

1. Description

The pneumatic gripper is a high performance tool, developed for sheet metal assembly tasks. It consists of a pneumatic cylinder with the possibility of mounting 3 different connection flanges (K1, K2, K3), a metal housing with mounting options front and rear and a gripping lever to which the devices are attached for clamping or gripping.

In the gripping operation, the cylinder acts upon an integrated toggle linkage, actuating the gripping lever and intensifying the pressure. The open and closed positions of the gripping lever is indicated to the control system by an integrated position sensing cartridge.

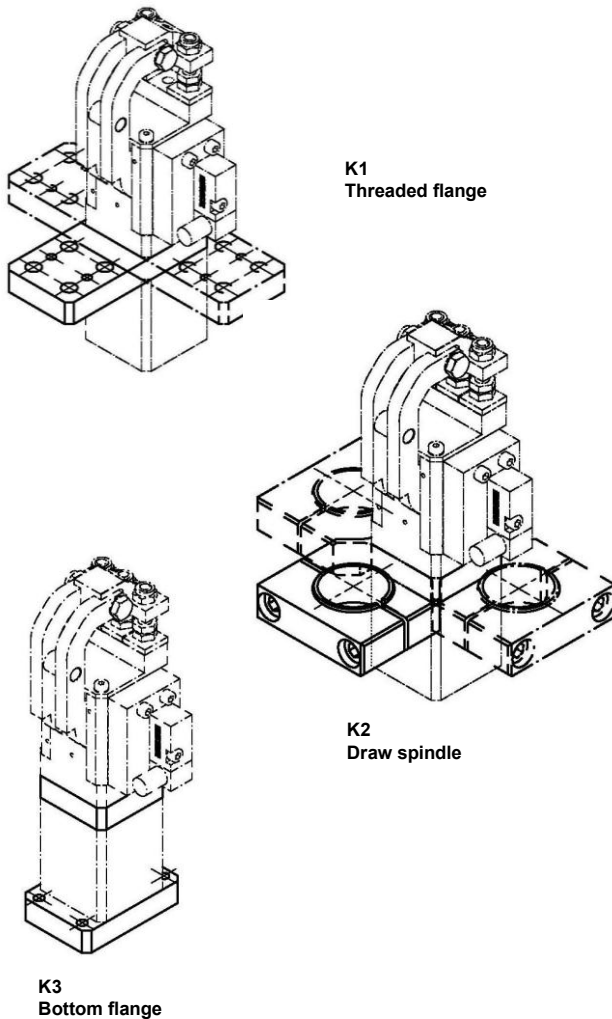


Fig. 1: Connection flanges

2. Safety

Since the pneumatic gripper is not designed to be an independent complete tool, it is not equipped with any unique safety measures or devices. Safety requirements can be met only when properly installed into an assembly system, according to prescribed safety regulations.

In case of malfunction, which may endanger personnel, operation of the pneumatic gripper must be terminated at once. Maintenance must only be performed by properly trained personnel with the system stopped. After system service procedures are completed, all safety devices must be properly reinstalled prior to operation.

3. Assembly of the Pneumatic Gripper

Installation of the gripper at the foreseen connection surfaces. For torques please see data sheet „Torques for screws and head rests, DIN 912, 931, 934, 6912“. Pipes or hoses connect the gripper to the control valve.

Installation of directional flow control valves is required to both ports to reduce the gripper opening and closing speed and to adjust to the proper system / line speed.

Caution: Moving heavy gripping arms or contour pieces too fast may cause damage to the gripper mechanical parts. Cycle time must not be below 1 sec. to open / 1 sec. to close.



GN 40



GN 40 AS

Fig. 2: Pneumatic Gripper

4. Alignment of the pneumatic gripper

The pneumatic gripper can be rotated steplessly above the attachment surface respectively the pneumatic cylinder. To do this, the two M8 threaded pins must be loosened.

Attention: When loosening the M8 thread pins, it must be noted that these are glued low-strength from the factory. During assembly, care must be taken that the M8 thread pins are also glued with a low-strength thread sealing (minimum breakaway torque 8 Nm). The M8 thread pins must be tightened with a torque of 15 Nm.

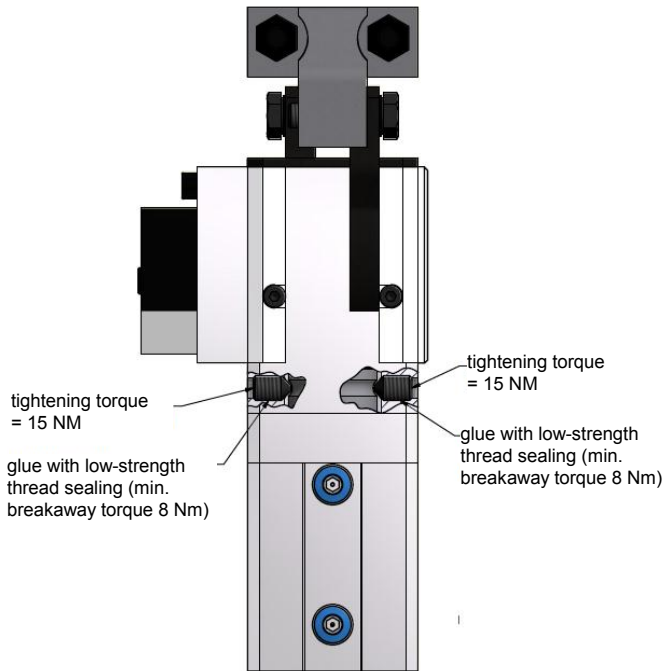


Fig. 3

5. Set-Up procedure

Caution! Danger of Crushing!

When the gripping lever is being set, fingers could be severed or crushed. Do not reach into the swivel area of the gripping lever while the pneumatic gripper is in operation. Before adjusting the gripping components, the air supply must be shut off.

- Attach contour piece to gripping lever
- Close gripper
- Adjust space between gripping lever/contour piece (see fig.4) Adjusting dimension: workpiece dimension X + preload (-0.2 – 0.3 mm).
- Open gripper
- Check the clamping

Caution: Only with a clamped component the internal toggle mechanism generates the required pre-tension and will be locked safely and free of play.

6. Changing the opening angle

The opening angle is set at the factory and can not be changed.

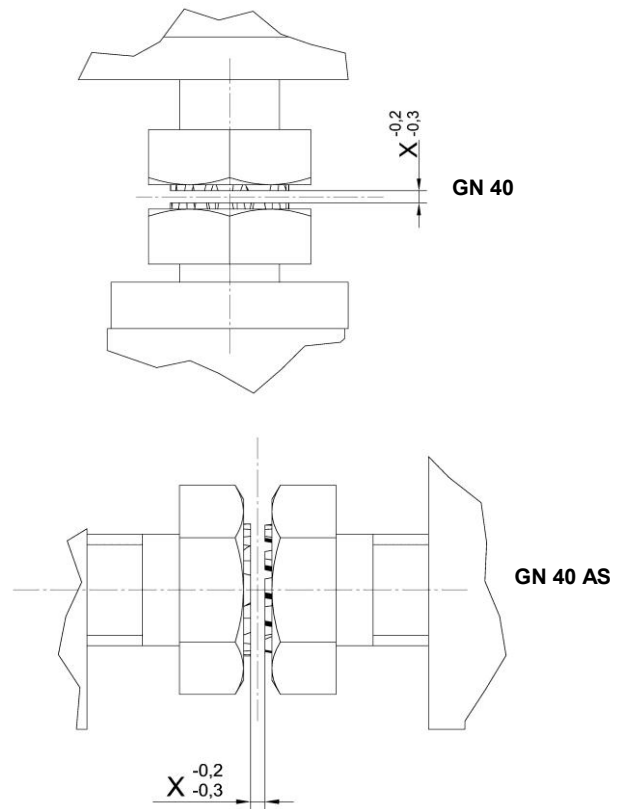


Fig. 4

7. Release of Toggle

The toggle mechanism can be unlocked, when the gripper jaw is in closed (locked) position, by removing air pressure, removing the position sensing cartridge and pressing the bearing in slot down. Reinstall position sensing cartridge.

Caution! Danger of Crushing!

Do not reach into the swivel area of the gripping lever!

8. Replacement of Position Sensing Cartridge

- Disconnect cable connection.
- Remove 2 socket head screws.
- Replace cartridge.
- Reassemble in reverse order.
- Test LED function.

Caution: Operation with wrong current or current higher than specified may short out the system and lead to personnel injury.

9. Maintenance

Bearings and wear faces on the pneumatic gripper have been designed with consideration for high production applications. This technical concept allows operation in excess of 2 million cycles without significant component wear.

Attention:

To provide protection from welding slag and other debris, the clamp is equipped with a fully enclosed but not sealed housing; therefore, no special maintenance is required. Cleaning with high-pressure steam, water or dry ice may damage the power clamp mechanism.

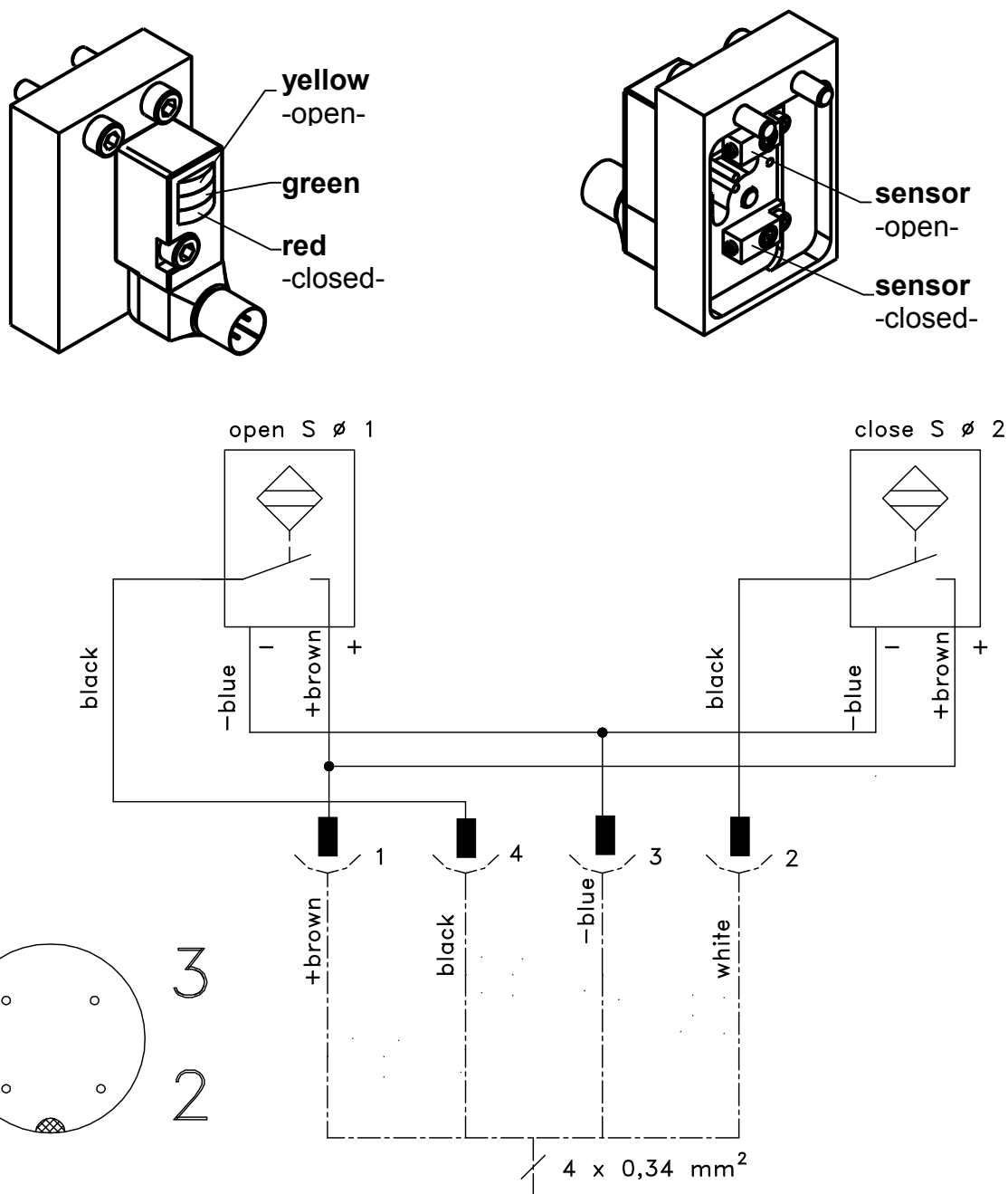


Fig. 5

Technical Specifications

Inductive switch (Standard version)

Short circuit proof

Rated voltage 10-30 V

Working current 100 mA

Closer PNP exit



Subject to technical modifications.

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