

NTN 6201

NTN 6201 Deep Groove Radial Ball Bearing Instruction Manual

1. INTRODUCTION

This manual provides essential information for the proper handling, installation, operation, and maintenance of the NTN 6201 Single Row Deep Groove Radial Ball Bearing. Adhering to these guidelines will ensure optimal performance and extend the service life of the bearing.

The NTN 6201 is a versatile, open-type deep groove radial ball bearing designed for applications requiring high speeds and the ability to support both radial and axial loads. Its open design allows for lubrication to be applied directly in place, making it suitable for environments where regular lubrication is part of the maintenance schedule.



Figure 1: NTN 6201 Single Row Deep Groove Radial Ball Bearing. This image displays the bearing with its inner and outer rings, steel balls, and the steel cage that maintains ball spacing.

2. PRODUCT FEATURES

- **Deep Groove Geometry:** Engineered for high-speed applications.
- **Single Row Design:** Effectively supports radial loads.
- **Steel Cage:** Ensures even spacing of balls, contributing to reduced friction, vibration, and noise during operation.
- **Open Bearing Type:** Designed for lubrication to be applied directly in the application environment.
- **Normal Radial Internal Clearance (CN):** Suitable for applications without significant thermal expansion or requiring atypical precision.

3. SETUP AND INSTALLATION

Proper installation is crucial for the longevity and performance of the bearing. Always ensure a clean working environment and use appropriate tools.

3.1 Preparation

- Clean all components and the housing thoroughly before installation.
- Inspect shafts and housings for burrs, nicks, or other imperfections.
- Ensure all dimensions meet the required tolerances.

3.2 Installation Procedure

1. **Mounting:** Bearings should be mounted using mechanical, hydraulic, or thermal methods. Avoid direct hammering on the bearing rings or balls.
2. **Shaft Fit:** For interference fits, heat the bearing to approximately 80-100°C (176-212°F) using an induction heater or oil bath. Do not exceed 120°C (248°F).
3. **Housing Fit:** For interference fits in the housing, cool the shaft or heat the housing.
4. **Alignment:** Ensure the bearing is seated squarely and fully against the shaft shoulder or housing seat.
5. **Lubrication:** As an open bearing, apply appropriate lubricant immediately after installation and before initial operation.

4. OPERATING PRINCIPLES

The NTN 6201 deep groove radial ball bearing is designed to accommodate radial loads primarily, but can also support moderate axial loads in both directions. The deep raceway grooves and close conformity between the raceways and balls enable this versatility.

Its normal internal clearance is suitable for most general applications where operating temperatures do not cause significant differential thermal expansion between the bearing components and the surrounding structure. The steel cage maintains the separation of the balls, ensuring smooth rotation and minimizing friction, even at high rotational speeds.

5. MAINTENANCE

Regular maintenance is essential to achieve the expected service life and reliable operation of the NTN 6201 bearing.

5.1 Lubrication

- As an open bearing, it requires external lubrication. Select a lubricant (grease or oil) appropriate for the operating conditions, including temperature, speed, and load.
- Follow the equipment manufacturer's recommendations for lubrication type and frequency.
- Ensure proper lubricant quantity; over-lubrication can lead to overheating, while under-lubrication causes premature wear.

5.2 Inspection

- Periodically inspect the bearing for signs of wear, corrosion, or damage.
- Listen for unusual noises (e.g., grinding, squealing) during operation, which may indicate a problem.
- Monitor bearing temperature; excessive heat can be a sign of lubrication issues or damage.

5.3 Cleaning

- If the bearing needs cleaning, use a suitable solvent and ensure all contaminants are removed.

- Thoroughly dry the bearing immediately after cleaning to prevent corrosion.
- Re-lubricate the bearing promptly after cleaning and drying.

6. TROUBLESHOOTING

This section outlines common issues that may arise during the operation of the NTN 6201 bearing and provides potential solutions.

Symptom	Possible Cause	Solution
Excessive Noise	Lack of lubrication, contamination, improper fit, damage to raceways or balls.	Check lubrication, clean bearing, verify fit, inspect for damage and replace if necessary.
Overheating	Over-lubrication, insufficient lubrication, excessive load, misalignment, tight fit.	Adjust lubricant quantity, reduce load, correct alignment, check fit tolerances.
Premature Failure	Improper installation, contamination, inadequate lubrication, overloading, corrosion.	Review installation procedures, ensure cleanliness, optimize lubrication, verify load calculations, protect from moisture.
Vibration	Bearing damage, imbalance in rotating components, loose fit.	Inspect bearing for damage, balance rotating parts, ensure correct fit.

7. SPECIFICATIONS

Detailed technical specifications for the NTN 6201 Deep Groove Radial Ball Bearing.

Specification	Value
Model Number	6201
Bearing Type	Single Row Deep Groove Radial Ball Bearing
Bore Diameter (ID)	12 mm
Outer Diameter (OD)	32 mm
Width	10 mm
Clearance	Normal (CN)
Cage Material	Steel
Bearing Material	Carbon Chrome Steel
Design	Open
Product Dimensions (L x W x H)	1.65 x 1.65 x 0.67 inches

Specification	Value
Item Weight	0.08 Pounds (1.28 ounces)

8. WARRANTY INFORMATION

NTN bearings are manufactured to high-quality standards. For specific warranty terms and conditions, please refer to the official NTN warranty policy or contact your authorized NTN distributor. Warranty coverage typically addresses manufacturing defects under normal operating conditions.

9. SUPPORT INFORMATION

For technical assistance, product inquiries, or further support regarding your NTN 6201 bearing, please contact your local NTN representative or visit the official NTN website. Provide the model number (6201) and any relevant application details when seeking support.