

1. Description

The electric clamp is a high-performance tool, which is designed for clamping tasks in sheet metal processing. It comprises an aluminium housing with fastening possibilities on all sides, a 24 V direct current motor with driving axle, adapted coupling, and a clamp arm with holding fixture for a contour piece.

During the clamping process, the motor-driven trapezoidal threaded spindle acts on an integrated toggle joint that starts the swivelling movement of the clamp arm. After the motor has been switched off, the upper clamping situation is ensured by the self-locking function of the trapezoidal threaded spindle drive. The self-locking function of the threaded spindle ensures the save positioning also in the open position. The position of the clamp arm is controlled via sensing elements integrated in the housing.

Attention! The electric clamp may only be operated in connection with a motor terminal TMI-8, TMI-8_V2 the control cabinet module TSM1_V101 or the decentral module TDM!

2. Safety

The electric clamp was not conceived to be a complete tool, ready for independent applications and has therefore not been fitted with safety equipment. The technical safety requirements are only met through its proper installation in a manufacturing system and the installation of an appropriate safety control unit.

Should any defects occur that place personnel at risk, the electric clamp is to be switched off immediately. Maintenance work may only be carried out by trained specialists and with the machine shut down.

After maintenance work has been carried out, make sure that all safety devices have been refitted correctly

The self-locking threaded spindle system blocks the movement of the clamp arm in case power supply is interrupted (Emergency Stop).

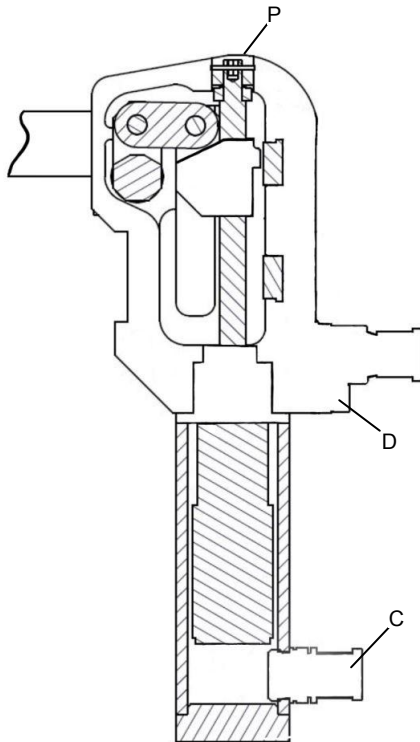


Fig. 1: Electric Clamp

3. Assembly of the electric clamp

Install the clamp by means of cylinder screws and dowel pins on one of the four sides of the housing.

Induktivabfrage (T12)

Depending on the electrical design of the electric clamp (see circuit diagrams), place the electric coupling on the connector "C" and screw it on.

Attention: Operation with incorrect or excessive voltage may result in short circuiting and personal injuries.

Function of the integrated LED is as follows:

green operating voltage
red Clamp closed
yellow Clamp open

Attention! The color coding is dependent on the standard and the customer. Red and yellow may vary.

4. Adjustment of the electric clamp

Caution, risk of crushing!

There is danger of fingers being crushed or severed during the adjustment of the clamp arm! Do not reach into the swivel area of the clamp arm while the electric clamp is actuated. Before doing any works within the tool area, interrupt the electrical power supply.

- Screw the contour piece onto the clamp arm.
- Close the clamp by using the rotating drive spindle (P). The toggle joint must move audibly into the end position.
- Determine the dimensional difference between the clamp arm/contour piece and the workpiece.
- Open the clamp.
Adjustment without pre-tension (soft touch)
Adjust the dimensional difference to 0 mm (!) by assembling the respective adjusting plates.

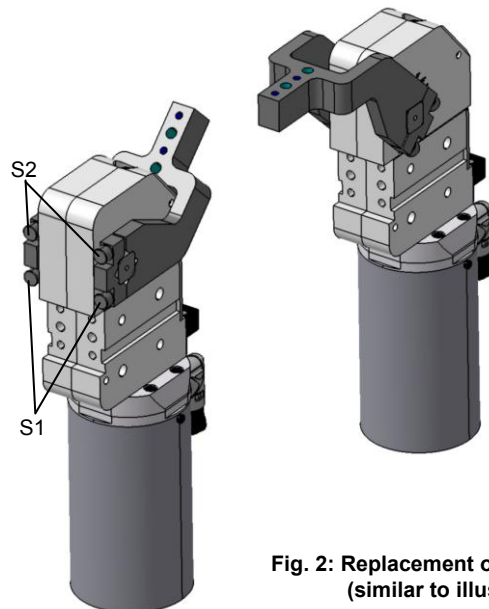


Fig. 2: Replacement of clamp arm (similar to illustration)

5. Unlocking the clamp

If the toggle joint is located in the above end position, the clamp can be unlocked mechanically and therefore opened by turning the driving spindle "P".

Caution, risk of crushing! If the screw "P" is actuated, the clamp arm can open suddenly. Do not reach into the swivel range of the clamp arm!

6. Changing the opening angle EK 25.1

The opening angle of EK 25.1 can be adjusted steplessly in the range of 45° to 105°. The opening angle of EK 16.1 can not be changed in the current version

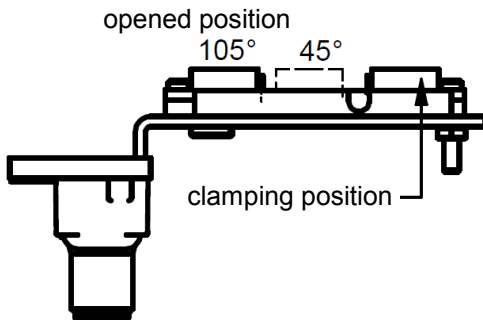


Fig 3: sensor cartridge

- Move into clamping position.
- Turn screw "P" until the desired opening angle has been reached.
- Move the lower switch to the appropriate position until the indicator lights up yellow.

7. Replacement of the sensor cartridge

- Disassemble the sensor cartridge by releasing screw "D".
- Adjust the sensor cartridge to the required opening angle and assemble.

8. Replacement of the clamp arm

To avoid cramping and distorting of the square shaft when replacing the clamping arm, make sure that the fixing screw S1 is fastened at first and only then, fasten the fixing screw S2 (see figure 1).

9. Maintenance

The electric clamp is fitted with low-maintenance bearings and guides designed for operation in large-scale series production. The technical design of the clamps provides a service life of 3 million power strokes without any signs of wear.

Attention: To protect the clamp from welding splatters the housing is of a fully encapsulated design. Therefore, special maintenance is not required. However, cleaning with a high-pressure steam cleaner or dry ice will result in damaging the electric clamp!

Attention! The color coding is dependent on the standard and the customer. Red and yellow may vary.

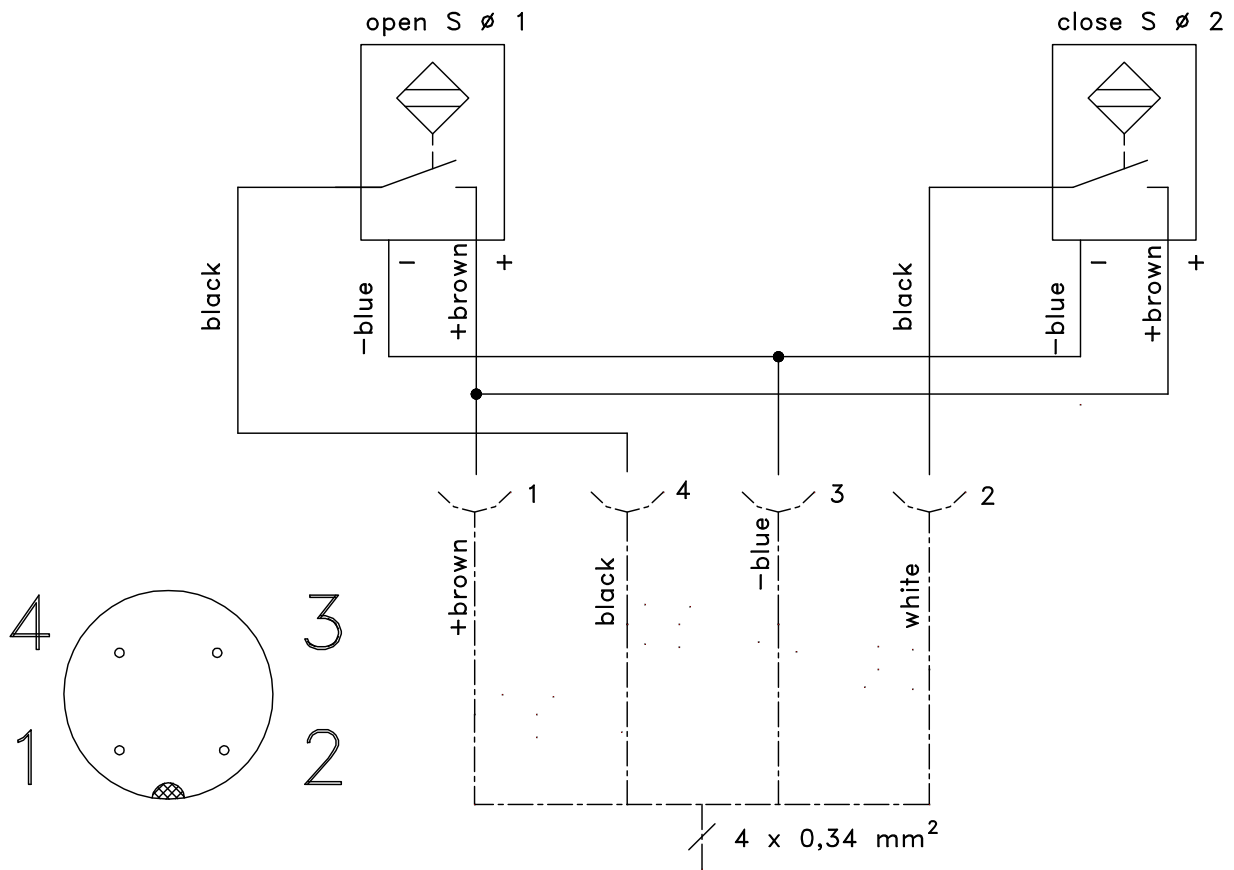
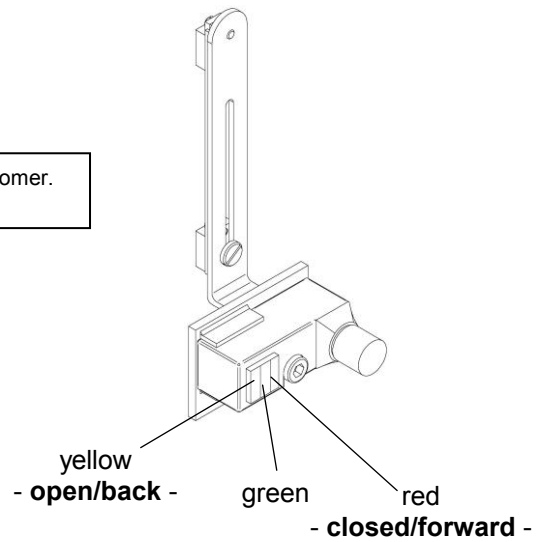


Fig. 4

Technical Specifications

Inductive switch (Standard version)

Short circuit proof

Rated voltage 10-30 V

Working current 32 mA (one initiator connected with PLC)

Closer PNP exit



Subject to technical modifications.

27.04.2018

Connection diagram for Electric Clamps 24 V DC

