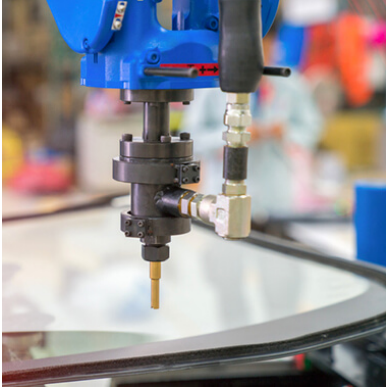


SOLUTIONS | TOOL CHANGER | ACCURATE TOOL CHANGE OPERATION FOR GLUING AND/OR RIVETING



Nowadays the ecological challenges push car manufacturers to find new ways to make their cars more energy efficient. Coupled with the need for increased automation in manufacturing plants to answer economical pressure, this brings new applications that need to be operated by robots. Indeed, new lighter materials such as aluminum or composite materials cannot be assembled with traditional processes such as spot welding. They need to be tightened together with rivet or glue for example.

Those operations require special tooling that needs to be accurately handled and monitored with dedicated sensors in order to ensure repeatability. PES has already implemented tool changing systems for such special operations. Our custom module design and manufacturing capabilities help us to adapt to any kind of equipment that is present on the robot end-of-arm while the cam lock mechanism with integrated wear compensation ensure the accuracy and repeatability that riveting or gluing applications need.

Electrical Features

- Quick connection of motors (power and control)
- Quick connection of Field Buses or discrete I/Os
- Special sensors and inspection camera signals transfer
- Tool presence and docking monitoring
- Tool changer status control and monitoring through discrete I/Os or Fieldbus

Mechanical Features

- Cam lock mechanism with integrated wear compensation
- Tough design for payloads up to 800kg and more
- Custom robot and tool mounting interfaces available

Interesting Options

- Tool coding
- Docking station with a compliant fixture
- Tool protection cover for dusty environments
- Powered docking station to keep electronic devices alive and avoid re-start latency while keeping communication with the tool

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Advantages

- Manual or software unlocking nearly impossible once locked and under safety loop monitoring
- Continuous tool changer status monitoring (air pressure, sensors, etc.)
- Minimal cycle time, reliable and repeatable
- Complete turnkey solution



Benefits

- Enhance robot and production line capabilities
- Mitigate energy consumption (no energy needed for a docked tool)
- Reduce maintenance costs
- Reduce integration costs



Facts & Figures

- With a good integration, tool change can be performed in **less than 5 seconds**
- Cam locking mechanism can outreach **5 millions of operation cycles**
- PES Tool Changing Solution complies with Level-D safety performance level requirements
- PES is a leading supplier of tool changing systems in the automotive industry worldwide for more than 20 years with hundreds of units in operation