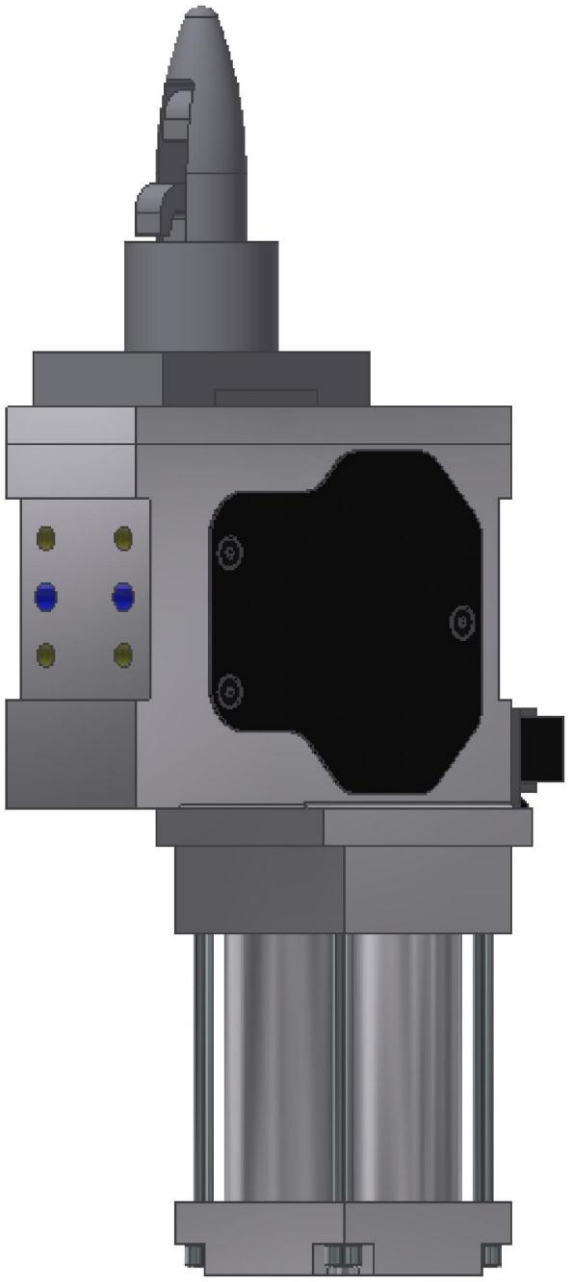
Operation Instruction
Underbody Clamp

K 32 UZ, K 32.1 UZ, K 32.1 UZ HR, KN 32 UZ
K 60 UZ, K 60.1 UZ, K 60.1 UZ HR, KN 60 UZ



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1. Description

The underbody clamp is a high-power tool designed for use in clamping tasks processing sheet metal. It consists of a pneumatic cylinder, a metal housing with mounting faces, front and rear, and a locating pin with an integrated clamp hook.

When used in clamping, the pneumatic cylinder moves an integrated toggle lever joint to accentuate power; the joint triggers the swivel action of the clamp hook. The position control of the clamp arm is achieved optionally through an integrated inductive sensing cartridge.

2. Safety

The underbody clamp was not conceived to be a complete tool, ready for independent applications and has therefore not been fitted with safety equipment. Only when it is correctly installed in a production system and a corresponding safety control system is added, will all safety requirements be met.

Should any faults occur that place personnel at risk, the underbody clamp is to be switched off immediately. Maintenance measures are only to be undertaken when the machine is at a complete standstill and by suitably qualified specialists.

After maintenance work has been carried out, the protection devices are to be refitted in the correct way.

3. Assembly of the underbody clamp

- The clamp is installed by means of four socket head cap screws on the mounting face, front or rear.
- Connect to supply air between pneumatic control valve and clamp (connections “N”).

  Attention: For fine adjustment of speed of clamping process, the use of external directional flow control valves is recommended.
- If external magnet switches are used, they are to be assembled and connected.

A. Inductive limit switch set (T12)

Set plug on socket “C” according to the electrical design of the pneumatic clamp (see circuit diagrams), and tighten.

Caution: Operation with incorrect or too high voltage can lead to short circuiting and danger to personnel.

Function control of the integrated LED as follows:

green . operating voltage
yellow clamp open
red clamp closed

B. Pneumatic limit switch set (T08/T10)

Connect control line for pneumatic limit switch set to the rear of the clamp according to the marking (P, R).

Attention: Working pressure for control lines max. 6 bar.

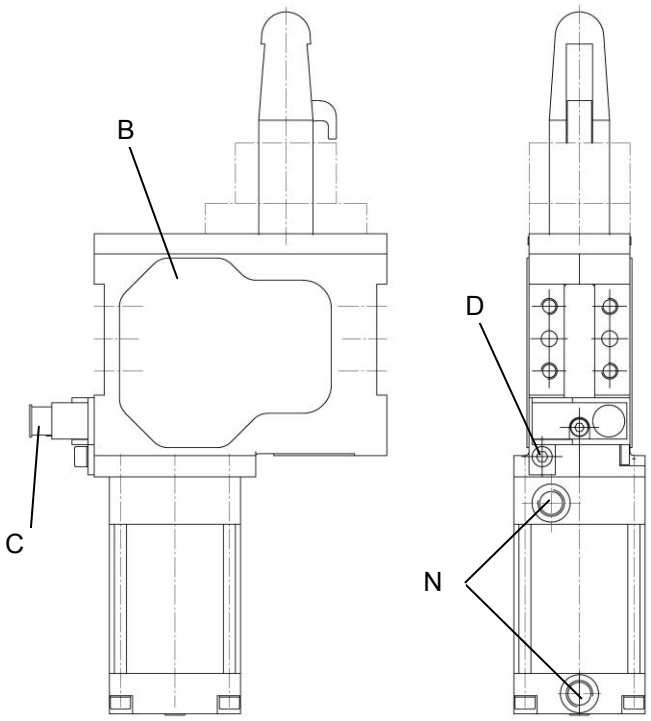

Fig. 1: Underbody Clamp K 60 UZ

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4. Set up for the Underbody Clamp

Caution! Danger of crushing!
When the clamp hook is being set, fingers could be severed or crushed. Do not reach into the toggle lever area of the clamping hook while the underbody clamp is in operation. Before adjustments are started, the air supply must be shut off.

- For sight checks of the support roller, remove cover “B” by releasing the screws.
- Move the underbody clamp to the opened position, the clamping hook is inside the locating pin; support rollers are in lower position.
- Set work piece on locating pin and move to desired position.
- Move underbody clamp to clamping position; the clamping hook lies on the work piece; the support roller is in the upper position.
  Attention: The support roller must be at the upper limit stop. Only in this way the operation of the upper dead-centre lock can be ensured.

5. Replacement of limit switch cartridge

- Remove limit switch cartridge by releasing screw “D”.
- Assemble new limit switch cartridge.

6. Maintenance

The underbody clamp is designed for high production applications; it is equipped with high quality, low-maintenance bearings, seals and guides. This technical concept allows 3 million cycles without significant component wear.
Because of the closed structure no special maintenance of the underbody clamp is necessary.
Caution: Damage can be caused to the underbody clamp by cleaning with steam-jet or dry ice.

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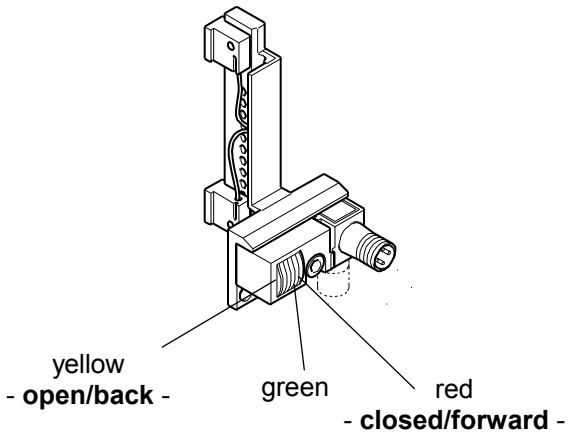
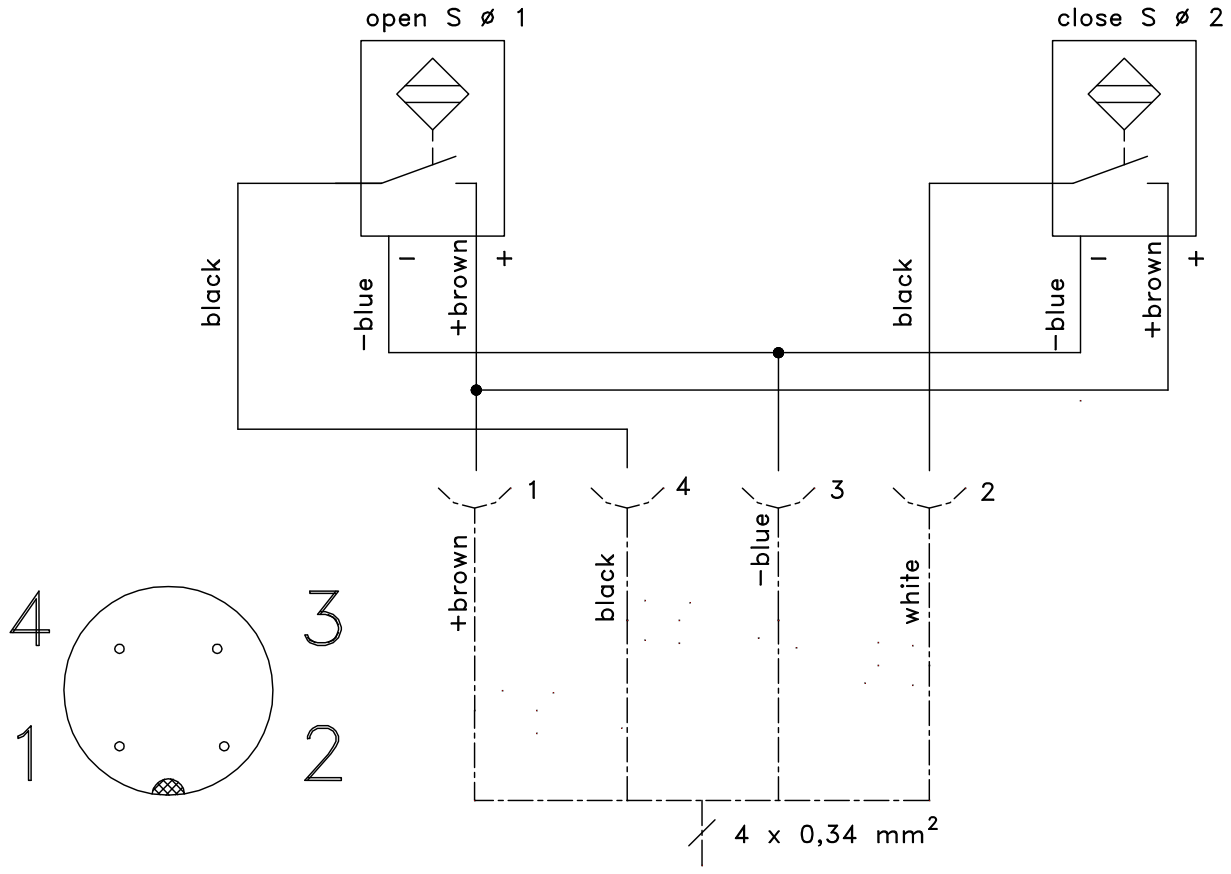
Detection set Inductive switch, 1 output T12





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

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