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› Bestopper 10:1 Planetary Gearbox for Nema 34 Stepper Motor Instruction Manual

Bestopper 10:1 Planetary Gearbox

Bestopper 10:1 Planetary Gearbox Instruction Manual

Model: 10:1 Planetary Gearbox for Nema 34 Stepper Motor

1. INTRODUCTION

This manual provides essential information for the safe and efficient installation, operation, and maintenance of your Bestopper 10:1 Planetary Gearbox. This gearbox is designed to provide a 10:1 speed reduction for Nema 34 Stepper Motors, suitable for applications requiring high torque and precision, such as CNC machinery and benchtop lathes. Please read this manual thoroughly before using the product.

1/2 inch Input

There is brake inside the input bore.
Motor shaft is secured when brake lock .



Figure 1: Bestopper 10:1 Planetary Gearbox with included mounting hardware.

2. SAFETY INSTRUCTIONS

- Always disconnect power to the stepper motor and associated equipment before installation, maintenance, or troubleshooting.
- Ensure all connections are secure and properly tightened to prevent accidental dislodgement or vibration during operation.
- Wear appropriate personal protective equipment (PPE) such as safety glasses and gloves when handling the gearbox and during operation of machinery.
- Do not exceed the specified input speed or torque ratings of the gearbox.
- Keep hands and loose clothing away from moving parts during operation.
- If any unusual noise, vibration, or heat is detected, immediately shut down the equipment and investigate the cause.

3. PRODUCT OVERVIEW

The Bestopper 10:1 Planetary Gearbox is a precision-engineered component designed to enhance the performance of Nema 34 stepper motors. It features a robust construction for durability and reliable operation.

Key Features:

- **Gear Ratio:** 10:1
- **Input Shaft:** 1/2 inch (12.7mm) with internal brake mechanism.
- **Output Shaft:** 16mm.
- Designed for Nema 34 Stepper Motors.

unit:mm

SIZE DIAGRAM

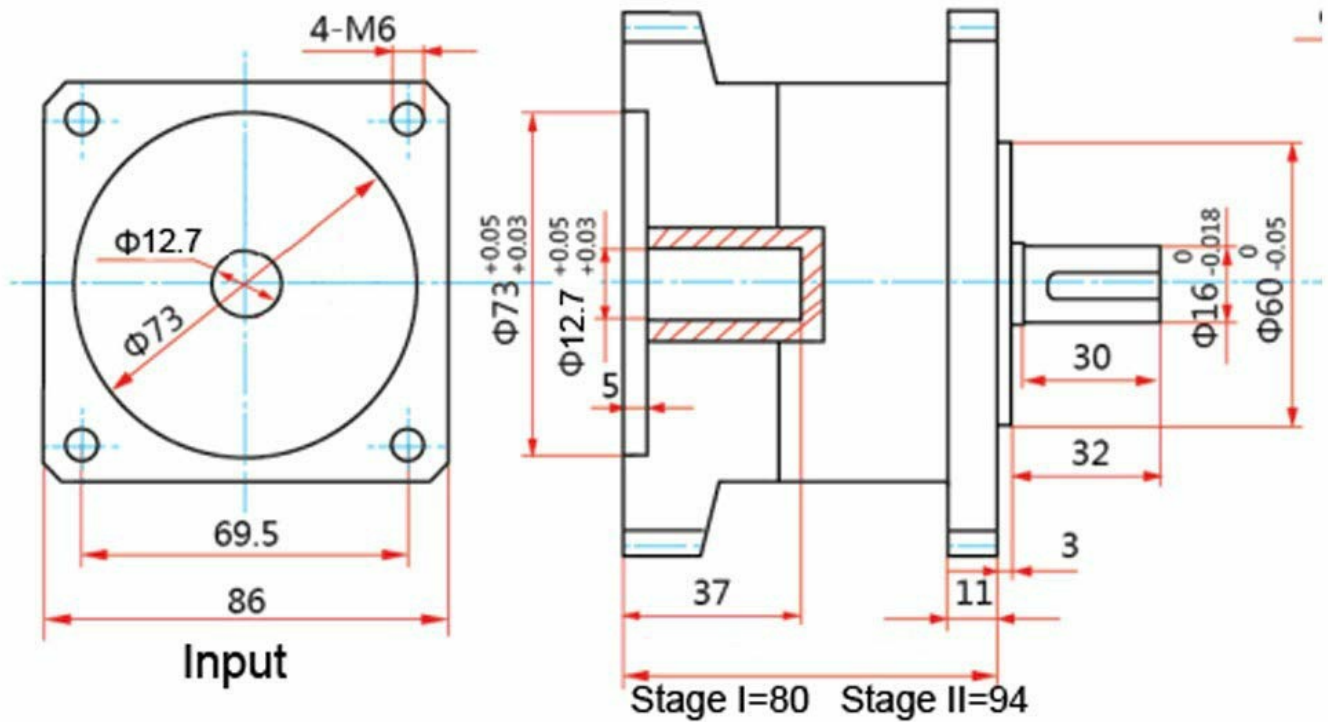
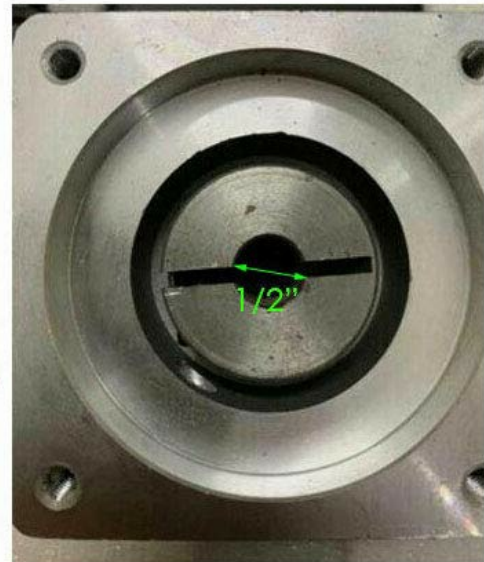


Figure 2: Input shaft measurement showing 12.70mm (1/2 inch). Note the internal brake mechanism.



Apply : for Nema34 Motor
 Input Shaft : 12.7mm (1/2")
 Output Shaft : 16mm
 Screw Distance : 70mm
 Rabbet : 73mm

Figure 3: Key dimensions for Nema 34 motor application, including 12.7mm input and 16mm output shafts.

4. SPECIFICATIONS

Detailed specifications for the Bestopper 10:1 Planetary Gearbox are provided below:

Specification	Value
Gear Ratio	10:1
Input Shaft Diameter	12.7mm (1/2 inch)
Output Shaft Diameter	16mm
Compatible Motor	Nema 34 Stepper Motor
Max Input Speed	3000 RPM

Specification	Value
Package Dimensions	6.93 x 5.75 x 5.67 inches
Item Weight	4.89 pounds
Manufacturer	FSTEK
UPC	749256974313



Figure 4: Detailed dimensional drawing of the gearbox (unit: mm).

5. SETUP AND INSTALLATION

Proper installation is crucial for the performance and longevity of your planetary gearbox. Follow these steps carefully:

- 1. Prepare the Motor:** Ensure your Nema 34 stepper motor is clean and free of debris.

2. **Align Gearbox and Motor:** Carefully align the input shaft of the gearbox with the output shaft of the stepper motor. The gearbox input bore includes a brake mechanism to secure the motor shaft.
3. **Secure Mounting:** Use the provided 4 mounting screws to attach the gearbox to the stepper motor. Tighten the screws evenly to ensure proper concentricity and prevent misalignment. An Allen wrench is typically used for these screws.
4. **Verify Stability:** After mounting, ensure the gearbox and motor assembly is stable and free from any wobbling or excessive play. Incorrect installation can lead to shaking and damage.



Figure 5: Examples of correct and incorrect gearbox installation. Ensure the gearbox is fully supported and securely fastened to the motor.

6. OPERATING INSTRUCTIONS

Once the gearbox is securely installed with the Nema 34 stepper motor, it is ready for operation. The gearbox reduces the motor's output speed by a factor of 10 while increasing the torque. Ensure your control system is configured to account for this gear ratio.

- **Initial Test:** Perform a low-speed test run to confirm smooth operation and proper alignment.
- **Monitor Performance:** During operation, observe for any unusual noises, vibrations, or excessive heat.
- **Load Management:** Do not overload the gearbox beyond its rated torque capacity.

7. MAINTENANCE

The Bestoppper Planetary Gearbox is designed for minimal maintenance. However, regular checks can help ensure its longevity and optimal performance.

- **Periodic Inspection:** Regularly inspect the gearbox for any signs of wear, damage, or loose fasteners.
- **Cleanliness:** Keep the exterior of the gearbox clean and free from dust, chips, and other contaminants.
- **Lubrication:** This gearbox is typically pre-lubricated and sealed for life. Do not attempt to open the unit for lubrication.

unless specifically instructed by the manufacturer.

8. TROUBLESHOOTING

If you encounter issues with your planetary gearbox, consider the following common troubleshooting steps:

- **Excessive Noise or Vibration:**

- Check for loose mounting screws between the gearbox and the motor, or between the assembly and the machine frame.
- Ensure proper alignment of the motor and gearbox shafts. Misalignment can cause significant vibration.
- Verify that the load is balanced and not causing undue stress on the gearbox.

- **Overheating:**

- Confirm that the gearbox is not operating beyond its rated load or speed.
- Ensure adequate ventilation around the gearbox.

- **Reduced Performance:**

- Check the motor's performance independently to rule out motor issues.
- Inspect for any signs of internal damage or excessive wear if other troubleshooting steps fail.

If problems persist after attempting these steps, please contact customer support for further assistance.

9. WARRANTY AND SUPPORT

For warranty information or technical support, please refer to the documentation provided with your purchase or contact Bestopper customer service. Keep your purchase receipt as proof of purchase.

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Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

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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