

SCREWDRIVING
AND FASTENING
SYSTEMS WITH
AUTOMATIC FEEDING

STÖGER
AUTOMATION

CSX

Automatic screwdriver for Human-Robot-Interaction



With its CSX STÖGER AUTOMATION has developed the first screwdriving unit specially designed for human-robot-interaction.

In the design, special attention was paid to eliminating possible risks for the operator. The safety cover of the nose piece, for instance, has been equipped with an automatic switch-off on contact, all edges have been rounded off and the screwdriving unit was completely covered with a rounded, edgeless protective cover.

For screwdriving processes in any position without a holding air current, a fixation device for the fastener has been integrated. Suitable adapters are available for the current robot models. Nuts and other connecting elements can also be fastened with the CSX.



The unit can be equipped with a vacuum module for difficult-to-access screw locations.

THE ADVANTAGES AT A GLANCE:

- + Rounded edges
- + Automatic switch-off when protection sleeve is touched
- + Suitable for robots with a load-bearing capacity > 5 kg
- + Compact design
- + Low weight
- + Automatic feeding of fasteners
- + Open interfaces for drives (electric / pneumatic), free choice of type and manufacturer
- + Interfaces for signal and data exchange
- + Analogue displacement-measuring system
- + High availability
- + Quick bit change without special tools

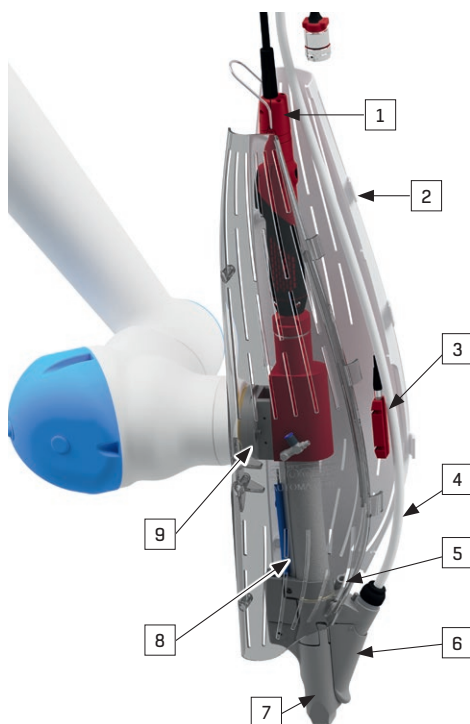
Technical data

CSX	
Screw size	M2 – M8*
Nut size	M2 – M8*
Weight (without drive)	approx. 3.5 kg
Torque	up to 16 Nm
Pressing force tool stroke	10-70 N
Noise level measurement	approx. 50 dbA
Cycle time	from 0.8 sec.
Vacuum version	yes
Bit change	downward, < 10 sec.
Length (with drive):	approx. 780 mm

* standard, further sizes on demand

Modules

CSX



- 1 Drive
- 2 Flexible protective cover
- 3 Screw loading control
- 4 Feed hose
- 5 Vacuum connection (optional)
- 6 Feeding arm with safety cover
- 7 Nose piece, rounded off, with safety shutdown
- 8 Depth sensor
- 9 Robot flange



EN ISO 10218-1:2011 Safety requirements for industrial robots describes the types of collaborative applications:

1. Safety-related, monitored stop: When a human enters the collaboration room, the robot stops until the human has left the shared workspace.

2. Hand guidance: The movements and forces that the worker exerts on the robot are controlled by the worker using sensors, e.g. a three-point circuit, and converted into a robot movement.

3. Speed and distance monitoring: the distance between man and robot is constantly monitored. If the distance falls below the prescribed value, the speed of the robot is reduced up to the safety stop.

4. Constructive or controlled power and force limitation: The contact forces between employee and robot can be technically limited to a safe level by setting parameters.

CAD data available on www.stoeger.com/en/downloads.html under file "automatic screwdrivers"

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