

uxcell 51108

uxcell 51108 Thrust Ball Bearings Instruction Manual

Model: 51108 / a17041700ux0024

1. PRODUCT OVERVIEW

The uxcell 51108 Thrust Ball Bearings are designed to accommodate axial loads in one direction. These bearings are composed of a shaft washer, a housing washer, and a ball and cage assembly. Their separable components allow for easy mounting and dismounting.

Key Features:

- **Dimensions:** Bore Diameter: 40mm, Outer Diameter: 60mm, Thickness: 13mm.
- **Material:** Bearing balls are made of Chrome Steel (AISI 52100) for wear resistance, high temperature resistance, and high hardness. The cage is constructed from carbon steel.
- **Load Capacity:** Dynamic Load Rating (Cr): 26.9kN; Static Load Rating (Cor): 62.8kN.
- **Operating Conditions:** Designed for low-speed operation with a limiting speed (grease) of 3400rpm. Exclusively handles axial loads.
- **Benefits:** Offers low noise operation, long service life, and simplified maintenance due to interchangeable separable components.

Typical Applications: These bearings are suitable for various rotating applications including oven turntables, jacks, pumps, machine tools, and automotive components where axial loads are present.



Figure 1: Two assembled uxcell 51108 Thrust Ball Bearings. Each bearing consists of a shaft washer, a housing washer, and a ball and cage assembly.

2. SETUP AND INSTALLATION

Proper installation is crucial for the optimal performance and longevity of thrust ball bearings. Ensure the working environment is clean and free from contaminants.

1. **Inspect Components:** Before installation, carefully inspect all bearing components (shaft washer, housing washer, ball and cage assembly) for any signs of damage or manufacturing defects.
2. **Clean Surfaces:** Ensure that the shaft and housing surfaces where the bearing will be mounted are thoroughly clean and free of burrs, dirt, or old lubricant.
3. **Lubrication:** Apply a suitable lubricant (grease or oil, depending on the application requirements) to the bearing components before assembly. This aids in smooth installation and initial operation.
4. **Assemble Bearing:**

- The shaft washer, which has a smaller bore, should be fitted onto the shaft.
- The housing washer, with a larger bore, should be fitted into the housing.
- The ball and cage assembly is placed between the shaft and housing washers.



Figure 2: Exploded view of the uxcell 51108 Thrust Ball Bearing, showing its three separable components: the shaft washer (left), the ball and cage assembly (center), and the housing washer (right).

5. **Press Fit (if applicable):** If a press fit is required, apply even pressure to the entire face of the washer being pressed. Avoid striking the bearing directly with a hammer, as this can cause damage. Use appropriate tools.
6. **Verify Alignment:** Ensure that the bearing components are correctly aligned and seated. Misalignment can lead to premature wear and failure.

3. OPERATING INSTRUCTIONS

Thrust ball bearings are specifically designed for certain load conditions and operating speeds. Adhering to these guidelines will ensure optimal performance and extend the bearing's lifespan.

- **Axial Loads Only:** These bearings are designed to handle axial loads (forces acting parallel to the shaft) in one direction. They are not intended for radial loads (forces acting perpendicular to the shaft) or combined loads.
- **Low Speed Operation:** The uxcell 51108 bearing is optimized for low-speed applications. The limiting speed with grease lubrication is 3400 rpm. Exceeding this speed can lead to overheating and premature failure.
- **Load Direction:** Ensure that the thrust load is applied correctly through the bearing. The shaft washer should be supported by the shaft, and the housing washer by the housing, with the ball and cage assembly transmitting the load between them.
- **Temperature Range:** Operate the bearing within its specified temperature range. Extreme temperatures can affect lubricant performance and material integrity.

4. MAINTENANCE

Regular maintenance is essential to ensure the long-term reliability and performance of your uxcell thrust ball bearings.

1. Lubrication:

- Periodically check and replenish lubricant. The frequency depends on the operating conditions (speed, load, temperature, environment).
- Use a high-quality grease or oil suitable for the application and bearing type.
- Ensure the bearing is adequately lubricated to prevent metal-to-metal contact, reduce friction, and dissipate heat.

2. Cleanliness:

- Maintain a clean working environment around the bearing. Contaminants such as dust, dirt, and moisture can significantly reduce bearing life.
- Inspect seals (if present in the assembly) regularly and replace them if damaged to prevent ingress of contaminants.

3. Inspection:

- Regularly inspect the bearing for signs of wear, corrosion, or damage.
- Listen for unusual noises during operation, which can indicate lubrication issues or impending failure.
- Check for excessive heat generation, which may suggest insufficient lubrication or overloading.

4. **Storage:** Store spare bearings in their original packaging in a cool, dry, and clean environment to prevent corrosion and contamination.

5. TROUBLESHOOTING

This section provides guidance on common issues that may arise with thrust ball bearings.

Symptom	Possible Cause	Solution
Excessive Noise	Insufficient lubrication, contamination, improper installation, overloading, wear.	Check and replenish lubricant. Clean bearing and surrounding area. Re-install correctly. Verify load conditions. Replace worn bearing.
Overheating	Insufficient lubrication, excessive speed, overloading, misalignment.	Ensure adequate lubrication. Reduce operating speed if exceeding limits. Verify load is within specifications. Check for proper alignment.
Premature Wear	Contamination, lack of lubrication, excessive load, misalignment, vibration.	Improve sealing and cleanliness. Ensure proper lubrication. Reduce load. Correct alignment. Address vibration sources.
Bearing Seizure	Severe lack of lubrication, extreme overloading, severe contamination, material defect.	Immediately stop operation. Replace bearing. Investigate root cause to prevent recurrence.

If issues persist after attempting these solutions, consult a qualified technician or contact uxcell customer support.

6. SPECIFICATIONS

Attribute	Value
Brand	uxcell
Model Number (Bearing)	51108
Product Model Number	a17041700ux0024
Bearing Type	Thrust Ball Bearing
Bore Diameter	40mm
Outer Diameter	60mm
Thickness	13mm
Ball Material	Chrome Steel (AISI 52100)
Cage Material	Carbon Steel
Dynamic Load Rating (Cr)	26.9kN
Static Load Rating (Cor)	62.8kN
Limiting Speed (Grease)	3400rpm
Direction of Load	Axial (One-Way)




7. WARRANTY AND SUPPORT

For specific warranty information or technical support regarding your uxcell 51108 Thrust Ball Bearings, please refer to the product packaging or contact uxcell customer service directly. Ensure you have your product model number (a17041700ux0024) and bearing number (51108) available when seeking assistance. You may also visit the official uxcell store for more information:[uxcell Store on Amazon](#)

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Related Documents - 51108

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