

Manuals+

[Q & A](#) | [Deep Search](#) | [Upload](#)

manuals.plus /

› [Genmitsu](#) /

› [Genmitsu 4th Axis Rotary Module for 4040 and 3030 Series CNC Machines Instruction Manual](#)

Genmitsu 4th Axis

Genmitsu 4th Axis Rotary Module Instruction Manual

Model: 4th Axis | Brand: Genmitsu

1. INTRODUCTION

This manual provides essential information for the safe and effective use of your Genmitsu 4th Axis Rotary Module. This module is designed as an upgrade for Genmitsu 4040-PRO, 4040 Reno, and 3030-PROVer MAX CNC machines, enabling advanced carving capabilities. Please read these instructions thoroughly before installation and operation.

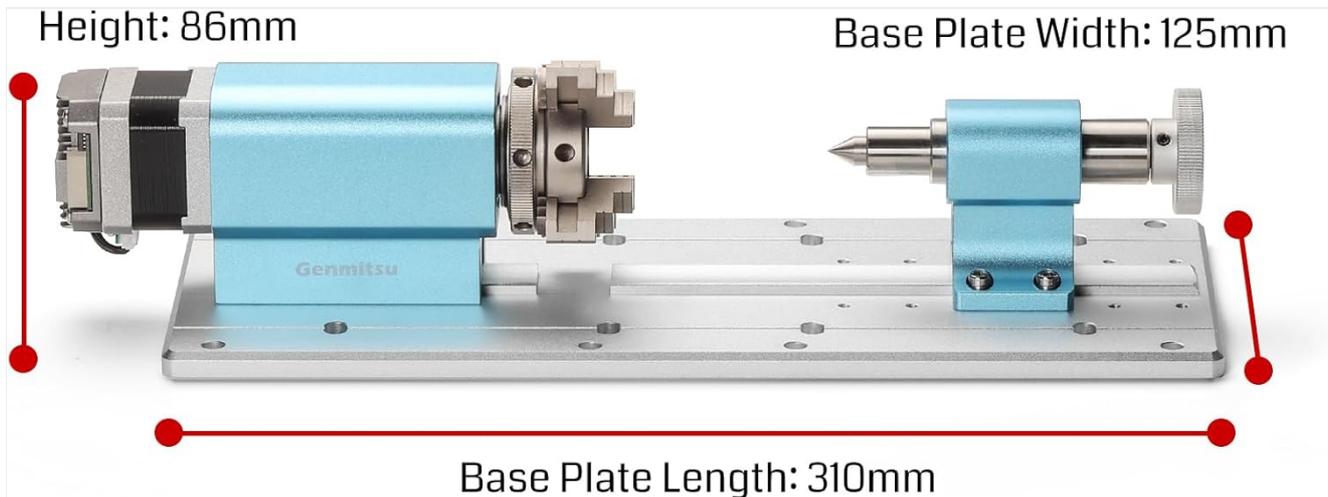


Figure 1: Overview of the Genmitsu 4th Axis Rotary Module.

2. KEY FEATURES

- **Enhanced Carving Capabilities:** Enables carving from multiple angles and positions, supporting full rotary carving with appropriate software. This expands the range of complex parts with curved or angled features that can be produced.
- **NEMA17 Planetary Geared Stepper Motor:** Features a high-torque NEMA17 motor, providing increased force and precision for rotating workpieces compared to belt-driven rotary modules.
- **Versatile Dimensions:**
 - Center Height: 50mm

- Total Height: 86mm
- Material Lengths: 10-100mm (with tailstock), 10-200mm (without tailstock)
- Applicable Material Diameter: 2-50mm

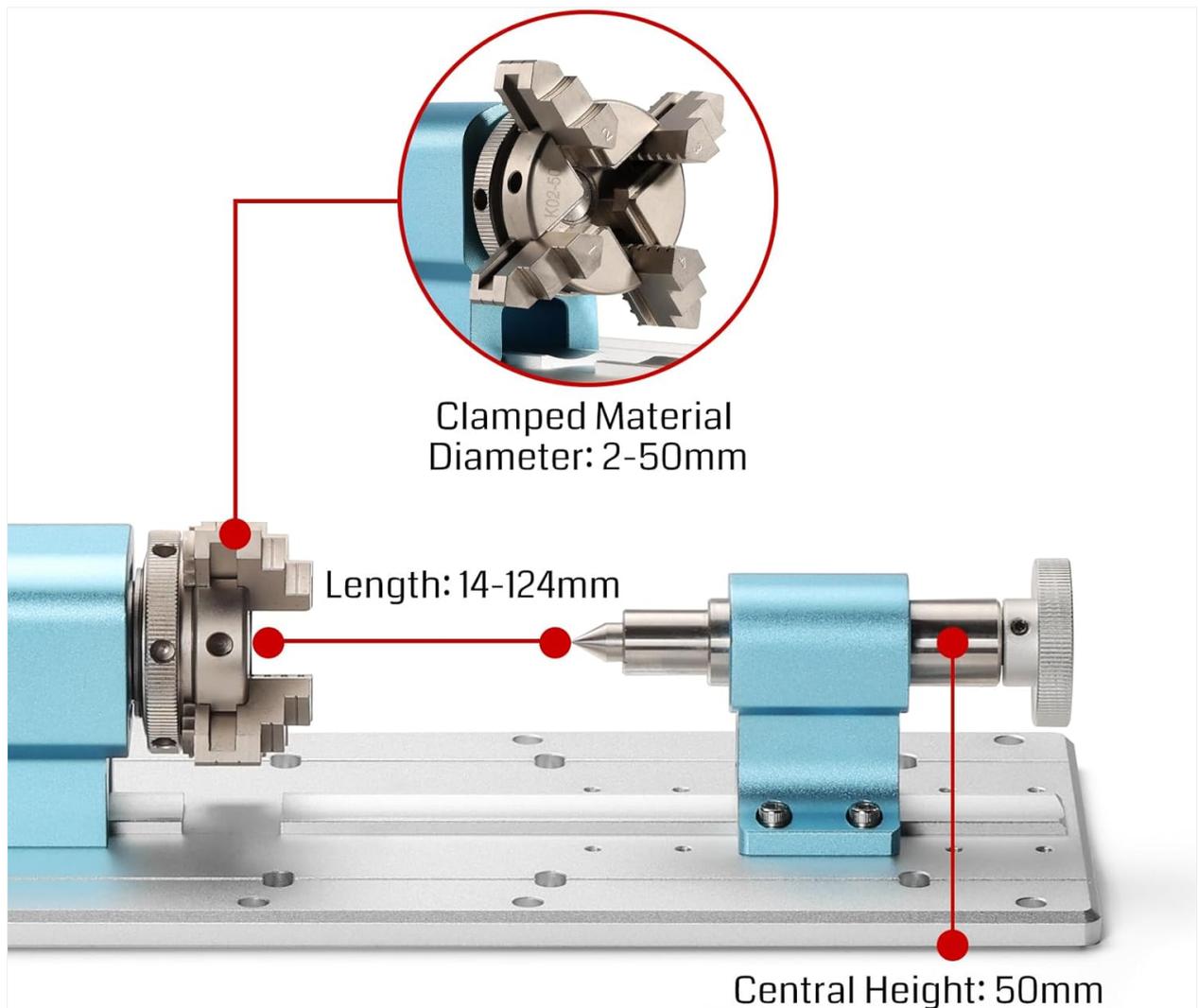
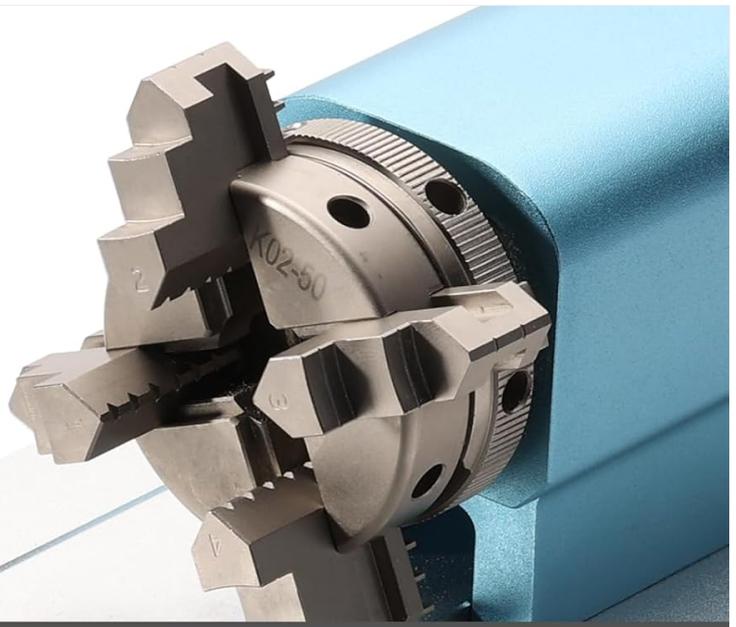


Figure 2: Key dimensions of the rotary module.

- **Precision Control:** Achieves precise control with a 10:1 reduction ratio, offering a minimum angle of 0.1° and a maximum angular speed of 300° per second for high speed and accuracy.
- **4-Jaw Chuck:** Securely holds various material shapes and sizes.

2-22mm
Forward Mounting



18-50mm
Reverse Mounting

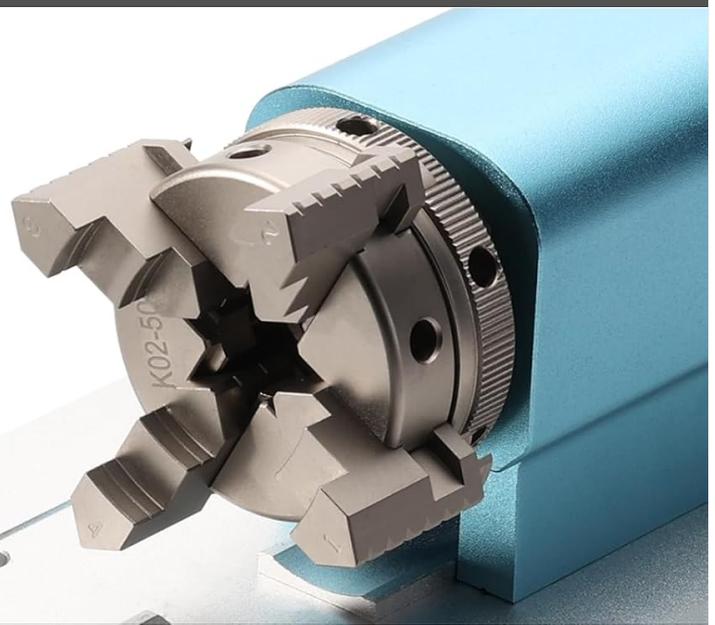


Figure 3: Clamped material diameter range (2-50mm).

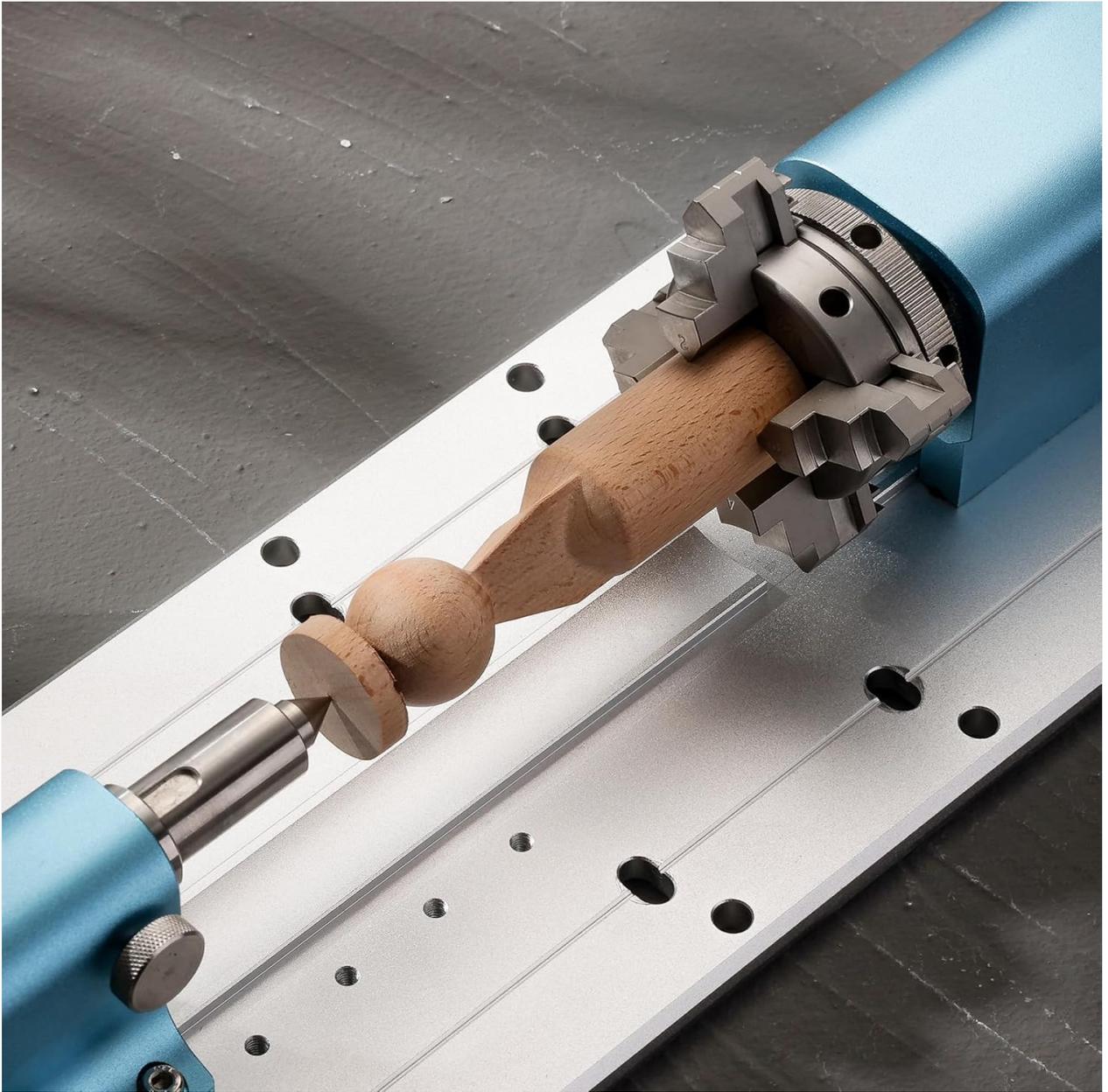


Figure 4: Chuck jaw configurations for forward (2-22mm) and reverse (18-50mm) mounting.

3. SETUP AND INSTALLATION

The Genmitsu 4th Axis Rotary Module comes pre-assembled for ease of installation. Follow these steps to integrate it with your compatible CNC machine:

1. **Unpacking:** Carefully remove all components from the packaging. Verify that all parts listed in the kit contents are present.

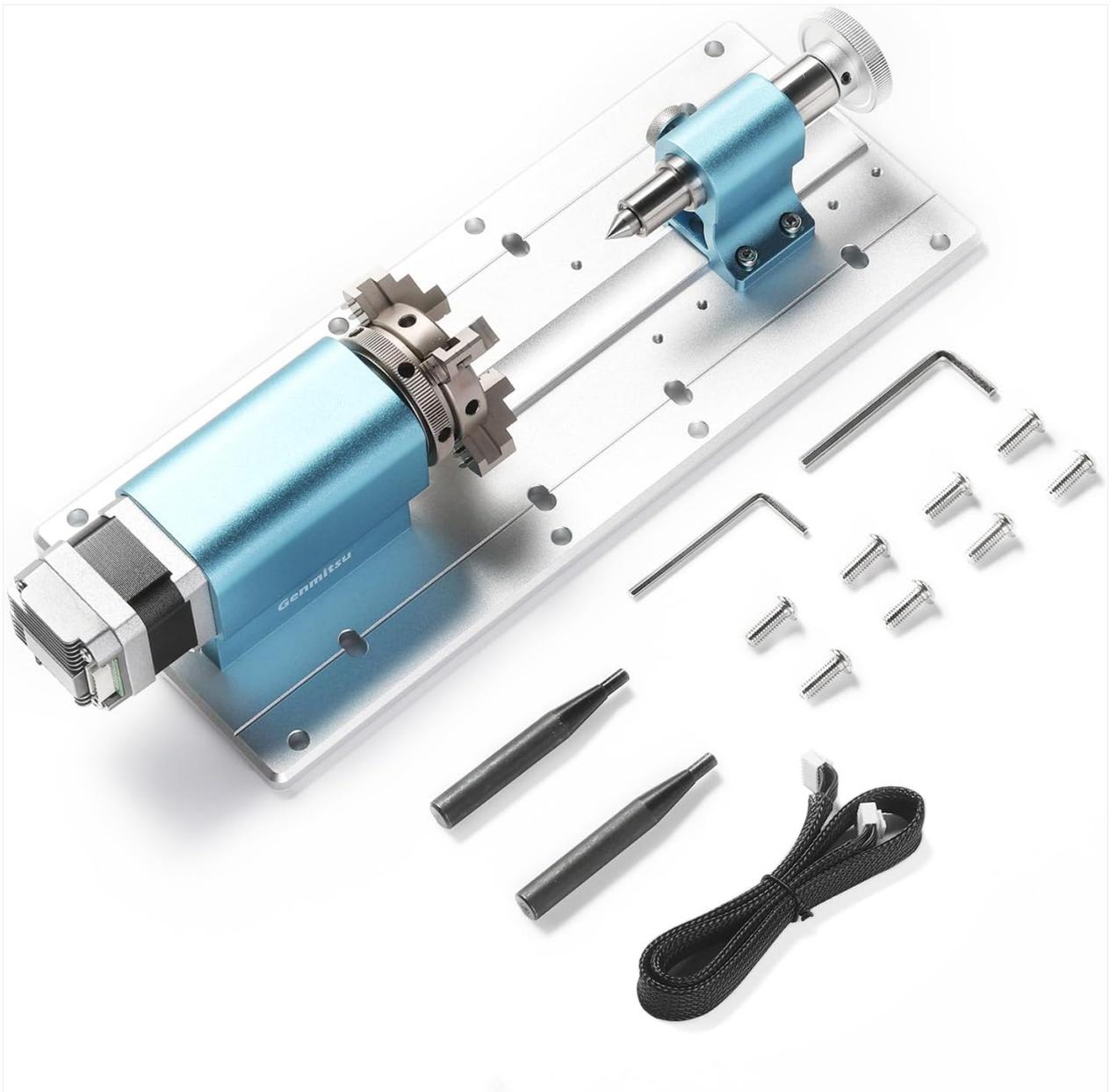


Figure 5: Kit contents including the rotary module, tailstock, and mounting hardware.

- Mounting:** Position the rotary module on the baseplate of your Genmitsu 4040-PRO, 4040 Reno, or 3030-PROVer MAX CNC machine. Align the module with the pre-cut holes on the baseplate and secure it using the provided screws. Ensure the module is parallel to the CNC's X-axis for accurate operation.
- Connecting:** Connect the stepper motor cable from the rotary module to the designated 4th axis port on your CNC machine's controller.
- Offline Controller Requirement:** For the 4040-PRO and 4040 Reno models, an [offline controller \(ASIN: B0C582HQ6Z\)](#) is required to send G-code for 4th axis operations. The 3030-PROVer Max typically includes an integrated offline controller. Ensure you have the necessary controller for proper functionality.
- Software Configuration:** You will need CAD/CAM software capable of generating toolpaths for rotary motion. Recommended options include Fusion 360 and Vectric. Configure your software to recognize and utilize the 4th axis.

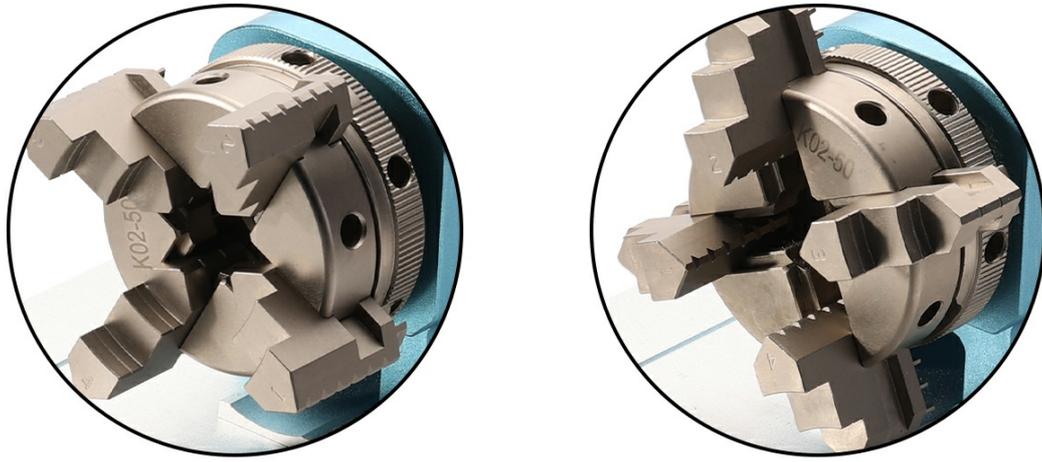


Figure 6: The 4th Axis Rotary Module installed on a compatible CNC machine.

4. OPERATION

Operating the 4th Axis Rotary Module involves preparing your workpiece, generating appropriate G-code, and executing the carving process.

1. Workpiece Mounting:

- Open the 4-jaw chuck by rotating the adjustment ring.
- Insert your material (diameter 2-50mm) into the chuck. Ensure it is centered and securely clamped.
- If using the tailstock for longer materials (up to 100mm), adjust its position to support the free end of the workpiece. The tailstock can be adjusted along the baseplate in 20mm increments, with a fine adjustment range of 0-30mm.

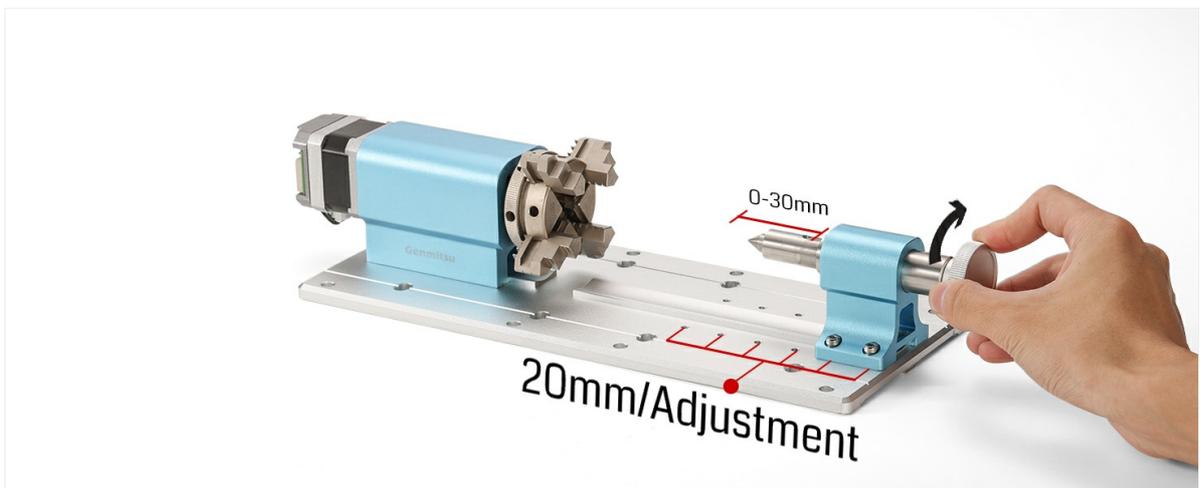


Figure 7: Tailstock adjustment for supporting longer workpieces.

2. **G-code Generation:** Use your chosen CAD/CAM software (e.g., Fusion 360, Vectric) to design your rotary carving project and generate the corresponding G-code. This G-code will include commands for the 4th axis rotation.

3. Execution:

- Load the generated G-code onto your offline controller.
- Ensure the CNC machine and rotary module are powered on and properly connected.
- Initiate the carving process from the offline controller. Monitor the operation closely.

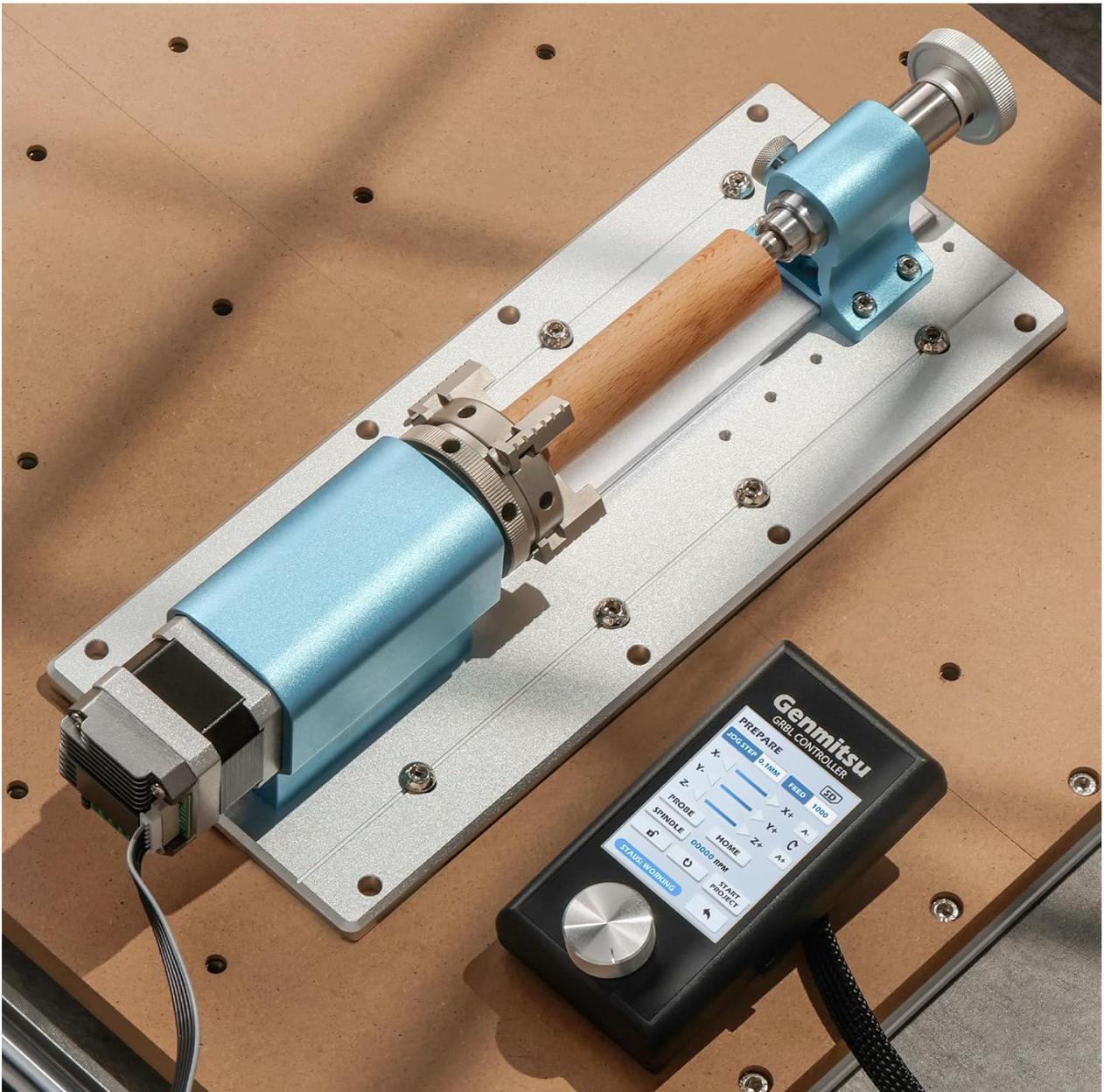


Figure 8: Rotary carving of a wooden piece using the module and an offline controller.

4.1. Operational Video

Your browser does not support the video tag.

Video 1: Demonstration of carving with the Genmitsu 4th Axis Rotary Module on a Genmitsu 4040 Reno CNC machine. The video shows the module in action, carving a design into a cylindrical wooden workpiece.

5. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your 4th Axis Rotary Module.

- **Cleaning:** After each use, clean the module, especially the chuck jaws and tailstock, to remove dust, debris, and wood chips. Use a soft brush or compressed air. Avoid using harsh chemicals that could damage the aluminum finish.
- **Lubrication:** Periodically apply a small amount of light machine oil to the moving parts of the chuck and tailstock screw mechanism to ensure smooth operation.
- **Inspection:** Regularly inspect all screws and connections to ensure they are tight. Check for any signs of wear or damage to the motor, cables, or mechanical components. Replace worn parts as necessary.

- **Storage:** When not in use, store the rotary module in a clean, dry environment to prevent corrosion and dust accumulation.

6. TROUBLESHOOTING

This section addresses common issues you might encounter with the 4th Axis Rotary Module.

Problem	Possible Cause	Solution
Module not rotating or rotating incorrectly.	<ul style="list-style-type: none"> Loose cable connection. Incorrect G-code or software settings. Offline controller not properly configured or connected. Motor driver issue. 	<ul style="list-style-type: none"> Check all cable connections between the module, CNC, and controller. Verify G-code for 4th axis commands. Review CAD/CAM software settings. Ensure the offline controller is correctly set up and communicating with the CNC. Contact Genmitsu support if motor driver is suspected.
Workpiece slipping in chuck.	<ul style="list-style-type: none"> Chuck jaws not tightened sufficiently. Incorrect jaw configuration for workpiece size. Workpiece material is too smooth or oily. 	<ul style="list-style-type: none"> Ensure the chuck jaws are securely tightened. Adjust jaw configuration (forward/reverse) to match workpiece diameter. Clean workpiece surface or use a material with better grip.
Inaccurate carving results.	<ul style="list-style-type: none"> Module not parallel to CNC axis. Loose mounting screws. Software calibration issues. Excessive backlash (though the product description highlights precision). 	<ul style="list-style-type: none"> Re-check module alignment and ensure it is parallel. Tighten all mounting screws. Review and recalibrate software settings for the 4th axis. Ensure workpiece is firmly secured.

7. SPECIFICATIONS

Attribute	Detail
Brand	Genmitsu
Model Name	4th Axis
Material	Aluminum
Item Weight	2.93 Kilograms (6.45 pounds)
Center Height	50mm
Total Height	86mm
Material Length (with tailstock)	10-100mm

Attribute	Detail
Material Length (without tailstock)	10-200mm
Applicable Material Diameter	2-50mm
Reduction Ratio	10:1
Minimum Rotation Angle	0.1°
Maximum Angular Speed	300° per second
Compatible CNC Machines	Genmitsu 4040-PRO, 4040 Reno, 3030-PROVer MAX
Required Controller	Offline controller (for 4040-PRO, 4040 Reno)

8. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please refer to the official Genmitsu website or contact their customer service directly. Keep your purchase receipt for warranty claims.