

Collaborative robotics in the food industry.

Industry e-book

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01

Collaborative automation in the food industry.

In an industry driven by seasonal demand, evolving consumer tastes, and environmental challenges, collaborative robotics can be used to improve product quality with increased precision while rapidly expanding production volume.



02

Stay competitive and boost productivity.

Collaborative robots (cobots) are flexible and easy to use throughout the food and beverage supply chain in a wide range of secondary processes. Cobot-based automation can be easily reconfigured, adding value for even for low-volume runs.



>50k

Massive installed base

Universal Robots' 50,000+ cobot solutions have been deployed around the world in both tier 1 automotive suppliers and small machine shops, and thousands of facilities in between.

1/2

Simple to redeploy

Cobots can be reconfigured and programmed for a new task in as little as half a day.

90

Easy programming

After an online 90-minute course on [UR Academy](#), anyone can become a certified cobot programmer. There are even in-person classes for hands-on learning.

17

Collaborative-ready

The e-Series 17 standard adjustable safety functions effectively and easily mitigate risk in a work cell, following a risk assessment.

1

Quick payback

UR cobots routinely deliver payback within a year.

03

Significance of human-robot collaboration in the food industry.

Collaborative robots can work in conditions from humid greenhouses to refrigerated rooms to tending hot ovens, relieving employees from repetitive tasks that can cause injury in unfavorable environments. They excel in low-touch processes, and can work around the clock without breaks. This is ideal for seasonal bursts, where cobots can meet productivity requirements without compromising on quality in applications such as:



Packaging

Manufacturing in smaller batches with shorter delivery cycles is a challenge to any packaging line. Cobots increase both flexibility and efficiency.



Palletizing

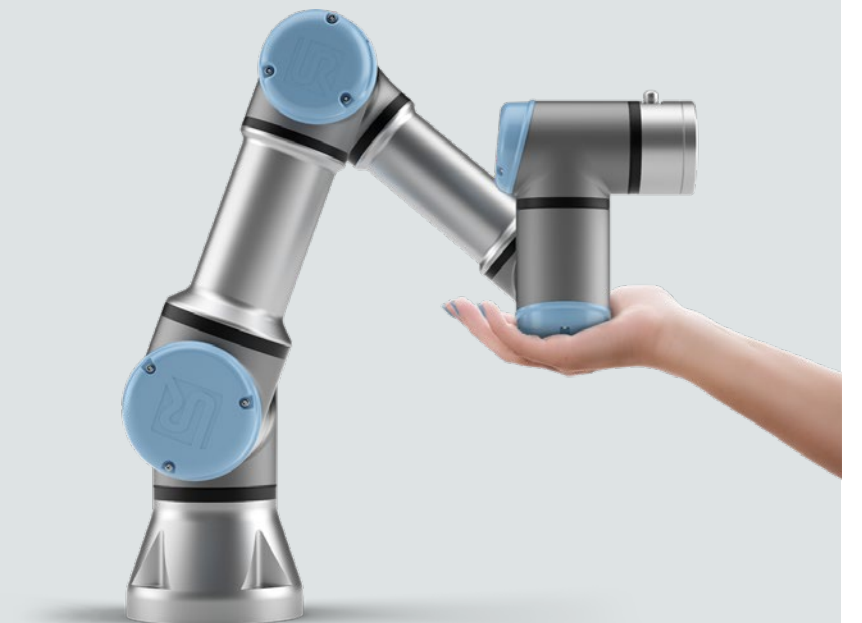
Built-in palletizing wizards make deployment a breeze, even to meet specific customer needs for pallet patterns and labeling that are often required for food and beverage distribution.

UR cobots now power dozens of flexible, 7th-axis, palletizing solutions with the ability to palletize at two pallet locations for optimized operation.



Pick & Place

Collaborative robots boost process accuracy and cut down on waste in automated pick and place processes, which can continue in lights-out operation. The light-weight design and small footprint mean that the robotic arms are suitable for operation and retooling for various processes in constricted spaces.

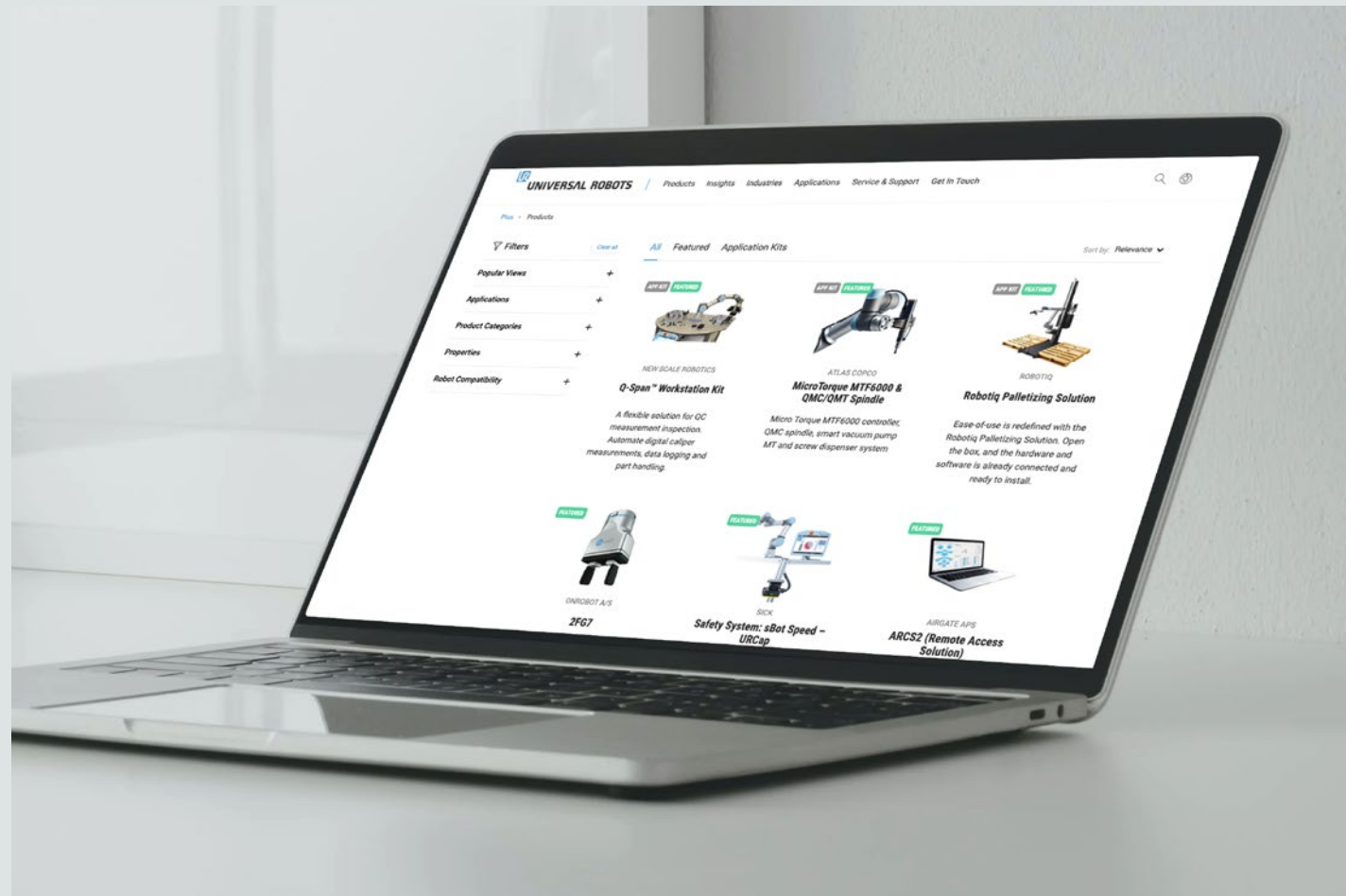


04

Automate easier than ever with UR+

The Universal Robots+ (UR+) ecosystem ensures smooth integration of 3rd party innovative peripheral products and software to match your requirements for highly specific robot applications.

UR+ solutions are certified for our cobots and provide Plug & Produce compatibility for guaranteed immediate deployment.



Plug & Produce

compatibility

Explore UR+ for a range of:

- Grippers
- Vision Systems
- Software
- Process Tools
- Hardware



universal-robots.com/plus

05

Food case stories
from around the world.



Atria Scandinavia is one of the leading convenience food manufacturers for vegetarians and gourmets in Northern Europe. The company delivers its products to wholesalers around the clock.

Atria Scandinavia

The Challenge

Atria Scandinavia packages, labels, and palletizes olives, artichoke hearts, dried tomatoes, garlic, and other specialties every day. The company needs to keep downtime as low as possible to provide fresh products at a competitive price.

The Solution

Atria Scandinavia has two UR5 robots and one UR10 in collaborative operation, preparing 228 units per hour on average for delivery. Employees on the conveyor belt have been amazed at how simple it is to have robots do the work.

The Result

The cobots took less than a year to pay for themselves. Material usage has also been optimized in the packaging department, with 25 percent less waste thanks to the collaborative robots. This achievement has prompted the management at Atria to mothball traditional industrial robots as well as a bulky packaging machine that took up half the packaging facility. Now it has automated all of its packaging lines in production using our flexible cobots instead.

“ It used to take six hours to retool for another product. It now takes us just twenty minutes using UR robots.

Johnny Jansson
Technical Director



The food producer Cascina Italia processes millions of eggs per day for a fiercely contested market.

Cascina Italia



“ Collaborative robotic solutions are a boon for companies like us with limited floor space and investment budgets.

Ruggero Moretti
Plant Manager

The Challenge

Cascina Italia needs to keep agile in order to respond to new market needs. Optimizing internal processes to free up resources is a constant challenge. Investing in conventional robotic solutions would stretch the company’s financial resources to the limit; installing them would be highly challenging given the limited floor space available.

The Solution

A UR5 cobot has been installed at the end of the production lines – twenty-four lines in total – where it assists the human operators. The cobot prepares transport boxes for major jobs to relieve employees from this exhausting task. Specifically, the robot packs 144 cartons with ten eggs each into transport boxes, handling around a million and a half eggs daily.

The Result

After installing the robot directly onto the production line, Cascina Italia saved not only production floor space but also the cost of installing a guard fence. The staff took just half a day to learn how to operate the cobot on their own. The company expects the investment to break even within a year.

Orkla Foods is behind many famous food brands in product categories ranging from ready-to-eat dishes to soups and sauces. It is especially popular in the Nordics but has a strong presence in many countries.

Orkla Foods

The Challenge

Bags of vanilla cream produced at the Kumla factory in Sweden were packed manually. The aim was to find an automation solution which could work with other production machines in a network, would be easy to move and program and able to operate alongside employees without extensive safety installations.

The Solution

After a tip from a local business, the company had a demonstration of a UR cobot and was impressed. They deployed a UR10 for the pick and place of vanilla cream bags into cartons. The robot works independently but is fed by a filling machine and is part of a network with a carton erector and carton sealer.

The Result

The Orkla team found that the UR10 added simplicity, enabling the company to streamline their process while also eradicating repetitive, heavy-lifting tasks for their employees. The protective stop of the robot allows it to operate cage-free at Orkla Foods, thereby enabling a solution that employees can work with. The company was able to achieve a payback period of just six months for their UR10 solution.

“ The robot is flexible, easy to implement, simple to program and can perform various tasks in a network with other machines.

Johan Linne
Site Manager



Mass-food manufacturer Sri Lakshmi Agro Foods, Chennai, was established over 85 years ago. It is responsible for some of India's largest staple food brands, including Udhaiyam Dhall.

Udhaiyam Dhall



“ Without this cobot, we would have not been able to meet the high demands during festival seasons. The UR5's consistent output allowed us to ensure consistent supply.

S. Sudhakar
Managing Director

The Challenge

Sri Lakshmi Agro Foods needed a robot solution that could easily be integrated with their existing secondary packaging machines in the Udhaiyam Dhall line. This was especially important to meet the high demand during festivals such as Diwali, when it was difficult to retain their mostly female staff for night shifts.

The Solution

Sri Lakshmi Agro Foods found the UR5 to be the perfect solution, integrating it in the secondary packaging line. The flexibility of the cobot allowed it to be mounted upside down.

The Result

The UR5 led to 24x7 output, enabling the company to meet high levels of demand, even during holiday seasons. Having a primarily female workforce, the UR5 cobot helper was particularly vital in ensuring uninterrupted productivity so that women would not have to work late night shifts. Mounting the cobot upside-down also meant a zero- footprint solution, thereby allowing the company to save on valuable shop floor space.

Unilever is one of the world's largest companies within the Fast-Moving Consumer Goods (FMCG) industry and the owner of around 400 brands, available in over 190 countries.

Unilever



“ Before automation, employees had to perform monotonous tasks involving bending over to place boxes on lower layers of the pallet. This strenuous activity was totally eliminated by UR robots.

Dariusz Ratajczak
Automation Senior Specialist

The Challenge

In the Katowice plant in Poland, Unilever packs and pallets tea, which is delivered in bags of 25 kg each. The company found it increasingly difficult to find qualified personnel for this manual and physically demanding job. In addition, an increase in efficiency in the application area should be achieved through automation.

The Solution

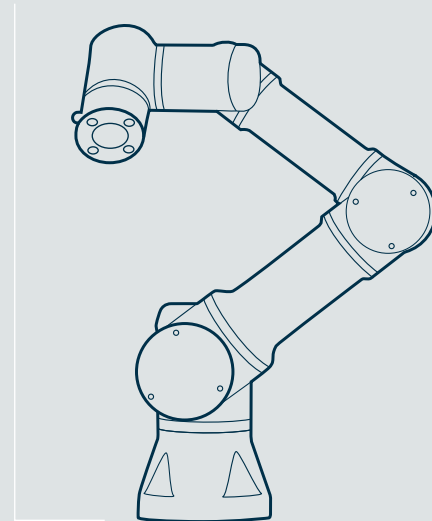
Equipped with vacuum grippers, several UR10 robots stack packaged tea boxes on pallets. They manage around 1,100 boxes in an eight-hour shift. The employees at Unilever program the cobots into variable shapes and sizes of the packaging themselves.

The Result

Unilever implemented the first robot within three weeks. With the fully automated palletizing of two production lines, the company is increasing its efficiency and significantly improving the ergonomics of its specialists. Operators even gained 30% more time for activities with higher added value. Unilever estimates that the robots will pay for themselves in less than a year. Due to its success, the company is considering introducing additional cobots at other Unilever locations across the world.

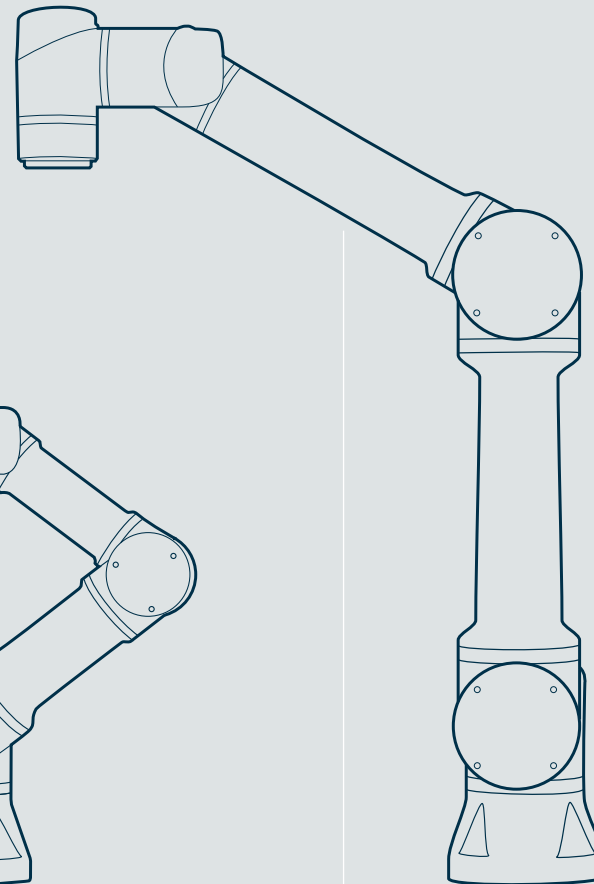
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Our cobots at a glance.



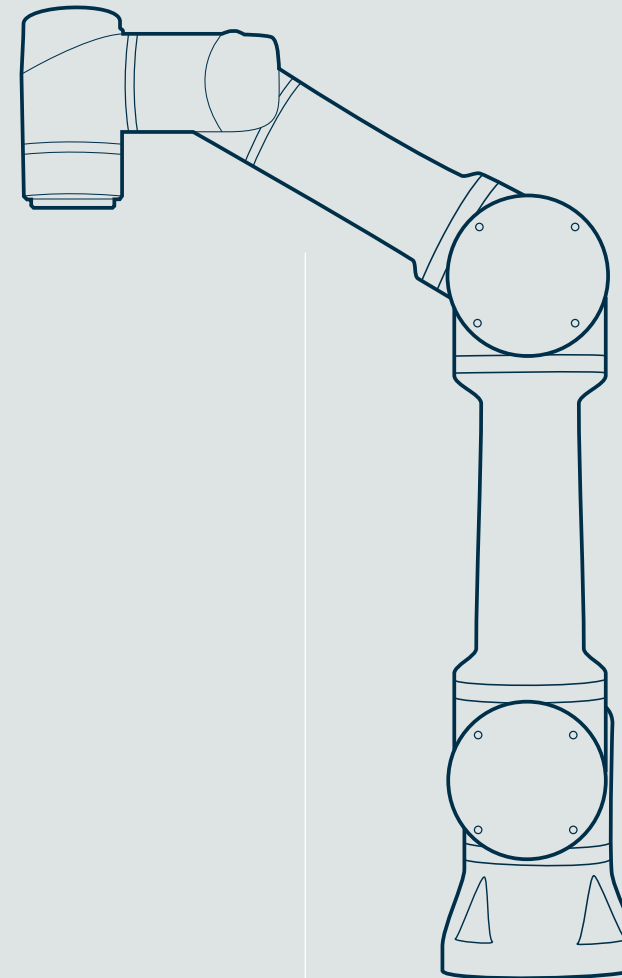
UR3e

Small but powerful, the UR3e has a payload of 3 kg and reach radius of 500 mm. With 360-degree rotation on all wrist joints and infinite rotation on the end joint, this tabletop cobot handles high precision tasks and light assembly tasks with ease.



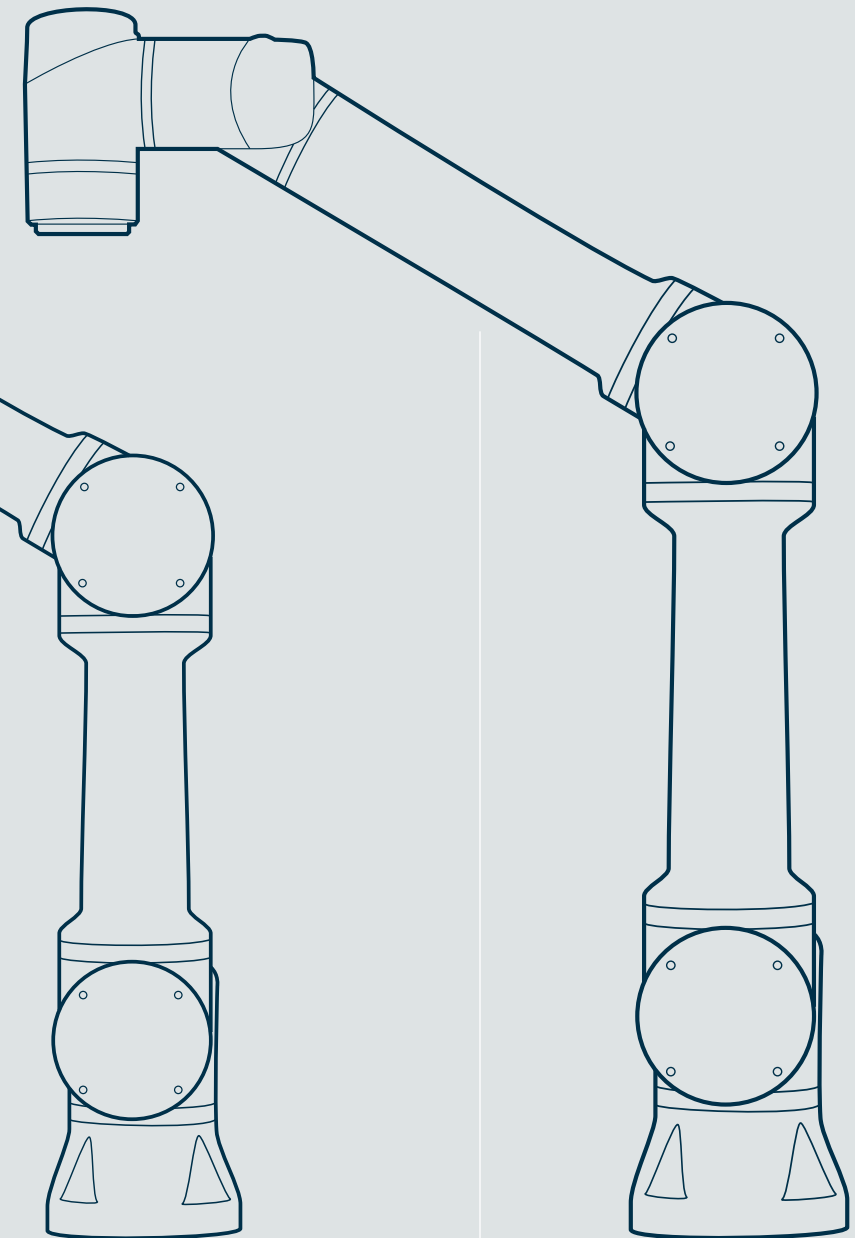
UR5e

The medium-sized member of the Universal Robots family is ideal for automating low weight processing tasks with its 5 kg payload and 850 mm reach radius. Easy to program and fast to set up, the UR5e strikes the perfect balance between size and power.



UR16e

With its 16 kg payload, the UR16e helps reduce the costs, injuries, and downtime associated with heavy part handling. A small footprint and 900 mm reach make the UR16e ideal for applications such as heavy-duty material handling and CNC machine tending applications, including multipart handling.



UR10e

Capable of automating tasks up to 12.5 kg with the same reliability and performance characterized by the e-Series, the UR10e has a reach radius of 1300 mm. This enables it to carry out tasks like packaging and palletizing in facilities where there is a greater distance between different operating areas.

Ask our experts
to find out more
about automating
using our cobots.

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