







## 12.4 CYLINDRICAL ROLLER BEARINGS

Cylindrical roller bearings are manufactured in many designs, dimensions and sizes. The most common designs are single row cylindrical roller bearings with cage. Single row cylindrical roller bearings are capable of transferring big radial loads and, in some design cases, they are capable of capturing even axial load. Cylindrical roller bearings can operate at high revolutions. The full complement design is capable of transferring big radial loads but at lower rpm.

Majority of design versions is separable which allows easier assembly and disassembly in location. In majority of cases the mutual axial displacement of the outer and inner ring is used when the axial shift of the shaft against the body is aligned inside the bearing without reducing the service life of the bearing. Axial displacement is mostly caused by thermal expansion of the shaft.

Use of cylindrical roller bearings requires good alignment of both rings. Modification of raceways of rings and cylindrical rollers allow only small tilting in case of misalignment without reducing the service life of the bearing. Multirow cylindrical roller bearings have to comply with even more stringent alignment requirements.

ZKL manufactures the following types of cylindrical roller bearings:

- single row cylindrical roller bearings
- double row cylindrical roller bearings
- single row full complement cylindrical roller bearings
- double row full complement cylindrical roller bearings
- multi row cylindrical roller bearings

ZKL further offers special cylindrical roller bearings that are described in more details in chapter Special cylindrical roller bearings:

- single row cylindrical roller bearings and bearing units for railway applications
- electrically insulated cylindrical roller bearings
- single row and multirow bearings for heavy industry
- split cylindrical roller bearings.

Where the space for bearing is limited significantly, cylindrical roller bearing can be used without the inner or outer ring. Rolling elements are guided directly on the shaft or in the body. This location requires that the contact shaft or body surfaces correspond with the structural design of the bearing ring.

