VEVOR S4040

VEVOR S4040 CNC Router Machine User Manual
Model: S4040

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your VEVOR S4040 CNC Router Machine. This 3-axis wood engraving and milling machine features a 300W spindle, a 15.75 x 15.75 x 2.36 inch working area, and an offline controller. It is designed for precise engraving and cutting on various materials including wood, acrylic, MDF, leather, plastic, foam, vinyl, and soft metals.
Please read this manual thoroughly before operating the machine to ensure proper usage and to prevent damage or injury.

2. SAFETY INSTRUCTIONS

Always prioritize safety when operating the CNC router machine. Failure to follow these instructions may result in serious injury or damage to the equipment.

- **Read the Manual:** Understand all instructions and warnings before use.
- **Personal Protective Equipment (PPE):** Always wear safety glasses to protect your eyes from flying debris. Consider hearing protection and a dust mask, especially when working with materials that produce fine particles.
- **Work Area:** Ensure your work area is clean, well-lit, and free from obstructions. Keep children and unauthorized personnel away from the machine during operation.
- **Secure Workpiece:** Always securely clamp your material to the workbed to prevent movement during engraving or cutting.
- **Emergency Stop:** Familiarize yourself with the location and operation of the emergency stop button.
- **Power Disconnection:** Disconnect power before performing any maintenance, adjustments, or when changing tools.
- **Tooling:** Use only sharp, appropriate cutting tools for the material being processed. Dull or incorrect tools can cause kickback or breakage.
- **Ventilation:** Ensure adequate ventilation, especially when working with materials that produce fumes

or dust.

- **Electrical Safety:** Do not operate the machine with wet hands or in damp conditions. Ensure all electrical connections are secure and properly grounded.

- **Never Leave Unattended:** Do not leave the machine running unattended.

---

3. PACKAGE CONTENTS

Upon unpacking, verify that all components are present and undamaged. If any items are missing or damaged, contact VEVOR customer support immediately.

- 1 x CNC Router Machine (main unit)
- Offline Controller
- Power Adapter
- USB Cable
- Assorted Engraving Bits
- Clamps
- Wrenches and Hex Keys
- Brush
- Other necessary accessories for assembly

Item Model Number: **S4040**
Input Voltage: **AC100-220V, 50/60Hz**
Maximum Spindle Power: **300W**
Effective Work Area: **15.75 × 15.75 × 2.36 in/400 × 400 × 60 mm**
Compatible Software: **All software supporting GRBL f1.1 firmware**
Computer Connection: **USB**
Offline Operation:
2.4 in Touchscreen Offline Controller
Spindle Speed: **12,400 RPM**
X/Y/Z Axis Speed: **1200 mm/min**
Main Material: **6061 Aluminum Alloy**
Net Weight: **28.66 lbs/13.0 kg**
Product Dimensions: **27.95 × 23.62 × 12.60 in/710 × 600 × 320 mm**

Image: VEVOR S4040 CNC Router Machine with its various included accessories, such as the offline controller, power supply, USB cable, and tools.

4. SETUP

The VEVOR S4040 CNC Router Machine features a pre-assembled design for quick installation. Key components come pre-assembled and pre-wired, simplifying the setup process.

4.1 Assembly Steps

1. **Unpack Components:** Carefully remove all parts from the packaging and place them on a clean, stable surface.

2. **Connect Pre-assembled Modules:** The machine consists of a few main pre-assembled modules. Follow the included quick start guide or detailed assembly instructions to connect these modules. Typically, this involves attaching the gantry to the base and securing the spindle assembly.

3. **Secure Wiring:** Ensure all pre-wired connections are properly seated and secured. Use cable ties if necessary to manage cables and prevent them from interfering with moving parts.

4. **Power Connection:** Connect the power adapter to the machine and then to a grounded electrical outlet. Do not power on yet.

5. **Computer Connection (Optional):** If you plan to operate the machine via a computer, connect the USB cable from the machine to your computer.

Image: The VEVOR S4040 CNC Router Machine shown fully assembled, ready for operation.

5. OPERATING INSTRUCTIONS

The VEVOR S4040 offers both offline control via its 2.4-inch touchscreen controller and online control through compatible software.

5.1 Offline Control

The 2.4-inch touchscreen offline controller allows you to operate the machine without a computer connection.

1. **Prepare G-code:** Save your G-code files (design instructions) onto a USB drive.

2. **Insert USB Drive:** Plug the USB drive into the offline controller.

3. **Power On:** Turn on the machine's power switch.

4. **Select File:** Use the touchscreen interface to navigate and select your desired G-code file.

5. **Position Workpiece:** Secure your material on the workbed using the provided clamps.

6. **Set Origin:** Manually move the spindle to the desired starting point (origin) for your engraving/cutting job and set the X, Y, and Z axes origin through the controller.

7. **Start Operation:** Initiate the engraving or cutting process from the controller.

8. **Adjust Spindle Speed:** Use the rotary knob on the machine to precisely control the spindle speed during operation.

Image: A close-up view of the 2.4-inch touchscreen offline controller, showing its interface for file selection and machine control.

5.2 Software Compatibility (Online Control)

The machine is compatible with all software that supports GRBL f1.1 firmware. Popular compatible software includes:

- **CNC (Candle):** Supports Windows 7/8/10/11 and macOS.
- **Easel:** Supports Windows 7/8/10/11, macOS, and Linux.
- **LaserGRBL:** Supports Windows 7/8/10/11 and macOS (via Virtual Machine).
- **LightBurn:** Supports Windows 7/8/10/11 and macOS.

To operate via computer, install the necessary drivers and software, connect the machine via USB, and

follow the software's instructions for loading G-code, setting parameters, and initiating jobs.
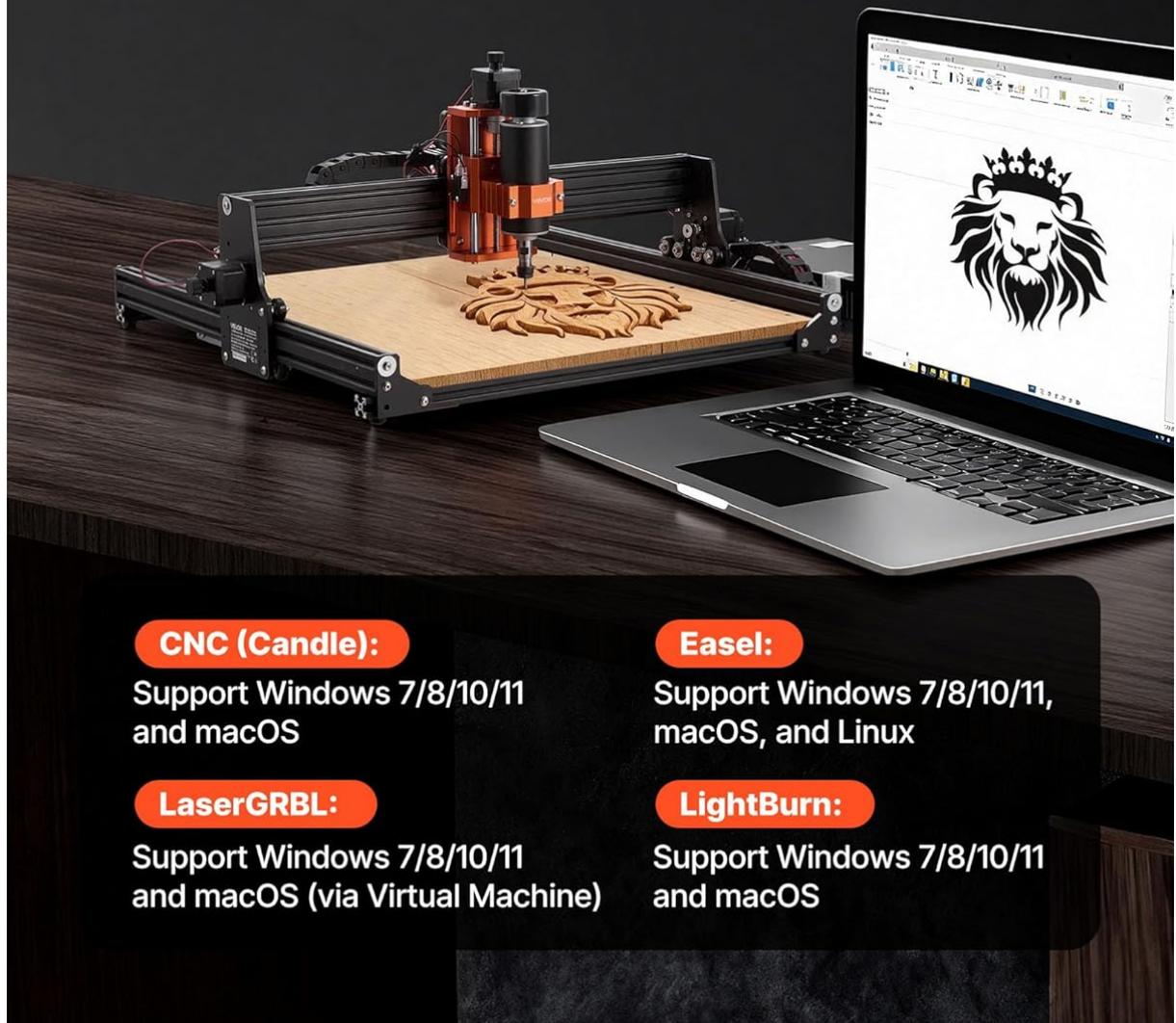

Image: The VEVOR S4040 CNC Router Machine connected to a laptop, demonstrating its compatibility with various design and control software.

5.3 Engraving and Cutting Materials

The VEVOR S4040 is suitable for a wide range of materials:

- Wood (hardwood, softwood, MDF)
- Clear Acrylic
- Leather
- Plastic

- Foam
- Vinyl
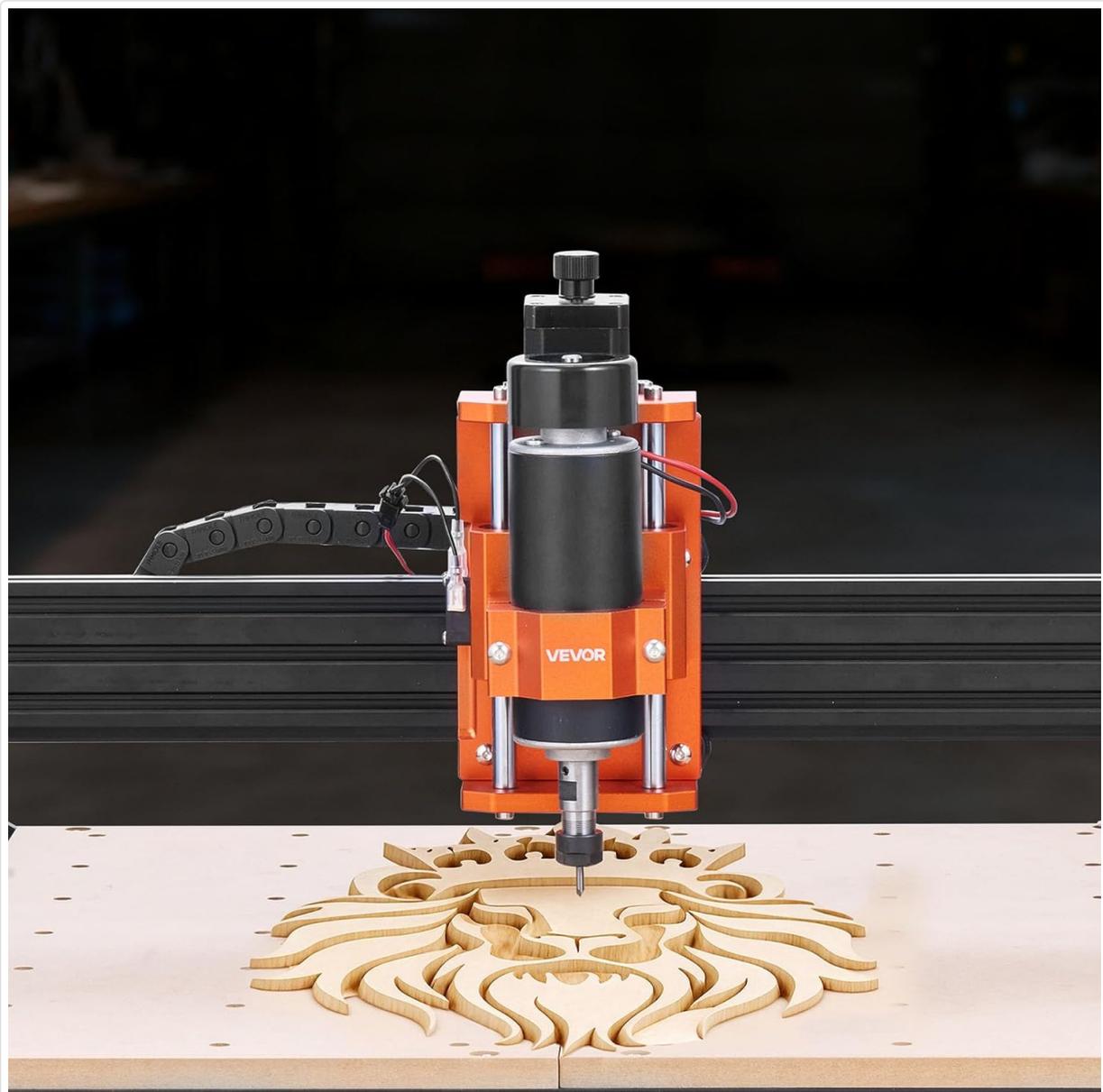- Soft Metals (e.g., aluminum, brass)

Image: The VEVOR S4040 CNC Router Machine actively engraving a detailed lion head design into a piece of wood, showcasing its precision.

6. MAINTENANCE

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

- **Cleaning:** After each use, clean the work area, rails, and lead screws to remove dust, chips, and debris. Use a brush or vacuum. Avoid using compressed air directly on sensitive electronic components.
- **Lubrication:** Periodically apply a small amount of appropriate lubricant to the linear rails and lead screws to ensure smooth movement. Refer to the manufacturer's recommendations for lubricant type and frequency.
- **Check Connections:** Regularly inspect all electrical connections, cables, and mechanical fasteners to ensure they are secure. Tighten any loose screws or bolts.

- **Spindle Care:** Keep the spindle clean and free of debris. Ensure proper ventilation around the spindle motor to prevent overheating. The spindle motor features current detection protection, extending its lifespan up to 5,000 hours.
- **Tool Inspection:** Inspect cutting bits before each use for sharpness and damage. Replace dull or broken bits immediately.

7. TROUBLESHOOTING

This section addresses common issues you might encounter. For problems not listed here, contact VEVOR customer support.

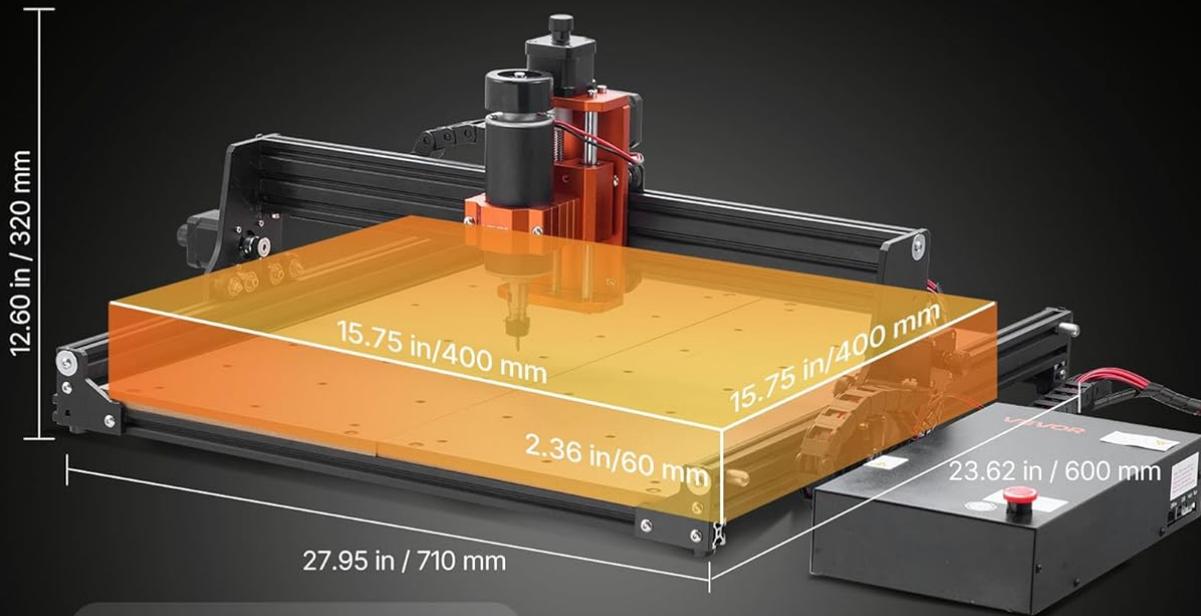| Problem	Possible Cause	Solution
Machine does not power on	Power cable loose; Power switch off; Faulty power adapter	Check power cable connection; Ensure power switch is ON; Test power adapter with another device if possible.
Motors not moving	Emergency stop engaged; Loose motor cables; Software connection issue	Disengage emergency stop; Check all motor cable connections; Verify software connection and settings.
Inaccurate engraving/cutting	Loose workpiece; Dull bit; Incorrect G-code/settings; Loose belts/lead screws	Secure workpiece firmly; Replace bit; Verify G-code and software settings; Check and tighten belts/lead screws.
Spindle not rotating	Spindle cable loose; Spindle speed set to zero; Spindle motor fault	Check spindle cable connection; Increase spindle speed via controller/software; Contact support if issue persists.
Offline controller not responding	Controller cable loose; Controller frozen	Ensure controller cable is secure; Restart the machine and controller.

8. SPECIFICATIONS

Detailed technical specifications for the VEVOR S4040 CNC Router Machine.

Feature	Specification
Item Model Number	S4040
Input Voltage	AC100-220V, 50/60Hz
Maximum Spindle Power	300W
Effective Work Area (X, Y, Z)	15.75 x 15.75 x 2.36 in (400 x 400 x 60 mm)
Compatible Software	All software supporting GRBL f1.1 firmware

Feature	Specification
Computer Connection	USB
Offline Operation	2.4-inch Touchscreen Offline Controller
Spindle Speed	12,400 RPM
X/Y/Z Axis Speed	1200 mm/min
Repeat Positioning Accuracy	≤0.05 mm
Main Material	6061 Aluminum Alloy
Net Weight	28.66 lbs / 13.0 kg
Product Dimensions (L x W x H)	27.95 x 23.62 x 12.60 in (710 x 600 x 320 mm)

Image: The VEVOR S4040 CNC Router Machine with its overall dimensions and working area clearly indicated.

9. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please contact VEVOR customer service. Refer to your purchase documentation or the official VEVOR website for specific warranty terms and contact details.
When contacting support, please have your model number (S4040) and purchase date available.