DSM Messtechnik GmbH

Flexible automation solutions for first-class assembly processes

ENGLISH

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Your benefit – a robot tightening system for several assembly tasks with different screw geometries

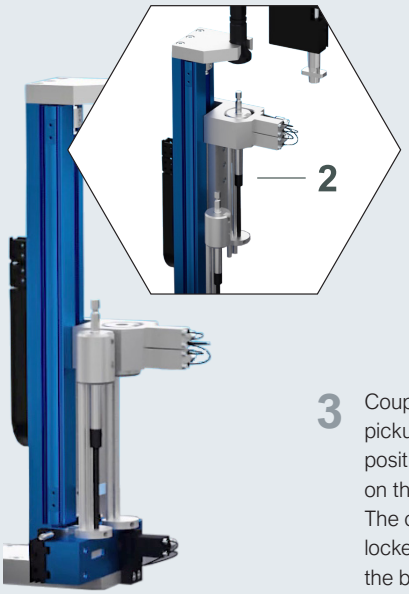
DSM tightening technology in connection with the applications **tightening unit SEL** and **bit changing machine BWA** for robot-controlled process automation.

The tightening unit SEL has a modular design – it consists of the basic module with nutrunner which is adapted to the robot and the coupling module with vacuum mouthpiece. The coupling modules, designed for different screw geometries, can be exchanged without tools and are coupled to the base module and locked pneumatically.

Additionally integrate the BWA bit changer into your line layout and increase the flexibility of the assembly and the possible variants in your station.

The BWA is equipped with a vertical and a horizontal lifting unit and enables the automatic change of the screwdriver bit.
The bit holder modules can be adapted to different bit geometries and are permanently assigned to a tool position.

2 The robot moves the tightening unit to the bit changing machine and places it in the stand-by position.
Robot moves up and disconnects the bit which is then picked up by the bit holder.
The lifting unit moves down and places the bit holder at the assigned tool position.
The horizontal lifting unit moves to the bit suitable for the screw connection; the vertical lifting unit moves downwards and picks up the bit holder moves upwards and the robot couples the bit into the quick-change unit.



3 Coupling modules are in pickup position. The robot positions the basic module on the suitable mouthpiece. The coupling module is locked and connected to the basic module.

4 The vacuum mouthpiece picks up the screw with negative pressure and is placed at the screwdriving point by the robot – the tightening process starts.
The screw is screwed in a few turns, the mouthpiece is lifted from the screw head and the screw is screwed in until the final tightening – this prevents torque distortion due to frictional torque.

1 The robot arm moves to the tool change position and disconnects the coupling module.

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