

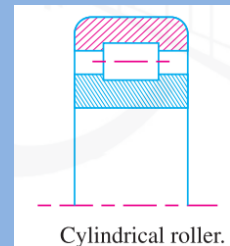
SCRIET(MECHANICAL DEPARTMENT),CCSU MEERUT MACHINE DESIGN(ROLLING CONTACT BEARING LECTURE 2)

Types of Roller Bearings

- a) *Cylindrical roller bearings*
- b) *Spherical roller bearings.*
- c) *Needle roller bearings.*
- d) *Tapered roller bearings.*

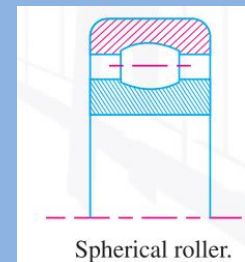
Cylindrical roller bearing

1. These bearings have short rollers guided in a cage.
2. It has lowest coefficient of friction of any form of heavy duty rolling-contact bearings.
3. It is used in high speed service.



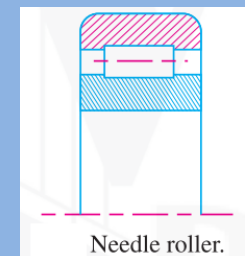
Spherical roller bearings

1. These bearings are self-aligning bearings (the self-aligning feature is achieved by grinding inner or outer of the races in the 1° form of sphere).
2. These can carry thrust loads in either direction.



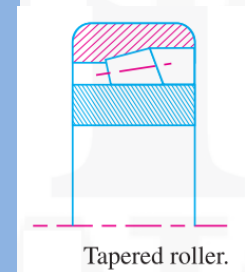
Needle roller bearings

1. These bearings are completely filled (so that neither a cage nor a retainer is needed).
2. Used when heavy loads are to be carried with an oscillatory motion, e.g. piston pin bearings in heavy duty diesel engines (where the reversal of motion tends to keep the rollers in correct alignment.)



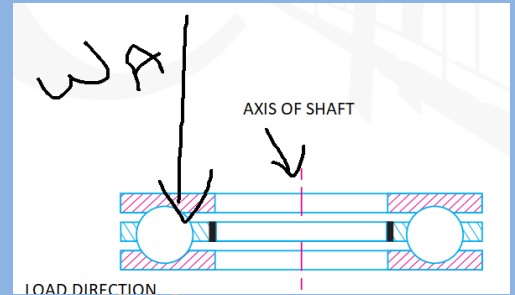
Tapered roller bearings

1. The rollers and race ways of these bearings are cones with vertex cut(truncated) whose center axis intersect at a common point.
2. It can carry both radial and thrust loads



Thrust Ball Bearings

1. The thrust ball bearings are used for carrying thrust loads (Axial loads W_R are parallel to axis of shaft)
2. Used at speeds below 2000 r.p.m (because at high speeds, centrifugal force causes the balls to be forced out of the races).



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