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## SainSmart 3018-PROVer V2

# Genmitsu 3018-PROVer V2 CNC Router Machine User Manual

Model: 3018-PROVer V2

## INTRODUCTION

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The Genmitsu 3018-PROVer V2 is an entry-level CNC (Computer Numerical Control) router machine designed for hobbyists and beginners. This machine is capable of engraving and milling various materials such as wood, plastic, acrylic, PVC, PCB, carbon fiber, density board, and soft metals like copper and aluminum. This manual provides essential information for the safe and effective operation, maintenance, and troubleshooting of your 3018-PROVer V2 CNC router.

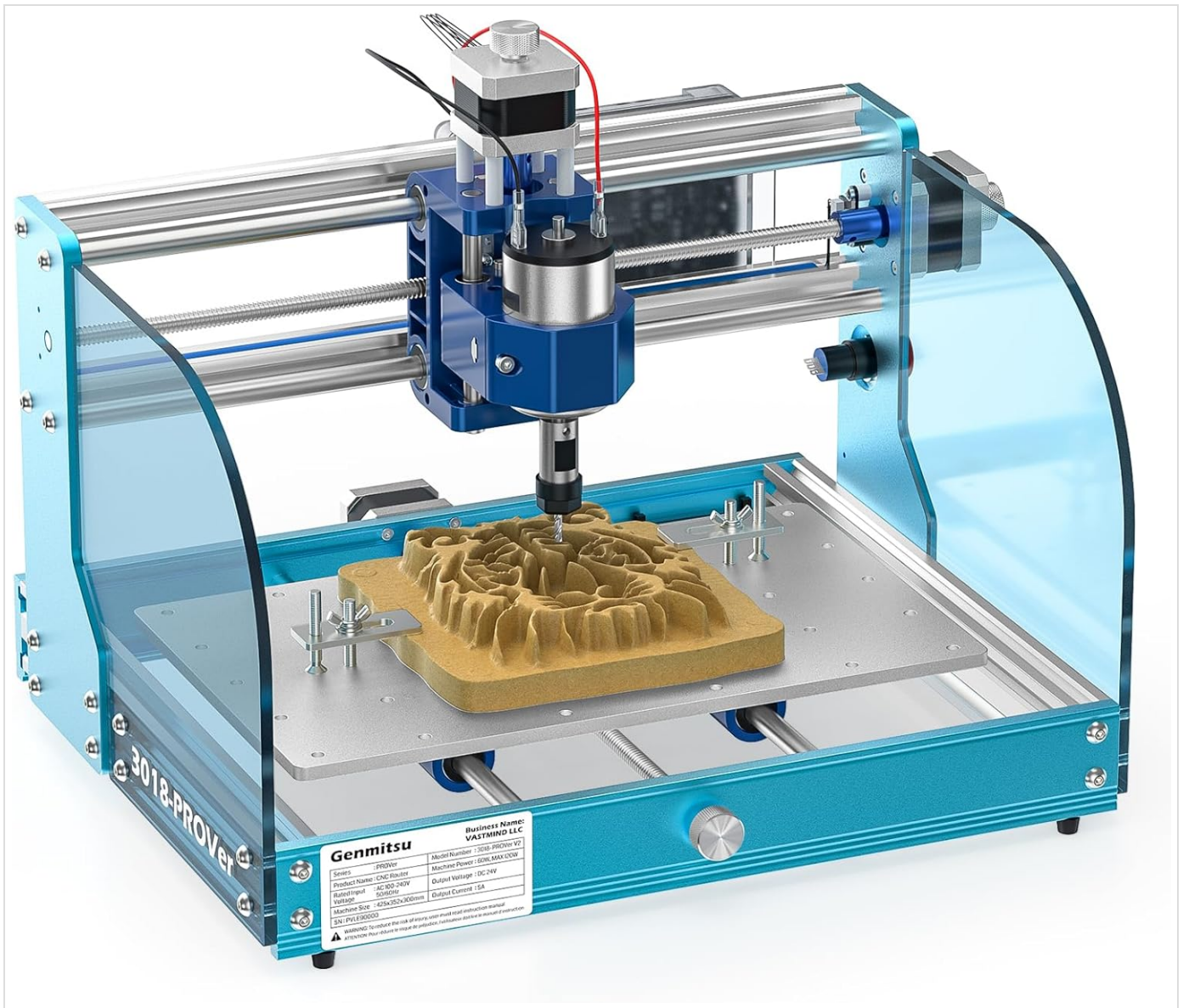


Image: The Genmitsu 3018-PROVer V2 CNC Router Machine, showcasing its compact design and a sample carving in progress.

## SAFETY INFORMATION

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Always prioritize safety when operating the CNC machine. Failure to follow safety guidelines can result in injury or damage to the equipment.

- **Eye Protection:** Always wear safety glasses to protect your eyes from flying debris.
- **Dust Mask:** Wear a dust mask, especially when working with materials that produce fine dust.
- **Hearing Protection:** Use hearing protection during extended operation, as the spindle can generate noise.
- **Secure Workpiece:** Ensure the material is securely clamped to the spoilboard before starting any operation to prevent movement during carving.
- **Emergency Stop:** Familiarize yourself with the location and function of the emergency stop button. Press it immediately in case of any malfunction or emergency.
- **Clear Workspace:** Keep the area around the machine clear of obstructions, loose clothing, and long hair.
- **Ventilation:** Operate the machine in a well-ventilated area, especially when cutting materials that produce fumes.
- **Power Disconnection:** Disconnect power before performing any maintenance, cleaning, or bit changes.

## PACKAGE CONTENTS

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Verify that all components are present upon unpacking your Genmitsu 3018-PROVer V2 CNC Router Machine:

- Genmitsu 3018-PROVer V2 CNC Router Machine (Pre-Assembled Main Parts)
- Power Adapter
- USB Cable
- Z-Probe
- Limit Switches (Pre-installed)
- Emergency Stop Button (Pre-installed)
- Acrylic Baffles
- Milling Bits/Engraving Bits
- Clamps for Workpiece
- Assembly Tools
- User Manual (Physical or Digital)

## SETUP

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### 1. Assembly

The 3018-PROVer V2 features pre-assembled main parts, including the gantry frame and the one-piece aluminum spoilboard, significantly simplifying the assembly process. Clear cable management is also integrated. Most users can complete the assembly within an hour.

1. Carefully unpack all components and verify against the package contents list.
2. Attach the pre-assembled gantry to the base, securing it with the provided screws.
3. Install the acrylic baffles into their designated slots on the sides of the machine. These baffles help reduce debris spread.
4. Connect the motor and limit switch cables to the control board, following the clear labeling.
5. Ensure all screws are tightened, but do not overtighten.

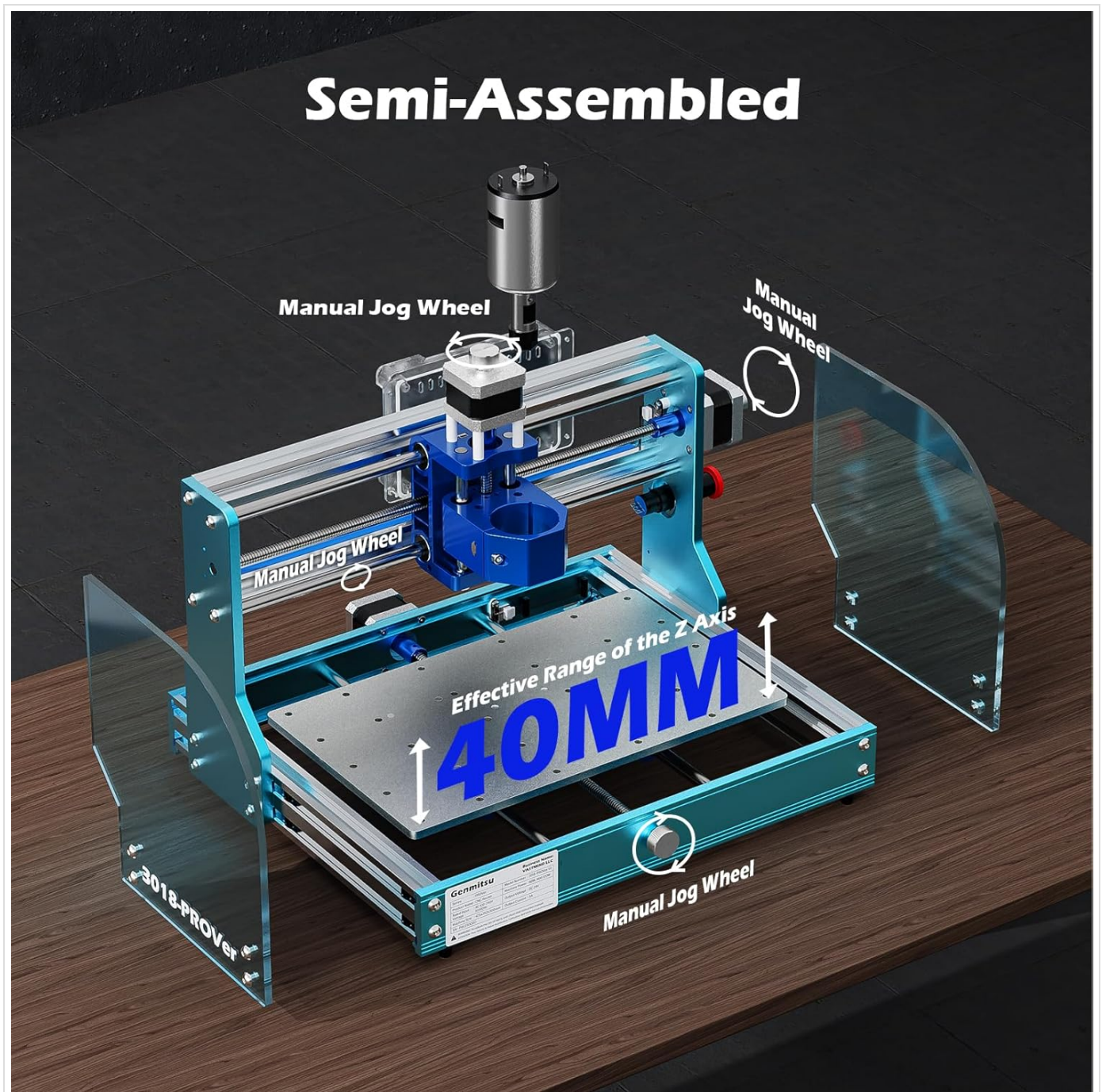


Image: The Genmitsu 3018-PROVer V2 in a semi-assembled state, highlighting the manual jog wheels for axis movement and the 40mm effective Z-axis range.

## 2. Initial Connection

Connect the power adapter to the machine and then to a suitable power outlet (230V AC). Connect the machine to your computer using the provided USB cable.

## 3. Software Installation

The Genmitsu 3018-PROVer V2 is compatible with various CAD/CAM software to design and convert your ideas into G-code instructions. Common options include Candle (often included), Easel, Carveco, and Fusion360. Refer to the SainSmart Resource Center for detailed software setup guides and drivers.

- Download and install the necessary drivers for your operating system (Windows, Linux, macOS).
- Install your chosen CNC control software (e.g., Candle).
- Configure the software to communicate with your 3018-PROVer V2, typically by selecting the correct COM port.

## 4. Calibration and Homing

The machine is equipped with limit switches for all axes (X, Y, Z) and an E-Stop button for safety. The Z-probe assists in accurate Z-axis homing.

- **Homing:** In your control software, initiate the homing sequence. The machine will move each axis until it triggers its respective limit switch, establishing the machine's home position.
- **Z-Probe Usage:** To set the Z-axis zero point accurately, place the Z-probe on your workpiece. Connect the Z-probe's clip to the milling bit. In your software, initiate the Z-probe function. The spindle will slowly descend until the bit touches the probe, automatically setting the Z-axis zero.



Image: A close-up view of the Z-probe in action, demonstrating how the milling bit makes contact with the probe to establish the Z-axis zero point, indicated by a blue light.

## OPERATING INSTRUCTIONS

### 1. Material Preparation

The 3018-PROVer V2 can engrave a wide range of materials. Ensure your material is flat and free of defects.

- **Compatible Materials:** Wood, plastic, acrylic, PVC, PCB, carbon fiber, density board, copper, aluminum.
- **Work Area:** The effective engraving area is approximately 284mm (X) x 180mm (Y) with a Z-axis travel of 40mm.

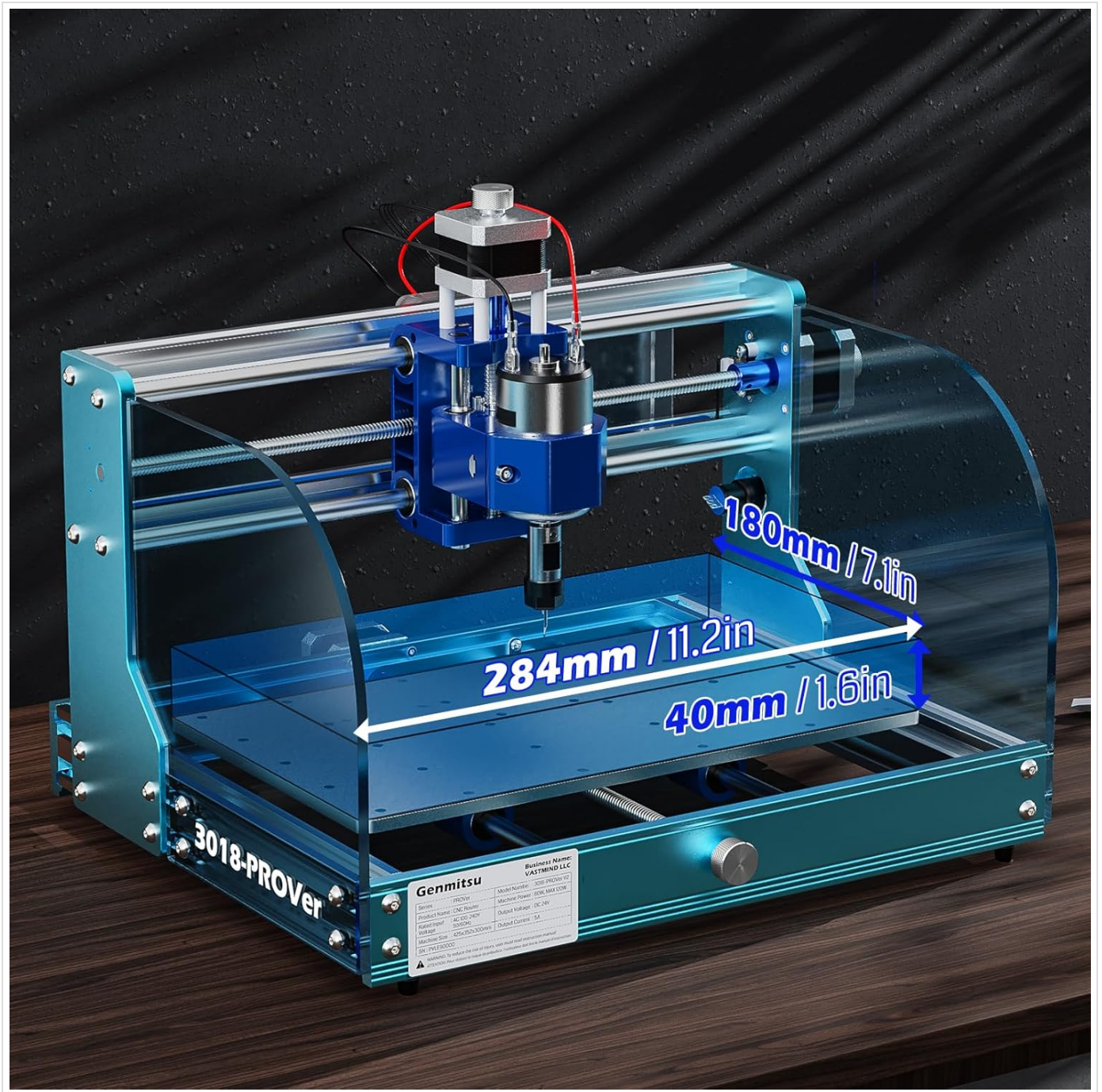


Image: The Genmitsu 3018-PROVer V2 CNC machine with its key dimensions highlighted: 284mm (X-axis), 180mm (Y-axis), and 40mm (Z-axis).

## 2. Securing the Workpiece

Place your material on the one-piece molded aluminum spoilboard. Use the provided clamps to firmly secure the material to prevent any movement during the carving process. The spoilboard is compatible with most CNC clamps on the market.

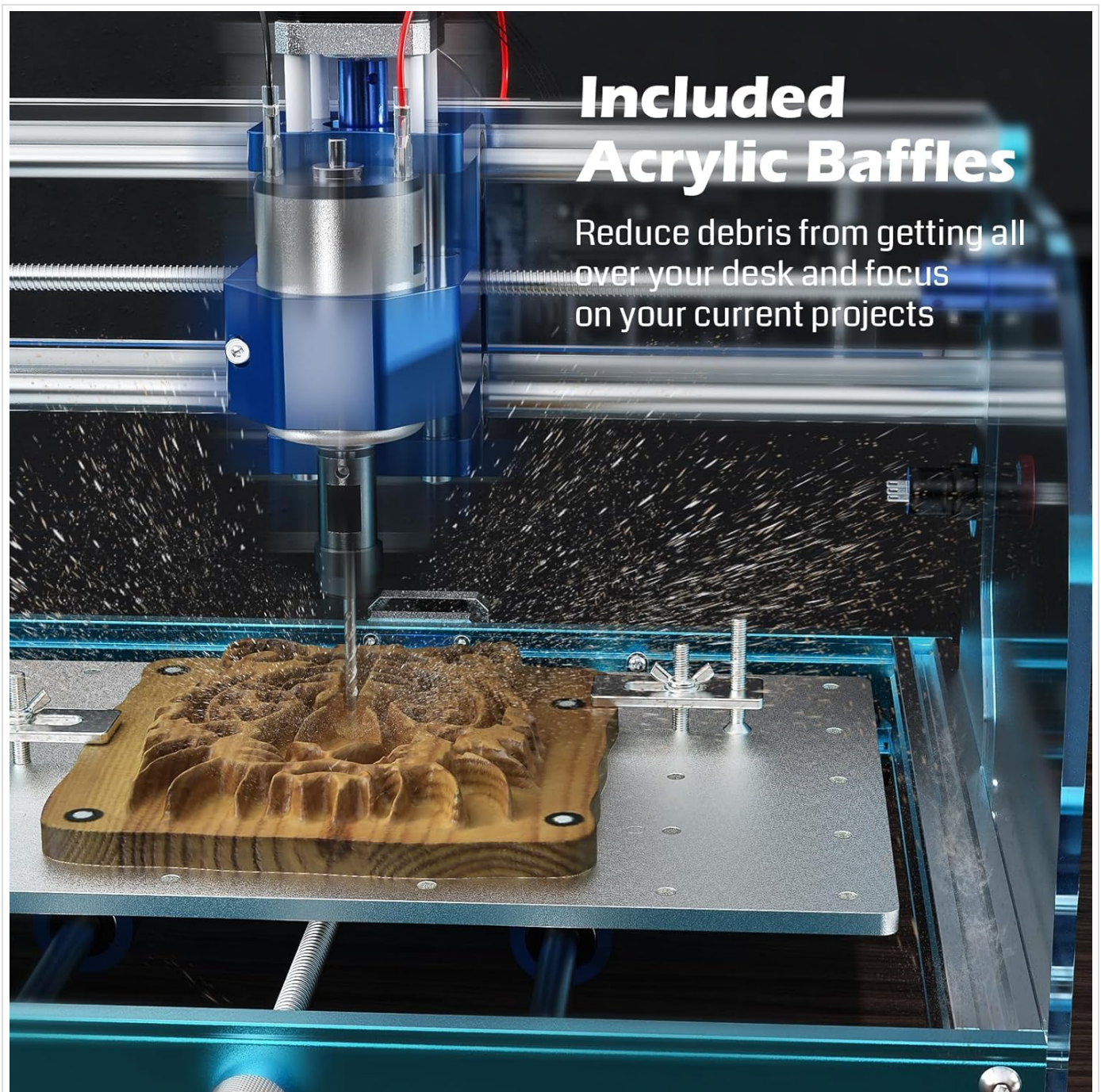


Image: A close-up view of the machine's one-piece molded aluminum spoilboard, showing a blue material securely clamped in place, ready for engraving.

### 3. Tool Installation

Select the appropriate milling bit for your material and desired operation. Loosen the collet nut, insert the bit, and tighten the collet nut securely using the provided wrenches. Ensure the bit is inserted far enough to be stable but not so far that it interferes with the spindle's operation.

### 4. Loading G-Code and Starting Operation

Once your design is converted to G-code, load the file into your CNC control software.

1. Load the G-code file into your CNC control software (e.g., Candle).
2. Set the workpiece zero point (X, Y, Z) in the software. This is the starting point for your carving.
3. Perform a dry run (air cut) if possible, to ensure the tool path is correct and does not collide with clamps or the machine frame.
4. Start the spindle motor.

5. Initiate the carving process from your software.
6. Monitor the machine during operation. The included acrylic baffles help contain debris.

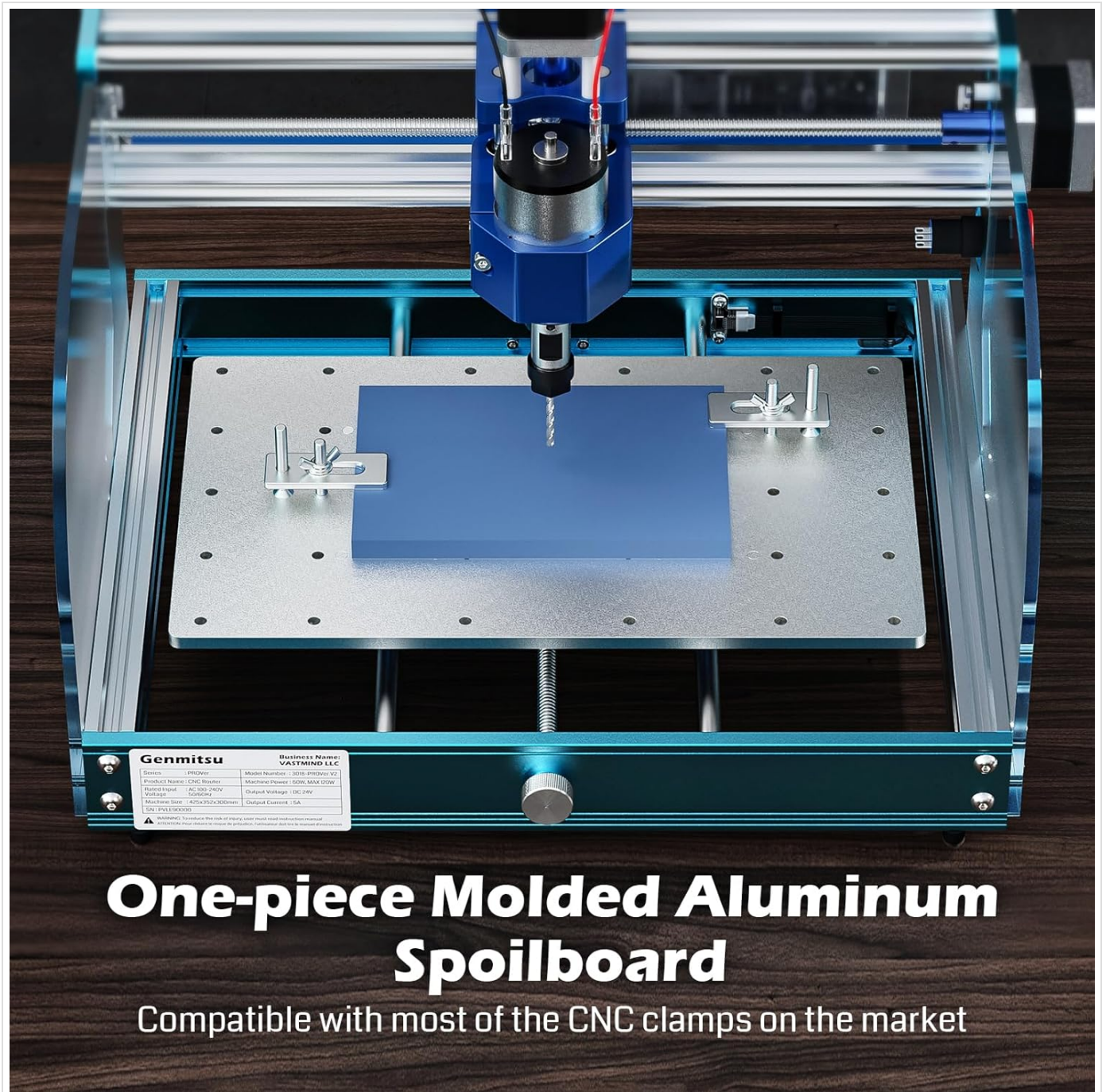


Image: The Genmitsu 3018-PROVer V2 in operation, showing the spindle carving into a piece of wood, with debris being contained by the transparent acrylic baffles.

## 5. Stopping Operation

To stop an operation, you can pause or stop it via the software. In an emergency, press the red E-Stop button immediately. After the operation is complete, allow the spindle to stop completely before removing the workpiece.

## MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your CNC machine.

- **Cleaning:** After each use, clean the machine thoroughly to remove dust and debris. Use a brush or vacuum cleaner. Avoid using compressed air directly on sensitive electronic components.

- **Lubrication:** Periodically apply a small amount of lubricant to the lead screws and linear rails to ensure smooth movement of the axes.
- **Bit Inspection:** Inspect your milling bits before and after each use for wear or damage. Replace dull or broken bits to ensure clean cuts and prevent strain on the spindle motor.
- **Cable Management:** Ensure all cables are neatly routed and not pinched or frayed.
- **Tightness Check:** Periodically check all screws and fasteners for tightness.

## TROUBLESHOOTING

This section addresses common issues you might encounter. For more detailed troubleshooting, refer to the SainSmart Resource Center or contact customer support.

Problem	Possible Cause	Solution
Machine not responding to software commands.	Incorrect COM port selected; drivers not installed; loose USB connection; E-Stop engaged.	Verify COM port in software; install drivers; check USB cable; disengage E-Stop.
Spindle not rotating.	Power issue; spindle cable disconnected; software command error.	Check power supply; ensure spindle cable is secure; verify G-code for spindle start command.
Inaccurate carving/Skipped steps.	Material not secured; feed rate too high; dull bit; loose belts/couplings.	Secure workpiece firmly; reduce feed rate; replace bit; check and tighten belts/couplings.
Limit switches not working.	Loose connection; damaged switch; software configuration.	Check wiring to limit switches; inspect switches for physical damage; verify software settings for homing.
Z-probe not detecting contact.	Loose connection; probe damaged; bit not conductive.	Ensure probe cable is securely connected; check probe for damage; ensure bit is conductive and clean.

## SPECIFICATIONS

Feature	Specification
Brand	SainSmart
Model	3018-PROVer V2
Material	Aluminum
Power Source	Corded Electric
Product Dimensions (W x H)	16.54" x 11.42"
Voltage	230 Volts (AC)
Amperage	1.03 Amps
Maximum Rotational Speed	10000 RPM

Feature	Specification
Item Weight	20.3 pounds
Included Components	CNC Router Machine
UPC	816550022917

## WARRANTY AND SUPPORT

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SainSmart provides customer support and warranty services for the Genmitsu 3018-PROVer V2. For specific warranty terms and conditions, please refer to the documentation included with your product or visit the official SainSmart website.

For additional resources, troubleshooting guides, and software information, please visit the [SainSmart Resource Center](#). You can also find the official User Guide in PDF format [here](#).

If you encounter issues that cannot be resolved using this manual or the online resources, please contact SainSmart customer support for assistance.