Saved from manuals.plus.
Open the live page for links to other documents and user manuals.

LUNYEE 4040 Pro Max

LUNYEE 4040 Pro Max CNC Router Machine User Manual

Model: 4040 Pro Max

1. Important Safety Instructions

Read all instructions before operating the LUNYEE 4040 Pro Max CNC Router Machine. Failure to follow these instructions may result in electric shock, fire, and/or serious injury.

- Always wear appropriate personal protective equipment (PPE), including safety glasses, hearing protection, and dust masks.
- Ensure the work area is clean, well-lit, and free from obstructions.
- Keep hands and loose clothing away from moving parts and cutting tools.
- Disconnect power before performing any maintenance, adjustments, or tool changes.
- Securely clamp all workpieces to prevent movement during operation.
- Do not operate the machine in damp or wet conditions.
- Keep children and unauthorized persons away from the machine during operation.
- Familiarize yourself with the Emergency Stop (E-stop) button location and function.

2. Package Contents

Verify that all items are present in the package. If any parts are missing or damaged, contact LUNYEE customer support.

- LUNYEE 4040 Pro Max CNC Router Machine (partially assembled)
- 800W Trim Router
- Control Box
- Power Supply
- USB Cable
- Clamps and Fasteners
- Basic Tool Kit (wrenches, hex keys)
- User Manual (this document)



Figure 1: LUNYEE 4040 Pro Max CNC Router Machine. This image shows the overall structure of the CNC machine with its orange and silver components, the spindle, and the work area.

3. Setup and Assembly

The LUNYEE 4040 Pro Max CNC Router Machine comes with pre-assembled modules and quick-connect wiring to facilitate a faster setup. Follow these steps for initial assembly:

1. **Unpacking:** Carefully remove all components from the packaging. Place them on a stable, flat surface.
2. **Gantry Installation:** Attach the gantry assembly to the base frame if not already secured. Ensure all screws are tightened.
3. **Spindle/Router Mounting:** Secure the 800W trim router into its mount on the Z-axis. Ensure it is firmly seated and clamped.
4. **Wiring Connections:** Connect the stepper motor cables, limit switch cables, and spindle power cable to the control box. The quick-connect wiring is color-coded or labeled for ease of connection.
5. **Control Box Placement:** Position the control box in a convenient location near the machine.

6. **Power Connection:** Connect the power supply to the control box and then to a grounded electrical outlet.**Do not power on yet.**
7. **Software Installation:** Install the necessary CNC control software (e.g., Universal Gcode Sender (UGS), Candle) on your computer. Ensure GRBL 1.1F drivers are correctly installed.

For a visual guide, please refer to the official assembly video:

Your browser does not support the video tag.

Video 1: LUNYEE 4040 Pro Max CNC Router Assembly Video. This video provides a step-by-step visual guide on how to assemble the LUNYEE 4040 Pro Max CNC Router Machine, including connecting components and wiring.

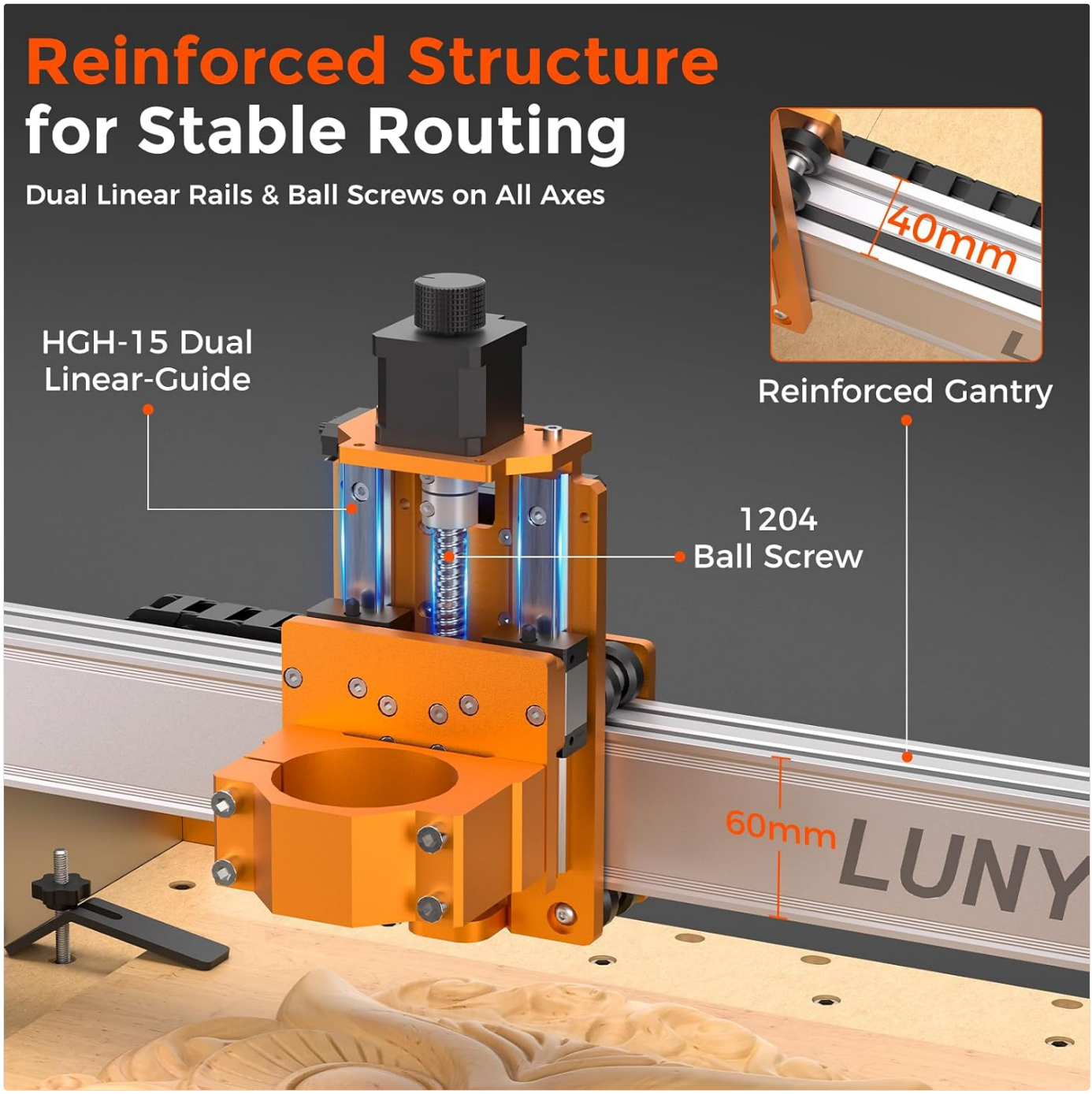

Figure 2: Reinforced Structure for Stable Routing. This image highlights the HGH-15 dual linear guides, 1204 ball screw, and reinforced gantry (40mm thick) that contribute to the machine's stability.

4. Operating Instructions

4.1. Software and Connectivity

The LUNYEE 4040 Pro Max is compatible with GRBL 1.1F firmware, allowing it to work with various open-source CNC control software. Recommended software includes:

- Universal Gcode Sender (UGS)
- Candle
- LightBurn (for laser modules, if applicable and purchased separately)
- Fusion 360 (for CAD/CAM design and G-code generation)

Connect your computer to the control box via the provided USB cable. Ensure the correct COM port is selected in your CNC control software.

4.2. Control Box Functions

The control box provides essential functions for operating the CNC machine:

- **Power Button:** Turns the machine on/off.
- **E-stop (Emergency Stop):** Immediately cuts power to all motors and the spindle in case of an emergency. Press firmly to activate. Twist to reset.
- **Reset Button:** Resets the GRBL controller, often used after an E-stop or error.
- **Probe Port:** For connecting a Z-probe for automatic Z-height setting.

4.3. Spindle Operation and Speed Adjustment

The machine is equipped with an 800W trim router with adjustable speed settings.

- **Speed Control:** The router features a 6-speed adjustable dial, allowing for speeds between 10,000 and 30,000 RPM. Adjust the speed according to the material being cut and the specific cutting tool.
- **Collet:** Ensure the correct collet size is used for your router bit and that the bit is securely tightened before operation.



Figure 3: High-Performance 800W Spindle. This image shows a close-up of the 800W trim router, highlighting its 6-speed adjustable dial and speed range of 10,000-30,000 RPM.

4.4. Preparing for a Job

1. **Design and G-code:** Create your design using CAD software and generate G-code using CAM software (e.g., Fusion 360, Easel).
2. **Material Placement:** Place your workpiece on the spoil board.
3. **Workpiece Clamping:** Securely clamp the workpiece using the provided clamps or other suitable methods. Ensure clamps do not interfere with the tool path.
4. **Tool Installation:** Insert the appropriate router bit into the collet and tighten it securely.
5. **Homing and Zeroing:**
    - **Homing:** In your control software, initiate the homing sequence. The machine will move to its limit switches to establish a known home position.
    - **Zeroing X/Y:** Manually jog the router bit to the desired X and Y origin point on your workpiece and set these as the work zero in your software.

    - **Zeroing Z:** Use a Z-probe or manually jog the bit until it just touches the surface of your workpiece, then set this as the Z-zero.
6. **Spindle Speed:** Set the router's speed dial to the appropriate RPM for your material and bit.
7. **Test Run (Optional but Recommended):** Perform an air cut (running the job above the material) to verify the tool path.

4.5. Running a Job

1. Ensure all safety precautions are in place.
2. Load your G-code file into the control software.
3. Start the job from your control software.
4. Monitor the machine throughout the entire cutting process. Be prepared to press the E-stop button if any issues arise.
5. Once the job is complete, wait for the spindle to stop rotating before removing the workpiece.

5. Maintenance

Regular maintenance ensures the longevity and optimal performance of your LUNYEE 4040 Pro Max CNC Router Machine.

- **Cleaning:** After each use, clean the machine to remove dust, chips, and debris. The machine features magnetic acrylic baffles and X/Y axis dust protection to help contain debris. Use a vacuum cleaner or compressed air (with caution) to clean the work area, lead screws, and linear rails.
- **Lubrication:** Periodically apply a light machine oil or grease to the linear rails and ball screws to ensure smooth movement. Consult the manufacturer's recommendations for specific lubricants.
- **Fastener Check:** Regularly inspect all screws and fasteners for tightness. Tighten any loose connections.
- **Spindle Maintenance:** Keep the spindle motor vents clear of dust to prevent overheating.
- **Cable Inspection:** Check all cables for signs of wear, fraying, or damage. Replace damaged cables immediately.



Figure 4: Dust-Protection Design for Cleaner Routing. This image illustrates the magnetic acrylic baffles and X/Y axis dust protection features designed to minimize chip scattering and keep the work area clean.

6. Troubleshooting

Problem	Possible Cause	Solution
Machine does not power on.	Power cable disconnected, power supply failure, E-stop engaged.	Check power connections, ensure E-stop is disengaged (twisted out), test power supply.
Motors do not move or move erratically.	Loose motor cables, incorrect software settings, E-stop engaged, driver issues.	Check all motor cable connections, verify COM port and baud rate in software, disengage E-stop, reinstall GRBL drivers.
Spindle does not turn on.	Spindle power cable disconnected, router switch off, software command issue.	Check spindle power connection, ensure router's physical switch is ON, verify G-code M3 command.

Problem	Possible Cause	Solution
Poor cutting quality or inaccurate cuts.	Loose workpiece, dull bit, incorrect feed/speed, loose belts/couplings, machine not calibrated.	Secure workpiece, replace bit, adjust feed/speed settings, check for loose mechanical components, verify machine calibration.
Machine loses position during job.	Motor skipping steps (too fast feed rate, too deep cut), loose pulleys, electrical interference.	Reduce feed rate/depth of cut, check pulley tightness, ensure proper grounding, keep signal cables away from power cables.

7. Specifications

Feature	Detail
Model	4040 Pro Max
Brand	LUNYEE
Working Area (X, Y, Z)	400 x 400 x 90 mm (15.74" x 15.74" x 3.54")
Spindle Power	800W Trim Router
Spindle Speed	10,000 - 30,000 RPM (6-speed adjustable)
Control Software	GRBL 1.1F compatible (UGS, Candle, Fusion 360)
Axis Drive System	Linear Guide Z-Axis, Ball Screw Drive
Frame Material	Metal (Reinforced Gantry Structure)
Compatible Materials	Wood, MDF, Acrylic, Plastics, PCB, Light Aluminum
Product Dimensions (W x H)	24.6"W x 15.1"H
Item Weight	33 pounds
Power Source	AC/DC (Corded Electric)
Voltage	48 volts



Figure 5: 400x400x90mm Work Area. This image visually represents the working dimensions of the LUNYEE 4040 Pro Max CNC machine, showing the length, width, and height capacity for various materials.

8. Warranty and Support

LUNYEE provides customer support for its products. For warranty information, technical assistance, or to report missing/damaged parts, please contact LUNYEE directly through their official website or the retailer where the product was purchased.

Please have your model number (4040 Pro Max) and purchase details ready when contacting support.

LUNYEE Official Store: Visit LUNYEE Store on Amazon

© 2023 LUNYEE. All rights reserved.

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.

Name

Anonymous

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

Open the live page

https://manuals.plus/asin/B0GYZPDHN1

More documents and user manuals: **https://manuals.plus/**