

Functioning of the HRC demonstrators AUTOMATICA 2016

- Short description -

Subject: Assembly task in the electronics sector
– Relief for delicate work

Integrator

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Assembly description

There is an ABB YuMi with two Co-Act MPG-plus fitted on the pedestal. On the left side, the storage rack for the printed circuit boards is mounted, the deposits for the workpiece holding table are located on the right (5) and in the middle (1).

Description of the program sequence

1. The robot takes a workpiece holding table with the arm on the right side (in the picture) and puts it in the middle.
2. With the arm on the left side, the robot feeds two printed circuit boards onto the supporting components.
3. The fully loaded supporting components are set down with the right arm on the free storage location.
4. This procedure is repeated until all workpiece holding tables are fully loaded.
5. Then, the loaded holding tables are dismantled again in sequence in the middle. The printed circuit boards are put back onto the left storage rack and the empty workpiece holding tables on the right.
Then the cycle begins again (first).

By touching the arm lightly, the robot stops, keeping the workpieces gripped. By touching the robot again, it follows the programmed sequence.

Components used

Robots	ABB YuMi IRB 14000
Flange	Proprietary ABB
Grippers	MPG-plus 040 (incl. 2 micro valves (MV 10)) (0305521)
Sensor system	2x IN 40
Attachment fingers	Standard Components Material: Anodized aluminum, protective coating in Automatica design, integrated lighting (colors: red; blue)
Protection cover	adapted to MPG-plus, in Automatica design, material: PA 12 (reworked)
Adaptation	customer-specific, 1-part. Adapter plate with integrated micro valves between MPG-plus and YuMi, material: PA12

Further technical information

Control assembly	Sequential program via ABB control
Communication	Actuating the gripper via digital signals on the micro valves in the gripper flange
Electrical wiring	Using the robot-side feed-through, wiring of the valves in the protective covering
Electrical interfaces	Printed circuit board in the gripper flange for direct contact on the robot-side pins

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