

Spherical plain bearings with roller bearings

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



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1 Storage

ASKUBAL spherical plain bearings with roller 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

The rolling bearing spherical plain bearings must always be mounted in a housing bore with axial securing. For roller bearing spherical plain bearings, determine forces and direction of force (axial/radial) during standstill and operation.

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

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

Determine bearing clearance, shaft and bore tolerance (consider operating temperature).

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.

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

Attention:

Covers -ZZ: are only intended to prevent large parts from entering the bearing and are not suitable as seals.

Seals -2RS: do not provide complete sealing. They are suitable for operation in normal dust and dirt-free environments.

For special sealing requirements or to seal component part, a seal separate from the bearing must be used.

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. If necessary, follow the instructions of the machine designer for preloading / adjusting the bearings.

Attention:

Never transmit installation forces via rolling elements (e.g. when pressing the bearing into the bore, press on the inner ring).

Never install or remove by hammering or knocking.

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3.3 Testing after mounting

Check the free movement of the inner ring.

A small amount of grease may escape from the roller bearing spherical plain bearings during commissioning. This grease should be removed.

Check the installation position of the spherical bearing in relation to the shaft to prevent excessive tilting of the bearing.

3 Operation

The temperature of the unit must be between -10°C and 80°C during operation.

3.1 Control

The following points should be checked:

Heating, running noise and vibrations of the rod end during operation.

Increase in bearing air, excessive wear,

Seat of the fastening screws

Seat of the covers and seals

3.2 Lubrication

The spherical bearings with roller bearings have lifetime lubrication and an additional grease nipple for relubrication if necessary.

3.3 Relubrication

The following points should be observed when relubricating:

Regreasing must be done with a suitable grease gun. Grease must be pressed in until a small amount of grease comes out at the seal. Caution: In the case of central lubrication systems, the pressure may have to be reduced before entering the bearing, otherwise the covers and seals may be damaged.

3.3 Relubrication intervals

It is not possible to make a general statement about the inspection and relubrication intervals, as they depend on many influencing factors such as ambient conditions, dust, dirt, direction of rotation, load, temperature, etc., but also on the damage that can be caused by a failure. If no empirical values are available, the check should be carried out daily and before each start-up after a standstill.

Greases:

For the lubrication of rolling bearings, corrosion-protective pressure-resistant greases based on lithium or lithium complex metal soap greases have proven to be effective. When selecting the grease, please also consider the operating temperature range of the bearings. The manufacturers of the greases can advise you in individual cases.

For further questions, we recommend our knowledgebase at www.askubal.de