



APPLIED AUTOMATION

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Collaborative Robots

- Industry 4.0
- The robotics market
- What are 'cobots'?
- Benefits
- Applications
- Safety
- Replacing humans?



Industry 4.0 & Cobots

The digitisation of manufacturing

- Human / machine interaction
- Hybrid factories (humans / robots / cobots)
- Flexible production & processes
- Interconnection

The robotics market

- Cobots = a game changer
- Fastest growing sector of robotics
- Expected to increase tenfold to \$1 billion by 2020
- Universal Robots is the market leader

What are 'cobots'?

- A new class of robots
- Robots that can work alongside human employees
- No need for safety guarding
- Automate virtually anything



Benefits

- Simple to programme
- Easy to use interface
- Flexible deployment
- Quick ROI
- Lightweight & space saving
- Improve productivity, quality, efficiency
- Making automation accessible
- Automate new processes



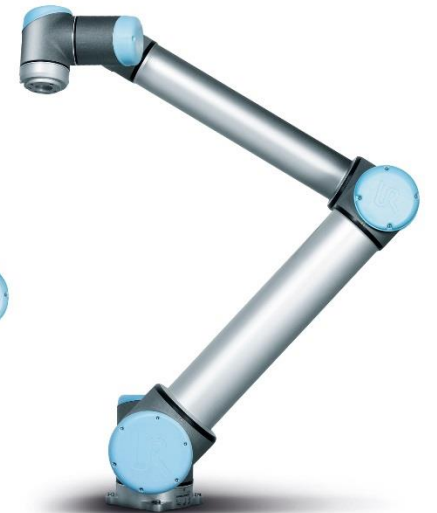
UNIVERSAL ROBOTS



UR3



UR5



UR10

Applications

- Pick and place
- Injection moulding
- CNC machines
- Packaging and palletizing
- Gluing
- Assembly
- Quality inspection
- Dispensing
- Welding
- Screw driving
- Polishing

Safety

ISO/TS 15066:2016

- Specifies safety requirements for cobots and the work environment
- Supplements requirements and guidance given in ISO 10218-1 and ISO 10218-2

UR cobots safety system certified by TÜV

(German Technical Inspection Association)

Replacing humans?

- ▶ Dangerous, unpleasant and repetitive tasks
- ▶ Retraining / redeploy
- ▶ Changing roles to work with robots
- ▶ Long term

Any questions?

