

# Application and maintenance of deep groove ball bearings

## First, Overview

[Deep groove ball bearings](#) are generally made up of a pair of rings and a group of cages, a group of rigid balls and a group of cages. The type of deep groove ball bearings code 6 is the most common in production.

Deep groove ball bearing is simple in structure and easy to use. It is the largest in batch production and bears a certain axial load when the radial travel of the bearing.

When the gap is enlarged, it has the function of angular contact ball bearing and can bear large axial load.

Deep groove ball bearing is mainly used to bear pure radial load, but also can bear both radial load and axial load, when it only bears pure radial load, contact angle is zero.

When deep groove ball bearings have large radial clearance, they have the performance of angular contact bearing and can bear large axial load. The friction coefficient of deep groove ball bearings is very small.

Ultimate speed is also very high, especially in the case of high-speed operation with large axial load, deep groove ball bearings have more advantages than thrust ball bearings. Others with the same size

Compared with similar bearings, this type of bearing has small friction factor and high limit speed. When the speed is higher and the thrust ball bearing is not suitable, the bearing can bear axial load.

When the deep groove ball bearing is mounted on the shaft, the axial displacement of the shaft or housing can be limited to the axial clearance of the bearing. At the same time, when the housing hole and the shaft (or the outer ring to the inner ring)

When relative tilting, (no more than 8-16 determined according to clearance) can still work normally. However, if there is a dip, it is necessary to reduce the service life of the bearing.

Compared with other bearings of the same size, deep groove ball bearings have the least friction loss, higher limit speed and are not suitable for thrust ball bearings with higher rotational speed.

This kind of bearing can be subjected to pure axial load. If the manufacturing accuracy is improved and the solid cage made of bakelite, bronze and hard aluminum is adopted, the rotational speed will be returned.

It can be improved.

## **(1) characteristics of deep groove ball bearings**

Deep groove ball bearings are simple in structure and easy to achieve high manufacturing accuracy compared with other types, so they are easy to be produced in series in large quantities and have lower manufacturing costs.

The use is very common. When the larger radial clearance is chosen, the axial bearing capacity increases, and the contact angle is zero when the radial force is pure. When the axial force is applied, the contact angle is greater than

Fatal Frame. Generally, the use of stamping wave cage, vehicle solid cage, and sometimes nylon frame. Deep groove ball bearings, apart from the basic type, also have a variety of variant structures, such as

Deep groove ball bearings with dust cover; deep groove ball bearings with rubber seals; deep groove ball bearings with stop grooves; deep groove ball bearings with large load capacity with ball notches

Bearing, double row deep groove ball bearings, but they all have the following common characteristics:

**1. Each ring of deep groove ball bearing has a continuous groove raceway with a cross section of about one third of the circumference of the ball. It is mainly used to bear radial load.**

**It can also bear a certain axial load.**

**2. When the radial clearance of the bearing increases, it has the property of angular contact ball bearing, and can bear the axial load alternating in two directions.**

**3, small friction, high speed;**

**4, simple structure, low manufacturing cost, easy to achieve higher manufacturing accuracy.**

**5. Generally, the stamping wave cage is used for bearings with an inner diameter greater than 200 mm or running at high speed, and the vehicle solid cage is adopted.**

## **(Two) installation, application and maintenance**

Deep groove ball bearings are the most representative rolling bearings and are widely used. It is suitable for high speed or even high speed operation, and is very durable and low maintenance cost.

The operation cycle is long. However, professional and technical personnel are required to check and maintain regularly to ensure the safety, reliability, and improve the operation cycle

and quality.

## **Assembly of deep groove ball bearings**

The assembly of deep groove ball bearings requires the assembly personnel to have higher professional skills, and strictly implement the technical requirements and operating procedures in the assembly process.

Whether the bearing installation is good or bad will affect the accuracy, life and performance of the bearing. Therefore, please fully study the installation of bearings, according to the following operating standards.

### **Bearing installation.**

- 1. Clean bearings and related parts (for Grease-Lubricated bearings and bilateral oil seal or dust cover, seal ring bearings do not need cleaning before installation).**
- 2, check the size and finishing of the relevant parts.**
- 3. Installation of bearings should be based on the bearing structure, size and bearing parts with the nature of the match, the pressure should be directly increased in the tight fit to the end of the ring.**

No pressure is passed through the roller body.

### **(Three) bearing installation generally adopts the following methods**

Pressing fit: when the inner ring of the bearing is tightly matched with the shaft and the outer ring is loosely matched with the bearing seat hole, the bearing can be pressed on the shaft by a press, and then the shaft is connected

Install the bearing into the bearing seat hole together with the bearing. When pressing, a soft metal assembly sleeve (copper or soft steel) is padded on the end face of the inner ring of the bearing, and the outer ring of the bearing and the bearing are padded.

When the inner ring and shaft are loose, the bearing can be pressed into the bearing seat hole first, and the outer diameter of the supporting pipe should be slightly smaller than the diameter of the seat hole in this fashion. If the shaft

When the bearing ring is tightly matched with the shaft and the seat hole, both the inner and outer rings of the bearing should be pressed into the shaft and the seat hole at the same time. The structure of the assembly sleeve should be able to tighten both the inner and outer rings of the bearing at the same time.

### **The end face of the ring.**

Heating fit: Installation method of transforming tight fit into loose fit by heating bearing or bearing seat with thermal expansion is a common and labor-saving installation method.

This method is suitable for the installation of bearings with large interference. The rings of bearings or detachable bearings are put into the oil tank and heated evenly for 80-100 degrees before hot-loading.