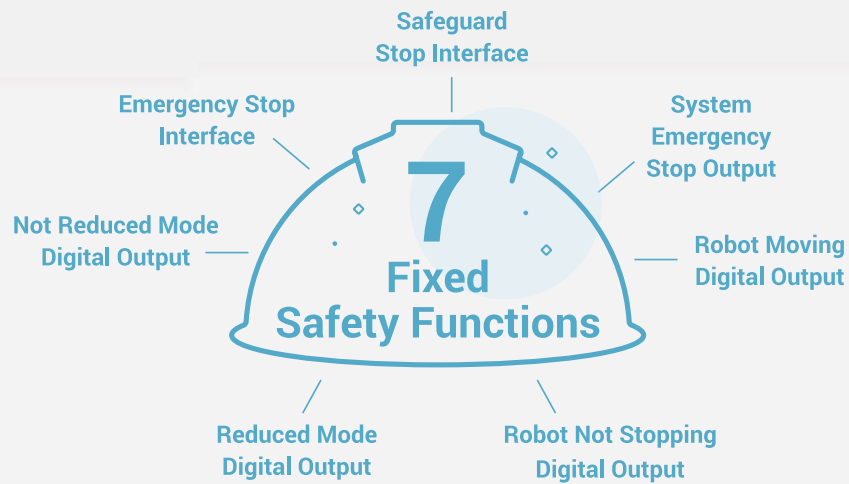


Cobots: 5 Myths Debunked

Myth #1

Cobots are dangerous!

Cobots are not dangerous. They have built-in safety functions that permit them to work safely side-by-side with people. Cobots do not need to be caged up behind protective fencing (subject to risk assessment).

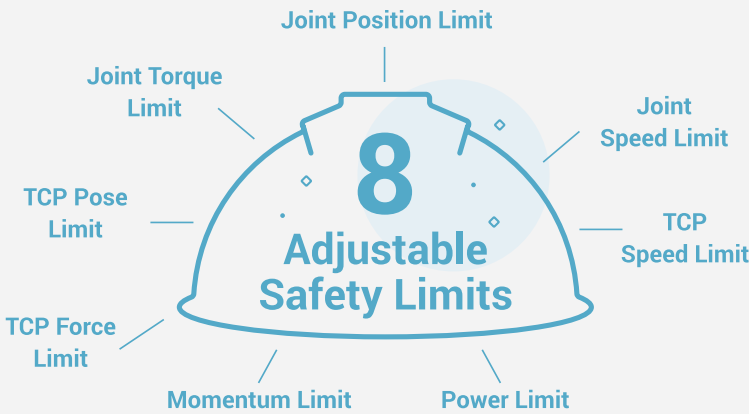


ISO 13849

The safety system is certified by TÜV Nord to Performance level D, resulting in an extremely reliable system

ISO 15066

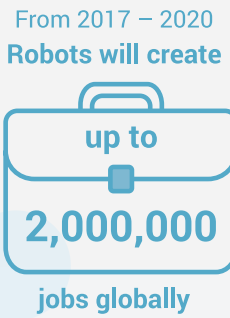
Universal Robots' cobots meet the guidelines set out in ISO/TS 15066 which help integrators assess risks and requirements during installation



Myth #2

Robots replace jobs.

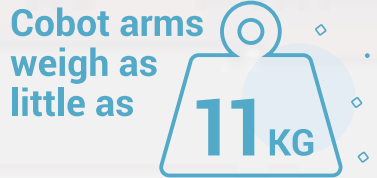
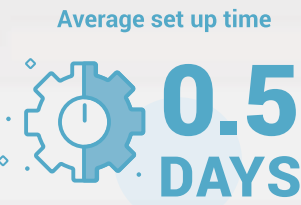
Robots create jobs — better jobs. They relieve workers from strenuous and repetitive tasks so that workers can take on new roles. Ultimately, human dexterity, critical thinking, decision making and creativity cannot be replaced by machines.



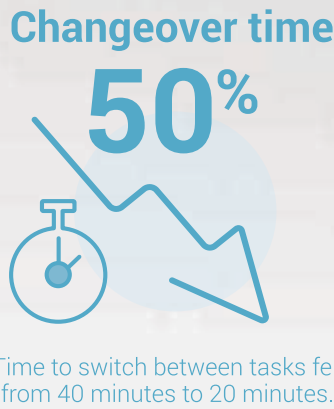
Myth #3

It's a hassle to implement and maintain robots

Cobots are easy to implement, operate and upkeep. Being compact and lightweight, there is no need to change production layout when switching the cobot between tasks. They are easily programmed or re-deployed, and require minimal maintenance.



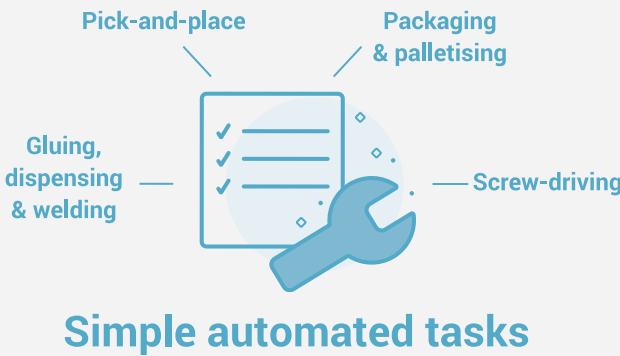
At Continental Automotive IN SPAIN
A producer of car instrument panels, deployed UR10 cobots to handle PCB boards and components.



Myth #4

Robotics automation is for complex, large-scale operations

Regardless of the scale of output cobots can be deployed for simple processes that are repetitive, manual, or potentially strenuous for workers.



Myth #5

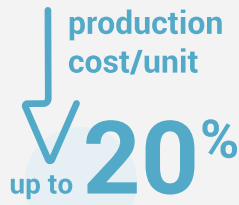
Robots are costly!

Cobots are cost effective. Installation requires minimal investment as they do not require major infrastructural changes. They can be redeployed to different functions in the production line, and used around the clock.

Average payback period as short as



At Multi Wing in CZECH REPUBLIC
A manufacturer of axial fan solutions, installed a UR5 robot to its production line reducing



Sources

Collaborative Robots VS Traditional Industrial Robots: <https://www.robotics.org/userAssets/riaUploads/file/6-Pat.pdf> • <https://www.universal-robots.com/products/ur-robot-benefits/> • <https://www.universal-robots.com/case-stories/continental/> • http://usa.chinadaily.com.cn/2017-04/07/content_29035397.htm • <http://www.packagingdigest.com/robotics/what-are-collaborative-robots-and-why-should-you-care1505> • <https://www.universal-robots.com/products/ur-robot-benefits/>

Benefits of Collaborative Robots: Rise Of The Cobot (Market Analysis And Forecast) – Four By Three • <https://www.universal-robots.com/media/1528658/tuv-nord-certificate.pdf> • <https://www.universal-robots.com/products/ur-robot-benefits/> • Meet The Cobots: Humans And Robots Together On The Factory Floor – Financial Times • Working Days Lost – Health and Safety Executive • <https://www.universal-robots.com/products/ur-robot-benefits/> • How Human-Robot Teamwork Will Upend Manufacturing – MIT Technology Review • <https://www.universal-robots.com/case-stories/atia/> • <https://www.universal-robots.com/case-stories/aurorab/> • <https://www.universal-robots.com/case-stories/atia/>

Cobots – 5 Myths Debunked: <https://www.universal-robots.com/media/1528658/tuv-nord-certificate.pdf> • <https://www.universal-robots.com/media/1528658/tuv-nord-certificate.pdf> • <https://www.universal-robots.com/about-universal-robots/news-centre/universal-robots-welcomes-the-new-technical-specification-on-collaborative-robot-design/> • Positive Impact of Industrial Robots on Employment – International Federation of Robotics • A Future That Works: Automation, Employment And Productivity – McKinsey Global Institute • The Impact of Robots on Productivity, Employment and Jobs – International Federation of Robotics • The Talent Challenge: Harnessing The Power Of Human Skills In The Machine Age – PricewaterhouseCoopers • <https://www.universal-robots.com/products/ur-robot-benefits/> • <https://www.universal-robots.com/case-stories/continental/> • <https://www.universal-robots.com/applications/> • <https://www.universal-robots.com/case-stories/bj-gear/> • <https://www.universal-robots.com/case-stories/multi-wing/>

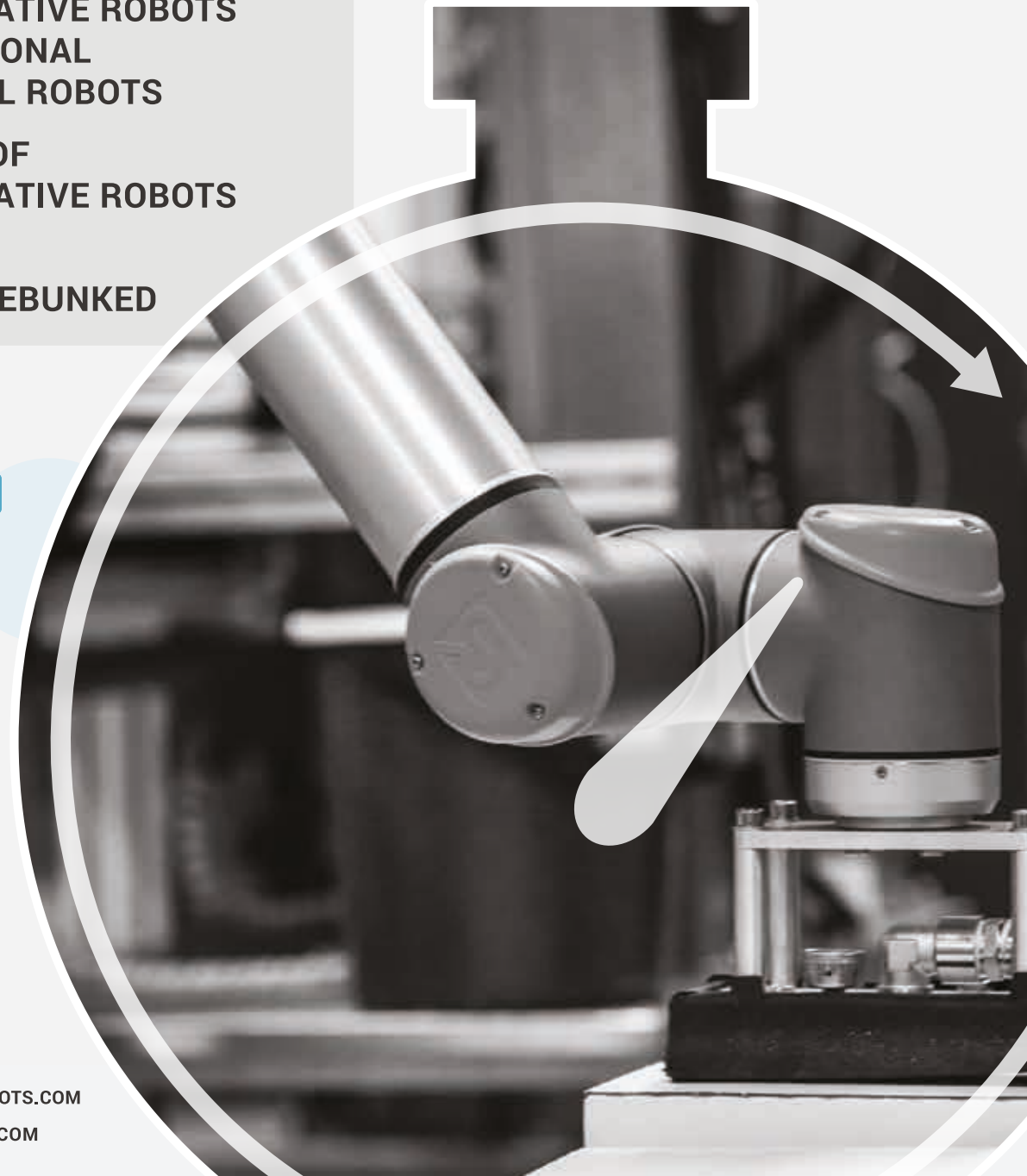
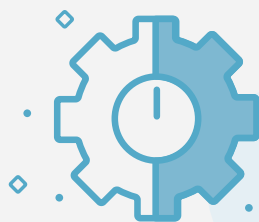


UNIVERSAL ROBOTS

FACTS

YOU NEED TO KNOW

- COLLABORATIVE ROBOTS VS TRADITIONAL INDUSTRIAL ROBOTS
- BENEFITS OF COLLABORATIVE ROBOTS
- COBOTS: 5 MYTHS DEBUNKED



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Collaborative Robots



Traditional Industrial Robots



VS

Collaborative robots (cobots) — robots that work alongside people — and traditional industrial robots differ in many ways. Here are the key differences that make cobots the game-changer in robotics.

DESIGN

SIZE
Compact

SIZE
Bulky

SPACE
Work within limited space

SPACE
Huge space requirements

USAGE
Easily relocated & modular
• Adaptable to different deployments

USAGE
Fixed Installations

WEIGHT
Lightweight
• 40% lighter than smaller traditional industrial robots

WEIGHT
Heavy
• Typically at least 50kg

SAFETY

SAFETY BARRIERS
Built-in safety barriers

SAFETY BARRIERS
Physical safety barriers required

SENSORS
Senses external forces
• Automatically stops when an obstruction is detected

SENSORS
No in-built force sensors
• Dangerous for humans to work in close proximity

USAGE

PROGRAMMING
Anyone can be trained

PROGRAMMING
Programming expertise needed

SETUP
Fast setup
• Average setup time 0.5 days

SETUP
Difficult to setup
• With additional costs

VERSATILITY
Flexible deployment
• Good for high-mix low-volume productions

VERSATILITY
Installed for a single purpose

Benefits of Collaborative Robots

Collaborative robots (cobots) — robots that work alongside people — will soon drive the automation market as their features can greatly benefit work processes/output and people.



Global sales of cobots are expected to reach **\$12 billion**

PRODUCTIVITY

15
Safety Functions

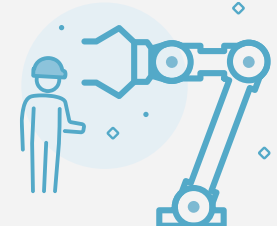
07 + 08

Fixed Functions
as well as emergency and safeguard stopping mechanisms

Adjustable Limits
for joint positions and speeds, tool centre point positions as well as orientation, speed, force, momentum and power of the robot.

Average Set Up Time

0.5 DAYS



Human-robot collaboration is **85% MORE PRODUCTIVE** than humans or robots working independently

PROFITABILITY

AT Atria IN SWEDEN
A food manufacturing company re-programmed UR cobots to switch between packaging two different products.

Downtime 94%
Due to task changeovers

Time taken to switch between packaging two products was reduced from 6 hours to 20 minutes.

Product Output

15%

while ensuring consistent product quality

AT AUROLAB IN INDIA
A manufacturer of lenses added UR cobots to its production to handle delicate material.

EMPLOYMENT

85%

Reduces staff idle time over

Over **8 million** work days lost

to workplace injuries caused by musculoskeletal disorders in the UK between 2015 and 2016.

REDUCE ERRORS



IN Atria **Material Wastage 25%**

Thus, optimising material usage during food packaging.