

## **skf bearing what is the suffix c3 mean**

C3 is the suffix used by SKF bearing to indicate that they are made of chrome steel.

Chrome steel is a high-quality steel alloy consisting of chromium, molybdenum, and carbon. Chrome steel has a high hardness and corrosion resistance, making it ideal for use in bearings and other components that must withstand high load and high operating temperature.

Chrome steel is also more durable than standard carbon steel, which means it can withstand more wear and tear without failing.

### **C3 is an internal clearance applicable to bearings in their assembled state.**

C3 is an internal clearance applicable to bearings in their assembled state. It is the sum of the radial clearance and axial clearance. The value of C3 can be obtained by subtracting the radial clearance from the total radial clearance and subtracting the axial clearance from the total axial clearance. The C3 clearance should be at least half of the C2 clearance or greater, but never less than 0.1mm. The reason for this is that it ensures sufficient clearance for lubricant and dirt to flow through the bearing, as well as providing a margin of safety against damage caused by foreign objects entering from outside. For example, if a bearing has a total radial clearance of 0.03 mm and a total axial clearance of 0.02 mm, then its C3 value is 0.01 mm (0.03-0.02).

### **C3 bearing is a tight fit bearing, the design clearance value of 1%~5% of the specified inner and outer diameter.**

The C3 bearing has a high load capacity and high precision. Therefore, it is widely used in precision equipment such as missiles, precision instruments, computer components and so on.

C3 bearing has two types: concentricity type and eccentricity type. The relationship between the outer ring and the inner ring is called concentricity or eccentricity. When there is no eccentricity in the C3 bearing, it can be called concentricity bearing; when there are eccentricities on both sides of the inner ring or both sides of the outer ring, it can be called eccentricity bearing; when there are eccentricities on one side of the inner ring or one side of the outer ring, it can be called single eccentricity bearing; when there are double eccentricities on both sides of the inner ring or both sides of the outer ring, it can be called double eccentricity bearing; when there are three or more concentricities or eccentrics in one C3 bearing, it can be called multi-concentricity or multi-eccentricity bearings.

**Since the increase of the internal clearance will make the outer ring of the bearing shift axially, it is not recommended to use bearings with a large bearing**

## **clearance (for example, C5).**

The bearing clearance is the gap between the inner ring and the outer ring of a bearing. The clearance determines how much axial movement there can be between the rings under load. A large clearance means that there is plenty of room for movement, but also means that there is less support for radial loads.

Since the increase of the internal clearance will make the outer ring of the bearing shift axially, it is not recommended to use bearings with a large bearing clearance (for example, C5).

Bearings with a small amount of internal clearance (such as C3) are generally used in moving applications where they need to bear heavy loads while moving along a shaft or axle. These types of bearings are commonly used in engines or transmissions where they must support high amounts of torque and speed while rotating at high RPMs. In these cases, it is important for them to have as little resistance as possible so that they can spin freely without adding additional friction or heat buildup that would cause additional wear on other parts such as oil seals or bushings inside an engine block or transmission housing."

**It should be noted that the radial internal clearance of deep groove ball bearings is much smaller than that of angular contact ball bearings, tapered roller bearings and cylindrical roller bearings with the same size, so the same level of internal clearance cannot be achieved for all types of bearings.**

The reason is that the radial internal clearance of deep groove ball bearings depends on the shape and size of the inner ring raceway groove, which has a greater effect than that of other types of bearings. Therefore, in order to achieve equal levels of internal clearance, deep groove ball bearings should have larger sizes than other types of bearings.

The larger the radial internal clearance, the greater the load capacity. In addition, if the load capacity is relatively large and there is no requirement for long service life, it may be appropriate to choose an open bearing with a high radial internal clearance.

On the other hand, if it is a highly concentrated load or a large static load that requires high reliability in operation, we must consider whether it is possible to use an angular contact ball bearing or tapered roller bearing instead of this type of deep groove ball bearing.

**The suffix c3 means tighter-than-standard radial clearance.**

Radial clearances are defined by the American National Standards Institute (ANSI) and the Society of Automotive Engineers (SAE). The standard radial clearance is r1, so c3 is 0.0003

inches tighter than r1.

The purpose of this tighter clearance is to prevent piston ring sticking in the bore during starting and low-temperature operation. In a diesel engine, for example, ring sticking can cause excessive wear on the cylinder wall as well as damage to the ring lands.

In an automobile engine, tight c3 clearances are used only when required by design or specification, such as when using low-friction rings to reduce friction loss during cold starts or when operating at very high speeds where piston skirt contact with the cylinder wall could otherwise cause excessive wear.

The C3 suffix indicates that a bearing has a higher load capacity and fatigue strength than standard deep groove ball bearings. The C3 suffix can be combined with other suffixes such as M, T, R, etc. as long as the total load carried by the bearing is x2 times greater than that of a standard bearing.