

Using UR cobots in industrial assembly work



In industry, manual assembly work is almost always repetitive and dull. Cobots from Universal Robots are designed to help deal with this via the consistent speed and accurate repeatability essential in every manufacturing and assembly setup.

Maximum safety

UR cobots are lightweight units with a very small footprint, making it easy to find the best place for them on the assembly line.

They are also designed to operate safely when close to humans, featuring built-in safety functions that automatically limit the force applied if they come into contact with people or objects. This makes these cobots ideal for all the more dangerous, dirty and awkward tasks in industrial assembly processes. 80% of all UR cobots operate without safety guarding (subject to application risk assessment)

Easy to integrate

An intuitive software interface makes it easy for operators to transfer their process expertise to the built-in software. Operators don't need programming skills. They only have to move the robot arm into the right position, and all the assembly positions and operations are saved into program waypoints. Operators can then adjust and alter the assembly process by themselves whenever needed.

Compatibility counts

Almost any tool can be mechanically and electrically attached to the cobot for automated use, thanks to full compliance with the ISO 9409-1-50-4-M6 standard. Digital or analog signals pass through the tool connector (2DI, 2DO, 2AI, plus new UART serial interface only in e-Series) or through the integrated I/O interface in the controller (16DI, 16 DO, 2AI, 2AO).

Business benefits

- Achieve faster assembly, greater output and better quality
- Make assembly operations close to heavy machinery safer
- Use with virtually any materials
- Re-deploy easily as prompt response to changing requirements
- Free up employees for higher-value work

Advantages

- TÜV Nord-certified safety system (EN ISO 13849-1:2008 PL d, + full cat3 in e-Series)
- Very small footprint (128 mm, 149 mm or 190 mm diameter)
- High pose repeatability (UR3e and UR5e: ± 0.03 mm, UR10e: ± 0.05 mm)
- Standard mechanical and electrical interfaces built in
- Easy to install anywhere – can operate without a cage (subject to risk assessments) even in space-constrained areas

Contact

Want to find out more about how cobot-assisted process work can help your business?

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Cobot-assisted assembly in your industry

Companies in a wide range of industries use cobots from Universal Robots in assembly work of many different kinds. Those listed below are especially common. If you don't see your industry included, contact us to find out how a UR cobot can help with your particular business operations.

Automotive manufacturing

- Easily automate tasks not even thinkable with traditional industrial robotics
- Boost manufacturing flexibility – set-up time is normally only half a day
- Faster assembly, greater output
- Lightweight, space-saving and easy to re-deploy to different assembly assignments
- Works within narrow spaces and helps prevent production errors

Electronics and technology

- Ideal for assembly work at all stages of electronics production
- Ideal for assembly work on electronic products of all kinds
- Lightweight, space-saving and easy to re-deploy to new uses without altering production layouts
- Safer for employees working close to dangerous machinery

Molding

- Ideal for all areas of plastic and polymer production, including de-gating, PCB loading/unloading, and pick & place assignments
- Reduce employee exposure to noxious gases
- Enhance safety by protecting assembly line workers from contact with plastic shavings and sharp objects
- Increase production capacity, while reducing repetitive assembly work for employees
- Lightweight, space-saving and easy to re-deploy to new uses without altering production layouts.

CASE Lear Corporation
Country Germany
Cobot UR5



Result

Completes about 8,500 drilling actions on car seats every day. Any worker can program the robot by simply grabbing the arm and leading it through the desired movement.

See the video:

universal-robots.com/case-stories/lear

CASE RUPES
Country Italy
Cobot UR3



Result

RUPES achieved its commitment to "zero defects" products, using precise positioning and force control to ensure full compliance with specifications. This relieves the workforce of heavy, repetitive tasks, and frees up human workers for more rewarding duties.

See the video:

universal-robots.com/case-stories/rupes

CASE TCI New Zealand
Country New Zealand
Cobot UR3 and UR5



Result

The new setup provides better quality assurance, enabling staff to focus on less monotonous tasks. Production proceeds 24/7 with no need to worry about things that might cause stoppages.

See the video:

universal-robots.com/case-stories/tci-new-zealand



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