

## ROBOTS AND COBOTS



*Location: FlandersMake@VUB | Flanders Make - Lommel | Flanders Make - Leuven*

## DESCRIPTION

Our extensive range of robots, collaborative robots and robotic arms facilitates testing of automation and human-robot collaboration solutions. We help companies to identify the optimal robotic application for their specific assembly challenge and develop proof-of-concept implementations using our robots and cobots.

Below you can find all available robots and cobots.

## TECHNICAL SPECIFICATIONS

### ABB YUMI COBOT

- 2-arm cobot for assembly & handling of small electronic parts

### KUKA IIWA COBOT

- Cobot for handling payloads up to 14kg
- Including a 3-finger adaptive gripper
- Mobile KRM platform

## FRANKA PANDA COBOT

- Single-arm cobot for improving working conditions of operators by providing physical support, thus reducing the risk of workplace injuries and facilitating the workload.

### Specific software:

#### 1. Task allocation software

We developed a framework for task allocation of human-robot assembly applications. Ergonomics are integrated by measuring the physical load during the assembly tasks while evaluating the human body posture using the Rapid Entire Body Assessment (REBA) method.

#### 2. Ergonomic cooperation software

The cobot is adapted to the worker's characteristics like height, possible injuries, right- or lefthandedness and other preferences. The system continuously monitors the operator and adapts the cobot's pose to guarantee an optimal posture of the operator, depending on the workpiece, tools and task that needs to be performed.

#### 3. Programming-by-demonstration software

Using this tool, an operator can program a robot by simply showing it what to do. By combining this with 'reinforcement learning' principles, an active learning method is reached whereby the human-cobot relation becomes similar to a teacher-student relation. As such, industrial cobot programming tasks are made much easier and less costly.

Max. reach (max)	800 mm
Body weight	18.5 kg
Degrees of freedom	7°
Max. payload (including end effector)	3 kg
Max. gripping torque	-

## BAXTER COBOT

- Dual-arm cobot for improving working conditions of operators by providing physical support, thus reducing the risk of workplace injuries and facilitating the workload.

### Specific software:

#### 1. Task allocation software

We developed a framework for task allocation of human-robot assembly

applications. Ergonomics are integrated by measuring the physical load during the assembly tasks while evaluating the human body posture using the Rapid Entire Body Assessment (REBA) method.

## 2. Ergonomic cooperation software

The cobot is adapted to the worker's characteristics like height, possible injuries, right- or lefthandedness and other preferences. The system continuously monitors the operator and adapts the cobot's pose to guarantee an optimal posture of the operator, depending on the workpiece, tools and task that needs to be performed.

## 3. Programming-by-demonstration software

Using this tool, an operator can program a robot by simply showing it what to do. By combining this with 'reinforcement learning' principles, an active learning method is reached whereby the human-cobot relation becomes similar to a teacher-student relation. As such, industrial cobot programming tasks are made much easier and less costly.

Max. reach (max)	1210 mm
Body weight	75 kg without pedestal 139 kg with pedestal
Degrees of freedom	14° (7° per arm)
Max. payload (including end effector)	2.2 kg
Max. gripping torque	4.4 kg

## OUR OFFER

- **Feasibility studies** for the integration of a cobot in your company.
- **Design of cobot cells** with digital work-instruction and monitoring.
- **Optimisation of task scheduling** between robots, cobots and operators.
- Design and implementation of userfriendly and intuitive **robot interfaces**.

## INTERESTED?

Contact [info@flandersmake.be](mailto:info@flandersmake.be) for more information.