

SKF 6306-2Z/C3

SKF 6306-2Z/C3 Radial Bearing User Manual

Model: 6306-2Z/C3 | Brand: SKF

1. INTRODUCTION

This manual provides essential information for the proper handling, installation, operation, and maintenance of the SKF 6306-2Z/C3 Radial Bearing. Adhering to these guidelines will ensure optimal performance and longevity of the bearing.

The SKF single-row, double-shielded non-contact radial bearing features symmetric races designed to support radial loads while maintaining high speeds and rotational accuracy. It conforms to the ABEC 1 precision standard, ensuring performance within a narrow range of variation. Its deep grooves allow it to support heavier loads than standard grooves and keep balls stable for high speeds. The C3 radial internal clearance compensates for thermal expansion, and the steel cage ensures even load distribution and reduces friction, vibrations, and noise.

2. PRODUCT OVERVIEW

2.1 Key Features

- Axially symmetric races for radial load support and high rotational accuracy.
- ABEC 1 precision standard for consistent performance.
- Deep grooves for heavier load capacity and high-speed stability.
- C3 radial internal clearance to accommodate thermal expansion.
- Steel cage for even load distribution, reduced friction, vibrations, and noise.
- Double-shielded design for protection against contaminants.

2.2 Product Images



Figure 1: Front view of the SKF 6306-2Z/C3 Radial Bearing, showing the double shields and the SKF Explorer marking.



Figure 2: Technical drawing of the SKF 6306-2Z/C3 Radial Bearing, illustrating its dimensions including bore, outer diameter, and width.

3. SPECIFICATIONS

The following table details the key specifications for the SKF 6306-2Z/C3 Radial Bearing:

Specification	Value
Item Model Number	6306-2Z/C3
Brand	SKF
Material	Alloy Steel
Item Weight	0.35 Kilograms
Bearing Number	6306 2Z
Item Thickness	19 Millimeters
Bore Diameter	30mm
Outer Diameter (OD)	72mm
Precision Standard	ABEC 1
Clearance	C3
Shielding	Double Shielded, Non-Contact

4. SETUP AND INSTALLATION

Proper installation is crucial for the performance and lifespan of the bearing. Always consult the equipment manufacturer's specific instructions for bearing replacement or installation. The following are general guidelines:

- Preparation:** Ensure the housing and shaft are clean, free from burrs, and within specified tolerances.
- Lubrication:** The SKF 6306-2Z/C3 bearing is double-shielded and pre-lubricated for life. No additional lubrication is typically required upon installation.
- Mounting:**
 - Use appropriate tools for mounting to avoid damage to the bearing. Never strike the outer ring when pressing onto a shaft, or the inner ring when pressing into a housing.
 - Apply force evenly to the ring being fitted. For shaft fits, press on the inner ring. For housing fits, press on the outer ring.
 - Consider using heat (induction heater or oil bath) for inner ring mounting on shafts to expand the ring, making installation easier and preventing damage.
- Alignment:** Ensure proper alignment of the bearing with the shaft and housing to prevent premature wear and failure.
- Sealing:** Verify that any external seals or covers are correctly installed to protect the bearing from contaminants.

Caution: Incorrect installation can lead to premature bearing failure. If unsure, consult a qualified technician.

5. OPERATING GUIDELINES

Once installed, the SKF 6306-2Z/C3 bearing is designed for reliable operation under specified conditions. Observe the following:

- **Load Capacity:** Do not exceed the bearing's specified dynamic and static load ratings. Refer to ISO 281:1990 for load carrying capacity and life standards.
- **Speed Limits:** Operate within the recommended speed limits for deep groove ball bearings of this size and type. Excessive speeds can lead to overheating and damage.
- **Temperature:** Monitor operating temperature. Prolonged operation at excessively high temperatures can degrade lubrication and bearing material.
- **Vibration and Noise:** Unusual vibration or noise during operation may indicate an issue. Investigate promptly.

6. MAINTENANCE

The SKF 6306-2Z/C3 bearing is a sealed, pre-lubricated unit designed for minimal maintenance. However, general care of the surrounding environment is important:

- **Cleanliness:** Keep the area around the bearing clean to prevent contaminants from entering, especially if external seals are compromised.
- **Inspection:** Periodically inspect the bearing and its housing for signs of wear, damage, or unusual conditions (e.g., discoloration, excessive heat, unusual noise).
- **Re-lubrication:** As a double-shielded bearing, it is typically lubricated for life and does not require re-lubrication under normal operating conditions. If the application involves extreme conditions or very long service life, consult SKF technical documentation for specific re-lubrication guidelines.
- **Storage:** Store spare bearings in their original packaging in a cool, dry, and vibration-free environment to prevent corrosion and damage.

7. TROUBLESHOOTING

If you encounter issues with the bearing, consider the following common problems and potential solutions:

Problem	Possible Cause	Solution
Excessive Noise	Contamination, improper installation, misalignment, insufficient lubrication (unlikely for sealed bearing), bearing damage.	Inspect for contamination, verify installation and alignment, replace damaged bearing.
Overheating	Excessive speed, over-lubrication (unlikely for sealed bearing), misalignment, excessive load, inadequate cooling.	Check operating parameters, verify alignment, reduce load if possible, ensure proper ventilation.
Premature Failure	Improper installation, overloading, contamination, corrosion, fatigue.	Review installation procedures, ensure correct load, maintain clean environment, replace bearing.

For persistent issues or complex problems, it is recommended to contact SKF technical support or a qualified

bearing specialist.

8. WARRANTY AND SUPPORT

For information regarding the warranty terms and conditions for your SKF 6306-2Z/C3 Radial Bearing, please refer to the documentation provided at the time of purchase or visit the official SKF website. Technical support and further assistance can also be obtained through official SKF channels. You can visit the [SKF Store on Amazon](#) for more product information.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question