



# APPLICATION INFO

## PERMAGLIDE® PLAIN BEARINGS: BEARING IN PILE-DRIVING AND DRILLING MACHINES

SECTOR: CONSTRUCTION MACHINES, CIVIL ENGINEERING



Pile-driving and drilling machine

### Recommended products

Permaglide® cylindrical plain bearing bush, design **PAP ... P200**

Permaglide® thrust washers, design **PAW ... P200**

### Function

Pile-driving and drilling machines must function reliably. When used outdoors on building sites, the swivel joints of the leaders and their bearing positions are subjected to harsh conditions, such as high temperature fluctuations, moisture and dirt. When pile-driving, impacts and shocks subject the bearing position to stress.

### Bearing with Permaglide® P2 plain bearing bushes and P2 thrust washers

During the application, the pins of the swivel joint bearing run in two plain bearing bushes. Two thrust washers are located between the arms of the joint. The material Permaglide® P200 is recommended for the plain bearing bushes and thrust washers.

The plain bearings tolerate misalignment of the rough welded construction. The polymer sliding layer of the material Permaglide® P200 is insensitive to high edge loading. In combination with grease lubrication, the sliding layer has a dampening effect, which significantly reduces vibrations and impacts from reaching the hydraulic excavator. By using the Permaglide® P2 plain bearings, the bearing functions reliably despite the difficult operating conditions.



### Advantages of Permaglide® P200 plain bearings

- Insensitivity to shocks and impacts
- Insensitive to edge loads
- Good damping characteristics
- High wear resistance
- Insensitivity to dirt
- Low moisture absorption
- Operating temperature range of -40 °C to 110 °C
- Low-maintenance operation with lubrication
- Lead-free
- Compliant with Directive 2011/65/EU (RoHS II)

### Application description

Tubes, posts or guide rails are driven into the ground using pile-driving machines. Drilling machines are used for drilling bores in specialist civil engineering, tunnelling, canal construction and for drilling water wells or geothermal wells.

In combined pile-driving and drilling systems, either a hydraulic hammer or a boring machine is mounted on a telescopic leader. The leader is attached to the outrigger of the hydraulic excavator. The hydraulic hammer or boring machine runs up and down the leader. The link piece between the leader and excavator takes the form of an articulated bearing. The leader is straightened laterally by free swivelling motions in this way.

### Description of the joint bearing

Joint bearings are articulated bearing elements based on plain bearings. Joint bearings allow swivelling motions, rotary motions and tilting motions and transfer static and dynamic forces. Maintenance-free joint bearings or joint bearings that can be re-lubricated are used depending on the application.



Permaglide® P200 plain bearing bush and P200 thrust washer



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