The new generation of robots: “collaborative robots”

What is a collaborative robot?
Collaborative robots are a new generation of robots which can work hand-in-hand with human beings.

Robot designed for direct cooperation with a human within a defined workspace (DIN EN ISO 10218-2).

Conventional robot versus collaborative robot

Why human-robot cooperation makes sense
» High flexibility thanks to quick and easy application changes
» Easy operation/programming (e.g. teaching)
» More attractive workplaces
» Optimization of costs
» Low space requirements (no safety fence needed)

Robots make life easier for workers
» In the case of monotonous routine activities
» In connection with exhausting, ergonomically unfavourable work
» For precision working
» For hazardous work
» Reduction in absence rates caused by sickness
» Robots allow age-appropriate working

Collaborative robots
» Optimize cycle times
» Reduce retooling time
» Improve productivity
» Enhance efficiency
» Boost reproducibility (quality improvement)
» Reduce or eliminate human errors (quality improvement)

Safety is the top priority
Additional safety functions and systems ensure that employees remain safe.
» Continuous monitoring by proximity and contact sensors
» Immediate stopping of robot on or before contact with worker
» Elimination and minimization of possible squeeze and pinch points
» Certification to applicable codes and standards

Applications and fields of use
Collaborative robots are used in a large number of applications in a wide variety of fields and industries, for example in production, packaging, logistics and warehousing, quality control, etc.

The tasks performed by robots include
» Pick & place
» Part handling
» Sorting, palletizing
» Machine charging
» Order picking and packing
» Adhesive and sealant application
» Assembly and dismantling
» Measurement, inspection and testing
» Machining
» Bolting
» …

Answers to Automation.
Challenges of the 21st century

Globalization is forcing the pace of technological development. Plants need to be changed over to Industry 4.0; growing individualization and a wider variety of variants are becoming increasingly important. Product life cycles are being reduced. At the same time, as a result of demographic change and other factors, specialists are becoming increasingly scarce and wages are rising. This means that companies need to master a variety of challenges.

Why is PA Solutions the best choice?

PA Solutions has 20 years of experience in the field of robotics and works together with the leading robot manufacturers. As a holistic service provider in the field of automation, the company offers its customers manufacturer-independent advice. Our international orientation means that we can provide our specialist expertise on site to customers throughout the world.

PA Solutions service and product range

- Project implementation as general contractor
- Manufacturer-independent advice
- Planning and conceptual design
- Proof of concept (feasibility study)
  - Profitability analysis
  - Unit time/cycle time analysis
- Engineering (process design/process simulation)
  - Mechanical design
  - Electrical design
  - Simulation
  - Programming (online/offline)
  - Risk assessment/CE marking
  - Technical documentation
- Supply and integration of collaborative robot systems
  - Robots, grippers, camera systems, additional components
  - Integration in company IT
- Commissioning and training
- Technical support

Summary

Collaborative robots do not replace conventional robots but make automation solutions more flexible and increase the range of applications for robots.

Collaborative robots can combine the advantages of human beings and robots, i.e. the flexibility of a human being with the endurance, precision and speed of a robot, making for more economical production.

This approach safeguards competitiveness or secures a competitive advantage, making it unnecessary to outsource or relocate work to less expensive countries.

Your contacts

We will gladly be at your disposal for a personal consultation about details of our services in the field of collaborative robots.

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