

# RoSI

## Robotic Seal Inserter

P/N: 01-03-0003



Nominated for the  
**productronica**  
innovation award 2019

RoSI is designed to insert blind seals and/or hard pins into connectors in a fast, fully automatic and controlled way.

It has a rotating working area with 2 trays where the operator puts the connectors after selecting the production order, i.e. the insertion pattern and quantity.

The workstation rotates the tray inside and the robot automatically picks up the needed insertion tool and the insertion process begins, with the seal feeder shooting the seals to the head of the robot and then into the connector's via.

It can work with up to 4 seal feeders, which allows up to 4 different seals per connector. The entire process is done automatically and at the end a vision system will inspect the insertion process.

The flexibility is total, since the connector trays' are designed for quick replacement and the feeders can be changed completely without complex setups, since the insertion tools are not hard fixed to the robot.

### Applications:

- Blind seal insertion into connectors
- Hard pins insertion into connectors



### Technical Features:

- ▶ 1 loading area with 2 trays (rotating trays), to ensure flexibility and non-stop production;
- ▶ Connectors tray's with quick fix for fast and easy replacement;
- ▶ Insertion time of 0.5 sec/seal. Global cycle time of 1 sec/seal (inc. setup and visual inspection tasks);
- ▶ Up to 4 seals/hard pins automatic feeders, which allow 3 different seals per connector;
- ▶ Possibility to change seal feeders, since the insertion tools are not hard fixed to the robot;
- ▶ Automatic detection of connector's presence and position, using vision system;
- ▶ Vision system to perform final visual inspection, to mark OK and NOK parts;
- ▶ Constant monitoring of vision system;
- ▶ Controlled insertion depth, with constant monitoring of the insertion tool height;
- ▶ New configurations done locally, without the supplier;
- ▶ Selection of references using barcode readers or remotely by KSK servers, via OPC-UA protocol;
- ▶ Export configurations by USB stick or network to other machines;
- ▶ Configuration and maintenance mode password protected;
- ▶ Partial and global connector's counters, including down-counter associated to the production: batch production;
- ▶ Working time counter;
- ▶ Several system's languages, including English, German, Portuguese...
- ▶ Easy upgradeable software, via USB stick or remotely.



#### Flexibility:

- Local setup of new configurations
- Insertion of seals and/or hard pins
- Process of different connectors with quick setup trays



#### Productivity:

- Insertion time of 0.5 sec/pin (1 sec/pin with add. tasks)
- Rotating trays for non-stop production
- Up to 4 seal/hard pins feeders (that can be replaced)



#### Error-Proof:

- Vision system to validate connector's position, compensating any variation and to perform final visual inspection, identifying OK and NOK connectors



#### Connectivity and Traceability:

- Network connection via OPC-UA to KSK servers
- Batch production
- Production reports and dash board analysis
- Interface with touchscreen and barcode



#### Controlled Process:

- Controlled insertion depth, with constant monitoring of the insertion tool height
- Protocol to discard NOK parts
- Calibration of vision system

### Technical Data:

#### Dimensions:

- Length:** 1350 mm
- Width:** 1820 mm
- Height:** 1900 mm
- Weight:** 500 kg

#### Connections:

- Electrical:** 230 VAC @ 50 Hz - 1 IEC standard male socket
- Consumption:** 1.5 kW (peak)
- Air pressure:** 5 to 7 Bar - quick-coupler socket - Ø 8 mm
- Interface:** Touchscreen, barcode, 2x USB, Ethernet and tower light.

### Industry 4.0 Features:

- ▶ Analysis of production data and statistics via dashboard;
- ▶ Remote assistance and troubleshooting;
- ▶ Network connectivity and remote configuration;
- ▶ Saving of KPIs to USB and/or remote location;
- ▶ Automatic and immediate error reporting.

### Options:

#### Connectors Tray (Pair)

P/N: 08-06-0001

#### Feeder Module

P/N: 08-06-0002

#### Insertion Tool

P/N: 08-06-0003