

Types Of Bearings And Their Applications Functions In The Industry

 Kg International  Technical Insights  5 January 2022



Bearings are mechanical parts that facilitate movement. They are fundamental requirements to the machine industry and hence of great importance. The Bearings are used in all sorts of machines, but most people probably don't know much about them.

We'll begin with a brief explanation of how bearings work and what purposes they serve.

Bearings assist the rotary motion of shafts inside machines.

Planes, cars, electric generators and many other machines have bearings. Those products are used in your everyday household appliances, including refrigerators, vacuum cleaners and air-conditioners.

Bearings support rotating shafts to reduce wear, improve efficiency and attain greater precision in machines.

The use of bearings in machines is ubiquitous because they are required for rotation, which due to the many shafts that rotate in all sorts of machines makes them indispensable to the machine industry. However, without bearings, our world would cease to turn.

Let's talk about the role bearings play in making machines work smoothly

They perform two major functions.

Function 1: Makes rotation smoother and reduces friction.

Friction between the rotating shaft and supporting parts is likely to cause problems. These two components use bearings to separate them.

The bearings reduce the friction and allow for smooth rotation. This reduces energy consumption. Bearings play the most important role in machine function.

Secondly Bearings ensures the location of the rotating shaft firmly and carries the load exerted on it.

Bearings are essential for machines because they allow us to use them repeatedly.

How widespread are bearing?

Let's consider how bearings affect our lives. It's unusual to see them so it may be a bit difficult to imagine. Let's discuss cars, since we all know about them.

Did you ever play with an electric car racing set when you were a child? You might have remembered that the bearings which are attached to the wheels of toy car and might have cleaned them sometimes.

Deep Groove Ball Bearings

Deep-Groove Ball Bearings are most widely used variety of bearing. They can be used in a wide range of different applications because they are simple and easy to maintain.

These bearings can take radial loads and small amount of axial loads. The dense structure makes them especially effective at absorbing impact energy, even during **high speed** rotation.

Angular Contact Ball Bearings

Angular Contact Ball Bearings can run more accurately because of their contact angles.

Angular-contact ball bearings can therefore cope with both high axial and radial loads.

Self-Aligning Ball Bearings

Double Row Self-Aligning Ball Bearings are self-aligning ball bearings with inner and outer ring raceways separated by a swiveling spherical cage.

When misalignment of the shaft and housing causes a problem, this type of bearing is recommended. Ball bearings with self-aligning feature are best for radial loads.

Thrust Ball Bearings

Thrust Ball Bearings consist of two bearing discs with raceways on their sides for the balls. Thrust ball bearings are designed specifically to accept axial forces in one direction, which also helps locate the shaft axially.

Roller Bearings

Roller bearings have rollers as rolling element instead of ball between the outer and inner rings. Line contact is designed for heavier loads than ball bearing of the same size; however, they will move more slowly than the ball bearing due to friction.

Spherical Roller Bearings

These bearings use spherical rollers sliding of spherical shaped raceways on Inner and outer rings. It has large contact areas and as a result they can support higher loads than conventional self-aligning bearings. This will correct misalignment between the shaft and housing. Bearings, such as spherical roller bearings, are great at handling large amounts of radial force and smaller amounts of axial force.

Cylindrical Roller Bearings

The rolling elements of cylindrical roller bearings cylindrical shaped rollers which rotates with the raceways, which minimizes stress concentrations at the point of contact. Due to this arrangement, cylindrical roller bearings are capable of carrying high radial loads.

They may also be capable of transmitting limited amounts of axial loads, depending on their design.

Tapered Roller Bearings

There are conical rollers arranged between tapered raceways in tapered roller bearings.

The tapered roller bearing's contact angle enables high radial and axial forces to be absorbed in one direction.

Bearings with tapered rollers are often paired up so that they can support forces axially in both directions.

Needle Roller Bearings

As the name implies, needle roller bearings contain long, thin rollers, also known as needles. Bearings with needle rollers have more numbers of rollers and thus high load rating, but they are only suitable for radial loads.

For Applications with Space-constrained situations can make needle bearings a good choice.

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