

NSK 51206

NSK 51206 Thrust Bearing

INSTRUCTION MANUAL

1. Product Overview

The NSK 51206 is a single-row, three-piece thrust ball bearing designed for applications requiring support for heavy axial loads in one direction. It features grooved races and a pressed steel cage, making it suitable for moderate-speed operations.



Figure 1: NSK 51206 Thrust Bearing. This image displays the three main components of the bearing: the housing locating washer, the shaft locating washer, and the central ball and cage assembly. The grooved raceways are visible on the washers, designed to conform to the balls.

Key Features:

- Single direction, deep-groove thrust ball bearing for applications that support heavy axial loads in one direction.
- Open bearing design for lubrication applied in place.
- Constructed from through-hardened chromium steel for enhanced durability and resistance to deformity under heavy loads.
- Features a pressed sheet steel retainer that evenly spaces rollers, contributing to reduced friction, vibration, and noise.
- Grooved raceways provide higher speeds and thrust-bearing capacity compared to bearings with flat washers.

2. Setup and Installation

The NSK 51206 thrust bearing is designed to be separable, which simplifies the installation process as its components can be mounted independently.

Components:

- Housing Locating Washer (Ring)

- Shaft Locating Washer
- Ball and Cage Assembly

Installation Steps:

1. Ensure all mating surfaces are clean and free from debris.
2. Apply a thin layer of appropriate lubricant to the bearing components before assembly.
3. Install the shaft locating washer onto the shaft.
4. Place the ball and cage assembly onto the shaft locating washer.
5. Position the housing locating washer on top of the ball and cage assembly, ensuring proper alignment with the housing.
6. Verify that the bearing is seated correctly and can rotate freely without binding.

Note: Proper alignment and lubrication during installation are crucial for optimal performance and bearing lifespan.

3. Operating Guidelines

This thrust ball bearing is designed to support heavy axial loads in a single direction and tolerates axial deflection. It is not intended to support radial loads.

Typical Applications:

- Machine tool drive shafts
- Automotive steering gears and clutches
- Rotary tables
- Outboard motor propellers
- Household appliances

The bearing can operate at temperatures ranging from -30°C to 150°C (-22°F to 302°F).

Important: Do not exceed the specified maximum rotational speed or load capacities to prevent premature bearing failure.

4. Maintenance

The NSK 51206 is an open bearing, meaning it is designed to be lubricated in place. Regular lubrication is essential for maintaining performance and extending the bearing's lifespan.

Lubrication:

- Periodically reapply appropriate lubrication based on the operating environment and usage frequency.
- Consult a lubrication specialist or NSK's official guidelines for specific lubricant types and reapplication intervals for your application.

Inspection:

- Regularly inspect the bearing for signs of wear, corrosion, or damage.
- Check for unusual noise or vibration during operation, which may indicate a need for maintenance or replacement.

5. Troubleshooting

This section provides guidance for common issues that may arise during the operation of the NSK 51206 thrust bearing.

Symptom	Possible Cause	Solution
Excessive Noise or Vibration	<ul style="list-style-type: none"> Insufficient or improper lubrication Misalignment during installation Overload or excessive speed Contamination Bearing wear or damage 	<ul style="list-style-type: none"> Check and reapply appropriate lubricant. Re-evaluate installation alignment. Ensure operating conditions are within specifications. Clean the bearing area; replace if contaminated. Inspect bearing for damage; replace if necessary.
Overheating	<ul style="list-style-type: none"> Lack of lubrication Excessive load or speed Improper fit or tight clearances 	<ul style="list-style-type: none"> Verify lubrication schedule and type. Reduce load or speed if exceeding limits. Re-check installation and clearances.
Premature Failure	<ul style="list-style-type: none"> Operating beyond design limits Improper installation Contamination or corrosion Fatigue due to long-term use 	<ul style="list-style-type: none"> Review application requirements against bearing specifications. Ensure correct installation procedures are followed. Maintain a clean operating environment. Replace bearing as part of routine maintenance.

6. Specifications

Detailed technical specifications for the NSK 51206 Thrust Bearing:

Attribute	Value
Model Number	51206
Brand	NSK
Bearing Type	Thrust Ball Bearing, Single Row, 3 Piece
Bore Diameter	30mm
Outer Diameter (OD)	52mm
Width	16mm
Maximum Rotational Speed	3400rpm
Static Load Capacity	58000N
Dynamic Load Capacity	29500N
Material	Low-alloy, through-hardened chromium steel (Alloy Steel)

Attribute	Value
Operating Temperature Range	-30°C to 150°C (-22°F to 302°F)
Product Dimensions (L x W x H)	1.18 x 0.63 x 2.05 inches
Item Weight	3.2 ounces

7. Warranty and Support

For specific warranty information regarding your NSK 51206 Thrust Bearing, please refer to the documentation provided with your purchase or contact NSK directly. Warranty terms typically cover manufacturing defects under normal operating conditions.

For technical support, inquiries, or to report issues, please contact NSK customer service or visit their official website. Contact details can usually be found on the product packaging or the manufacturer's official online resources.

Manufacturer: NSK

Website: www.nsk.com (Please verify the official website for your region)