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## NTN 6901

# NTN 6901 Single Row Deep Groove Radial Ball Bearing User Manual

Model: 6901

## 1. INTRODUCTION

This manual provides essential information for the proper installation, operation, and maintenance of your NTN 6901 Single Row Deep Groove Radial Ball Bearing. Adhering to these instructions will ensure optimal performance and extend the lifespan of the bearing. Please read this manual thoroughly before use.

## 2. PRODUCT OVERVIEW

The NTN 6901 is a single row 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 in place, making it versatile for various industrial uses.



Figure 1: NTN 6901 Single Row Deep Groove Radial Ball Bearing. This image shows the metallic outer and inner rings, with the steel balls visible within the deep grooves, separated by a steel cage. The bearing is open, meaning it does not have shields or seals.

### Key Features:

- **Deep Groove Geometry:** Optimized for high-speed applications.
- **Single Row Design:** Effectively supports radial loads.
- **Steel Cage:** Ensures even spacing of balls, reducing friction, vibration, and noise.
- **Open Configuration:** Allows for lubrication to be applied directly during installation or maintenance.
- **Normal Radial Internal Clearance (CN):** Suitable for applications without significant thermal expansion or requiring atypical precision.

## 3. INSTALLATION (SETUP)

Proper installation is crucial for the longevity and performance of the bearing. Follow these guidelines carefully:

### 1. Preparation:

- Ensure the shaft and housing seats are clean, free from burrs, and within specified tolerances.

- Verify that all tools and equipment are clean and in good condition.
- Handle the bearing with clean hands or gloves to prevent contamination.

## 2. Mounting:

- Apply a thin layer of appropriate lubricant to the shaft and housing seats before mounting.
- For press-fit applications, use a bearing heater to expand the inner ring or a hydraulic press with appropriate mounting tools to apply force evenly to the inner ring. **Never strike the outer ring or cage.**
- For housing fits, apply force evenly to the outer ring. **Never strike the inner ring or cage.**
- Ensure the bearing is seated squarely and completely against the shaft shoulder or housing shoulder.

## 3. Lubrication:

- As this is an open bearing, it requires external lubrication. Apply the recommended grease or oil immediately after installation.
- Fill the bearing and surrounding housing cavity with the appropriate amount of lubricant, typically filling 30-50% of the free space.

## 4. OPERATION

Once installed and lubricated, the NTN 6901 bearing is ready for operation. Observe the following during initial startup and regular use:

- **Initial Run-in:** During the first few hours of operation, monitor the bearing for unusual noise, vibration, or excessive heat. A slight increase in temperature is normal during run-in.
- **Temperature Monitoring:** Regularly check the bearing temperature. Excessive heat can indicate improper lubrication, overload, or misalignment. Refer to the application's specific temperature limits.
- **Vibration and Noise:** Any sudden increase in vibration or noise levels should be investigated immediately.
- **Load Limits:** Do not exceed the specified radial and axial load capacities for the bearing.

## 5. MAINTENANCE

Regular maintenance is essential to maximize bearing life and prevent premature failure.

- **Relubrication:**
  - As an open bearing, periodic relubrication is required. The frequency depends on operating conditions (speed, temperature, load, environment).
  - Consult lubrication charts or a qualified engineer for specific relubrication intervals and lubricant types.
  - Avoid over-lubrication, which can lead to excessive heat and seal damage (if seals are added externally).
- **Inspection:**
  - Periodically inspect the bearing for signs of wear, corrosion, or damage.
  - Check for lubricant leakage or contamination.
  - Monitor for unusual noise or vibration during operation.
- **Cleaning:**
  - If the bearing needs cleaning, use a suitable solvent and ensure it is thoroughly dried before relubrication and reinstallation.
  - Avoid using high-pressure washes directly on the bearing.

## 6. TROUBLESHOOTING

This section addresses common issues that may arise with ball bearings. For complex problems, consult a qualified technician.

Symptom	Possible Cause	Solution
Excessive Noise/Vibration	Lack of lubrication, contamination, improper fit, misalignment, bearing damage.	Check lubrication, clean/replace if contaminated, verify fit, check alignment, inspect bearing for damage.
Overheating	Insufficient or excessive lubrication, overload, misalignment, tight fit.	Adjust lubrication, reduce load, correct alignment, check fit tolerances.
Premature Failure	Improper installation, inadequate lubrication, contamination, overloading, corrosion.	Review installation procedures, ensure proper lubrication schedule and type, protect from contaminants, operate within load limits, prevent moisture exposure.

## 7. SPECIFICATIONS

Detailed technical specifications for the NTN 6901 Single Row Deep Groove Radial Ball Bearing:

Attribute	Value
Model Number	6901
Brand	NTN Bearing
Bearing Type	Single Row Deep Groove Radial Ball Bearing
Bore Diameter (ID)	12 mm
Outer Diameter (OD)	24 mm
Width	6 mm
Material	Carbon Chrome Steel
Clearance	CN (Normal) Radial Internal Clearance
Configuration	Open
ASIN	B003MULX42
Package Dimensions	3.15 x 2.95 x 0.39 inches
Item Weight	0.49 ounces

## 8. WARRANTY AND SUPPORT

For warranty information or technical support regarding your NTN 6901 bearing, please contact NTN Bearing directly or refer to their official website. Keep your purchase records for any warranty claims.

NTN Bearing is a global manufacturer with extensive experience in bearing technology. For further assistance, visit

the official NTN website or contact their customer service department.