

DOLUNTO 17HS4401S

DOLUNTO Nema17 Stepper Motor 17HS4401S User Manual

Model: 17HS4401S

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1. INTRODUCTION

This manual provides essential information for the proper installation, operation, and maintenance of your DOLUNTO Nema17 Stepper Motor (Model 17HS4401S). Please read this guide thoroughly before using the product to ensure optimal performance and longevity. This motor is designed for applications requiring precise motion control, such as 3D printers, CNC engravers, and other automated systems.

2. PRODUCT OVERVIEW

The DOLUNTO Nema17 Stepper Motor 17HS4401S is a high-quality, 4-lead stepper motor engineered for reliable and precise motion control. Key features include:

- **Uniform Rotation Speed:** Designed to maintain a consistent rotation speed without losing steps, ensuring high internal control accuracy.
- **Stable Structure:** Features a reinforced PCB board and a rotor coated with imported epoxy resin, cured at high temperature, to prevent jamming and ensure long-term stability.
- **Low Noise Operation:** Engineered for high overall stability, resulting in uniform rotation and reduced operational noise.

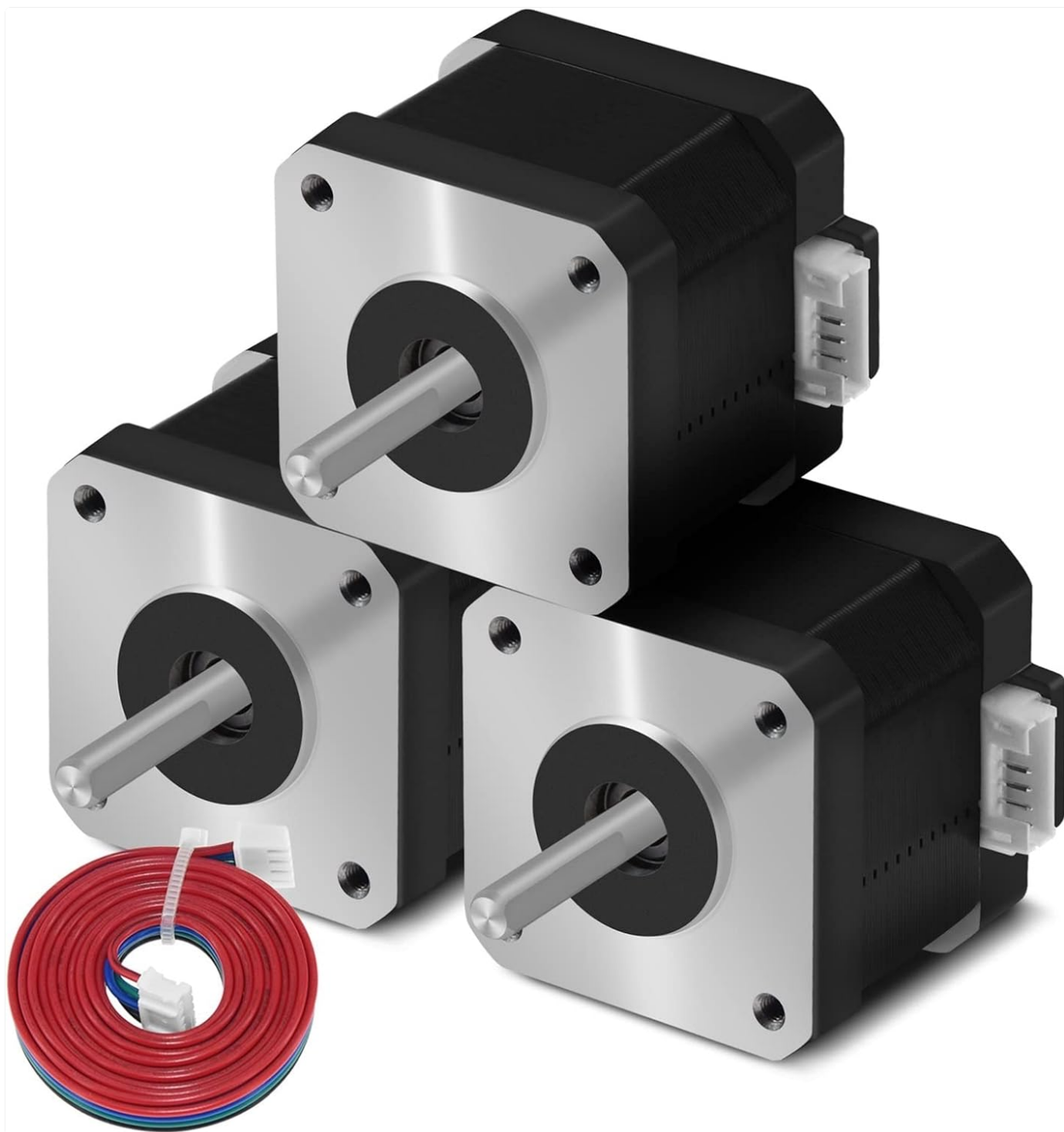


Figure 2.1: DOLUNTO Nema17 Stepper Motor 17HS4401S with its connecting cable.

High torque, Low noise

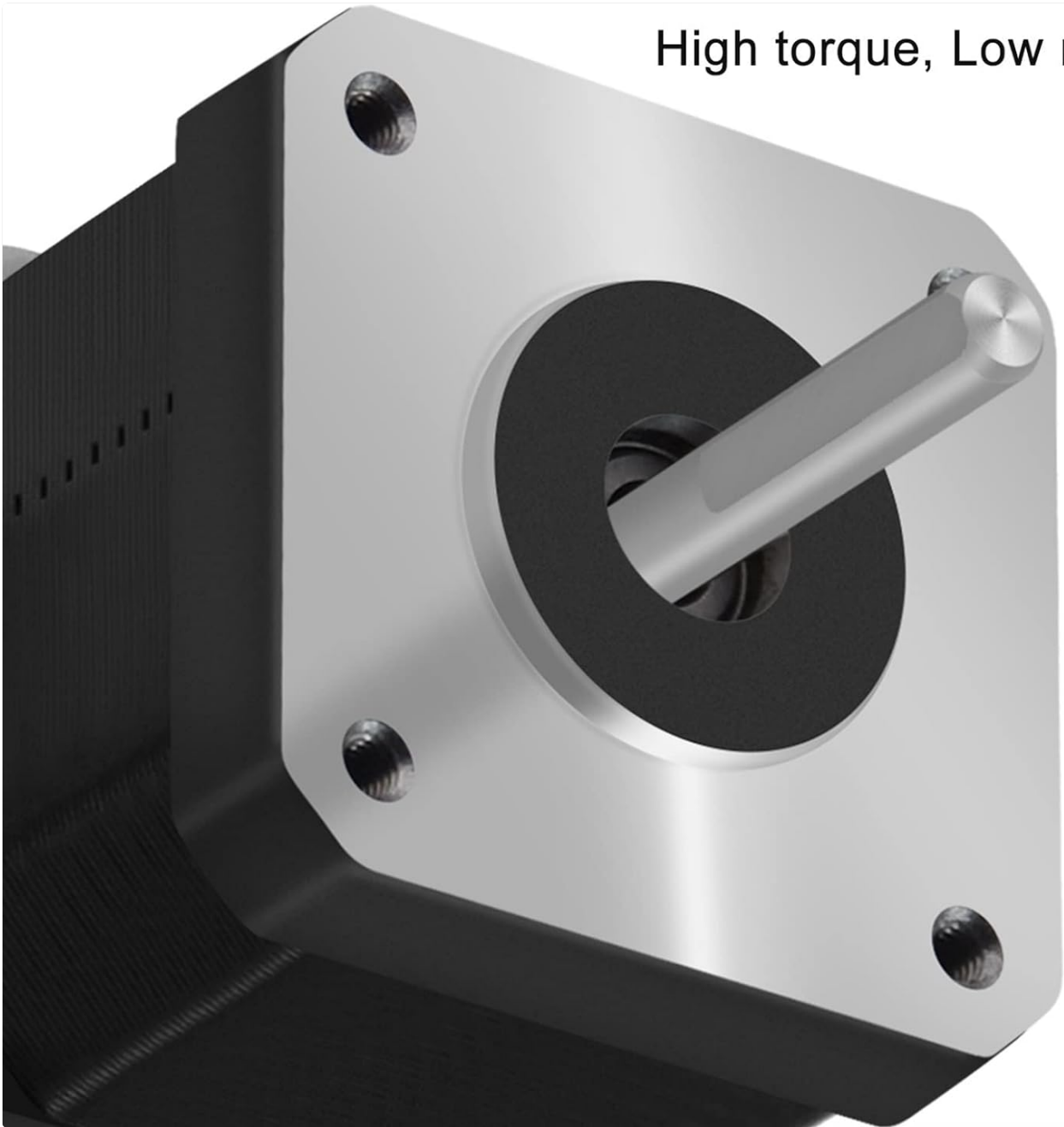


Figure 2.2: Close-up of the motor shaft, emphasizing its high torque and low noise design.

3. SPECIFICATIONS

The following table details the technical specifications for the DOLUNTO Nema17 Stepper Motor 17HS4401S:

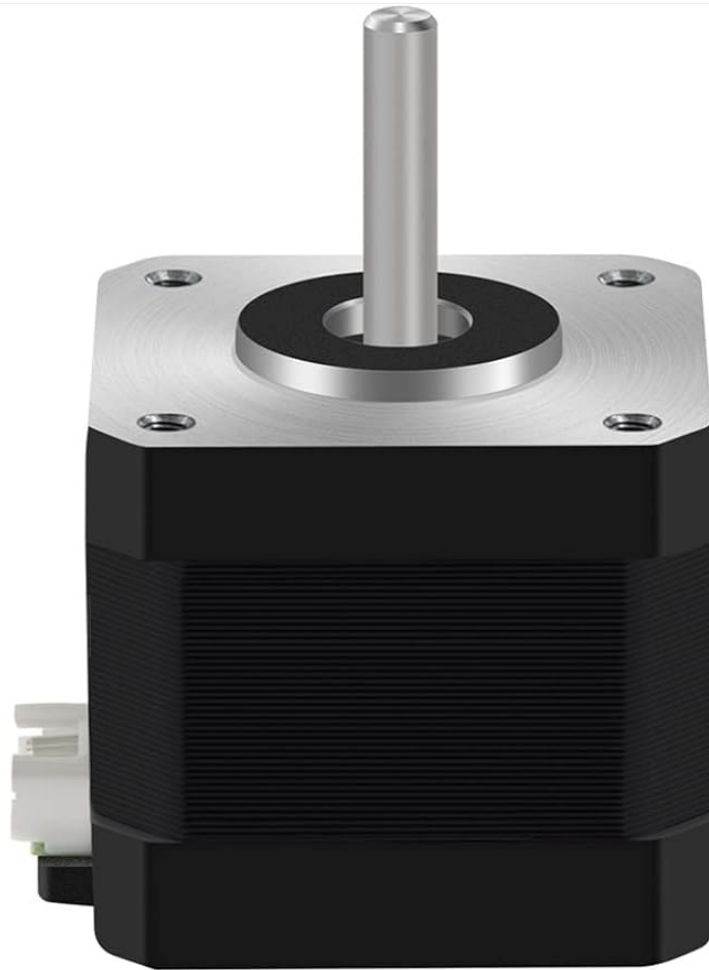


Figure 3.1: Detailed technical specifications for the 17HS4401S motor.

Parameter	Value
Model	17HS4401S
Step Angle	$1.8^{\circ} \pm 0.09^{\circ}$
Rated Voltage	DC 3.6 V
Rated Current	1.5 A / Phase
Holding Torque	$\geq 420\text{mN.M}$
Maximum No-Load Starting Frequency	$\geq 1900 \text{ PPS}$
Weight	255 g
Number of Leads	4

codes are Red/Blue for one coil and Green/Black for the other, but always verify with the schematic.

- **Power Supply:** Ensure your power supply meets the motor's rated voltage (DC 3.6V) and current (1.5A per phase) requirements, with sufficient overhead for the driver.
- **Cable Length:** The motor typically comes with a 39.4-inch (approximately 1 meter) connecting cable. Ensure connections are secure and free from shorts.



Name :	Nema 17 stepper motor
Model :	17HS4401S
Step Angle :	1,8 ° ± 0,09 °
Rated voltage:	DC 3. 6 V
Rated Current :	DC 1,5 A / Phase
Holding Torque:	≥ 420mN. M
Maximum no load Starling frequency :	≥ 1900 PPS
Weight :	255 g

Figure 4.2: Motor with its 39.4-inch connecting cable.

5. OPERATING INSTRUCTIONS

The DOLUNTO 17HS4401S stepper motor requires a compatible stepper motor driver to function. The driver translates control signals (e.g., step and direction pulses) from a microcontroller or CNC controller into the appropriate current sequences for the motor coils.

1. **Driver Configuration:** Configure your stepper motor driver settings (e.g., microstepping, current limits) according to the motor's specifications and your application's requirements. Setting the current limit correctly is vital to prevent motor overheating.
2. **Control Signals:** Provide step and direction signals from your control system to the stepper motor driver. The motor will rotate one step (1.8°) per step pulse, with the direction determined by the direction signal.
3. **Speed and Acceleration:** Gradually increase the motor speed and acceleration parameters in your control software to find the optimal settings for your application. Rapid acceleration or deceleration can lead to lost steps.
4. **Monitoring:** During initial operation, monitor the motor's temperature. While designed for stability, prolonged operation at high currents or speeds without adequate cooling can cause overheating.

The motor's design ensures stable and accurate speed without losing steps, even during continuous operation, and maintains low noise levels.

6. MAINTENANCE

The DOLUNTO 17HS4401S stepper motor is designed for durability and requires minimal maintenance. Adhering to these simple practices will help ensure its long-term performance:

- **Keep Clean:** Periodically clean the motor's exterior to prevent dust and debris buildup, especially around the shaft and mounting areas. Use a soft, dry cloth. Avoid using solvents or harsh chemicals.
- **Inspect Connections:** Regularly check all electrical connections (motor to driver, driver to power supply) to ensure they are secure and free from corrosion or damage. Loose connections can lead to intermittent operation or motor failure.
- **Monitor Temperature:** While operating, ensure the motor does not consistently run at excessively high temperatures. If overheating occurs, check the driver current settings, power supply, and mechanical load.
- **Environmental Conditions:** Operate the motor within its specified environmental conditions (temperature, humidity) to prevent premature wear or damage.
- **Shaft and Bearings:** The motor's bearings are typically sealed and do not require lubrication. Avoid applying excessive force to the motor shaft.

7. TROUBLESHOOTING

If you encounter issues with your DOLUNTO 17HS4401S stepper motor, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Motor Not Moving / No Response	◦ No power to driver/motor. ◦ Incorrect wiring. ◦ Driver fault or incorrect settings. ◦ Control signals not reaching the driver.	◦ Verify power supply to the driver and motor. ◦ Check motor wiring against schematic (Figure 4.1). ◦ Ensure driver is enabled and current limits are set correctly. ◦ Confirm control signals (step/direction) are active.

Problem	Possible Cause	Solution
Motor Stalls / Loses Steps	◦ Excessive mechanical load. ◦ Insufficient current to motor. ◦ Too high acceleration/speed. ◦ Motor overheating.	◦ Reduce mechanical load or use a geared system. ◦ Increase driver current (within motor limits) or use a higher voltage power supply. ◦ Reduce acceleration and maximum speed settings. ◦ Check for proper cooling; reduce current if motor is too hot.
Erratic Movement / Vibration	◦ Loose connections. ◦ Electrical noise. ◦ Incorrect microstepping settings. ◦ Motor driver issues.	◦ Tighten all wiring connections. ◦ Ensure proper grounding and shielded cables if necessary. ◦ Adjust microstepping settings on the driver. ◦ Test with a known good motor driver if possible.
Motor Overheating	◦ Driver current set too high. ◦ Insufficient cooling. ◦ Excessive mechanical load.	◦ Reduce the current limit on the stepper motor driver. ◦ Ensure adequate airflow around the motor; consider a heatsink or fan if needed. ◦ Reduce the load on the motor.

8. WARRANTY AND SUPPORT

For specific warranty details and technical support regarding your DOLUNTO Nema17 Stepper Motor 17HS4401S, please refer to the documentation provided at the time of purchase or contact your retailer or the manufacturer directly. Keep your purchase receipt as proof of purchase. For further assistance, you may also visit the official DOLUNTO website or contact their customer service department.

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ASK A QUESTION ABOUT THIS MANUAL

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.

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Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

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