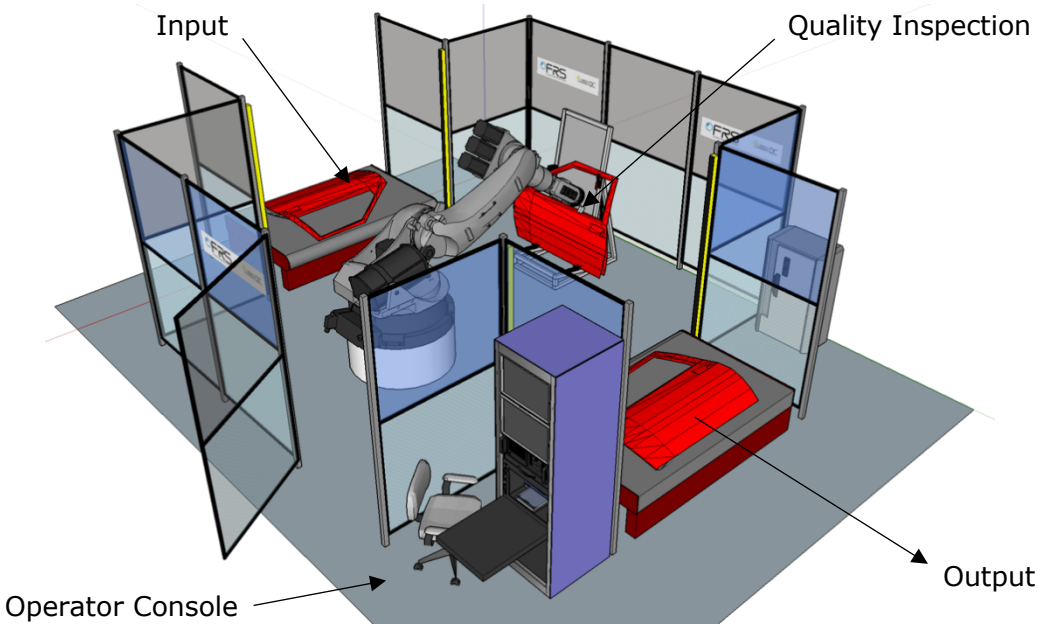
Product Card

URQC – 100

Ultrasonic Robotic Quality Control by Industrial Robot

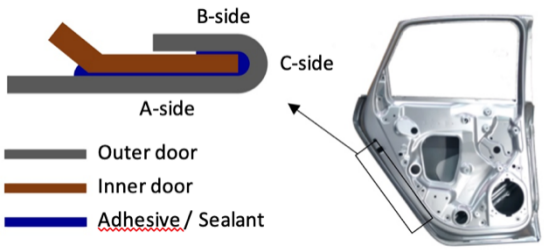
This product is under development

The FRS URQC–100 is a fenced robot cell which automates the highly sensitive ultrasonic measurements performed on serial-produced parts such as 'body in white' closure panels.



This fenced adaptive robot cell speeds up ultrasonic inspection and reduces measurement preparation time thanks to straightforward parts positioning and system calibration.

By combining force control and feedback of the ultrasonic signal, this product revolutionizes today's manual ultrasonic inspection, which is complex, time consuming and error-prone, turning it into an optimal and reliable quality control procedure.



The picture shows the robotic ultrasonic inspection of the fold glue joints of 'body in white' closure panels.

Robot Cell Configuration

- Industrial KUKA 6-axis robot equipped with a real-time (250 Hz) RSI interface,
- KUKA KRC4 Controller
- Computer for the FRS adaptive motion control,
- Ultrasonic sensor (conventional or phased array), ultrasonic signal processing and -display module (Olympus Omniscan MX2 or Focus PX) connected to the computer,
- 6D Force sensor,
- Coupling liquid dispersion module,
- I/O modules; parts fixation module,
- Peripherals including fence and operator console (including Graphical user interface),

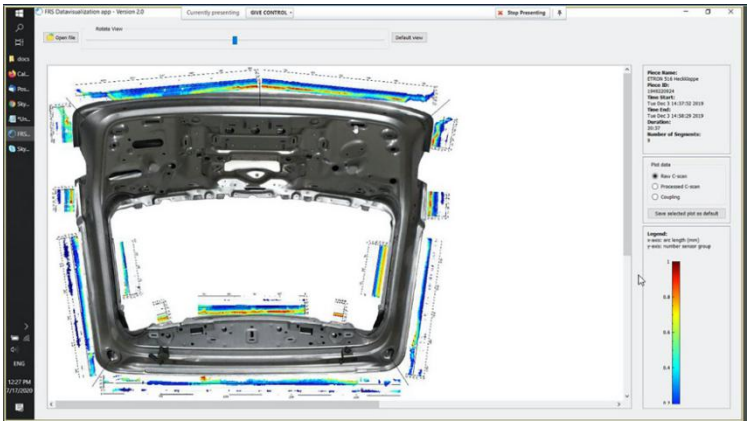
Features

- Inspect parts up to 1800x1400x350mm
- Allows for scanning speeds over 20 mm/s
- Accurately controls the contact forces between sensor and part
- Automatically adapts to inaccuracy in part positioning
- Automatically adapts to variability in part geometry
- Automatically guarantees optimal ultrasonic coupling between sensor and surface
- Automatically creates and logs reports of inspection results
- Guarantees safe operation
- Robustly deals with disturbances during inspection

Real-time control feedback loops continuously adjusts the positioning and orientation of the ultrasonic sensor to ensure a robust and optimal automated measurement. The robot flexibly deals with small variations in parts, surface, position through adaptive control.

Operator Console

- Graphical visualization of inspection results
- Configure inspection parameters



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