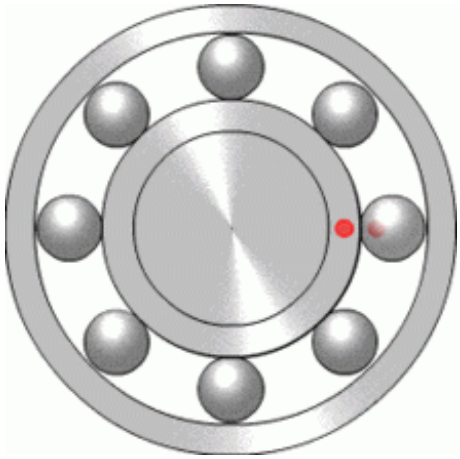
Still Fighting Friction

Saul Rosen August 19, 2016

The classic ball bearing is even more useful today than when it was first invented more than 200 years ago.

(Newswire.net -- August 19, 2016) -- Some items play an integral part in our daily lives without ever grabbing the headlines or even being considered by the person using them, which is the case with the humble ball bearing, which has been keeping things moving for many years.

An international bearing company ships around the world on a constant basis in order to keep up with demand from around the globe, and there is no sign that the classic ball bearing is about to be replaced anytime soon.



Fit for purpose

A ball bearing is often needed when you need to achieve a smooth and low friction movement within a variety of rotary applications.

One of the key selling points of ball bearings is not just the fact that they provide a simple but effective engineering solution, it is also their ability to deliver a high level of performance and durability.

Provided you choose the right ball bearings so that they can cope with the right amount of pressure they are being asked to cope with each time they are called into action, you should find that they are entirely fit for purpose and will prove reliable and dependable in equal measure.

It's all in the construction

There is a lot going on inside that ball bearing, although its construction is based on just four basic components.

There are two rings, which are often referred to as the inner and outer races, followed by the rolling elements, the balls, and finally the ball separator, which is known as the retainer. Put all that together and you have the basic construction of a ball bearing.

Different types

There are actually a number of different ball bearing types, which are specifically designed to cope with a variety of different engineering applications and tasks.

You might need to use a radial ball bearing for example, which are designed to be able to cope with both radial and axial loads in particular. A variation of the radial ball bearing, is the deep groove bearing, which are used when the primary load is going in the radial direction. This type of bearing is distinguished by the way it is constructed, using an inner and outer ring, but also sometimes consisting of a cage that works on containing and separating the balls.

You might also have need to use a thrust ball bearing. These are specifically designed to be able to cope with pure thrust loads. This type of ball bearing might employ integral gears which are often referred to as tabletop or turntable bearings and slewing rings.

Calculated lifespan

You can calculate with a fair degree of accuracy, the lifespan and performance of the ball bearing.

It is feasible to predict the potential life of your bearing, but working out the load and operating speeds it will be performing under, as well as taking into account other factors such as the environmental conditions that they are going to be working under.

As a general guide, you should expect that a ball bearing will have been constructed to comply with a basic industry standard which requires that about 90% of all bearings will still be serviceable after completing one million rotations and 50% are still fit for purpose after completing five million rotations

When buying ball bearings, ask about the expected bearing fatigue life, as it should be within this calculated lifespan.

Beyond just reducing friction

When you rely on a ball bearing, you expect it to help reduce friction and wear to minimal levels, which will prolong the life of your equipment and improve performance greatly, but it offers benefits that goes beyond just reducing friction.

You might not immediately consider that a ball bearing can offer a potential power saving, but the act of reducing friction will help to reduce power consumption. You could also enjoy some savings on labor and lubrication costs when you use ball bearings, especially when you compare their performance to plain bearings.

If you factor in the cost of lubricant and the cost of employing labor to service machinery that is not using ball bearings, you are likely to see that your costs for these two factors are going to be higher than if you used ball bearings in order to achieve greater efficiency.

It is also worth pointing out that you could also reduce the prospect of a fire hazard by using ball bearings, as they are much less likely to suffer overheating in an oily and flammable environment, compared to plain bearings.

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