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› ACMER S1 Portable Laser Engraver User Manual

ACMER Laser Engraver S1

ACMER S1 Portable Laser Engraver User Manual

Model: Laser Engraver S1 (S1-2500mW)

1. PRODUCT OVERVIEW

The ACMER S1 Portable Laser Engraver is a compact and lightweight machine designed for both beginners and experienced users. It offers precise engraving and cutting capabilities across a wide range of materials, making it suitable for various creative and professional projects. This manual provides essential information for safe operation, setup, maintenance, and troubleshooting.



Figure 1: ACMER S1 Portable Laser Engraver (2.5W model shown)

2. SAFETY INSTRUCTIONS

Operating a laser engraver involves potential hazards. Adhere strictly to the following safety guidelines to prevent injury and damage.

- **Eye Protection:** Always wear the provided laser safety goggles (Class 4 laser protection) when the machine is in operation. Never look directly at the laser beam.
- **Ventilation:** Operate the engraver in a well-ventilated area to dissipate fumes and smoke produced during engraving and cutting. Consider using an exhaust fan or air purifier.
- **Fire Safety:** Keep a fire extinguisher nearby. Do not leave the machine unattended during operation, especially when engraving flammable materials.
- **Material Compatibility:** Only engrave or cut materials specified as safe for laser processing. Avoid materials that produce toxic fumes or are highly flammable.
- **Children and Pets:** Keep children and pets away from the operating area.

- **Power Supply:** Use only the power adapter supplied with the device. Ensure proper grounding.
- **Emergency Stop:** Familiarize yourself with the location of the power switch for immediate shutdown in case of an emergency.

3. PACKAGE CONTENTS

Verify that all items are present in the package before proceeding with setup.

- ACMER S1 Laser Engraver Unit
- Laser Safety Goggles
- Power Adapter (AC/DC)
- USB Cable (Type-C)
- Sample Materials for Testing
- User Manual (this document)

4. SETUP GUIDE

4.1 Initial Setup

The ACMER S1 is designed for ease of use and typically requires no complex assembly.

1. Place the engraver on a stable, level surface in a well-ventilated area.
2. Connect the power adapter to the "POWER" port on the engraver and plug it into a suitable electrical outlet.
3. Connect the USB Type-C cable to the "TYPE C" port on the engraver and to your computer.
4. Press the "ON/OFF" button to power on the device. The indicator light will illuminate.

4.2 Software Installation

The ACMER S1 is compatible with professional carving software such as LightBurn and LaserGRBL.

1. Download the latest version of LightBurn or LaserGRBL from their official websites.
2. Follow the on-screen instructions to install the software on your computer (compatible with macOS, Windows, Linux).
3. Launch the software and configure it to recognize the ACMER S1 engraver. Refer to the software's specific documentation for detailed setup steps.

More Compatibility and Multi Device Control



Figure 2: Software compatibility including LightBurn, LaserGRBL, macOS, Windows, and Linux.

5. OPERATING INSTRUCTIONS

5.1 Preparing for Engraving/Cutting

1. Place the material to be engraved or cut on the working platform. Ensure it is flat and securely positioned.
2. Adjust the laser module height to achieve optimal focus on the material surface. Refer to the software's focusing guide.
3. Use the convenient frame scale design on the machine to accurately locate your design workpieces. The limit switches facilitate precise return to the original position.

Maximum Engraving Speed 10000mm/min



Ours **Faster & Save Time**
10000mm/min

Others **Slow & Waiting**
6000mm/min

Finest Spot Size

Maintaining an ultra-fine laser output enables the achievement of exceptionally detailed and lifelike engravings on each piece.



Finely & Vivid



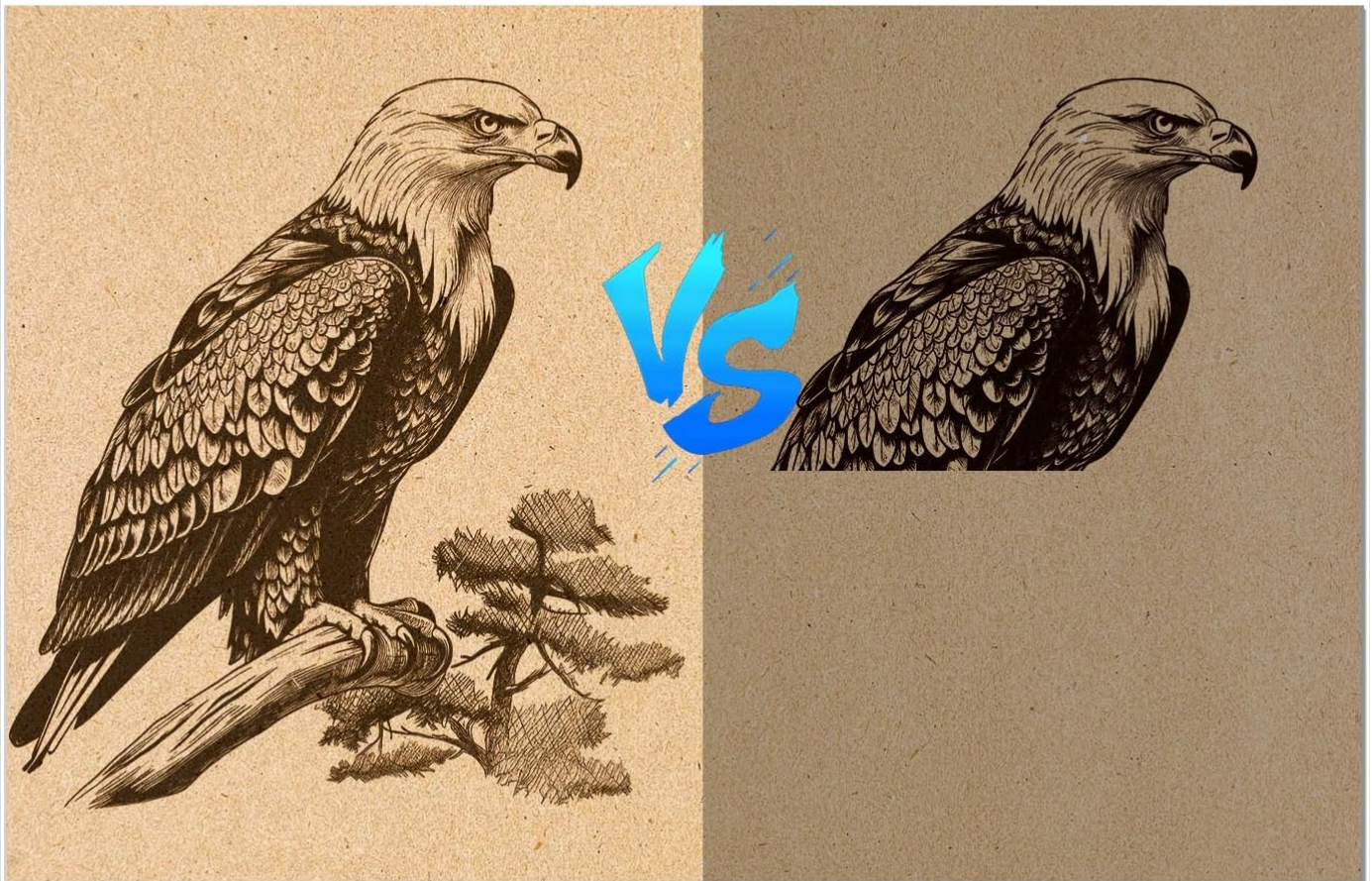
Coarse & Blurry

Figure 3: Features for precise origin return and convenient frame scale design.

5.2 Creating and Starting a Project

1. In your chosen software (LightBurn/LaserGRBL), import or create your desired design.
2. Select the appropriate material settings (power, speed, passes) for your material. The S1 can engrave 100+ materials with an ultra-fine 0.04 x 0.04mm spot and speeds up to 10000mm/min.
3. Preview the engraving path to ensure it aligns with your material placement.
4. Initiate the engraving or cutting process from the software.

Maximum Engraving Speed 10000mm/min



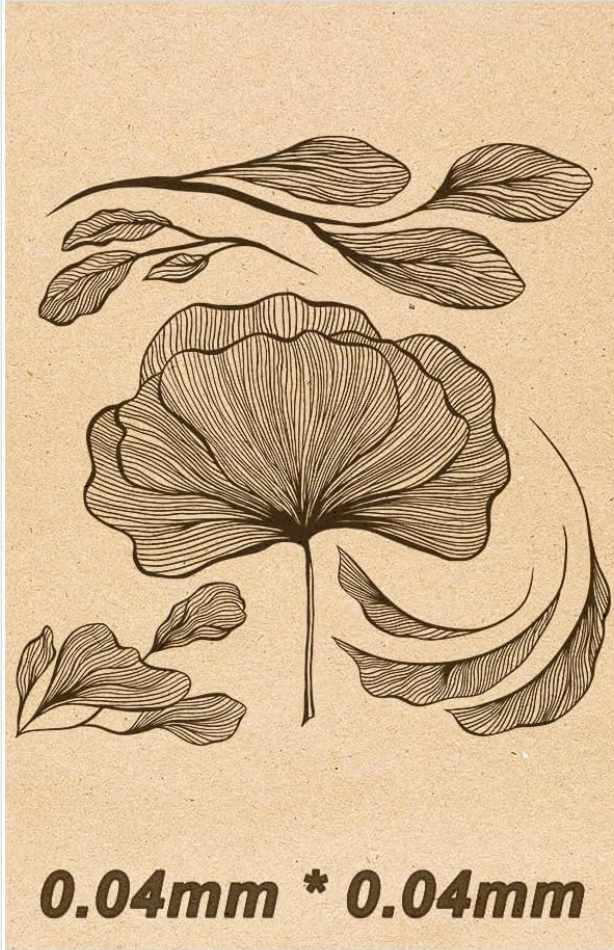
Ours **Faster & Save Time**
10000mm/min

Others **Slow & Waiting**
6000mm/min

Figure 4: The ACMER S1 offers a maximum engraving speed of 10000mm/min for faster project completion.

Finest Spot Size

Ours



Finely & Vivid

Others



Coarse & Blurry

Figure 5: The S1 achieves a finest spot size of 0.04mm x 0.04mm for finely detailed and vivid engravings.



Double Protection

- ✓ Delivery Goggles to Protect Eyes
- ✓ Red Laser Headset Intercepts Over 97% of Lasers

Suitable for Carving Over 100 Types of Materials

								
Wood	Bamboo	Paper	Plastic	Leatherwear	Acrylic	Alumina	Ceramics	Painted metal

Figure 6: The ACMER S1 is suitable for carving over 100 types of materials, offering versatility for various projects.

5.3 Official Product Video

Your browser does not support the video tag.

Video 1: Official product video demonstrating the ACMER S1 Laser Engraver's capabilities and various engraving results on different materials.

6. MAINTENANCE

Regular maintenance ensures optimal performance and extends the lifespan of your ACMER S1 laser engraver.

- **Cleaning the Lens:** Periodically clean the laser lens with a soft, lint-free cloth and lens cleaning solution to maintain engraving precision.
- **Cleaning the Machine:** Wipe down the machine's frame and working platform regularly to remove dust and debris.
- **Lubrication:** Check and lubricate the guide rails and moving parts as recommended by the manufacturer (refer to specific software or online resources for detailed guidance if not in this manual).
- **Firmware Updates:** Check for and install any available firmware updates for the engraver to ensure compatibility and

improved performance.

7. TROUBLESHOOTING

If you encounter issues with your ACMER S1, refer to the common problems and solutions below.

Problem	Possible Cause	Solution
Laser not firing or weak output	Incorrect focus, dirty lens, low power setting, laser module issue.	Adjust focus, clean lens, increase power setting in software, contact support if problem persists.
Machine not connecting to computer	Loose USB cable, incorrect driver, software not recognizing device.	Ensure USB cable is securely connected (try a different cable), reinstall drivers, restart software and machine.
Engraving results are blurry or inconsistent	Material not flat, incorrect focus, machine vibration, worn components.	Ensure material is flat and secured, re-focus laser, place machine on stable surface, check for loose parts.
Machine stops mid-operation	Software error, USB connection interruption, overheating.	Restart software, check USB connection, allow machine to cool down if hot.

For issues not listed here or if troubleshooting steps do not resolve the problem, please contact ACMER customer support.

8. SPECIFICATIONS

Feature	Detail
Brand	ACMER
Model Number	Laser Engraver S1 (S1-2.5W-001)
Laser Output Power	2.5W (also available in 3.5W/6W variants)
Laser Class	Class 4
Engraving Area	5.1"L x 5.1"W (approx. 130mm x 130mm)
Finest Spot Size	0.04mm x 0.04mm
Max Engraving Speed	10000mm/min
Item Weight	3.96 pounds
Product Dimensions	22.64 x 22.05 x 7.87 inches
Power Source	AC/DC
Operation Mode	Automatic
Color	Black
Compatible Software	LightBurn, LaserGRBL
Operating Systems	macOS, Windows, Linux

9. WARRANTY AND SUPPORT

ACMER is committed to providing high-quality products and excellent customer service.

- **After-Sale Service:** If you encounter any problems during the usage process, please feel free to contact us anytime. We are dedicated to providing you with a satisfactory solution.
- **Contact Information:** For support, technical assistance, or warranty inquiries, please visit the official ACMER website or refer to the contact details provided with your purchase documentation.

