

FAQ

Module-11: Bearings

1) What is the purpose of bearing?

It provides physical support to shafts and allows it to rotate with minimum friction, on its axis.

2) Why sliding contact bearing is called as 'journal bearing'?

Shaft is directly inserted into the inner race of sliding contact bearing. The part of shaft that is inside the bearing is called journal. Hence, it is termed 'journal bearing'.

3) Does the journal bearing supports thrust load?

No. It supports only radial load.

4) What is anti-friction bearing?

All rolling contact bearings (ball and roller) have low friction coefficients compared with journal bearings. So they are called as 'Anti-friction bearings'. But friction coefficients are not zero!

5) Why conformity of radii of balls and raceways is important?

In order to reduce friction of rolling elements, the contact between them and raceways must be a point. So the radii of inner and outer raceways are made slightly larger than the ball/roller diameters.

6) What is the important consideration in design of double-row deep groove ball bearings?

Accuracy of manufacturing is required so that two rows of balls share load equally.

7) What is pure thrust ball bearing?

In pure thrust bearing (can't support radial load), the angle of contact of rolling elements is 90° .

8) Why do we use self aligning ball bearing for top drafting rollers and main shaft of ring spinning machine?

In both cases, the axes of bearing and shaft can't be made perfectly coaxial. The inner ring and balls must be able to tilt in the outer ring depending on the misalignment.

9) Where do we use needle bearings?

If there is a limitation of space in radial direction, needle bearings are the best option, like bottom drafting rollers.

10) Why do we use self-aligning roller bearing for cylinder and doffer?

The axes of two bearing that support them may not be exactly in the same plane due to the mounting errors. They also require supporting heavy loads. The settings in card are also very narrow. The inner race of self-aligning roller bearings can adjust itself to the angular misalignment of shaft.