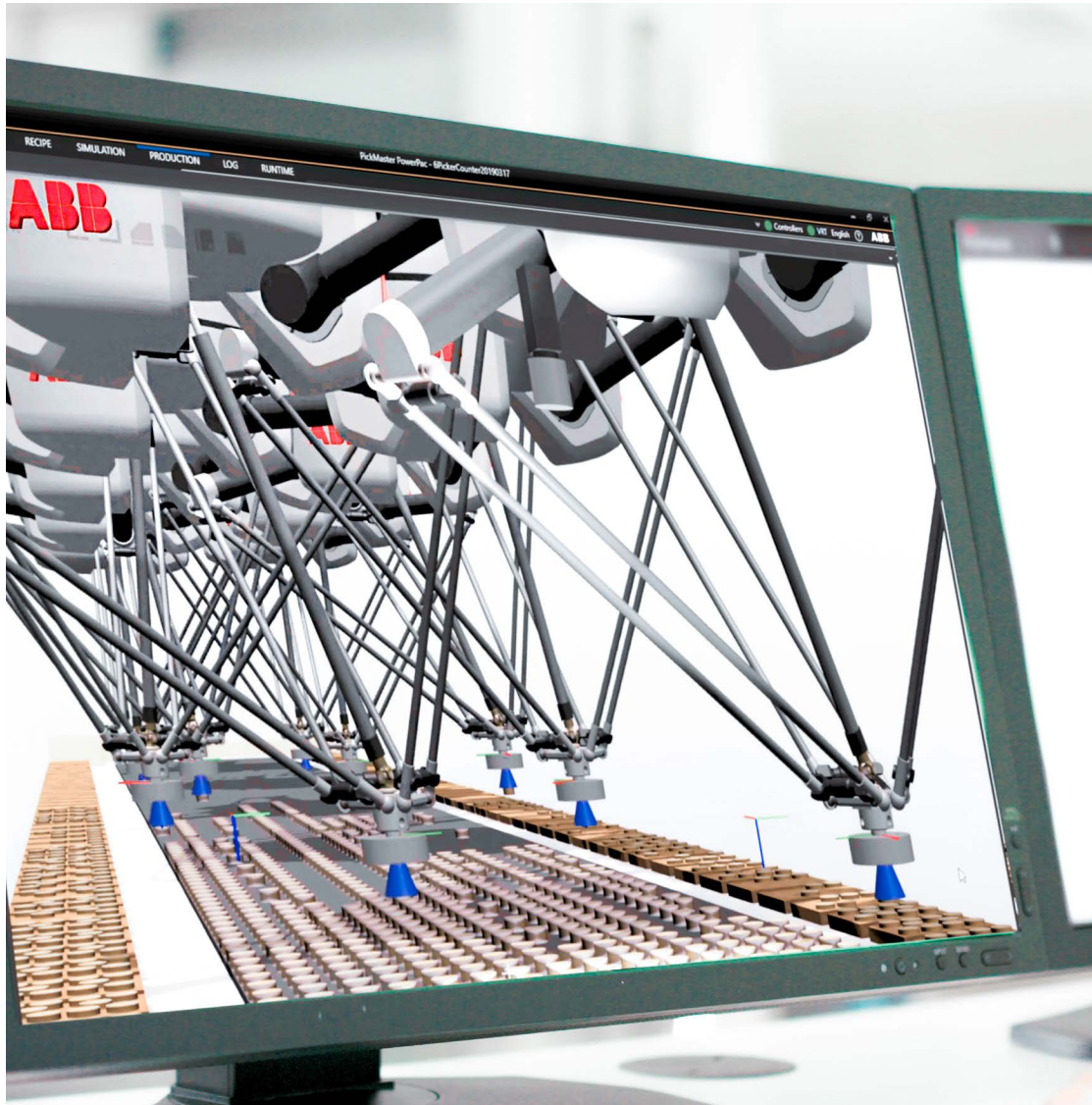


Everything under control

Safely and gently to the target

The right gripper for every task: Thanks to an extensive network of gripper manufacturers and developers, ABB offers suitable concepts for every requirement. Whether it's a fragile praline, a bag of cocoa or raw meat - everything reaches its destination safely using the right gripper.





Minutes, not hours

Software makes the difference

Robots only develop their full potential when supported by the right software and appropriate image processing. Sensors and camera systems provide robots with sufficient smarts to recognize even limp or naturally grown products and handle them with due care, as required by the particular process. At the same time, they guarantee maximum safety.

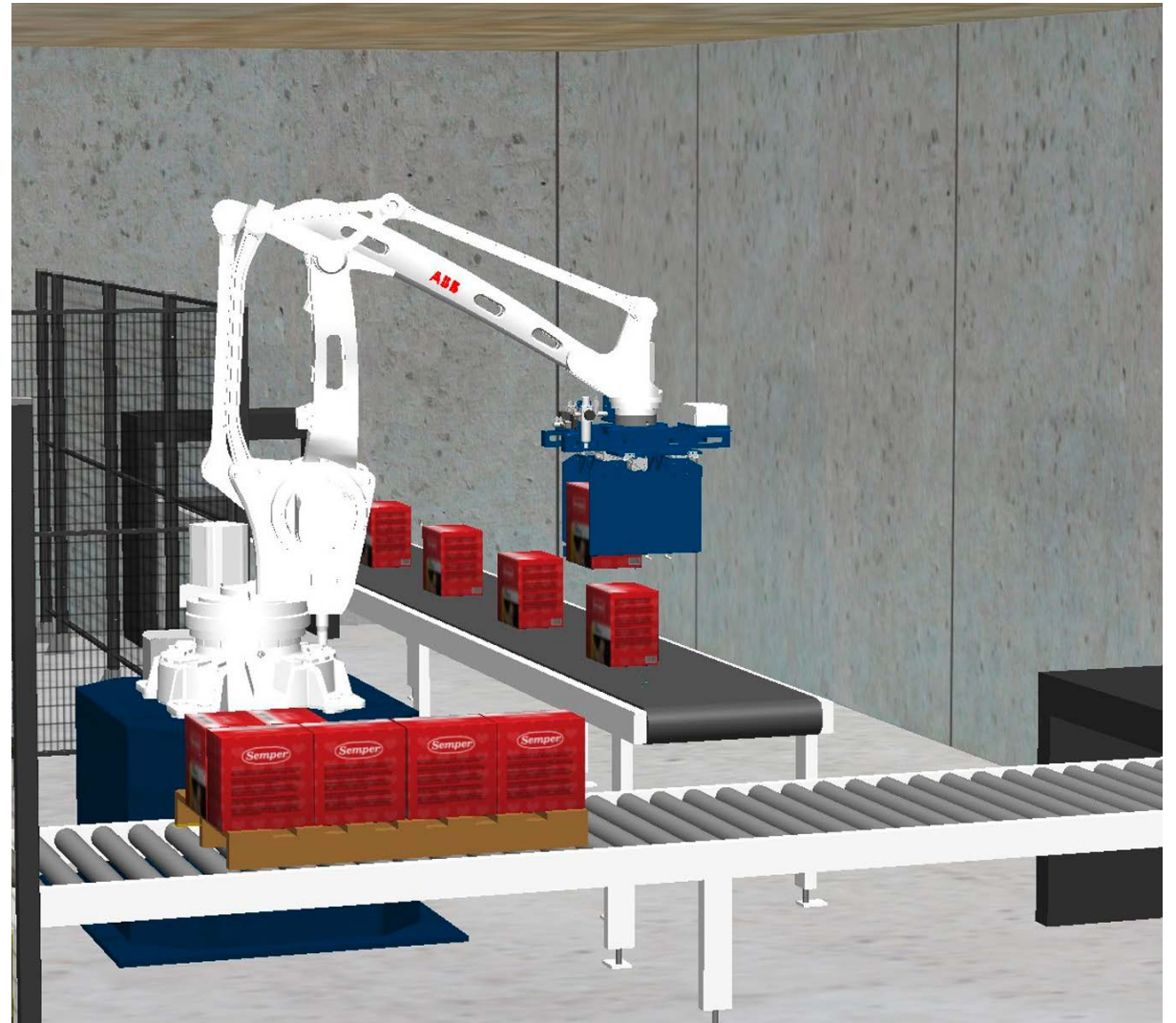
The PickMaster Twin robot software, dramatically increases productivity: In camera-based picking and packaging applications, it supports Digital Twin technology, simulating packaging stations and thus optimizing the process.

Commissioning time is reduced from days to hours and changeover times from hours to minutes, increasing overall line efficiency.

In addition, the PickMaster Twin boasts a powerful color vision system that supports up to ten cameras for precise position guidance and function checks.

Robots can be programmed very conveniently from a PC using the RobotStudio simulation and offline programming software. RobotStudio is available for a 30-day, no-obligation trial.

[More information and further downloads](#)



Want to know more?

Ask us!

Robotics open up long-term perspectives for small and medium-sized companies to keep up with large companies and competitors worldwide. As food and beverage manufacturer, you will benefit from ABB's extensive expertise in providing solutions for picking, packing, palletizing, handling and processing your products. What's more, as an established supplier, ABB provides you with a comprehensive portfolio of products and services.

We will gladly come to you and determine your automation potential. Let us show you which sections of your production can be automated most easily and how to achieve the highest profitability by using robots.

[Visit our food and beverage portal](#)