What is bearing problem?

Bearing problem is a critical situation where large number of bearings fail at the same time. In general, bearing failure is caused by high temperature and overloading.

Bearings are subjected to various loading conditions in operation. These loadings include radial load, axial load, thrust load, and impact load. The radial load is applied along the axis of rotation. The axial load is applied along the direction of shaft centerline. Thrust loads are applied at an angle to either radial or axial directions of rotation and therefore may be considered as both a radial and an axial loading simultaneously. Impact loads occur when objects collide with the bearing outer ring or housing during operation.

Heavy Load

Heavy load is a common problem that most of the industrial machine users face. This is because heavy loads can cause damage to the machine and affect its performance as well. The regular maintenance of the machine can help you to avoid any kind of damage but if for some reason you are unable to do so, then it is better to get it repaired by an experienced mechanic.

Bearing problem is one of the common issues faced when the load on the machine becomes too much. Bearing breaks down due to overloading or under lubrication and causes damage to other parts of the machinery.

Bearing failure is not only expensive but also time-consuming since it requires replacement and repair which may take anywhere from several hours to several days depending on the nature of work being done by your machine.

Fatigue Failure

Fatigue failure is a common cause of bearing failure. Fatigue failure is the result of repeated loading and unloading of a component. The repeated loading and unloading stresses a metal structure to the point that it fails by cracking or breaking.

The first time your car goes over a pothole, you may notice some road noise and vibration in the steering wheel. If your car has an OEM (original equipment manufacturer) steering system, this could be due to fatigue failure in one or more components in the system.

There are two main types of fatigue failure: stress-corrosion fatigue and fretting corrosion. Stress-corrosion fatigue occurs when there is enough stress on an object to cause its surface layer to crack; this allows corrosion products to penetrate into the object’s interior causing further damage. Fretting corrosion occurs when two surfaces are rubbing together at high speeds, such as during vehicle operation or while being transported on a carrier truck. Both types of fatigue failures can lead to premature bearing failure if proper preventative maintenance procedures are not followed by operators and mechanics alike.

Overheat

If a bearing overheats, it means that it has exceeded its operating temperature. The most common cause of this problem is a lack of lubrication. When the lubrication level drops below a certain point, friction increases and heat is generated in the bearing. This can lead to damage and failure.

Bearing overheating may also be caused by excessive load or incorrect installation or use. It’s important to keep in mind that the temperatures inside bearings are higher than those outside them. For example, if the ambient temperature is 20°C

(68°F), there will be about 10°C (18°F) more heat inside the bearing than outside it.

If you see any signs of overheating on your machine parts or equipment, take immediate action!

Lubrication failure

Lubrication failure is caused by a lack of lubrication, which can lead to premature bearing failure.

Lubrication failure can be caused by one of three reasons: a lack of oil supply, poor oil quality or poor oil circulation.

The first two forms of lubrication failure are usually easy to diagnose and correct. Poor oil circulation is more difficult to diagnose, but can be resolved by installing an external pump or changing the type of lubricant being used in the bearing.

Lubrication failure can also occur due to physical contamination, such as dirt or rust particles. In this case, the bearing needs to be cleaned with a solvent before re-lubricating it with new lubricant

Corrosion

The bearing problem is a common malfunction of a rotating shaft. The bearing is the main part of the bearing system, which is mainly composed of the shaft, the outer ring and the inner ring. It is mainly used to transmit torque from one shaft to another. Because of its high speed rotation and friction with other parts, it needs to be lubricated for smooth operation.

The main reason for bearing failure is corrosion. When there is corrosion or rust on the surface of the bearing, it will cause serious damage to the surface layer of the bearing

material, causing wear and tear, which in turn leads to premature failure.

There are many factors that cause corrosion, such as humidity, temperature and corrosive gases. We can divide them into internal factors and external factors:

Internal factors: The internal factors include chemical composition (e.g., Chlorine), mechanical properties (e.g., strength) and thermal properties (e.g., thermal expansion coefficient). These factors affect how products perform in actual use conditions.

External factors: External factors include environment temperature (e.g., heat transfer coefficient), pressure (e.g., viscosity), vibration.

Misaligned

Bearing misalignment is a condition in which the bearings are not aligned as they should be. Bearing misalignment can occur as a result of many factors, including improper handling and installation, environmental conditions and excessive vibration.

The main causes of bearing misalignment are:

Improper handling during installation. Improper lubrication at the factory. Improper storage and transportation. Environmental conditions such as temperature and humidity. Excessive vibration caused by poor maintenance or operating conditions.

Incorrect installation or removal can cause bearings to become misaligned. It is important that you use the correct tool for installing or removing bearings, because incorrect tools can also cause damage to the bearing shaft or housing. If you use incorrect tools, you may damage the bore during removal or installation and that could result in bearing misalignment.

For most people, bearing problem may refer to the machinery breakdown or some mechanical devices failure. It is actually much more complicated than this situation. There are many factors which could cause bearing problem, but for relatively, there are mainly three aspects: abnormal load, wrong lubricating oil, and oil leakage.