

Symbols and Signal Words

WARNING

Possible hazard situation. Disregarding it may cause grave personal injuries or death.

- i Information on correct and safe installation
- Action
- List

Carefully peruse the notes on safety before starting installation!

1. Notes on Safety

WARNING

Qualified personnel of a specialist workshop is authorized to carry out the installation only.

Absolutely follow the specifications and instructions of vehicle manufacturer.

Keep company's as well as national accident prevention regulations

Secure the vehicle against rolling away before starting to dismantle/install the brake cylinder. Secure the removed brake cylinder against rolling away as well.

Attach clearly marked note on steering wheel that work is being performed on the vehicle and that brake must not be applied.

Always start installation only then when you have read and understood all information required for installation.

2. Preconditions

• **Additionally Recommended Documents:**

You will find "General Notes on Repair and Test" under www.wabco-auto.de by entering the number of the brochure in product catalogue INFORM.

- 815 010 109 3 (en)
- 815 020 109 3 (de)
- 815 030 109 3 (fr)
- 815 040 109 3 (es)
- 815 050 109 3 (it)
- 815 060 109 3 (nl)

• **Required Tools:**

Torque wrench
(15 Nm, 120 Nm, 210 Nm)

- The axle/vehicle manufacturer must approve of brake cylinder replacement.

- Consult with the axle/vehicle manufacturer concerning installation situation when mounting brake cylinders to steering axles.

3. Visual Inspection

WARNING

You cannot repair brake cylinders with damage on the pressure reservoir with bayonet joint. Dispose of the brake cylinder. Caution: Spring pre-tension on Tristop® cylinders!

The brake cylinder and disk brake surfaces of flange and sealing surface must be clean and undamaged.

The bellows must be undamaged and fixed with a plastic ring. (see figure)

Replace wearing parts and damaged parts with original WABCO parts only.

Never clean brake cylinders using compressed air.

Sealing the disk brake against intrusion of water and dirt: Make sure that the sealing surface of the bellows lies fully on the flange of the disk brake.

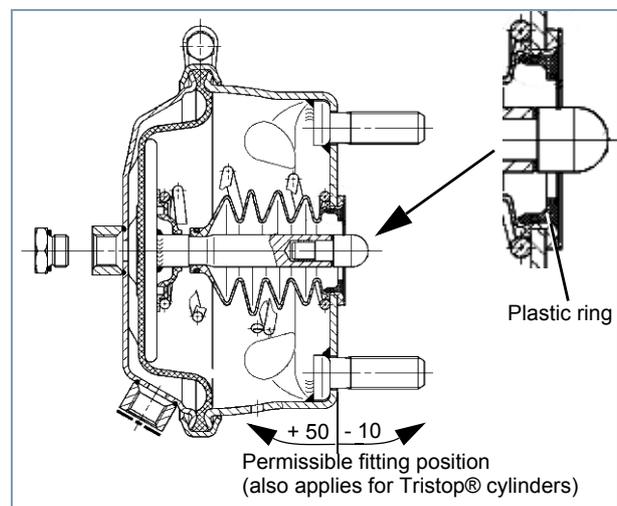


Figure: Cross-section of the membrane cylinder

You will need a plane contact surface between disk brake and brake cylinder and between fastening nuts and disk brake (max. deviation 0.4 mm).

- Do not use reinforcement strips, intermediate plates, washers, spring lockwashers and other locking elements
- The contact surface of the disk brake must not be paint-finished before installation.

4. Installation

 **WARNING**

The lower vent opening must be open and show downward. Maximum permissible deviation: $\pm 30^\circ$.

Remove a possibly existing plug from the lower vent opening.

- Install the brake cylinder in horizontal position.

Conditions:

- The brake cylinder piston rod must exactly fit into the spherical cap of the brake lever.
- The center axis of the brake cylinder may deviate max. 10° up and max. 50° down from level (see figure).
- The maximum permissible piston rod deflection is 4° all-round at 0 mm stroke, relative to the brake cylinder axis.
- **Tristop® cylinder**
Install the Tristop® cylinder only such that the venting tube - if there - is in the upper region.
Exception: Tristop® cylinders with integrated air valve (IBV).

Mounting the Brake Cylinder to the Disk Brake

- i** 2 fastening nuts M16x1.5, property class 8 (WABCO product no.: 810 304 031 4) - DIN EN 28673, ISO 8673
- Screw on the fastening nuts manually till the brake cylinder is snug on the surface.
- Tighten the fastening nuts with approx. 120 Nm.
- Tighten the fastening nuts with 210^{-30} Nm using a torque wrench.

- i** Use fastening nuts only once.
Increase the tightening torque appropriately when using self-locking fastening nuts.
Measure the required torque on screwing on the fastening nuts.
Check the tightening torque according to axle manufacturer's maintenance instruction.

Loosening Screw on Tristop® Cylinders

 **WARNING**

Securing the proper function of the Tristop® cylinder see to it that the loosening screw has been screwed down when degreasing and washing down the vehicle.

WABCO Tristop® cylinders are normally supplied with spring under tension. Loosen the spring before commissioning the vehicle.

Do not actuate the loosening screw with an impact wrench.

Proceed with WABCO® cylinders having its loosening screw unscrewed as follows:

- Screw in the loosening screw (drive position).
- Secure loosening screw with 15^{+20} Nm.

Double Membrane Pressure Reservoir Cylinder

- Mount the loosening screw laterally in the holding plate provided for this purpose.
- Close the hole for the loosening screw with the cap attached to the device.

5. Performance Test

 **WARNING**

Heed the national laws and specifications of the vehicle manufacturer.

- Perform braking test.