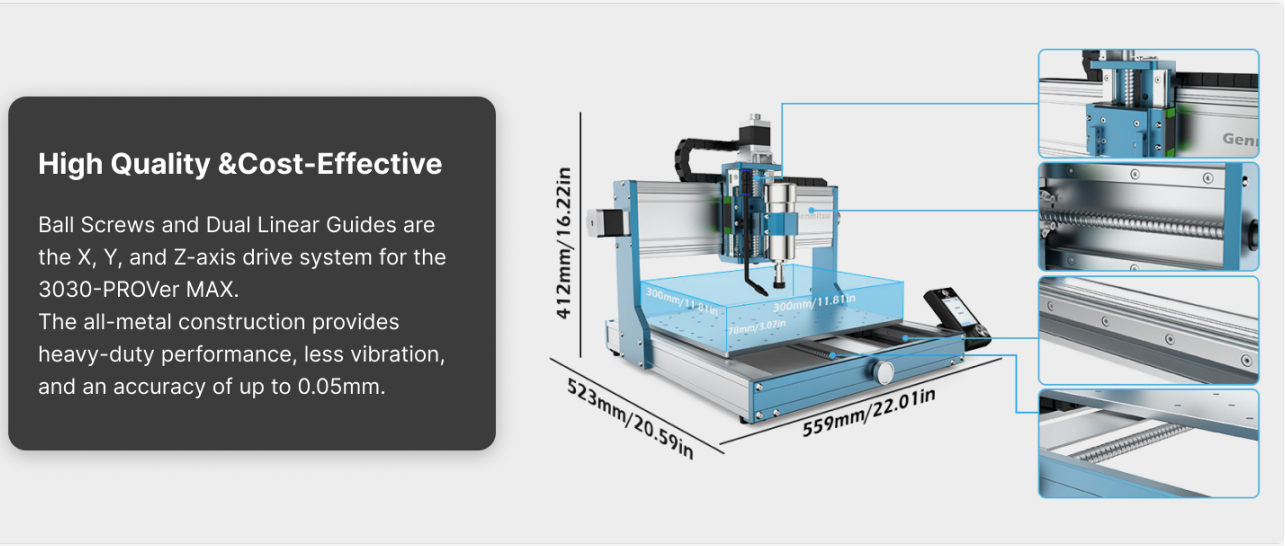
Genmitsu 3030-PROVer MAX

Genmitsu 3030-PROVer MAX CNC Router Machine and 4th Axis Rotary Module Kit User Manual

1. Introduction

This manual provides detailed instructions for the assembly, operation, maintenance, and troubleshooting of the Genmitsu 3030-PROVer MAX CNC Router Machine and its accompanying 4th Axis Rotary Module Kit. Please read this manual thoroughly before operating the machine to ensure safe and efficient use.



Banner image showcasing the Genmitsu 3030-PROVer MAX as an all-aluminum benchtop CNC router, emphasizing precision and versatility.

2. Safety Instructions

Operating CNC machinery requires adherence to strict safety protocols to prevent injury and damage. Always follow these guidelines:

- 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.
- Never operate the machine under the influence of drugs or alcohol.
- Keep hands and loose clothing away from moving parts and cutting tools.

- Always disconnect power before performing maintenance, adjustments, or tool changes.
- Familiarize yourself with the emergency stop button location and function.
- Secure workpieces firmly to prevent movement during operation.
- Do not leave the machine unattended while it is operating.

3. Package Contents

Verify that all components are present and undamaged upon unpacking. The package should include:

- Genmitsu 3030-PROVer MAX CNC Router Machine
- 4th Axis Rotary Module Kit
- 4-Jaw Chuck
- 10:1 Speed Reducer
- Offline Controller
- Power Supply and Cables
- Assembly Tools and Fasteners
- User Manual (this document)

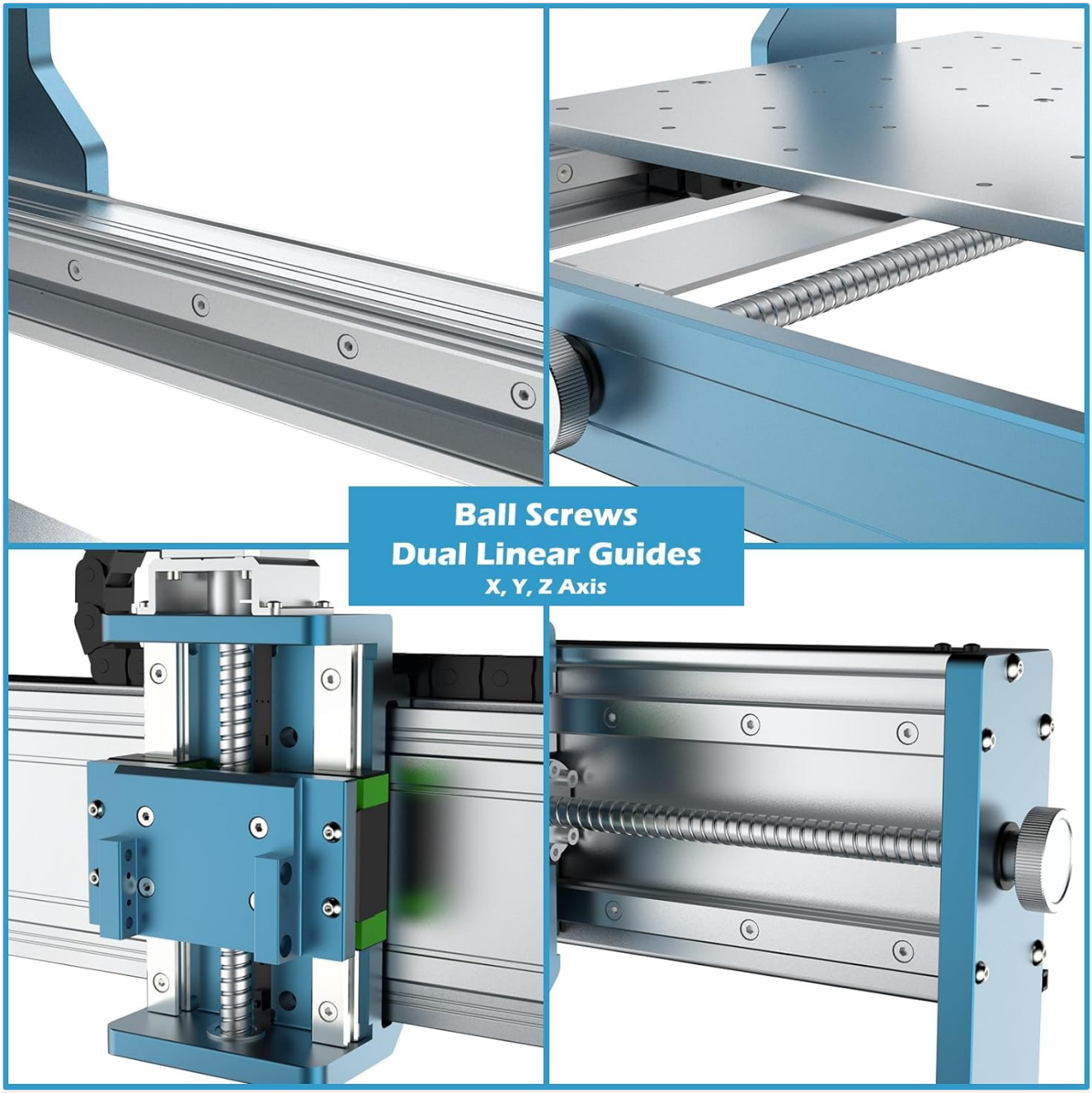
4. Assembly and Initial Setup

The Genmitsu 3030-PROVer MAX is designed for straightforward assembly. Follow these steps for initial setup:

4.1. CNC Router Assembly

1. Unpack all components and lay them out on a clean, stable surface.
2. Assemble the main frame of the CNC machine. The Y-axis notch design facilitates alignment for quick assembly.
3. Install the X, Y, and Z axis components, ensuring the ball screws and dual linear guides are properly seated. These components contribute to the machine's 0.05mm precision.
4. Mount the spindle assembly.
5. Connect all necessary cables, including power and data cables to the offline controller.

Image illustrating the Y-axis notch design that facilitates quick and easy assembly of the Genmitsu 3030-PROVer MAX, allowing for setup in approximately 10 minutes.

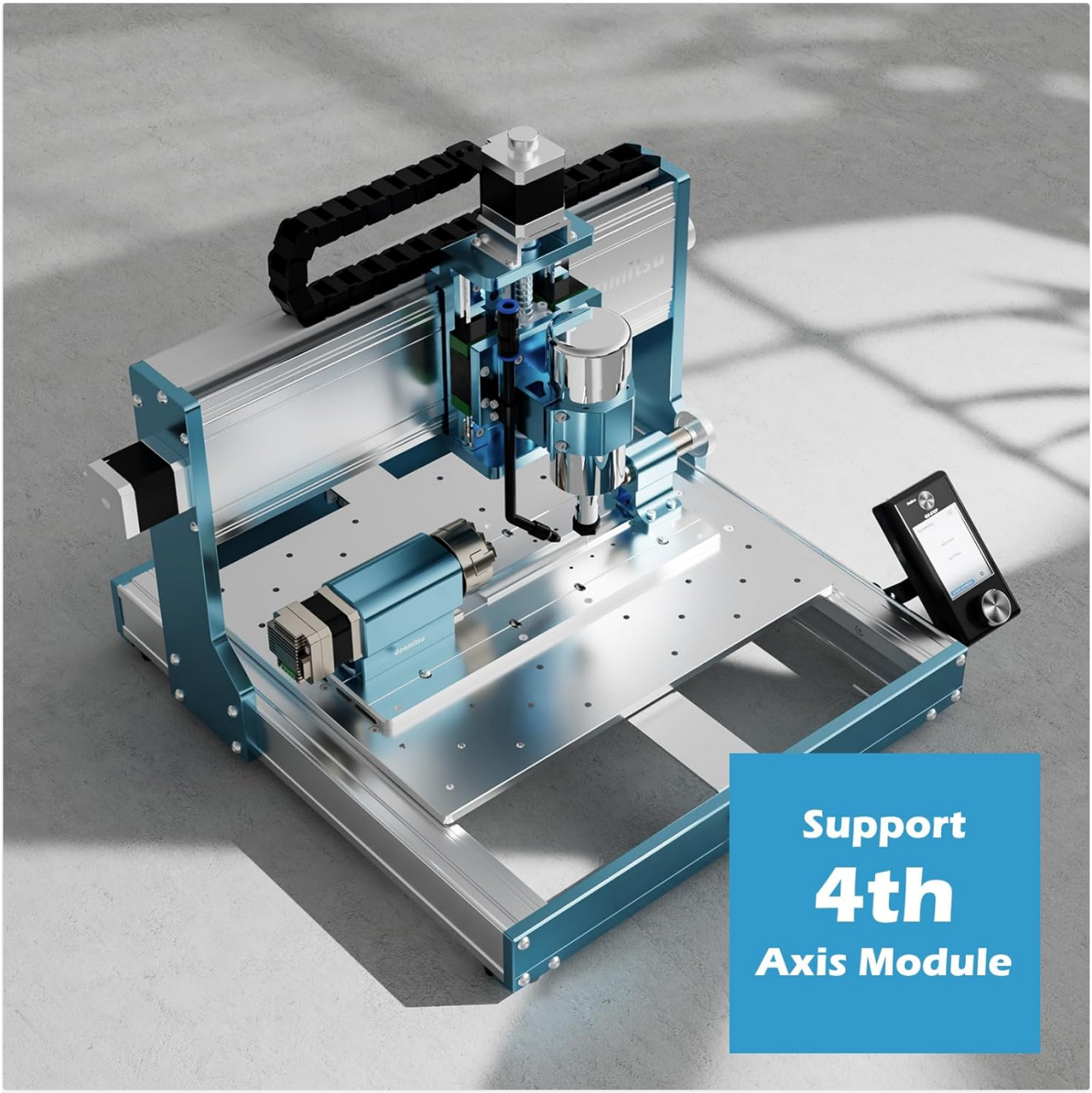


Detailed view of the ball screws and dual linear guides on the X, Y, and Z axes, highlighting the precision components of the Genmitsu 3030-PROVer MAX.

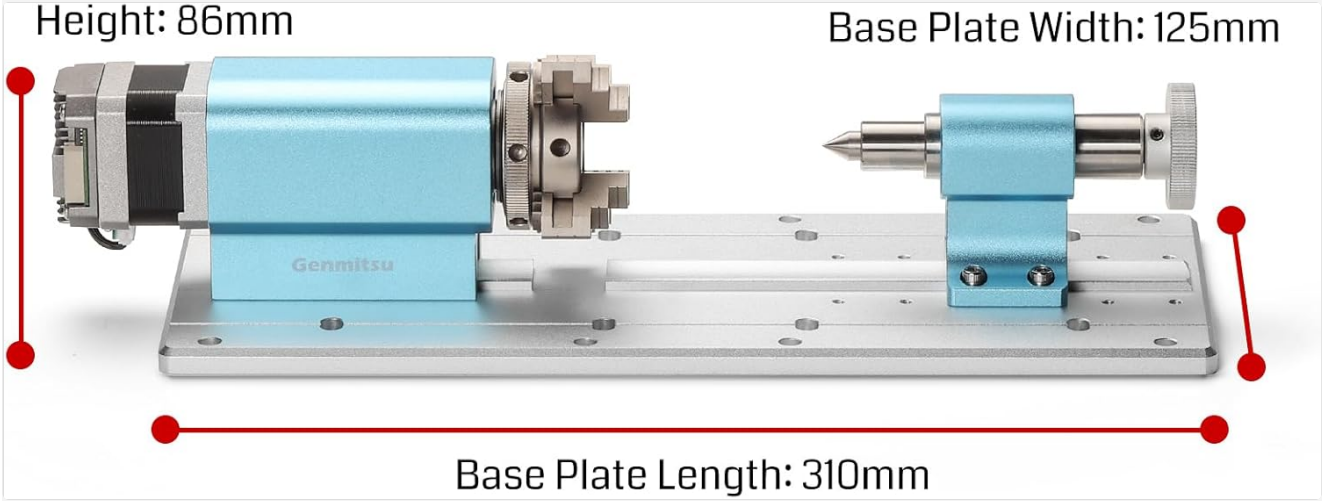
4.2. 4th Axis Rotary Module Installation

The 4th Axis Rotary Module is an upgrade that expands the machine's capabilities for rotational carving.

1. Ensure the CNC machine is powered off and disconnected.
2. Mount the 4th Axis Rotary Module onto the CNC machine's workbed using the provided fasteners.
3. Connect the NEMA17 planetary geared stepper motor cable from the rotary module to the designated port on the CNC controller.
4. Attach the 4-jaw chuck to the rotary module. The chuck supports both forward (2-22mm) and reverse (18-50mm) mounting for various material diameters.



The Genmitsu 3030-PROVer MAX CNC machine demonstrating support for the 4th Axis Rotary Module, enabling complex rotational carving.



Dimensions of the Genmitsu 4th Axis Rotary Module, including base plate length, height, and width.

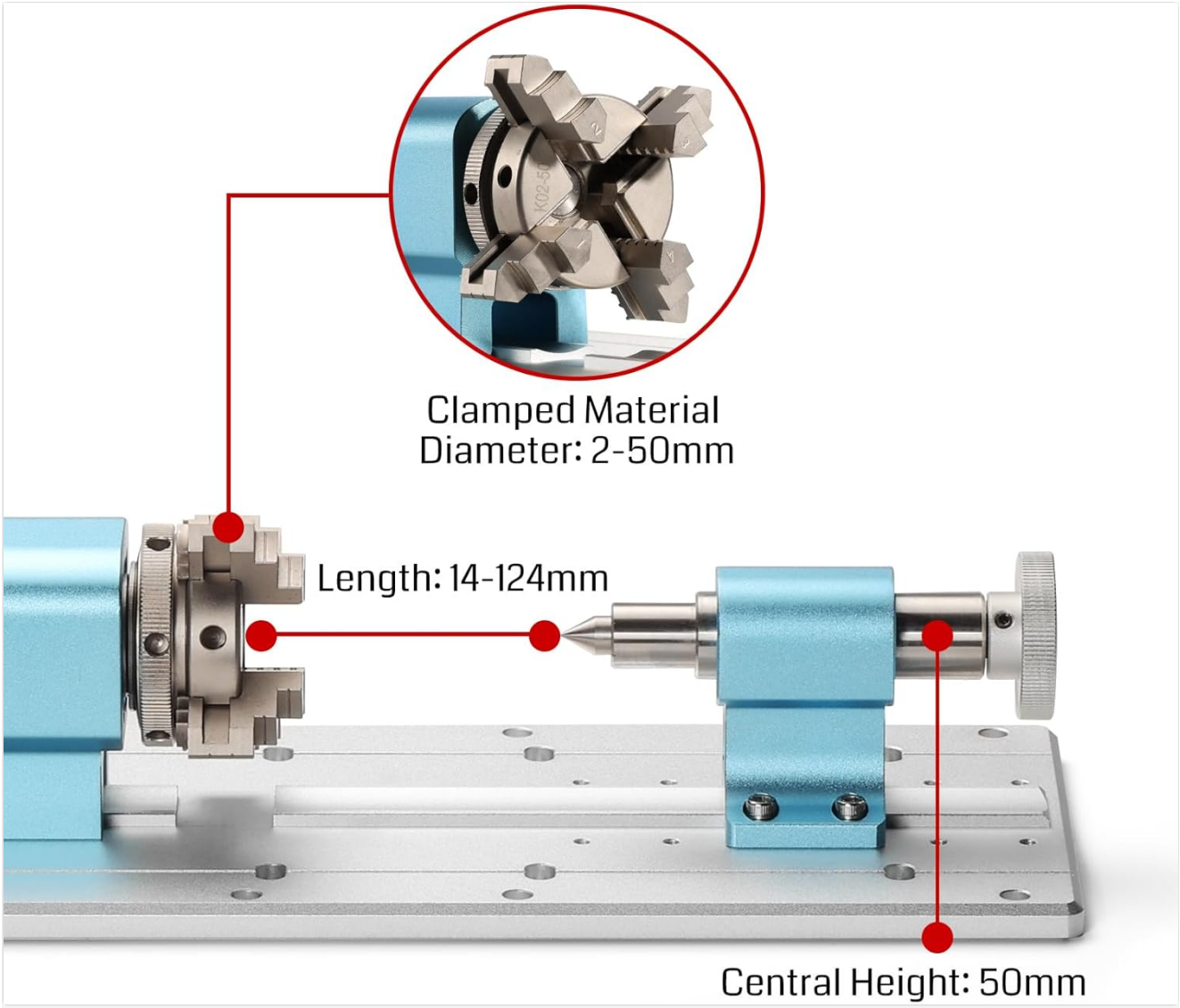
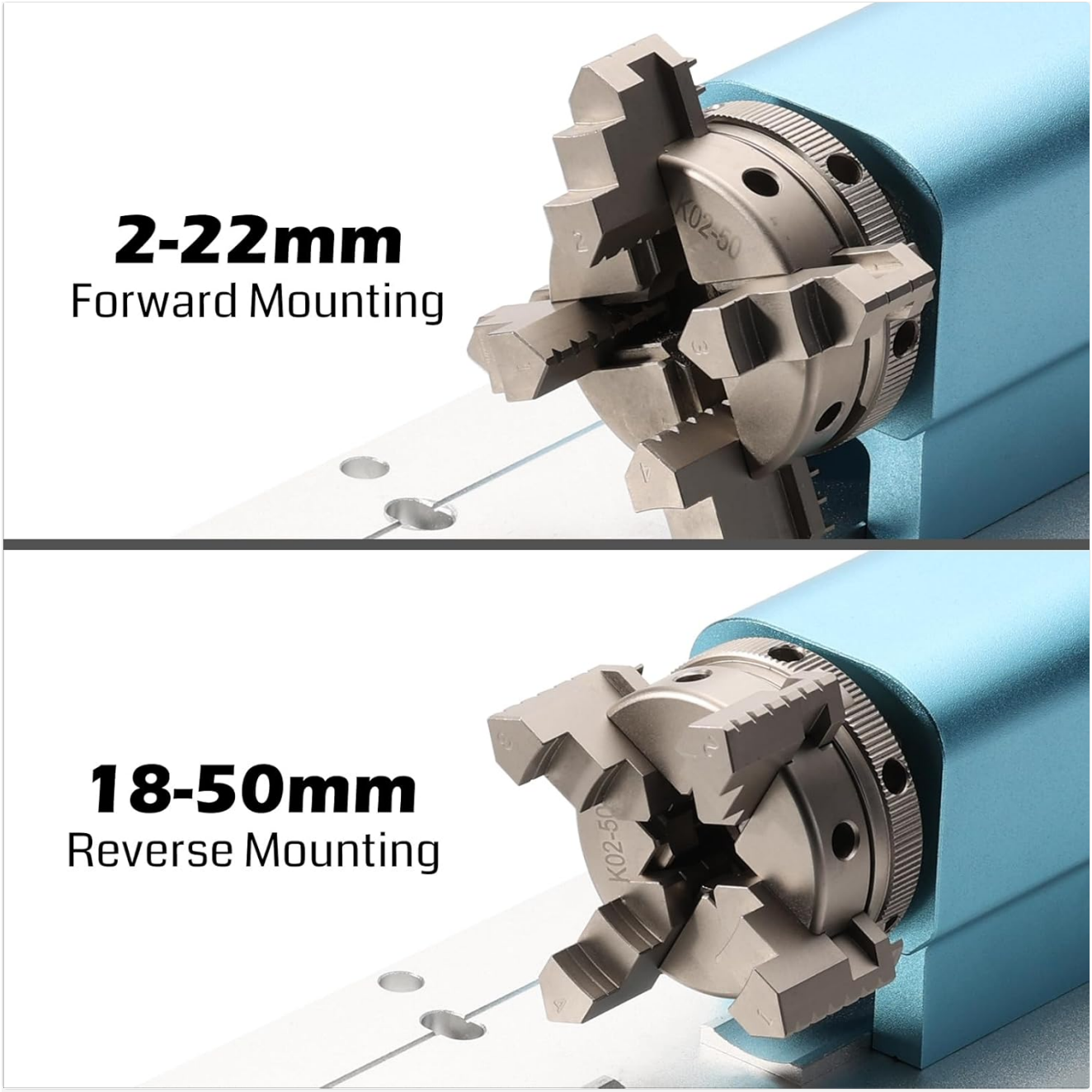


Diagram illustrating the clamped material diameter range (2-50mm) and central height (50mm) for the 4th Axis Rotary Module.



Demonstration of forward (2-22mm) and reverse (18-50mm) mounting configurations for the 4-jaw chuck on the rotary module.

5. Operating Instructions

5.1. Basic CNC Operation

1. Power on the machine and the offline controller.
2. Load your G-code file onto the offline controller.
3. Secure your workpiece to the workbed.
4. Install the appropriate cutting tool or attachment (e.g., laser, 65mm/69mm trimmer).
5. Use the Z-probe to set the Z-axis zero point accurately.
6. Initiate the carving process via the offline controller. Monitor the operation closely.

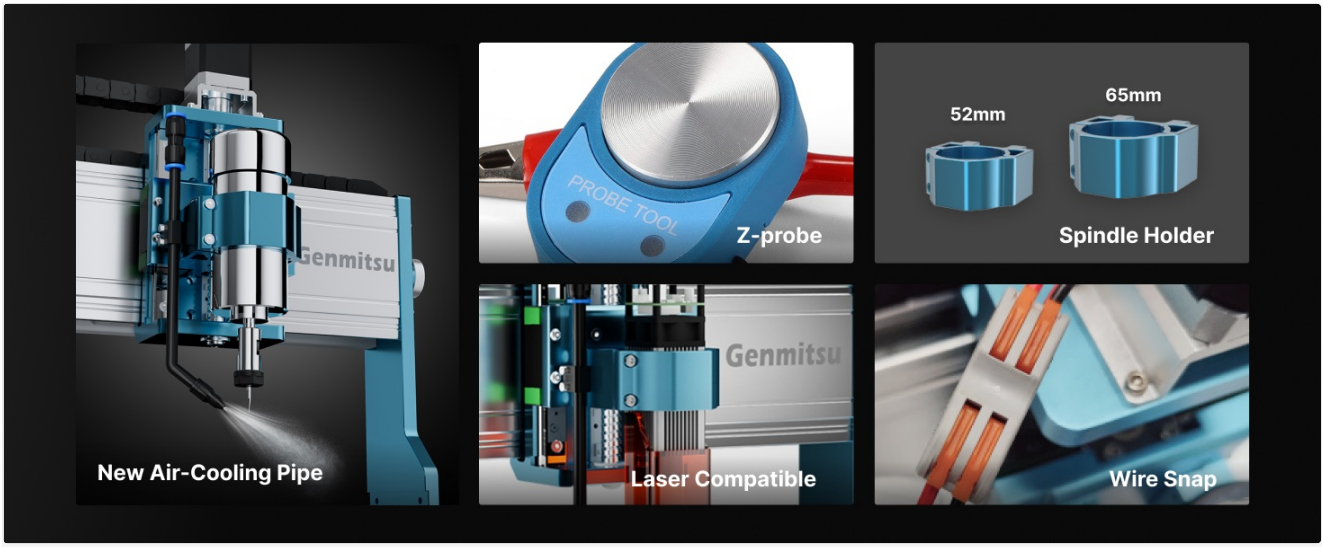


Image showcasing the new offline controller for the 3030-PROVer MAX, highlighting its emergency stop button and operating knob for precise control.

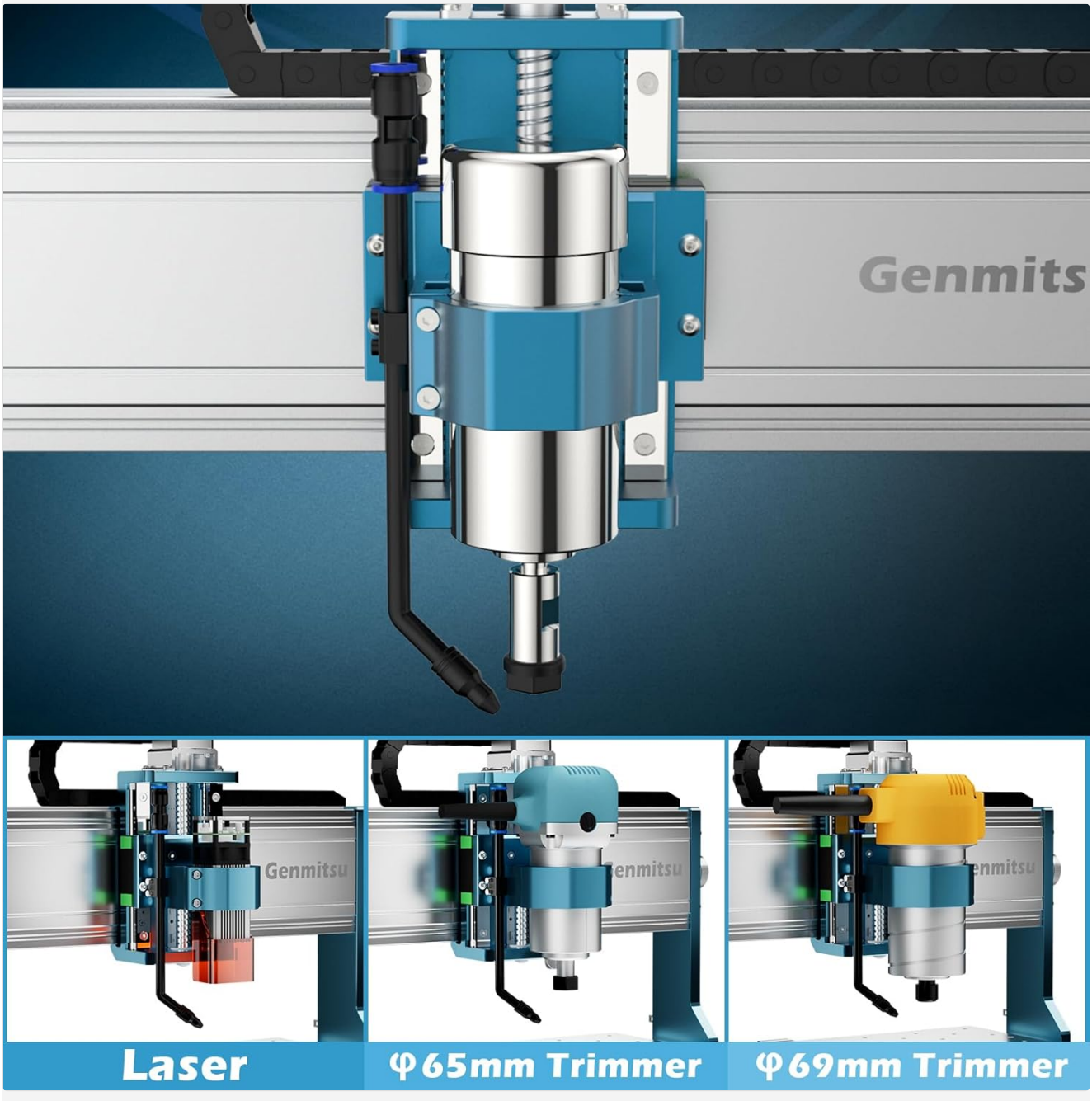


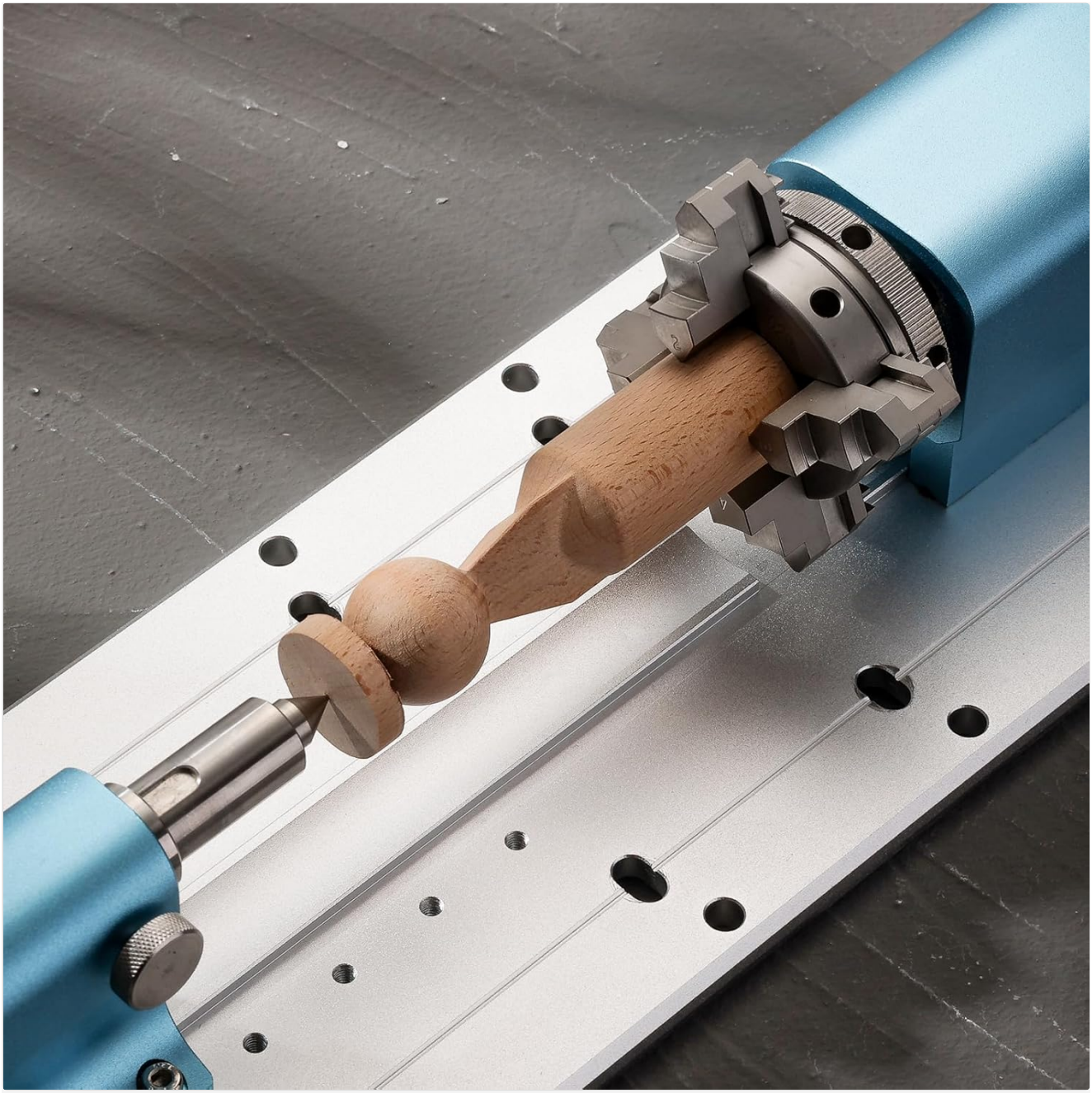
Illustration of various spindle options compatible with the Genmitsu 3030-PROVer MAX, including laser, 65mm trimmer, and 69mm trimmer attachments.

Collage of features including the new air-cooling pipe, Z-probe, spindle holder options (52mm, 65mm), and wire snap for the Genmitsu 3030-PROVer MAX.

5.2. Using the 4th Axis Rotary Module

For rotary carving, specific G-code designed for 4-axis operation is required. This G-code must be sent using the offline controller.

1. Prepare your 4-axis G-code using compatible software.
2. Mount and secure your cylindrical or irregularly shaped workpiece in the 4-jaw chuck.
3. Load the G-code file onto the offline controller.
4. Set the appropriate zero points for all axes, including the rotational axis.
5. Begin the carving process. The NEMA17 planetary geared stepper motor provides high torque for precise rotation.



The 4th Axis Rotary Module actively holding and rotating a wooden workpiece for carving.

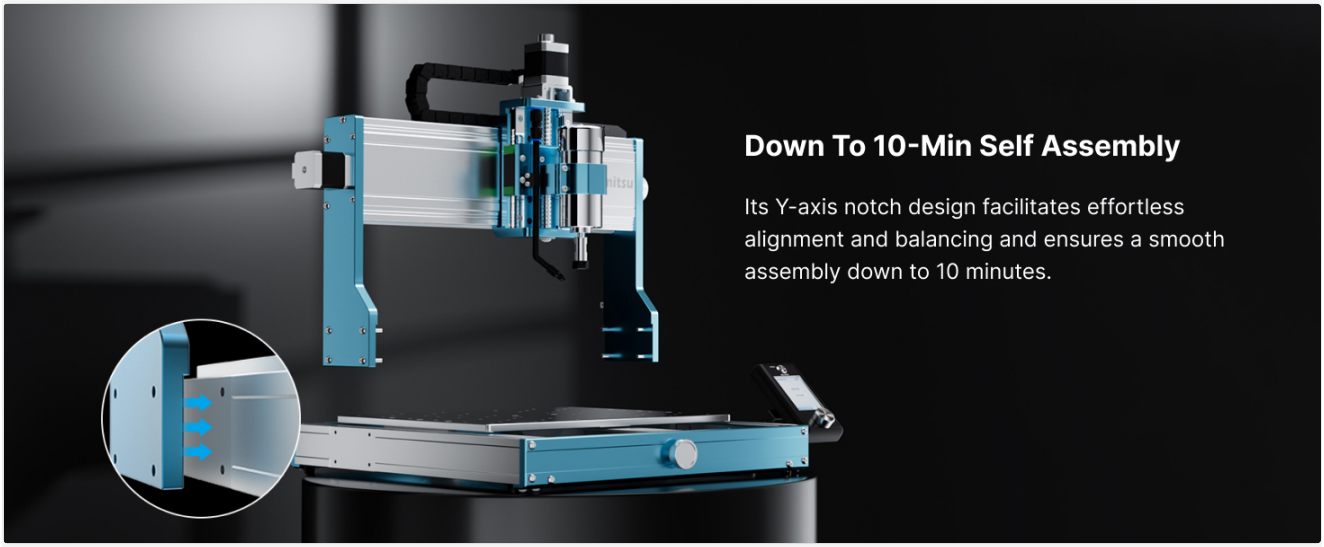
5.3. Material Compatibility

The 3030-PROVer MAX supports engraving and cutting a wide range of materials:

- **Metals:** Capable of cutting 2mm thick aluminum and other soft metals.
- **Wood:** Various types of solid wood.
- **Acrylic:** For clear and colored plastic projects.
- **Carbon Fiber:** For lightweight and strong components.
- **PCB:** For circuit board prototyping.
- **Plastics:** General plastic materials.

Image demonstrating the versatility of the 3030-PROVer MAX in engraving various materials such as metal, wood, acrylic, and carbon fiber.

Examples of materials that can be processed by the CNC machine, including wood carvings, PCB etching, metal engraving, plastic, and carbon fiber.

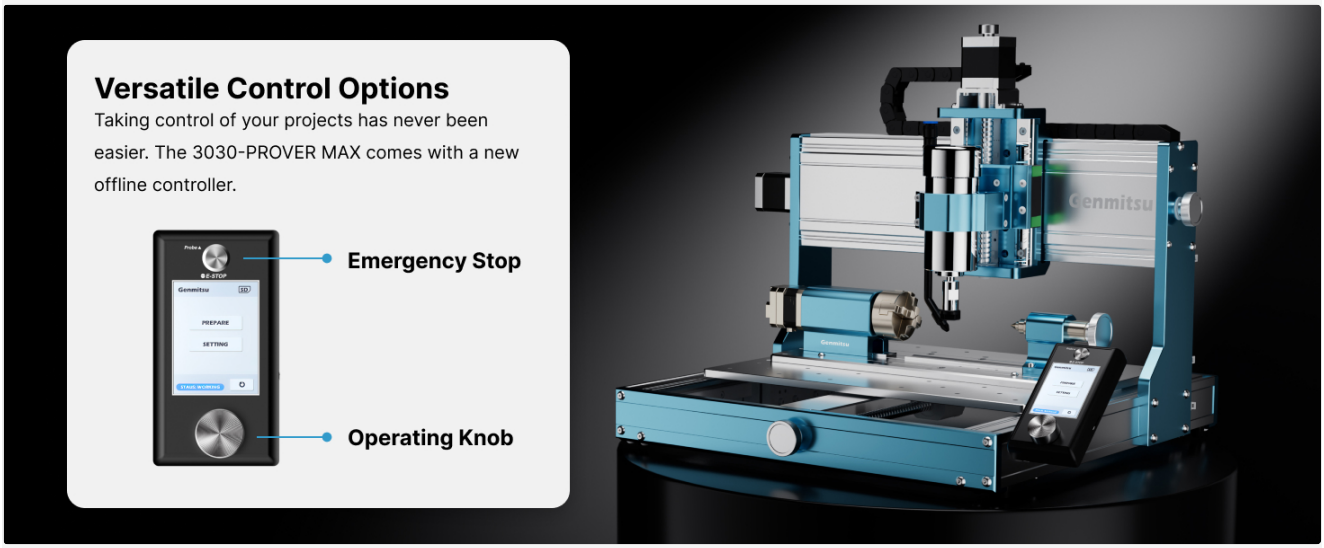


Comparison image demonstrating the 3030-PROVer MAX's ability to achieve a clean 2mm depth cut in metal, contrasting with less precise results from other CNC machines.

6. Maintenance

Regular maintenance ensures the longevity and optimal performance of your Genmitsu 3030-PROVer MAX.

- **Cleaning:** After each use, clean the machine thoroughly to remove dust, chips, and debris. The sealed dust-proof design helps protect internal components, but external cleaning is still essential.
- **Lubrication:** Periodically lubricate the ball screws and linear guides according to manufacturer recommendations to ensure smooth movement.
- **Inspection:** Regularly inspect all cables, connections, and moving parts for wear or damage. Replace any worn components promptly.
- **Tool Care:** Keep cutting tools sharp and clean. Dull tools can lead to poor cut quality and increased strain on the machine.



Visual representation of the sealed dust-proof design protecting the slide and screw assembly of the CNC machine, enhancing durability and reducing maintenance.

7. Troubleshooting

This section addresses common issues you might encounter. For more complex problems, contact customer support.

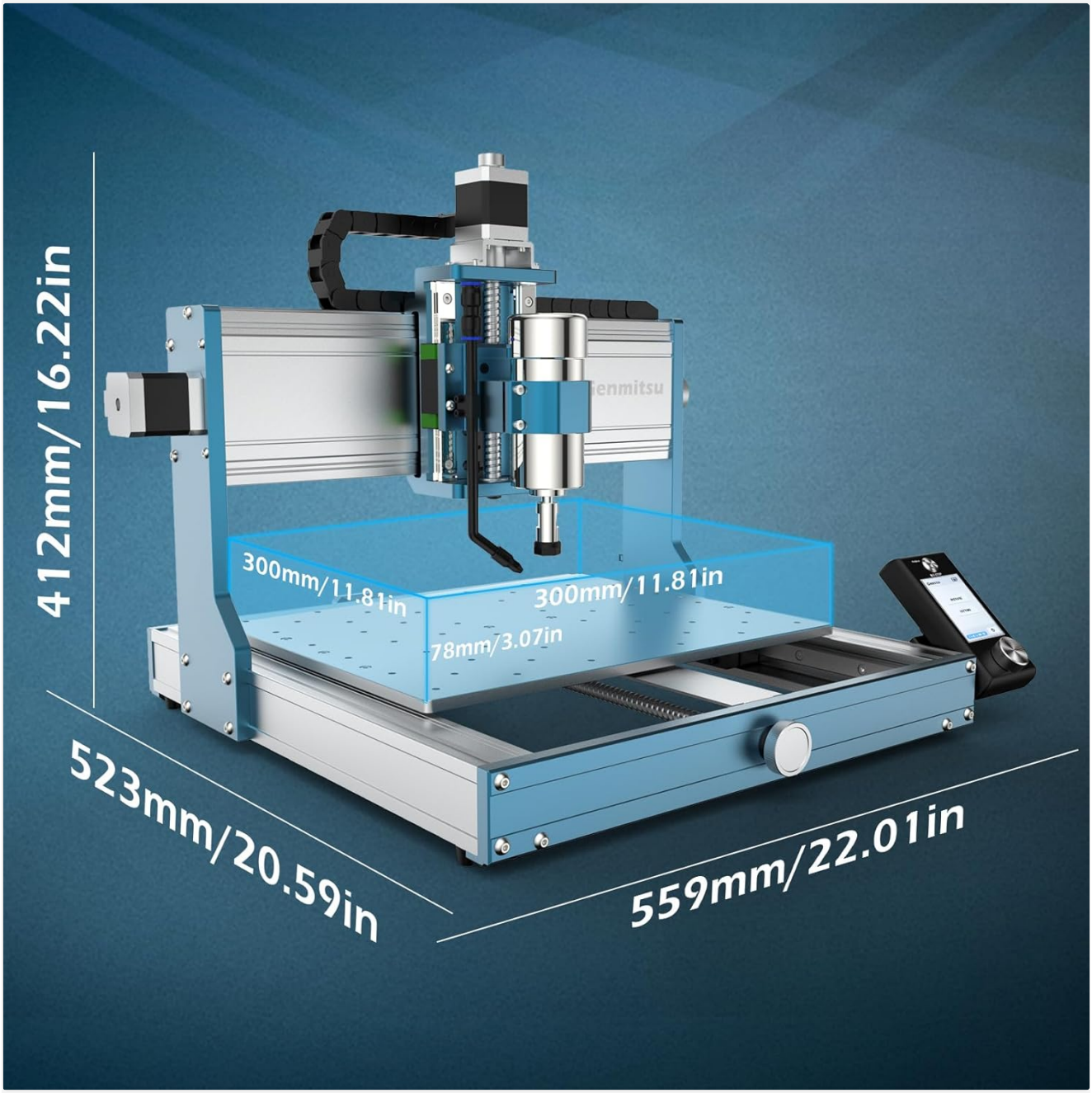
Problem	Possible Cause	Solution
Machine does not power on.	Power cable disconnected; faulty power supply.	Check all power connections; test power outlet.
Motors are not moving.	Emergency stop engaged; loose motor cables; incorrect G-code.	Release emergency stop; check motor connections; verify G-code.
Poor carving quality.	Dull cutting tool; incorrect feed rates/spindle speed; loose workpiece.	Replace/sharpen tool; adjust settings in G-code; secure workpiece.
4th Axis not rotating.	Incorrect connection; G-code not configured for 4th axis.	Verify motor connection; ensure G-code includes A-axis commands.

8. Specifications

Key technical specifications for the Genmitsu 3030-PROVer MAX CNC Router Machine:

- **Model Number:** 3030-PROVer MAX

- **Material:** Aluminum
- **Power Source:** Corded Electric
- **Accuracy:** Up to 0.05mm
- **Axis System:** X, Y, Z axes with Ball Screws and Dual Linear Guides
- **Offline Controller:** Single knob with emergency stop
- **4th Axis Rotary Module:** NEMA17 Planetary Geared Stepper Motor, 4-Jaw Chuck, 10:1 Speed Reducer
- **4th Axis Clamped Material Diameter:** 2-50mm (forward/reverse mounting)
- **4th Axis Central Height:** 50mm
- **Work Area (approximate):** 300mm x 300mm x 78mm (11.81in x 11.81in x 3.07in)
- **Overall Dimensions (approximate):** 559mm (22.01in) L x 523mm (20.59in) W x 412mm (16.22in) H



Dimensional overview of the Genmitsu 3030-PROVer MAX CNC Router Machine, showing its compact footprint and working area.

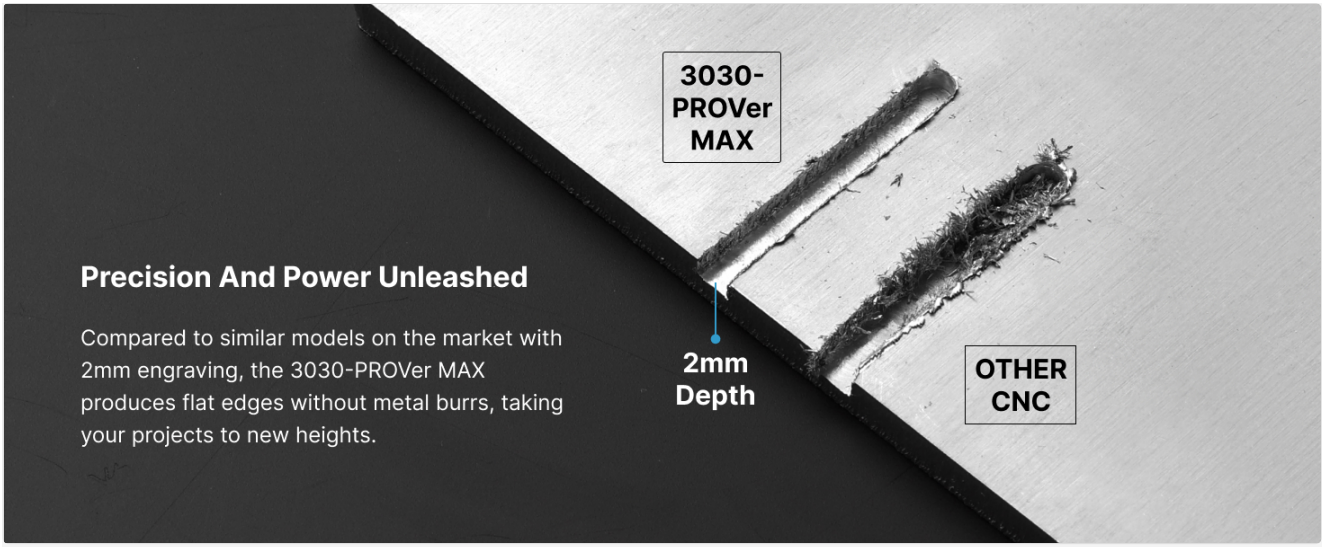
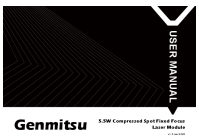
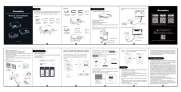
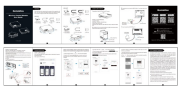
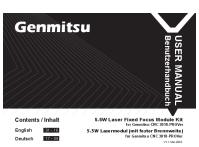


Image detailing the high-quality construction of the 3030-PROVer MAX, featuring ball screws, dual linear guides, and overall dimensions, highlighting its precision and durability.

9. Warranty and Support

For warranty information, technical support, or service inquiries, please refer to the official Genmitsu website or contact their customer service department. Keep your purchase receipt as proof of purchase.

Related Documents - 3030-PROVer MAX

	Genmitsu 5.5W Compressed Spot Fixed Focus Laser Module User Manual User manual for the Genmitsu 5.5W Compressed Spot Fixed Focus Laser Module, detailing its features, compatibility with Jinsoku and Genmitsu CNC machines, installation, software setup with LaserGRBL, and focusing instructions.
	Genmitsu Rotary Module Kit User Manual for PROVer XL 4030/6050 This user manual provides detailed instructions for installing and calibrating the Genmitsu Rotary Module Kit with the PROVer XL 4030 and PROVer XL 6050 PLUS CNC routers. Learn about the components, dimensions, and step-by-step installation procedures for 2D and 3D engraving.
	Genmitsu Wireless Control Module User Guide User guide for Genmitsu Wireless Control Modules (GGW-U232, GGW-UART, GGW-JTAG), detailing unboxing, installation steps for various CNC models, and Genmitsu app setup for Wi-Fi connectivity.
	Genmitsu Wireless Control Module User Guide Comprehensive user guide for Genmitsu Wireless Control Modules (GGW-U232, GGW-UART, GGW-JTAG), detailing unboxing, installation methods for various CNC models, app setup, Wi-Fi configuration, and FCC compliance information.
	Genmitsu 5.5W Laser Module User Manual for CNC 3018-PROVer Comprehensive user manual for the SainSmart Genmitsu 5.5W Laser Fixed Focus Module, detailing installation, setup with LaserGRBL, and usage with CNC 3018-PROVer and other Grbl-based routers.

	Genmitsu 4040-PRO CNC Router User Manual User guide for the Genmitsu 4040-PRO CNC Router Kits. This 3-axis CNC machine is designed for wood, acrylic, and MDF carving/cutting, with a working area of 400 x 400 x 78mm. Features GRBL control and support for 4-axis operation. Includes detailed specifications, installation, setup, and operational instructions.