



APPLICATION INFO

PERMAGLIDE® PLAIN BEARINGS: BEARING OF THE PISTON ROD IN PNEUMATIC CYLINDERS

Sector: Conveyor technology, automation technology, drive engineering, engineering, handling technology, compressed-air technology

Product: Permaglide® cylindrical plain bearing bush, design PAP ... P200

Function

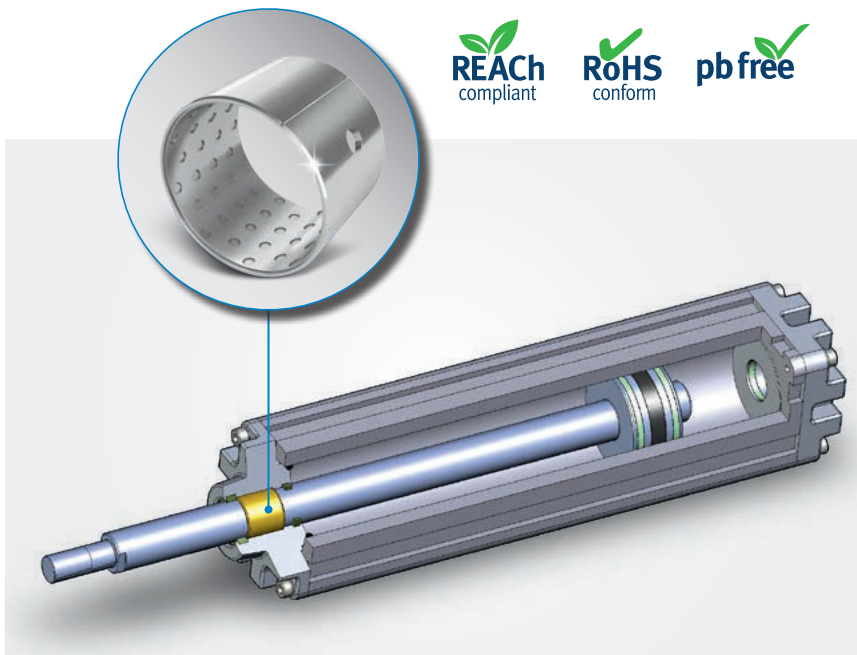
Pneumatic cylinders are used for the drive of linear movements, e.g. in conveyor technology and in engineering. Pneumatic cylinders are either single-acting or double-acting. The force of the piston rod

thus acts in one or in both directions on the axle. This means that the cylinder can be used to generate a pushing force or a pulling force. The piston rod must not stick-slip when using the pneumatic cylinder. Vibrations should be suppressed when the piston rod is extended.

Bearing with Permaglide® P200 plain bearings

In pneumatic cylinders, Permaglide® P200 plain bearing bushes are used as spigot bearings for the piston rod. The plain bearings are sealed and initially lubricated with grease.

The plain bearings are designed with oil distributing pockets in the sliding surface. This guarantees the appropriate distribution of lubricant over the entire service life. Lubrication ensures a low and constant friction coefficient and enables smooth linear movement. The bearing also provides a high level of guidance accuracy under changing operating conditions. The structure of the P200 makes it ideally suited to this application. High lateral forces, significant vibrations and sometimes high speeds act on the bearing position. With its extreme stress potential and distinct damping characteristic, the P200 constantly maintains its function as a precise spigot bearing.



Pneumatic cylinder application, bearing with Permaglide® P200 plain bearings

**Advantage: Reliable bearing with PERMAGLIDE® P200 plain bearings**

- Low-maintenance operation with lubrication
- High wear resistance
- Constant and low friction coefficient
- Good damping characteristics
- Insensitivity to shocks and impacts
- Lead-free
- Compliant with Directive 2011/65/EU (RoHS II)

Application description

A pneumatic cylinder comprises a cylindrical tube housing and a moving piston rod. Single-acting cylinders are usually also equipped with a return spring.

Requirement of pneumatic cylinders or bearing in pneumatic cylinders

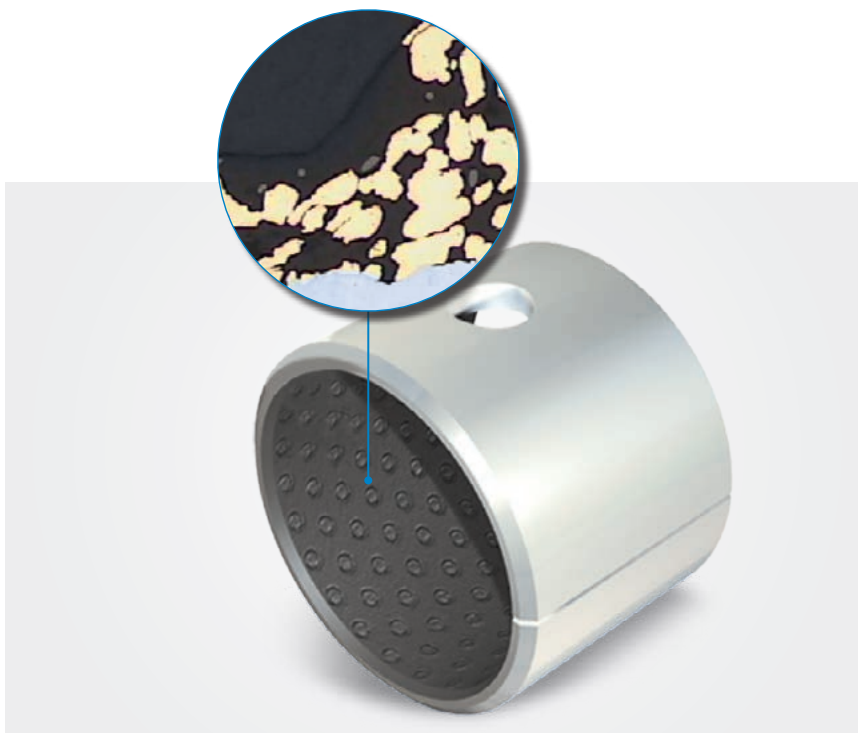
- Functional reliability
- High durability
- Wear resistance
- No subsequent lubrication required
- Smooth piston-rod movement
- Vibration damping

Technical data

- Operating temperature up to 130°C
- Sliding speed up to 6 m/s
- Piston diameter from Ø 30 mm to Ø 110 mm
- Stroke 25 mm to 500 mm

Pneumatic cylinder applications include the following:

- Sheet-metal working: Cutting, stamping, shaping, bending, pressing, embossing, mounting, riveting, pressure-joining, clinching, press-fitting
- Conveyor technology: Sorting, transporting, lifting, lowering
- Clamping devices
- Injection-moulding technology
- Clamping units: Opening and closing valves
- Automation technology
- Engineering
- Assembly units
- Packaging units



Permaglide® P200 plain bearing bush with oil distributing pockets



**Further information on
Permaglide® plain bearings**
Permaglide® catalogue, item
no. 50003863-02