The future is collaborative

Meet the world's no. 1
in collaborative robots

Universal Robots is not just a name. When we say universal we mean it. The UR arms can be implemented in virtually any industry, in any process and by any employee. Around the world, more than 10,000* operating UR robots are testimony to just that – and to the clear objective we've had from the very beginning: To make collaborative robot technology accessible to companies of all sizes.

Robots are our life. So whether you are looking for a robotic solution for the sake of precision, speed, optimization or ergonomics, we can help you. And probably at a price that will take you by surprise; our robotic arms have an average payback time of just 195 days, which makes them the most favorable on the market, within reach of most companies. But that is far from the only reason why Universal Robots is the world's no. 1 in collaborative robots:

With our TÜV-certified robots by your side, you are in the safest of hands. The UR robots can work collaboratively right alongside employees due to built-in force-sensing causing the robots to automatically stop operating when they encounter obstacles in their route.The robot can be programmed to operate in reduced mode when a person enters the work zone. When we say collaborative we don't, however, just apply the term to safety. We use it in a much wider sense; while safety is imperative, we believe that being collaborative is as much about being user-friendly, easily re-deployable and accessible. In our opinion the future is collaborative – and we are here to bring it to you

"The UR5 does in 4 hours what it would take manual labor 2-3 days to accomplish. This progress has made it possible for us to compete with overseas manufacturers and bring back manufacturing jobs to the US."

Geoff Escalette
CEO, RSS Manufacturing

* September 2016

Five fast benefits
for your business

EASY PROGRAMMING

The days of hiring expensive external consulting every time a robot has to be programmed are over. The new reality is this: Operators with no programming experience can quickly program the UR robot arms thanks to patented, intuitive 3D visualization. All he or she needs to do is move the robot arm to the desired waypoints or touch the arrow keys on the easy-to-use touchscreen tablet.

FAST SET-UP

Even untrained operators are in for a surprise the first time they are to set up a UR robot arm. Unpacking the robot, mounting it and programming the first simple task typically takes less than an hour. As experienced by our customers, the average time to carry out a complete set-up is just half a day.

FASTEST PAYBACK IN THE INDUSTRY

If you have always considered automation out of reach, it's time to reconsider. The collaborative UR robot arms come with an average payback time of 195 days. That's the fastest in the industry – quite simply because UR robot arms are void of all the added costs traditionally associated with automation such as external programming resources and shielded work cells.

FLEXIBLE DEPLOYMENT

Production set-ups today often need to be flexible and agile in order to meet changing demands and stay competitive. And Universal Robots won't be the one to limit you; on the contrary, our light-weight UR robot arms are easily moved and re-deployed to new processes, enabling you to automate virtually any manual task, including those with small batches or fast change-overs.

COLLABORATIVE AND SAFE

Universal Robots has been the frontrunner of collaborative robotics since the term was coined so rest assured that you are in the safest of hands when you choose our robots. More than 80% of the UR robot arms in operation worldwide works right next to humans – with no safety guards to shield them. And cobots are more than happy to do the jobs that human operators find repetitive and dull.

Case story
Task Force Tips, USA

When manufacturer of firefighting equipment, Task Force Tips, exchanged integrated robots, which they had been using since the 1990s, for UR robots the payback time was as little as 34 days. One of the main reasons was that staffing requirements went from seven to three operators.

"A major impediment in the past to using robots was the security fencing required around the machine. The beautiful thing about the UR Robots is you don't need all that guarding. We can roll the table with the robot right up to the machine and in a few minutes teach the robot to load parts," says Production Supervisor Cory Mack who calls the new set-up "a fundamental paradigm shift". "Now it only takes about one hour per operator per shift to operate the robot, including laying out parts and staging the robot. That means the robot is running for 21 hours unassisted."

Freeing up personnel from machine tending has also played an important role in increased product quality.

"When our employees are not worried about keeping a machine running all the time, they have a lot more time to visually inspect the machined products. Part quality has really gone to a whole other level with the UR Robot in place, while allowing our personnel to come up with new ideas and better ways to improve our production," says the TFT Production Supervisor.

Read the case in full at:
universal-robots.com/case-stories

Meet the market's most
collaborative family

Take flexibility, then add intelligence, endurance and outstanding precision and you have a UR robot arm. The UR family has three members: The UR3, the UR5 and the UR10 – each named after their payload capacity in kilograms and each with outstanding collaborative abilities that will make them a favorite on the production line.

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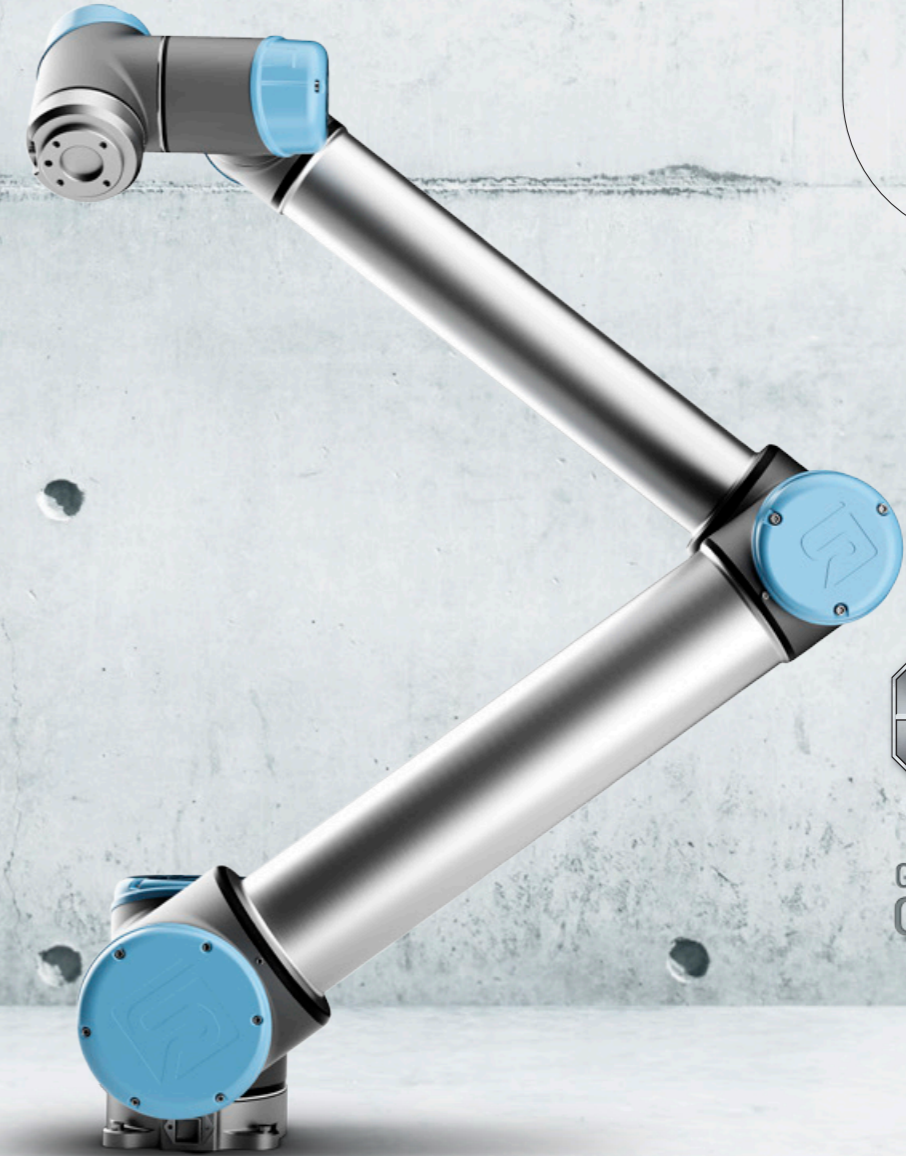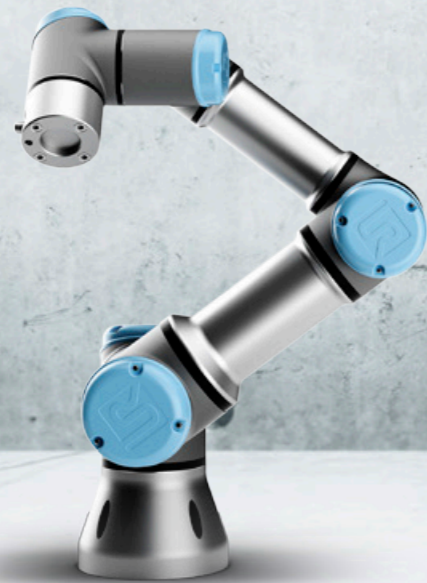
CLEANROOM
CLASS 5

THE UR3
The smallest member of the UR family, the UR3 table-top robot is the perfect choice for light assembly tasks and jobs that call for absolute precision. With 360-degree rotation on all wrist joints and infinite rotation on the end joint, the UR3 is the most flexible, versatile and collaborative robot on the market today.

THE UR5
The slightly bigger UR5 is ideal for automating low-weight processing tasks like picking, placing and testing. The medium-sized robot arm is easy to program, fast to set up and, just like the other collaborative members of the UR family, offers one of the fastest payback times in the industry.

THE UR10
While the largest robot arm in the UR family and the one with the most muscle power, the UR10 does not compromise on precision. The collaborative robot arm will automate heavier-weight process tasks with payload requirements of up to 10 kg.

Thanks to the reach radius of 1300 mm the UR10 robot arm is especially suitable for e.g. packaging, palletizing, assembly and pick and place where the distance between the different operating areas is longer.

UR3 IN SHORT
- Automates tasks up to 3 kg (6.6 lbs)
- Reach radius of up to 500 mm (19.7 in)

UR5 IN SHORT
- Automates tasks up to 5 kg (11 lbs)
- Reach radius of up to 850 mm (33.5 in)

UR10 IN SHORT
- Automates tasks up to 10 kg (22 lbs)
- Reach radius of up to 1300 mm (51.2 in)

Automate virtually anything

When we say the UR robot arms can automate virtually anything we mean virtually anything; from assembly to painting, from screw driving to labeling, from packing to polishing, from injection molding to welding and whatever other processing task you can think of. And thanks to the flexibility of the UR family, the robot arms are even economically viable for small-batch and mixed-product assembly.

PACKAGING AND PALLETIZING
Make sure that your deliveries are always correctly counted and packaged to the strictest standards by letting the UR robot arm do the job for you.

SCREW DRIVING
Let a UR robot arm repeat the same movement over and over with exactly the same precision and speed to improve the quality and consistency of your products.

INJECTION MOLDING
The UR robot arm can be used across all areas of plastic and polymer production and can tend presses with never-failing accuracy and consistency.

POLISHING
The UR robot arm sands and polishes even curved and uneven surfaces with adjustable force for a consistent result.

MACHINE TENDING
The UR robot arm can be used to run most machine tending applications autonomously and is quickly adaptable to new products on the production line.

PICK AND PLACE
A UR robot arm can run most pick and place tasks autonomously and in doing so is able to reduce cycle times and material waste.

LAB ANALYSIS
Relieve workers from repetitive work with a UR robot arm to increase objectiveness in your analysis and testing processes.

GLUING, DISPENSING AND WELDING
The UR robot arm can add efficiency to your gluing, dispensing and welding processes, e.g. by constantly dosing and injecting exactly the same quantity of material or by always performing each weld to the highest accuracy.
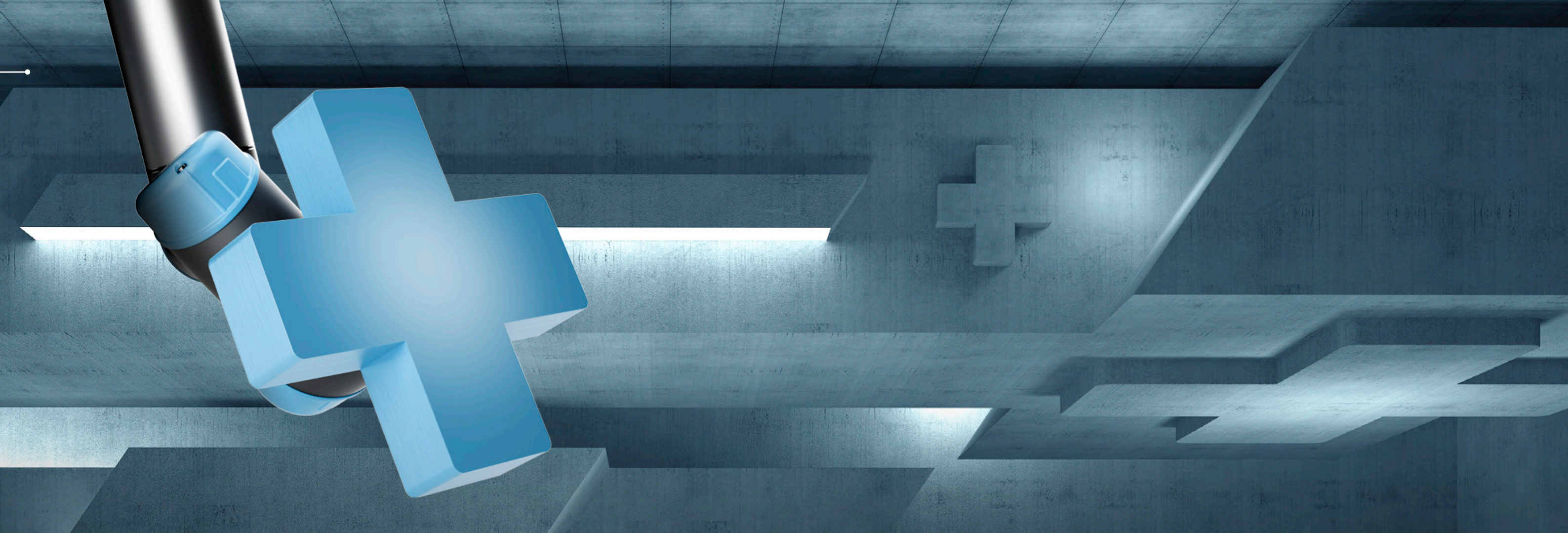
ASSEMBLY
The UR robot arm effortlessly handles assembly of plastics, woods, metals and a range of other materials while improving speed and quality in the process.

QUALITY INSPECTION
A UR robot arm with an inspection camera will identify and pinpoint defective or faulty parts before they are packaged or shipped to maintain high product quality.

Universal Robots +
## – a new shortcut to perfection

On its own a UR arm is just that. An arm. But outfitted right it will work wonders for your business. To make it as easy as possible for your distributor to single out the best end-effectors and accessories and customize the perfect robotic solution for you, we have launched Universal Robots+.

Universal Robots+ is a showroom with Universal Robots-certified end-effectors, software and accessories from some of the world's best developers – designed specifically to work flawlessly with the UR arms. One of the many plusses of the showroom is that it allows the distributors and end-users to find everything they need in one place. Another is that it provides direct support from the people who have developed the caps to the people who build the final robotic solution.

Let yourself be inspired by the multiple plug & play capabilities showcased at universal-robots.com/plus

Visit Universal Robots+ at:
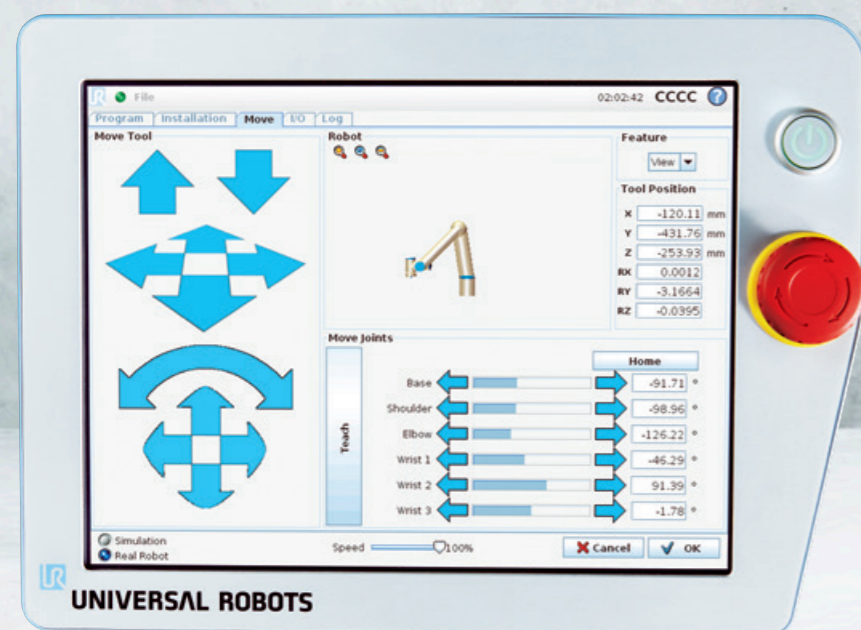**universal-robots.com/plus**
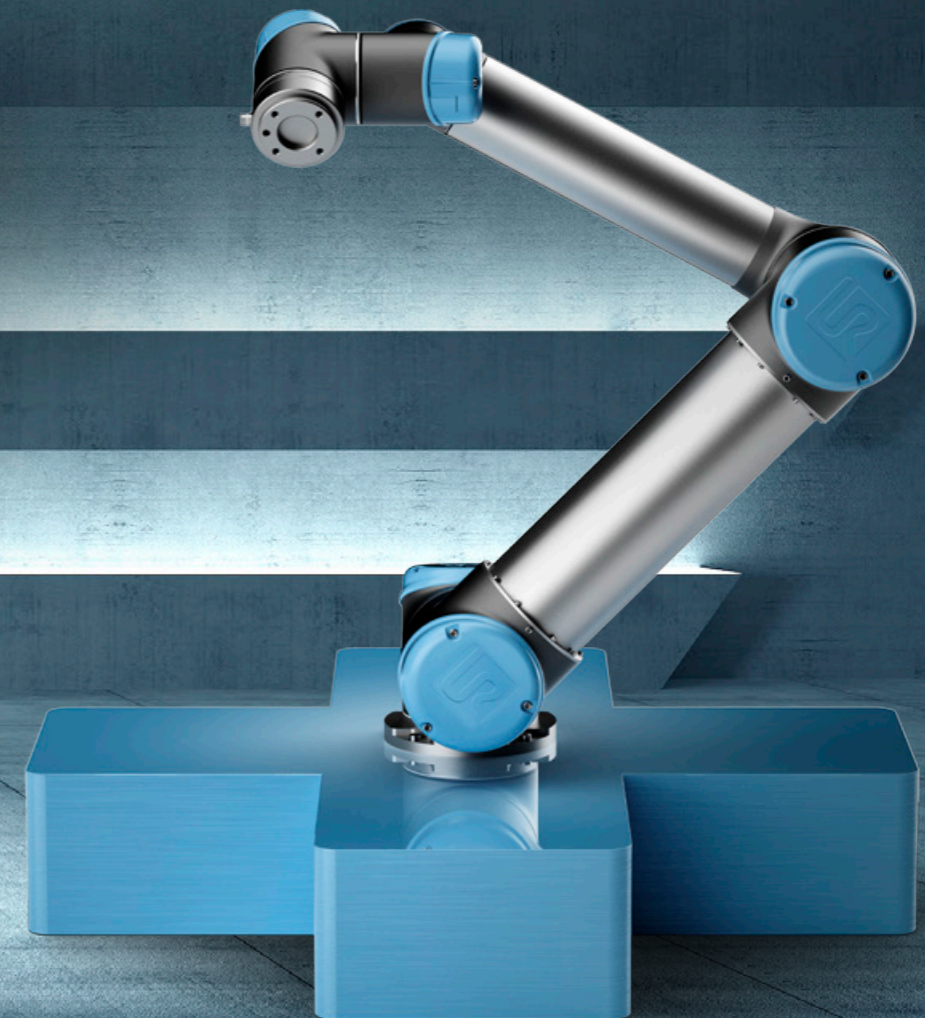
Programming a UR robot arm
is pure child's play

When you choose Universal Robots, intuitive programming is all part of the deal. One of the most tangible benefits is that you can easily re-program the UR robot arms yourself and make use of automation wherever and whenever it best suits you.

The UR robots are designed to mimic the range of motion of a human arm and incidentally all it takes to program and reprogram the robotic arms is a human arm. It doesn't get any easier – and perhaps most importantly it eliminates the need for expensive third-party programmers every time you want to assign the robot arm to a different task.
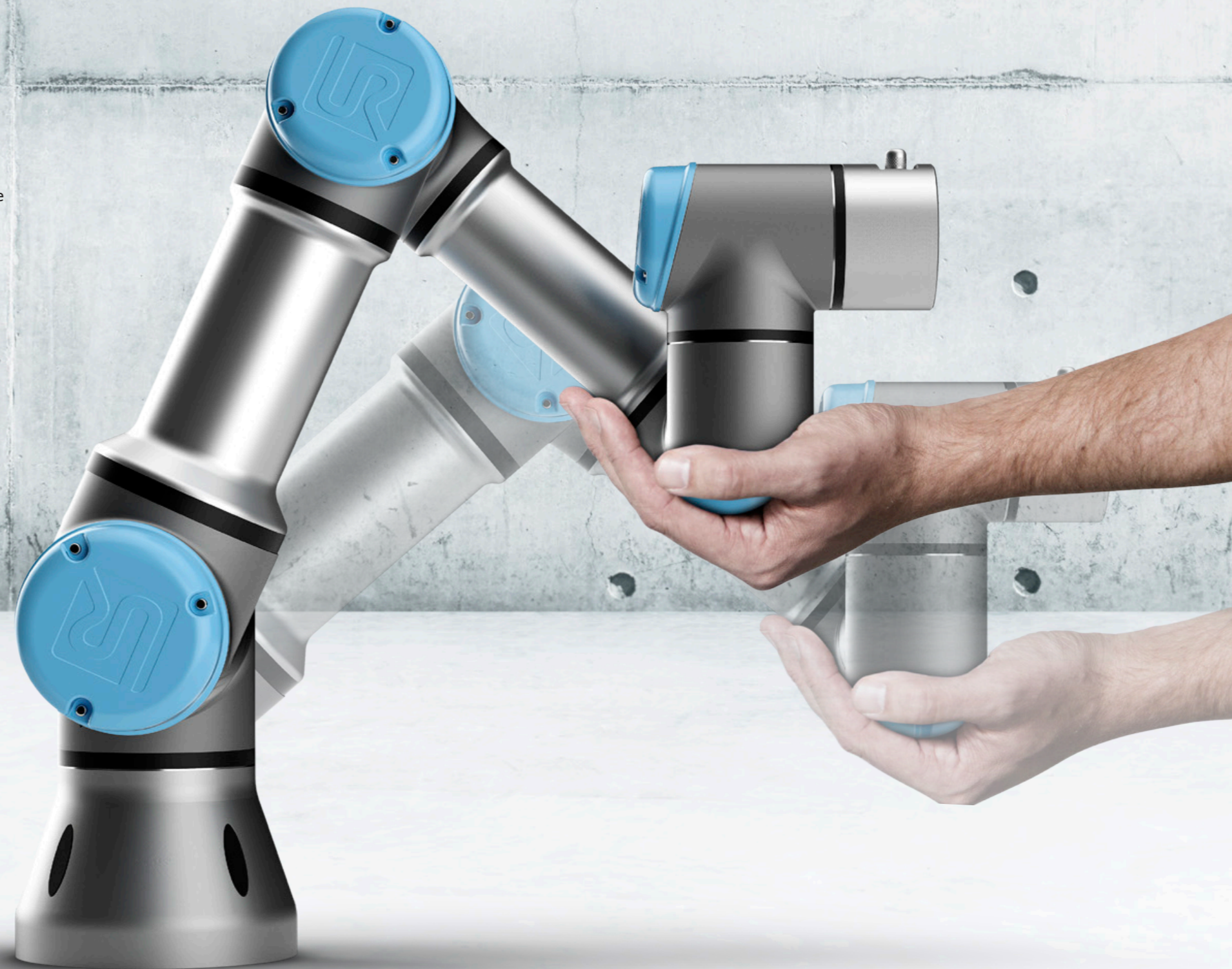
The intuitive software allows even the most inexperienced user to quickly grasp the basics of programming and set waypoints by simply moving the robot into position. And if you have recurring tasks, programs can be stored in the UR robot arm and re-used. It's pure child's play.

UNIVERSAL ROBOTS

Scott Fetzer Electrical Group, USA

At Scott Fetzer Electrical Group in Tennessee, USA, collaborative robots have optimized production by 20%, taking over monotonous and potentially hazardous tasks from employees now relocated to more rewarding jobs. The key to that entailed a creative approach to applying robot technology: Putting the robots on wheels.

"One of our biggest challenges is that we're a high mix-low volume producer. Most of our lines don't run all the time, so trying to find a way to put robots on the line in the traditional sense was a very big challenge," says Matthew Bush, Director of Operations at Scott Fetzer Electronic Group. "The UR robot was the only robot we thought could do the job. It's got the speed and precision of a standard industrial robot with the ability to move around and work next to humans."

A mobile fleet of UR robots is now deployed flexibly throughout the sheet metal department, integrating them in the entire production cycle from cutting the initial blank on the blanking press to forming, folding and final assembly of the electrical components.

Read the case in full at:
universal-robots.com/case-stories

Technical details

	UR3		**UR5**		**UR10**	
Performance						
Repeatability	±0.1 mm / ±0.0039 in (4 mils)		±0.1 mm / ±0.0039 in (4 mils)		±0.1 mm / ±0.0039 in (4 mils)	
Temperature range	0-50° *		0-50°		0-50°	
Power consumption	Min 90W, Typical 125W, Max 250W		Min 90W, Typical 150W, Max 325W		Min 90W, Typical 250W, Max 500W	
Collaboration operation	15 advanced adjustable safety functions. TüV NORD Approved Safety Function Tested in accordance with: EN ISO 13849:2008 PL d		15 advanced adjustable safety functions. TüV NORD Approved Safety Function Tested in accordance with: EN ISO 13849:2008 PL d		15 advanced adjustable safety functions. TüV NORD Approved Safety Function Tested in accordance with: EN ISO 13849:2008 PL d	
Specification						
Payload	3 kg / 6.6 lbs		5 kg / 11 lbs		10 kg /22 lbs	
Reach	500 mm / 19.7 in		850 mm / 33.5 in		1300 mm / 51.2 in	
Degrees of freedom	6 rotating joints		6 rotating joints		6 rotating joints	
Programming	Polyscope graphical user interface on 12 inch touchscreen with mounting		Polyscope graphical user interface on 12 inch touchscreen with mounting		Polyscope graphical user interface on 12 inch touchscreen with mounting	
Movement						
Axis movement robot arm	Working range	Maximum speed	Working range	Maximum speed	Working range	Maximum speed
Base	± 360°	± 180°/Sec.	± 360°	± 180°/Sec.	± 360°	± 120°/Sec.
Shoulder	± 360°	± 180°/Sec.	± 360°	± 180°/Sec.	± 360°	± 120°/Sec.
Elbow	± 360°	± 180°/Sec.	± 360°	± 180°/Sec.	± 360°	± 180°/Sec.
Wrist 1	± 360°	± 360°/Sec.	± 360°	± 180°/Sec.	± 360°	± 180°/Sec.
Wrist 2	± 360°	± 360°/Sec.	± 360°	± 180°/Sec.	± 360°	± 180°/Sec.
Wrist 3	Infinite	± 360°/Sec.	± 360°	± 180°/Sec.	± 360°	± 180°/Sec.
Typical tool		1 m/Sec. / 39.4 in/Sec.		1 m/Sec. / 39.4 in/Sec.		1 m/Sec. / 39.4 in/Sec.
Features						
IP classification	IP64		IP54		IP54	
ISO Class Cleanroom	5		5		5	
Noise	<65dB(A)		Comparatively noiseless		Comparatively noiseless	
Robot mounting	Any		Any		Any	
I/O ports	Digital in	2	Digital in	2	Digital in	2
	Digital out	2	Digital out	2	Digital out	2
	Analog in	2	Analog in	2	Analog in	2
	Analog out	0	Analog out	0	Analog out	0
I/O power supply in tool	12 V/24 V 600 mA in tool		12 V/24 V 600 mA in tool		12 V/24 V 600 mA in tool	
Physical						
Footprint	Ø128mm		Ø149mm		Ø190mm	
Materials	Aluminium, PP plastics		Aluminium, PP plastics		Aluminium, PP plastics	
Tool connector type	M8		M8		M8	
Cable length robot arm	6 m / 236 in		6 m / 236 in		6 m / 236 in	
Weight with cable	11 kg /24.3 lbs		18,4 kg / 40.6 lbs		28,9 kg / 63.7 lbs	

* The robot can work in a temperature range of 0-50°C. At high continuous joint speed, ambient temperature is reduced.

CONTROL BOX

| **Features**		
IP classification	IP20	
ISO Class Cleanroom	6	
Noise	<65dB(A)	
I/O ports	Digital in	16
	Digital out	16
	Analog in	2
	Analog out	2
I/O power supply	24V 2A	
Communication	TCP/IP 100Mbit, Modbus TCP, Profinet, EthernetIP	
Power source	100-240 VAC, 50-60 Hz	
Physical		
Control box size (WxHxD)	475mm x 423mm x 268mm / 18.7 x 16.7 x 10.6 in	
Weight	UR3, UR5	15 kg / 33,1 lbs
	UR10	17 kg / 37,5 lbs
Materials	Steel	

TEACH PENDANT

Features	
IP classification	IP20
Physical	
Materials	Aluminium, PP
Weight	1,5 kg / 3.3 lbs
Cable length	4,5 m / 177 in

A COMPLETE RANGE OF COLLABORATIVE ROBOTS
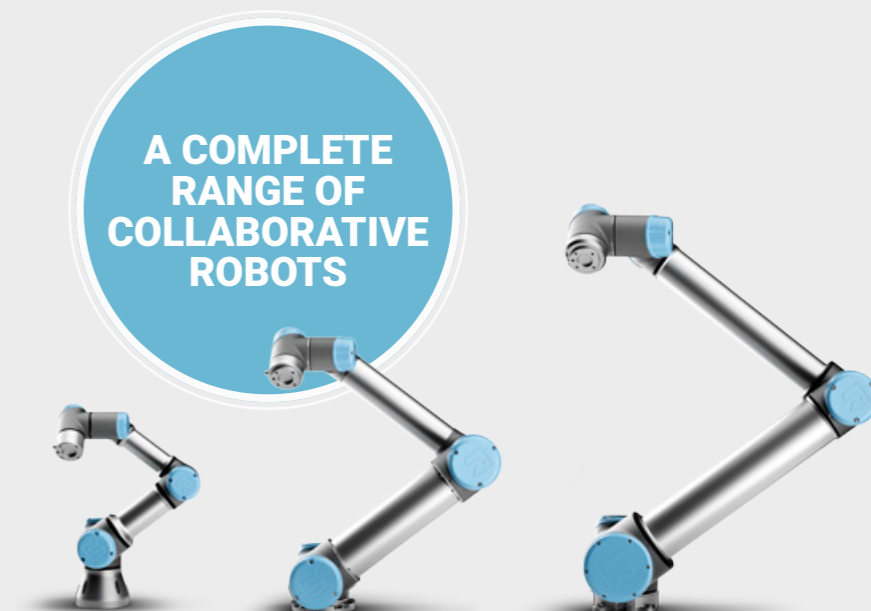
Contact your local distributor

All UR robot arms are sold worldwide through authorized distribution partners who have the knowhow to customize the automation solution that perfectly suits the requirements in your production.

Find the distribution partner closest to you at **universal-robots.com/distributors**. Simply locate your continent and you will get a list of distributors in your corner of the world.

Local distributor:

Great Lakes Office:
Universal Robots USA, Inc.
5430 Data Court, Suite 300
Ann Arbor, Michigan 48108
United States
Phone: +1 734 249 6016

East Coast Office:
Universal Robots USA, Inc.
11 Technology Drive
East Setauket, New York 11733
United States
Phone: +1 631 610 9664

West Coast Office:
Universal Robots USA, Inc.
101 Pacifica, Suite 350
Irvine, California 92618
United States
Phone: +1 949 236 6082

South Central US – LATAM Office:
Universal Robots USA, Inc.
Tower 909 Building, 909 Lake Carolyn Parkway, Suite 1850
Irving, Texas 75039
United States
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