



FL 1707

For technical personnel only!

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# APPLICATION INFO

## PISTON PIN BED IN TOGGLE LEVER CLAMPS

**SECTOR:** Engineering, plant engineering

**PRODUCT USED:** PERMAGLIDE® plain bearing bush, type PAP ... P10

### FUNCTION

Toggle lever clamps are used, for example, in machines tools, welding machines or special systems for fixing workpieces. Some high pressures act on the joint of the toggle lever clamp during movement. The toggle lever clamp absorbs the high tension forces directly, meaning that they do not stress the machine bench. Toggle lever clamps are also known as pneumatic clamps.

### ADVANTAGES OF THE PERMAGLIDE® P10 PLAIN BEARING BUSHES FOR USE IN TOGGLE LEVER CLAMPS

- maintenance-free material
- pressure resistance
- only minimal wear even after 10,000,000 work cycles
- this results in a long service life and reliable function of the toggle lever clamp
- Advantage compared with plastic plain bearings: PERMAGLIDE® P10 plain bearing bushes can withstand high pressure. Plastic plain bearings, on the other hand, would tend towards cold flow on the axes, resulting in a larger bearing clearance.
- Advantages compared with bronze bushes: PERMAGLIDE® P10 plain bearing bushes require no lubrication with grease or oil and have thinner walls than bronze bushes.

### REQUIREMENTS FOR THE PISTON PIN BED

- reliable function of the clamping unit
- maintenance-free
- low wear
- long service life
- no impairment due to high pressure
- low operating bearing clearance
- low installation dimensions

### BEARING WITH PERMAGLIDE® P10 PLAIN BEARING BUSHES

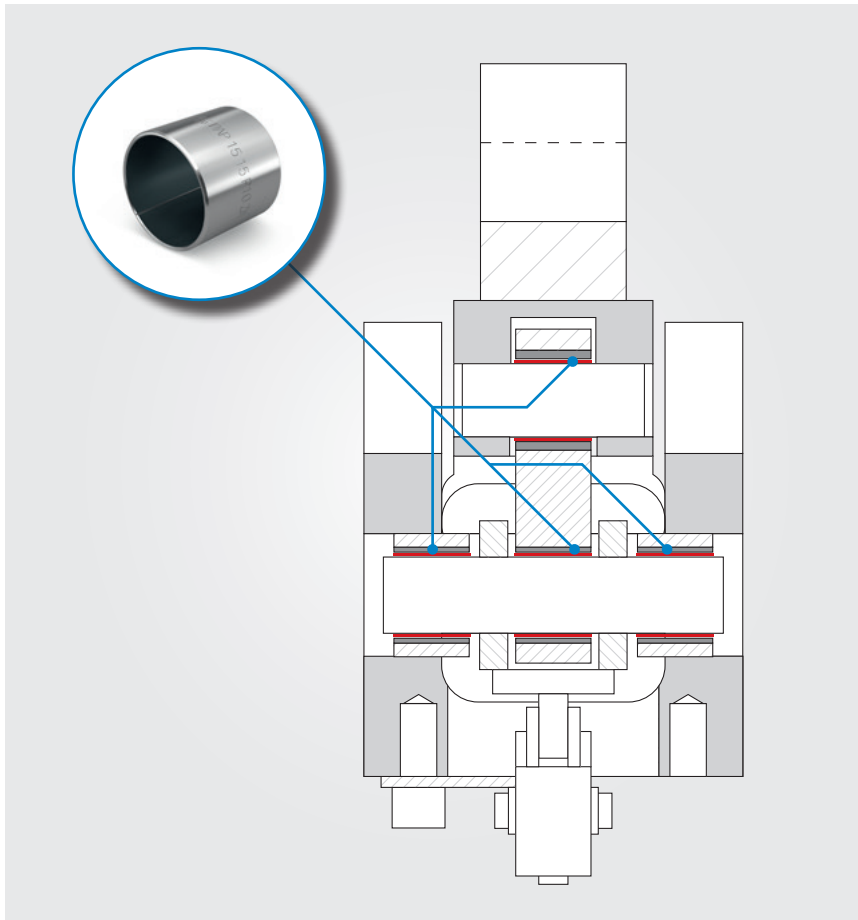
The piston pin bed for the application was manufactured with maintenance-free plain bearing bushes made from PERMAGLIDE® P10.





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Piston pin bed in toggle lever clamps with PERMAGLIDE® plain bearing bushes, type PAP ... P10

#### **FURTHER ADVANTAGES OF THE MATERIAL PERMAGLIDE® P10**

- very low stick-slip tendency
- good chemical resistance
- no tendency to fuse with metal
- largely resistant to swelling
- does not absorb water

#### **DESCRIPTION OF MATERIAL**

PERMAGLIDE® P10 is a leaded, robust bearing material that has the highest levels of tribological performance. It is designed for maintenance-free, dry-running applications, but can also be employed in systems with liquid lubrication. The use of grease as a lubricant in contact with P10 is only possible to a limited extent, and is not recommended.

#### **PREFERRED AREAS OF APPLICATION**

- maintenance-free operation under dry-running conditions
- rotating or oscillating movements up to a speed of 2 m/s
- linear movements
- temperature range -200 °C to 280 °C

#### **FURTHER INFORMATION ON PERMAGLIDE® PLAIN BEARINGS**

PERMAGLIDE® catalogue, item no. 50003863-02