

Functioning of the HRC demonstrators AUTOMATICA 2016

- Short description -

Subject: Handling task in the automotive sector
– Load support, positioning aid

Integrator

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Assembly description

A Fanuc CR 35iA with a Co-Act EGN fitted is on the pedestal. On one side there is an assembly with a trunk dummy of a vehicle in which the control cabinets of the control unit are also housed. Opposite there are two pedestals with one emergency wheel on each.

Description of the program sequence

1. The robot goes to the first pedestal with the spare wheel and lights up green to show that this is the right workpiece.
 2. Grips the wheel, takes it to the trunk dummy and places it in the trunk.
 3. The robot goes away
 4. After a while it picks up the spare wheel again and puts it back onto the pedestal.
 5. The robot goes to the second pedestal and indicates by means of a red light that this is the wrong workpiece.
- The cycle starts again from the beginning (first).

Upon contact with humans/collision, the robot remains still and the wheel remains safely gripped. By acknowledging the robot by pressing the button in the bottom section of the robot, it continues with its sequence.

Furthermore, the gripper can detect forces and moments on its attachment fingers. For instance it opens its fingers if you press on them even only slightly.

Components used

Robots	FANUC CR 35iA
Flange	ISO 040
Grippers	EGN 160 with special ECM (0306103)
Control unit	ECM for EGN160
Sensor system	FMS force measuring jaws
Attachment fingers	Standard components Material: Steel, protective coating in Automatica design, integrated lighting (colors: red; green; yellow; blue)
Protection cover	adapted to EGN 160, in Automatica design, material: PA 12 (reworked)
Adaptation	customer-specific, 2-part Adapter plate between EGN and FANUC, Material: Anodized aluminum

Further technical information

Control assembly	Sequential program via FANUC control, gripper actuation using laptop and Labview
Communication	ECM interface to Labview, communication between FANUC and Labview via digital I/Os
Electrical wiring	Wiring on the outside of the robot, protected beneath HRC pad
Electrical interfaces	Wire 1: Motor phases + transducer Wire 2: LEDs + FMS on each terminal in the electrical cabinet

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