

# Spherical plain bearing maintenance free

Notes on storage, construction, mounting, transport,  
operation, control, and maintenance



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## 1 Storage

ASKUBAL spherical plain bearings are provided with a corrosion protection agent and can be stored in the original packaging at temperatures between 10°C and 40°C and a relative humidity of less than 60% for several years. During storage, care must be taken to ensure that the cartons are not exposed to direct sunlight, otherwise the storage temperatures may be exceeded.

## 2 Construction

Spherical plain bearings must always be mounted in a housing bore with axial securing.

Determine forces and direction of force (axial/radial) during standstill and operation, consider max. tilting angle.

Determine special forces and direction of force (axial/radial) during overload, blockade and transport of the machine.

Determine ambient conditions (temperature, dust, vibrations.....).

Determine bearing clearance, shaft and bore tolerance (take operating temperature into account).

Select safety factors depending on the worst case of damage.

Calculate the strength of the housing wall and the static load rating for the bearing.

Carry out a service life calculation and determine the maximum speed.

Determine preload forces for bearing.

Take the direction of force (radial/axial) into account in all calculations and ensure that the permissible axial/radial ratio is not exceeded and that the forces are not too high in absolute terms.

### Attention:

**Warning: These bearings have a sliding film with PTFE sliding layer. This sliding layer is inert and completely non-toxic. At temperatures above 320°C it decomposes and is extremely toxic even in small quantities, even after cooling. The bearings should therefore not be heated above 150°C.**

## 3 Mounting

### 3.1 Before mounting

Shaft or bolt must be free of burrs.

All parts must be clean and dust-free.

Do not touch bare metal surfaces with bare hands, risk of corrosion.

### 3.2 Mounting

Press in / press out shaft or bolt only with even pressure on the inner ring.

Press in / press out the bearing outer ring only with uniform pressure on the outer ring.

Lubricate bearing if necessary.

### Attention:

**Never transmit installation forces via the sliding surface (e.g. do not press on the inner ring when pressing the bearing into the housing bore.)**

**Never install or remove by hammering or knocking.**

**When pressing the spherical plain bearings into the housing bore, make sure that the outer ring face of the spherical plain bearings is placed exactly on the housing bore and cannot become misaligned.**

### 3.3 Testing after Mounting

Check the mobility of the inner ring. If necessary, check the definition of the bearing clearance and the housing tolerance.

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## 4 Operation

The temperature of the unit must be between  $-10^{\circ}\text{C}$  and  $80^{\circ}\text{C}$  during operation.

### 4.1 Control

The following points should be checked:

Noise and vibration of the bearing during operation.

Increase in bearing air, excessive wear,  
damage to the inner or outer ring

### 4.2 Lubrication

The spherical plain bearings have a sliding film that is characterized by low friction and makes lubrication unnecessary. Therefore, maintenance-free operation is possible

For further questions, we recommend our knowledgebase at [www.askubal.de](http://www.askubal.de)