

NEW VISTAS

ACHIEVE MORE WITH COBOTS



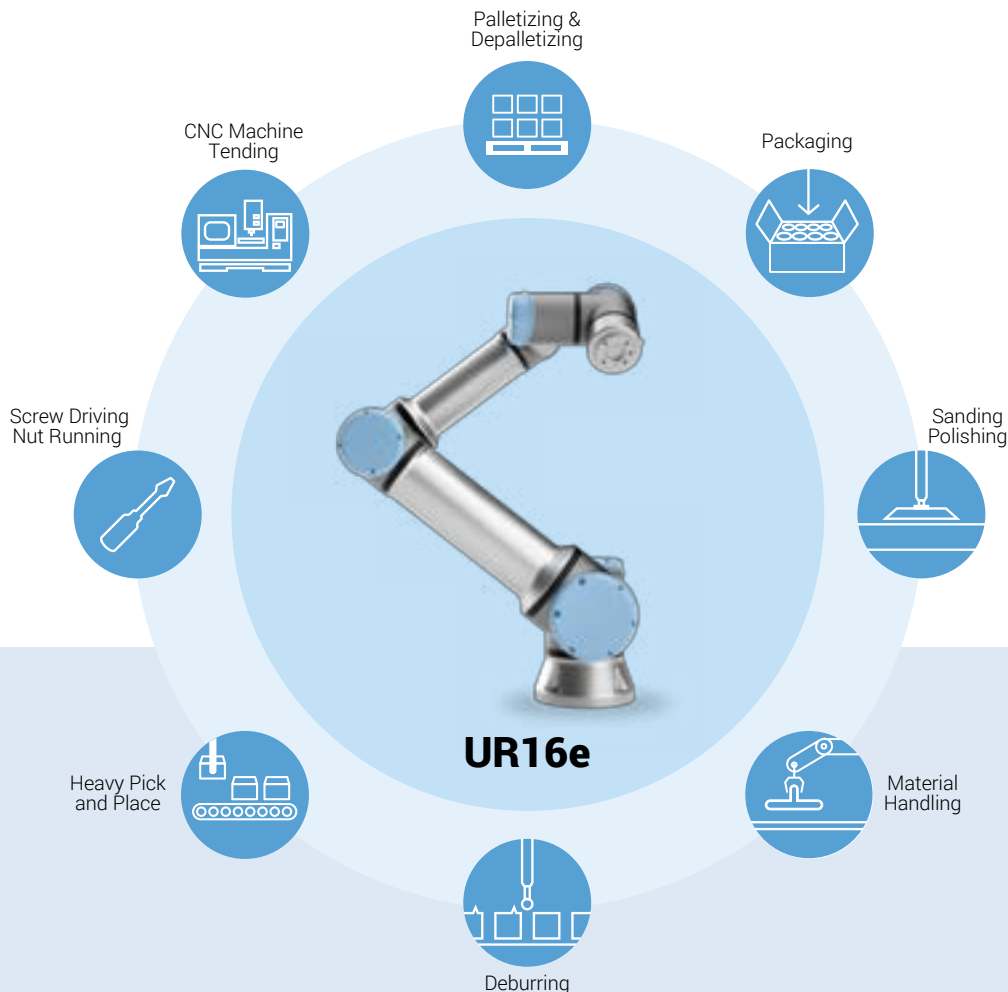
The UR16e Cobot Built To Do More

WHAT OUR COBOTS CAN DO FOR YOU

The year 2008 saw the beginnings of a revolution – this was when we released the UR5, the world’s first commercially viable collaborative robot, or cobot, onto the market. Our customers were able to use these new versatile lightweight robots alongside people without protective guards; the intuitive user interface cut down the learning curve by eliminating the need for specific programming skills. The new UR5, named after its payload in kilos (5kg/11lbs), stood in stark contrast to traditional industrial robots as collaborative robotics rapidly developed into a major growth driver on the automation market. The lighter and heavier payload models, the UR3 and UR10 extended our cobot range enabling completely new application scenarios.

Even so, this product range was still unsuitable for certain applications as cobots were not yet capable of handling payloads in excess of 10 kg (22 lbs). These application scenarios forced manufacturers to use conventional industrial robots, or if these were too complex, inflexible or unprofitable for the purpose, no automation at all.

Our newest cobot, the UR16e, has changed that by supporting maximum payloads of 16 kg (35 lbs) in collaborative automated processes. Handling heavy loads between 10 and 15 kg is not just monotonous in most settings; in the long term, it subjects human employees to heavy strain while also posing a health risk. Automation makes life safer and more comfortable for employees in this situation. However, the new cobot generation can do more than just heavy lifting. This application booklet aims to provide an insight into the smart applications that this powerhouse makes possible, and how you benefit in your production processes.



APPLICATION SCENARIO 1

PALLETIZING: RAMPING UP THROUGHPUT



Palletizing procedures are monotonous, tedious, and time-consuming. This is one part of the value chain that employees least look forward to, making it ideal for automation. Cobots with an increased maximum payload of 16 kg boost palletizing performance by eliminating the need to handle heavy bulk products such as packaged animal feed and potting soil manually.

Every retailer wants products delivered on different pallet sizes and patterns. UR cobots now power dozens of flexible, 7th-axis, palletizing solutions with ability to palletize at two pallet locations for optimized operation.

APPLICATION SCENARIO 2

MACHINE TENDING: CUTTING COSTS AND MINIMIZING DOWNTIME

You would be hard pressed to find anything more repetitive than loading and unloading a CNC machine – insert part, wait, extract part, insert next part, wait, extract part ... again and again. Hardly anyone is attracted to this type of work in these times of labor shortage. Automating machine tending with cobots ensures spindle uptime and increased machine utilization. With UR16e's repeatability of 0.05mm (50 micron), even the most demanding precision machining tasks can be automated.

There are several ways of benefiting from an increased maximum payload of 16 kg: in addition to handling heavy payloads, this increased payload capacity also adds versatility with double grippers – two grippers on one robot arm.

Double grippers add to the range of interesting scenarios. First, a double gripper could be used to feed two machines using a single robot arm. This results are substantial savings in cost and space in the production hall. Second, a cobot equipped with a double gripper may be used on one CNC machine with one of the two grippers unloading the machine while the other holds the next part in position, ready to be loaded. This cuts downtime to a minimum while maximizing efficiency in utilizing the capacity of your machines.



APPLICATION SCENARIO 3

MATERIAL REMOVAL: REDUCE WASTE AND INCREASE ACCURACY



Today, most material removal tasks are either done manually or by traditional industrial robots. A traditional industrial robot is typically rigidly mounted to a work cell purposed with one single task, which it rapidly and consistently repeats for its entire life cycle – which is fine if your products or processes never change.

Metal and machining shops easily end up sinking hundreds of thousand of dollars into these automated work cells, and must also invest in programmers, engineers, and robot technicians to integrate and maintain the systems. These upfront and ongoing costs, as well as lack of flexibility in their use, mean traditional robot technology is out of reach for many smaller shops or even larger firms that must be able to drive enough utilization from the cells to establish return on investment in a reasonable amount of time.

A collaborative robot can add flexibility, efficiency, and freedom to your grinding, deburring, milling, routing, drilling, and other material removal tasks. The UR16e offers built-in force/torque sensing for consistent and precise placement of the tool to reduce waste and scrap and optimize your process.

It's easy to move the UR cobot to the areas where you need application support. When the task is finished, you can re-purpose and re-deploy the robot to other areas in your production. If the robot comes into contact with a person, our patented technology limits the forces at contact. UR robots can also be programmed to operate in reduced mode when a human enters the robot's work area and resume full speed when the person leaves.

APPLICATION SCENARIO 4

SCREWDRIVING: AUTOMATE ASSEMBLY AND ELIMINATE THE RISK OF INJURY

Precision, steady force, and repeatability are the three crucial factors affecting process stability while driving in screws. The slightest deviation can easily cause irregularities in the final product. Cobots are especially effective at eliminating these deviations. Apart from that, cobots also eliminate the risk of injury associated with screwdriving.

The UR16e eliminates the challenges otherwise involved in handling heavy drilling and screwing tools, as the increased maximum payload of 16 kg is not only suitable for lifting heavy parts but also for exerting higher forces onto a surface. This allows you to cross the threshold in process automation, relieving your staff of another monotonous, health-endangering activity.



AT A GLANCE

OUR UR16e



SPECIFICATIONS

Payload: 16 kg (35.3 lbs)

Reach: 900 mm (35.4 in)

Degrees of freedom: Six rotating joints

Programming: 12 inch touchscreen with polyscope graphical user interface

Repeatability: ± 0.05 mm

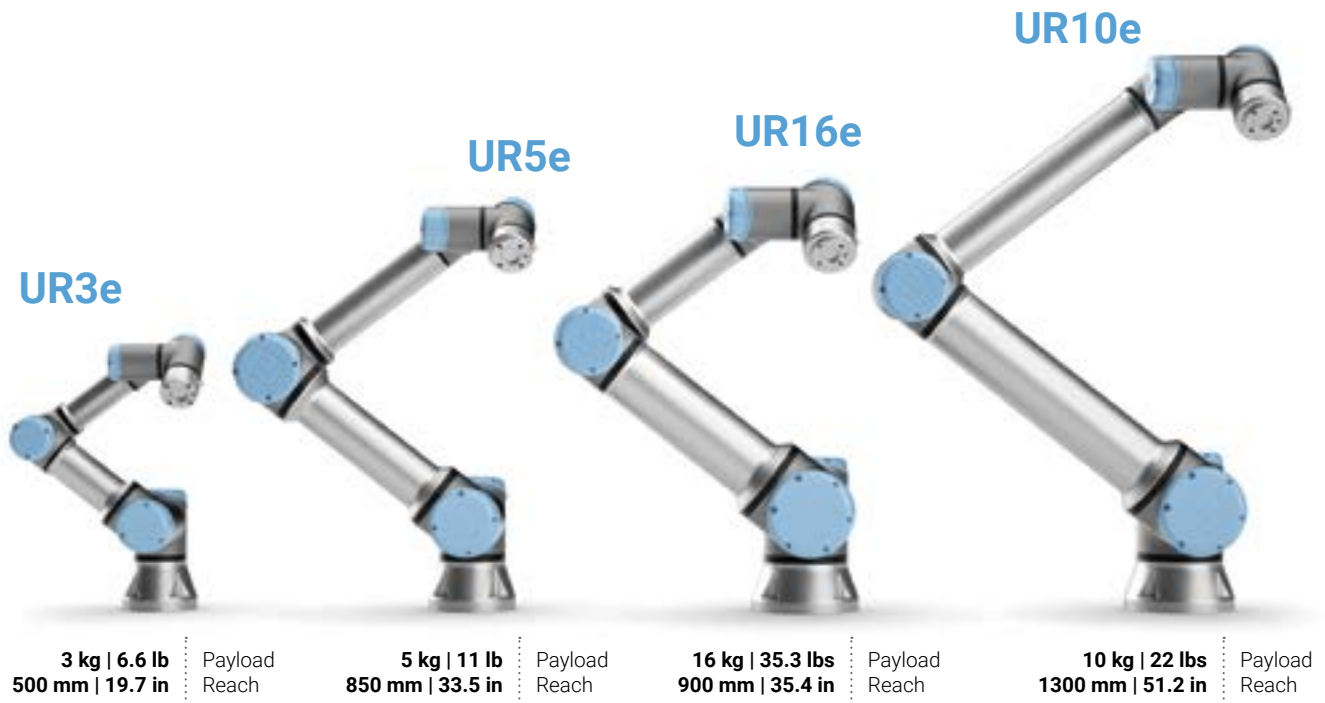
IP classification: IP54

Weight: 12 kg

Safety: Seventeen configurable safety functions certified according to EN ISO 13849-1, PLd Cat. 3, and EN ISO 10218-1 by TÜV Nord

OUR e-Series

MEET THE REST OF THE FAMILY



Control box

Features

IP classification	IP44
ISO 14644-1 Class Cleanroom	6
Ambient temperature range	0-50°C
I/O ports	
Digital in	16
Digital out	16
Analog in	2
Analog out	2
Quadrature Digital Inputs	4
I/O power supply	24V 2A
Communication	500 Hz Control frequency Modbus TCP PROFINET Ethernet/IP USB 2.0, USB 3.0
Power source	100-240VAC, 47-440Hz
Humidity	90%RH (non-condensing)

Physical

Control box size (WxHxD)	475 mm x 423 mm x 268 mm (18.7 in x 16.7 in x 10.6 in)
Weight	12 kg (26.5 lbs)
Materials	Powder coated steel

Teach pendant

Features

IP classification	IP54
Humidity	90%RH (non-condensing)
Display resolution	1280 x 800 pixels
Physical	
Materials	Plastic, PP
Weight including 1m of TP cable	1.6 kg (3.5 lbs)
Cable length	4.5 m (177.17 in)



- Intuitive programming flow
- Light and responsive Teach Pendant
- Thin cable and wide screen
- Customizable stopping time and stopping distance

READY TO AUTOMATE YOUR PRODUCTION PROCESSES?

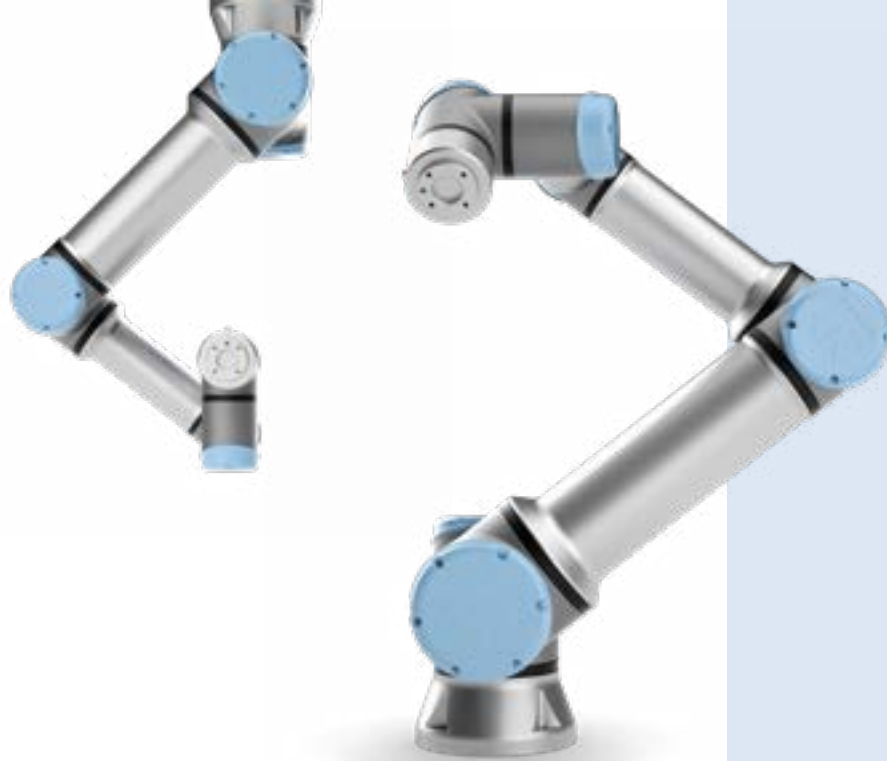
Contact us to arrange a robot demo and find out how safe and flexible collaborative robots can make automation easier than ever for companies of all sizes while boosting productivity, cutting costs, and making life more comfortable for your staff. We provide an easy route into a collaborative future.



**FREE OF CHARGE,
NO STRINGS ATTACHED**

**WHAT ARE YOU WAITING FOR?
MEET OUR COBOTS!**

[Request a cobot demo now](#)



ABOUT UNIVERSAL ROBOTS

Universal Robots was founded in 2005 to make robotics easier and more accessible to all by developing user-friendly, cost-effective, versatile, and safe industrial robots. The company has seen significant growth since it launched its first robot onto the market in 2008, and now sells user-friendly robotic arms across the world. A subsidiary of Teradyne Inc., Universal Robots is headquartered in Odense, Denmark. In the United States, Universal Robots has regional offices located in Ann Arbor, Michigan, Garden City, New York, Irving, Texas, and Irvine, California.

Use the following links to learn more about our company or contact us:

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