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› ACMER S1 Portable Laser Engraver Machine User Manual

ACMER S1-2.5W-3.5W-002

ACMER S1 Portable Laser Engraver Machine User Manual

Model: S1-2.5W-3.5W-002

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1. INTRODUCTION

The ACMER S1 Portable Laser Engraver Machine is a compact and versatile tool designed for engraving and cutting a wide range of materials. Its user-friendly design and precise laser output make it suitable for beginners and experienced crafters alike. This manual provides essential information for setting up, operating, and maintaining your ACMER S1 to achieve optimal results.

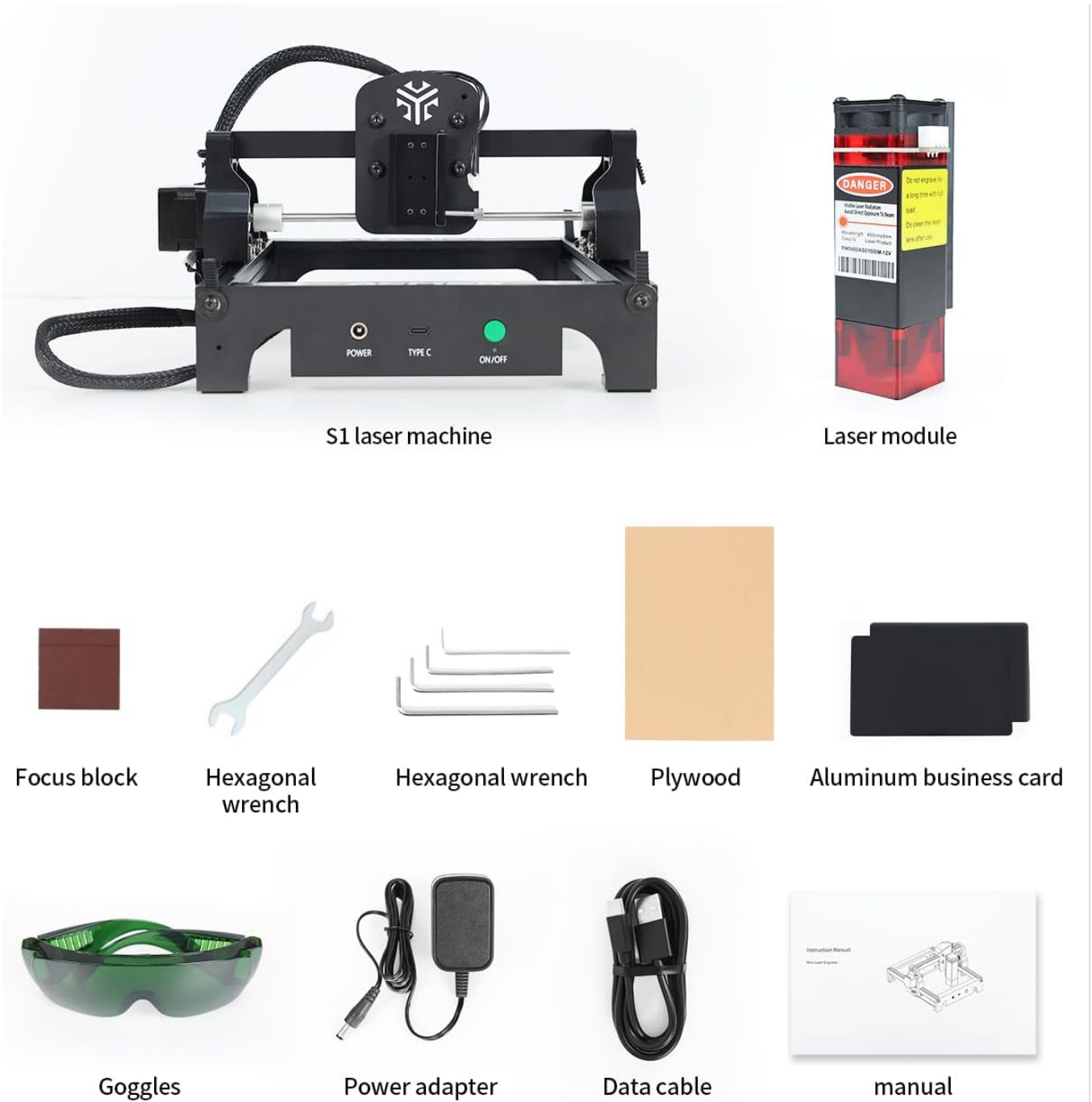


Figure 1.1: The ACMER S1 Portable Laser Engraver Machine.

2. WHAT'S IN THE BOX

Upon unboxing your ACMER S1, ensure all components listed below are present:

- ACMER S1 Engraver Machine & Laser Module
- Tool Kit
- Protective Goggles
- Instruction Manual
- Power Cord
- Plywood (1 piece)
- Cardboard (1 piece)
- Aluminum Business Card (2 pieces)



S1 laser machine

Laser module

Focus block

Hexagonal wrench

Hexagonal wrench

Plywood

Aluminum business card

Goggles

Power adapter

Data cable

manual

Figure 2.1: All components included in the ACMER S1 package.

3. SETUP

The ACMER S1 comes pre-assembled, simplifying the setup process. Follow these steps to prepare your machine for use:

1. **Place the Machine:** Position the engraver on a stable, flat surface. Ensure adequate ventilation and a clear workspace.
2. **Install Laser Module:** Carefully attach the laser module to the designated slot on the machine's gantry. Secure it according to the instructions in the included manual.
3. **Connect Power:** Plug the power cord into the machine's power input and then into a suitable power outlet.
4. **Connect to Computer:** Use the provided data cable (Type-C) to connect the engraver to your computer.
5. **Software Installation:** Install the recommended engraving software (e.g., LightBurn or LaserGRBL) on your computer. Refer to the software's documentation for detailed installation steps.

Convenient frame scale design

Increased safety and precision limit switches on both the X and Y axes!

The laser scale is the frame scale, providing users with clearly visible reference points. Allowing users to accurately locate their design workpieces.

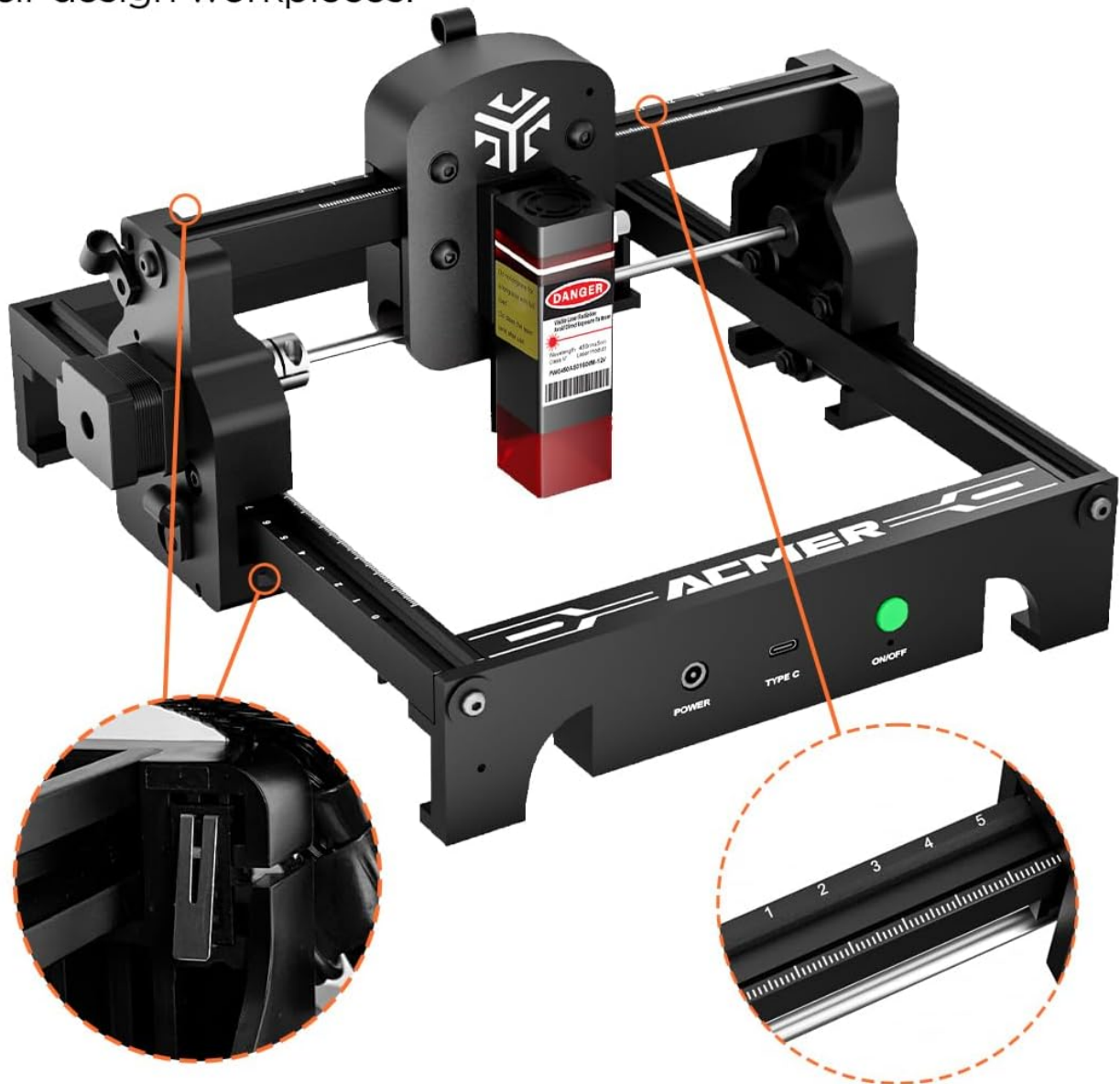


Figure 3.1: Setting up the ACMER S1 for immediate use.

Setup Video Guide

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Video 3.1: This video demonstrates the process of attaching the feet and grid to the ACMER S1, which is part of the initial setup. It also shows the machine in operation, engraving a grid pattern on wood.

4. OPERATION

The ACMER S1 offers versatile engraving and cutting capabilities. Familiarize yourself with its features for optimal performance.

4.1 Software Compatibility

The ACMER S1 is compatible with popular laser engraving software such as LightBurn and LaserGRBL, allowing for flexible design and control. It supports various operating systems including macOS, Windows, and Linux.



Figure 4.1: Software compatibility for the ACMER S1.

4.2 Engraving and Cutting Capabilities

With its powerful 2.5W/3.5W laser, the ACMER S1 can engrave over 100 different materials and offers comprehensive cutting capabilities. The ultra-fine laser output ensures finely detailed and lifelike engravings.

- **Engravable Materials:** Wood, Acrylic, Leather, Cork, Rock, Glass, Paper, Metal, Ceramics, Craft Paper, Cardboard.
- **Cutting Capabilities:** The S1 2.5W can cut up to 6mm wood and 5mm acrylic. The S1 3.5W can cut up to 8mm wood and 6mm acrylic.

Balanced Engraving and cutting Capabilities

The 2.5W/3.5W is not only more sophisticated in engraving, it can engrave more than 100 materials, but also has comprehensive cutting capabilities.

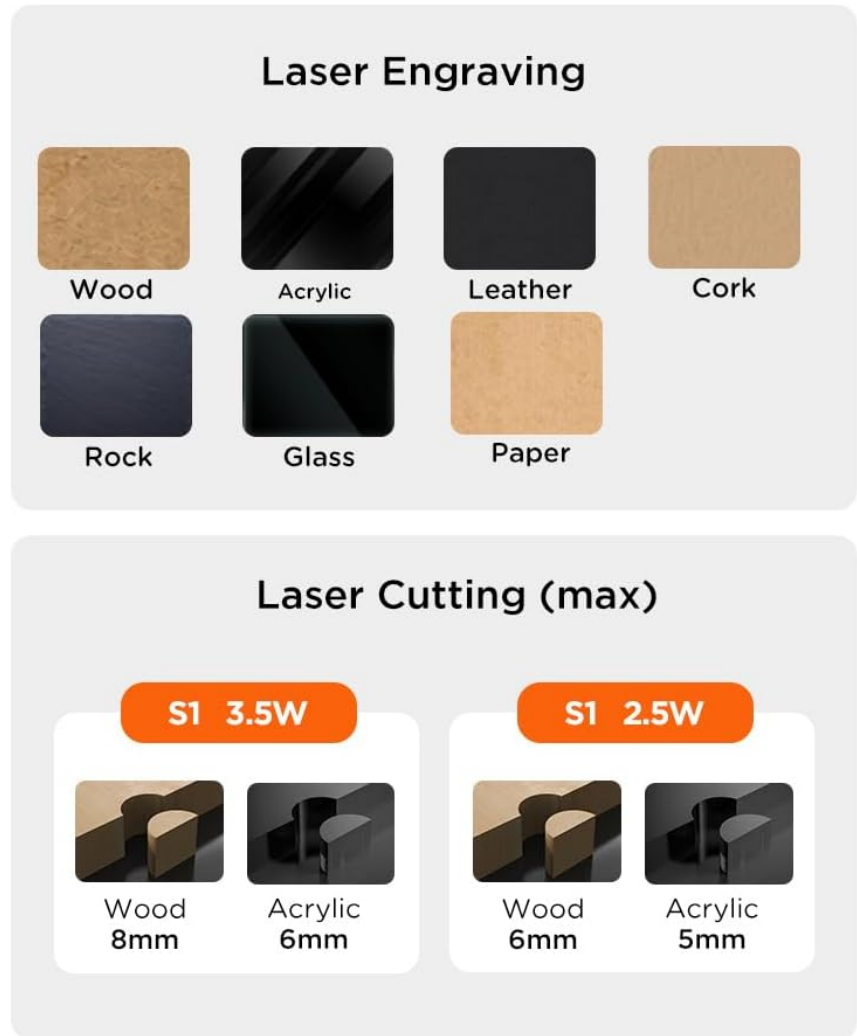


Figure 4.2: Engraving and cutting capabilities of the ACMER S1.

4.3 Working Area and Precision

Despite its compact size, the ACMER S1 provides a generous 130x130mm (5.1x5.1 inch) engraving area, allowing for processing multiple small items simultaneously. Integrated laser scales on the frame provide clear reference points for precise positioning.



Laser Engraving				Laser Cutting (max)					
				S1 3.5W		S1 2.5W		S1 6W	
Wood	Acrylic	Leather	Cork						
Rock	Glass	Paper		Wood 8mm	Acrylic 6mm	Wood 8mm	Acrylic 5mm	Wood 8mm	Acrylic 12mm

Figure 4.3: Maximized space utilization with 130x130mm engraving area.

Finest Spot Size

Maintaining ultra-fine laser output allows you to engrave more finely and lifelike on each work.



Figure 4.4: Convenient frame scale design for accurate positioning.

4.4 Engraving Examples

The following videos showcase the engraving capabilities of the ACMER S1 on different materials and for various applications.

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Video 4.1: Demonstrates leaf carving using the ACMER S1 2.5W, highlighting its precision on delicate materials.

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Video 4.2: An overview of the laser engraving machine, showcasing its capabilities for various projects.

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Video 4.3: Highlights the portability of the ACMER S1, demonstrating its use for engraving projects outdoors.

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Video 4.4: A short preview showcasing the ACMER S1 2.5W's ability to engrave creative designs.

5. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your ACMER S1. Key maintenance tasks include:

- **Clean the Laser Lens:** After each use, ensure the laser lens is clean to maintain engraving precision and power. Use a soft, lint-free cloth and appropriate cleaning solution if necessary.
- **Keep Workspace Clear:** Regularly remove debris and dust from the engraving area and the machine's rails to prevent interference with movement and laser operation.
- **Check Connections:** Periodically inspect all cable connections (power, USB) to ensure they are secure and free from damage.

6. SAFETY GUIDELINES

Operating a laser engraver requires adherence to strict safety protocols to prevent injury. Always prioritize safety during use:

- **Wear Protective Goggles:** Always wear the provided protective goggles when the laser is in operation. The laser emits harmful radiation that can cause eye damage.
- **Supervise Operation:** Never leave the machine unattended while it is engraving or cutting.
- **Ensure Ventilation:** Operate the machine in a well-ventilated area to dissipate fumes and smoke produced during engraving.
- **Keep Flammable Materials Away:** Ensure no flammable materials are near the engraving area during operation.
- **Secure Workpiece:** Always secure the material being engraved or cut to prevent movement during operation.
- **Limit Access:** Restrict access to the operating area, especially from children and pets, to prevent accidental exposure to the laser.



Figure 6.1: Always wear protective goggles during operation.

7. TROUBLESHOOTING

While specific troubleshooting steps are detailed in the full instruction manual, common issues may include:

- **Poor Engraving Quality:** Check laser focus, power settings, and material compatibility. Ensure the laser lens is clean.
- **Machine Not Responding:** Verify power connection, USB connection, and software communication. Restart the software and machine if necessary.
- **Excessive Smoke/Fumes:** Ensure proper ventilation and adjust laser power/speed settings for the material being used.

For detailed troubleshooting, refer to the comprehensive instruction manual provided with your product.

8. SPECIFICATIONS

Feature	Detail
Brand	ACMER
Model Number	S1-2.5W-3.5W-002
Material	Aluminum
Color	Black
Product Dimensions	10.24"L x 8.27"W
Style	Portable
Operation Mode	Automatic
Item Weight	3.98 pounds
Engraving Area	130mm x 130mm (5.1 x 5.1 inches)
Laser Power Options	2.5W / 3.5W / 6.0W (depending on variant)

9. SUPPORT

For any inquiries, technical assistance, or support regarding your ACMER S1 Portable Laser Engraver Machine, please visit the official ACMER Store or contact customer service. ACMER is committed to providing a better and faster production experience for its users.

Online Support: Visit the ACMER Store on Amazon