KOYOFEI KYF-3D-021

KOYOFEI Creality 42-40 Stepper Motor Instruction Manual

Model: KYF-3D-021

1. Introduction

This manual provides essential information for the installation, operation, and maintenance of your KOYOFEI Creality 42-40 Stepper Motor. Please read this manual thoroughly before use to ensure proper function and longevity of the product.

2. Product Overview

The KOYOFEI Creality 42-40 Stepper Motor is designed for use in 3D printers, specifically as an E-axis (extruder) motor or Y-axis motor for compatible models. It features stable performance, high step accuracy, and low noise operation.

2.1 Key Features

- **Compatibility:** Designed for E-axis of Creality Ender and CR-10 series (e.g., Ender-3, Ender-3 Pro, CR-10, CR-10S). Also fits Ender-5, Ender-5 Pro, CR-10 V2, CR-10S Pro V2 Y-axis.
- **Precision:** 1.8-degree step angle for accurate movement.
- **Torque:** 0.4 N.M holding torque.
- **Current:** 1A rated current per phase.
- **Performance:** High-quality motor with low power consumption, smooth speed, and stable operation.
- **Quiet Operation:** Low noise level and efficient heat dissipation.

2.2 Package Contents

- 1 x KOYOFEI Creality 42-40 Stepper Motor

Note: Connection cable and screws are not included.

Figure 1: Front view of the KOYOFEI Creality 42-40 Stepper Motor. The motor features a silver body with a black central section labeled "CREALITY 42-40" and a D-shaped shaft extending from the top.

Figure 2: The KOYOFEI Creality 42-40 Stepper Motor displayed alongside its black packaging box, featuring the "CREALITY" logo.

3. Specifications

Item Model Number	KYF-3D-021
Material	Metal
Step Angle	1.8 degrees
Phase	2
Holding Torque	0.4 N.M
Rated Current	1A
Shaft Diameter	5 mm, D-shaped
Frame Size	42 x 42 x 40 mm (1.7 x 1.7 x 1.6 inches)
Item Weight	290 g (10.23 ounces)

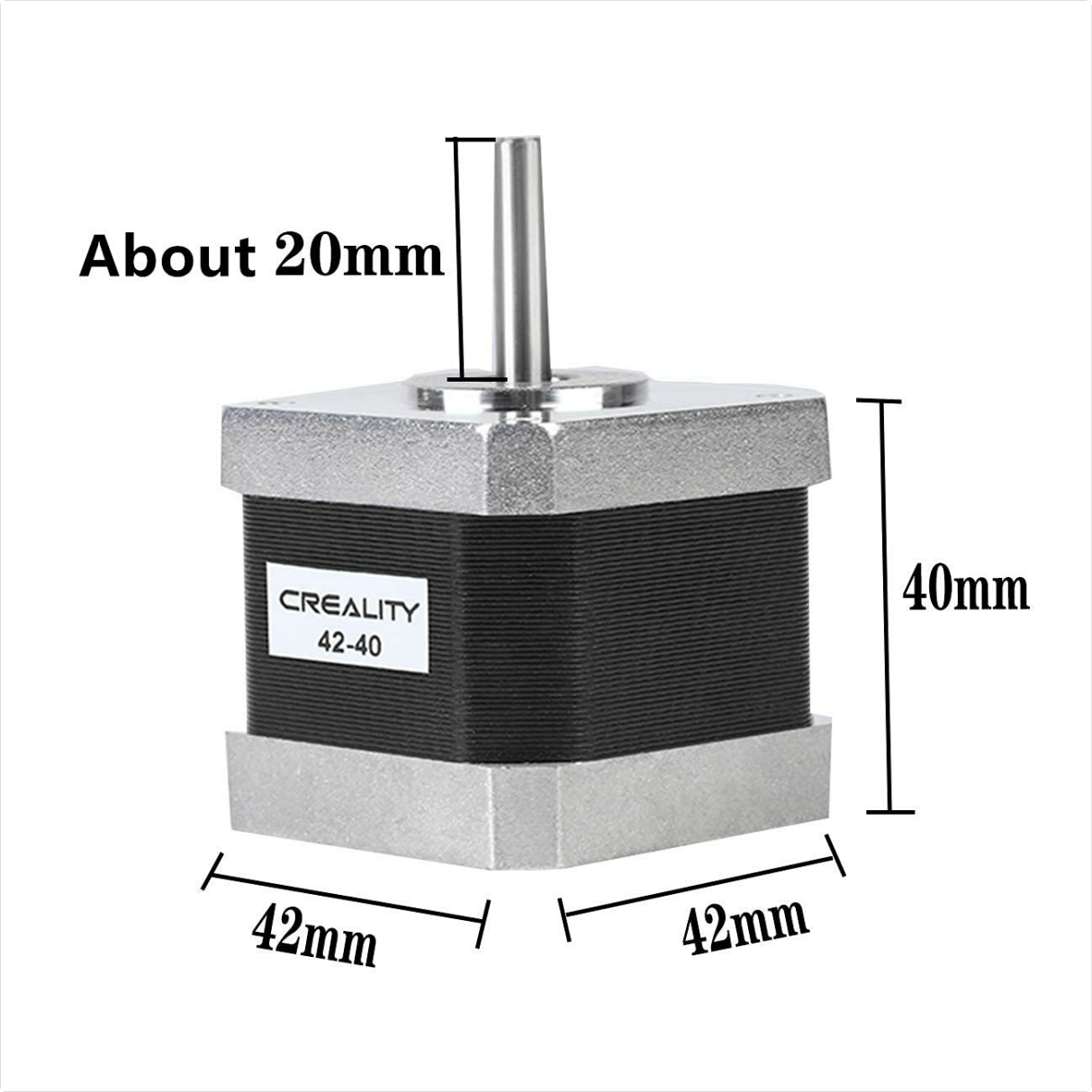

Figure 3: Dimensional drawing of the 42-40 Stepper Motor, showing a frame size of 42mm x 42mm and a height of 40mm, with a shaft length of approximately 20mm.

4. Compatibility

This 42-40 stepper motor is compatible with the E-axis (extruder) of various Creality 3D printer models, including:

- Ender-3
- Ender-3 Pro
- Ender-5
- Ender-5 Pro
- Ender-5 Plus
- CR-10
- CR-10 Mini
- CR-10S Pro V2
- CR-10S4
- CR-10S5
- CR-10 Max

- CR-10 V2
- CR-10 V3

Additionally, the 42-40 motor is suitable for the Y-axis of the Ender-5, Ender-5 Pro, CR-10 V2, and CR-10S Pro V2 models.

5. Setup and Installation

This section provides general guidance for replacing a stepper motor. Specific installation steps may vary depending on your 3D printer model. Always refer to your 3D printer's specific service manual for detailed instructions.

1. **Power Off:** Ensure your 3D printer is completely powered off and unplugged from the power source before beginning any installation.
2. **Locate Motor:** Identify the stepper motor you intend to replace (e.g., extruder motor, Y-axis motor).
3. **Disconnect Wiring:** Carefully disconnect the wiring harness from the existing stepper motor. Note the orientation of the connector if it is not keyed.
4. **Remove Old Motor:** Unscrew and remove the existing stepper motor from its mounting bracket.
5. **Install New Motor:** Mount the new KOYOFEI Creality 42-40 Stepper Motor onto the bracket using appropriate screws (not included). Ensure it is securely fastened.
6. **Connect Wiring:** Reconnect the wiring harness to the new stepper motor. Ensure the connection is firm and correctly oriented.
7. **Verify Movement:** After installation, manually check that the connected mechanism (e.g., extruder gear, Y-axis belt) moves freely without obstruction.
8. **Power On and Test:** Plug in and power on your 3D printer. Perform a functional test to ensure the new motor operates correctly. This may involve moving the axis or extruding filament.

Figure 4: Illustration highlighting the low noise and stable performance characteristics of the 42-40 extrusion motor kit, indicating smooth and consistent rotation.

6. Operating Principles

The 42-40 stepper motor operates on a 2-phase system with a 1.8-degree step angle, meaning it completes 200 steps for a full 360-degree rotation. This precise control allows for accurate positioning required in 3D printing applications. Its design prioritizes stable performance and low noise during operation, contributing to consistent print quality.

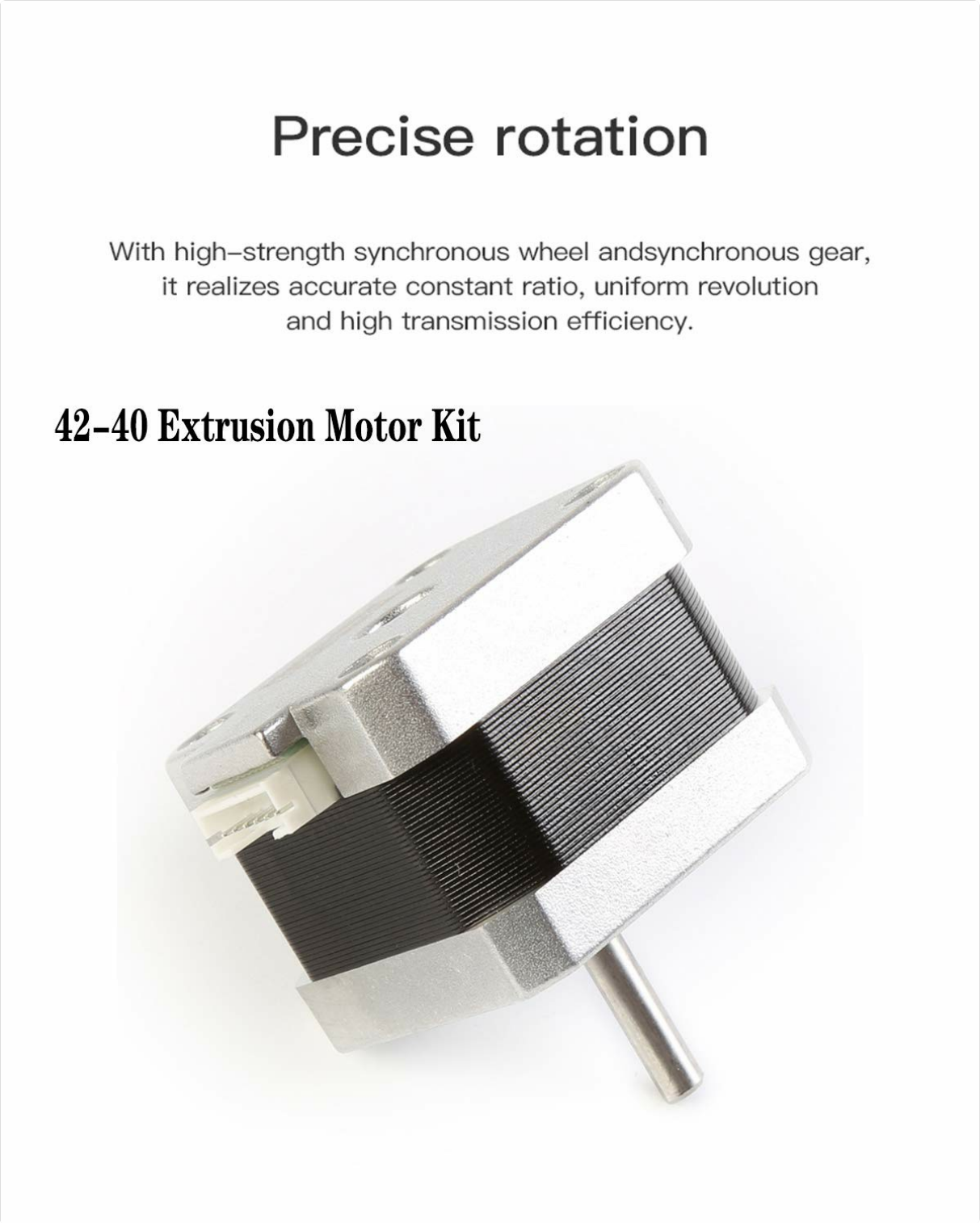

Figure 5: Depiction of the motor's precise rotation, emphasizing its high-strength synchronous wheel and gear for accurate constant ratio, uniform revolution, and high transmission efficiency.

7. Maintenance

The KOYOFEI Creality 42-40 Stepper Motor is designed for durability and requires minimal maintenance. However, periodic checks can help ensure optimal performance:

- **Cleanliness:** Keep the motor free from dust and debris, especially around the shaft and mounting points. Use a soft brush or compressed air for cleaning.
- **Connections:** Periodically check all electrical connections to ensure they are secure and free from corrosion.
- **Mounting:** Verify that the motor remains securely mounted to its bracket. Loose mounting can lead to

vibrations and reduced performance.

- **Shaft Condition:** Inspect the motor shaft for any signs of wear or damage.

Do not attempt to disassemble the motor, as this may void any potential warranty and could damage internal components.

8. Troubleshooting

If you encounter issues with your stepper motor, consider the following troubleshooting steps:

- **Motor Not Moving:**
  - Check all wiring connections for proper seating and continuity.
  - Ensure the motor is receiving power from the control board.
  - Verify that the motor driver on the control board is functioning correctly.
  - Confirm that the correct firmware settings for the motor are applied in your 3D printer's software.
- **Skipping Steps / Layer Shifts:**
  - Check for mechanical obstructions preventing smooth movement of the axis or extruder.
  - Ensure the motor is not overheating. Adequate cooling may be required in some setups.
  - Verify that the motor current (Vref) on the driver board is set correctly for the motor's specifications (1A rated current).
  - Inspect belts or gears for proper tension and wear.
- **Excessive Noise:**
  - Ensure the motor is securely mounted. Loose mounting can cause vibrations and noise.
  - Check for any foreign objects or debris interfering with the motor's rotation.
  - Verify that the motor current is not set too high.

If issues persist after performing these checks, contact technical support for further assistance.

9. Warranty and Support

For warranty information and technical support, please refer to the manufacturer's official channels. KOYOFEI is the brand for this product. For Creality-specific support related to your 3D printer, you may visit their official website or contact their support team.
You can find additional resources and contact information via the QR code on the product packaging or by visiting the Creality website:

- Official Creality Website: qr.creality.com

Figure 6: Bottom view of the product packaging, displaying a QR code and contact information for SHENZHEN CREALITY 3D TECHNOLOGY CO., LTD.