

ACMER ACMER S1 6W

ACMER S1 Laser Engraving Machine User Manual

Model: ACMER S1 6W

INTRODUCTION

Welcome to the world of precision crafting with your new ACMER S1 Laser Engraving Machine. This beginner-friendly 2-in-1 laser cutter and engraver is designed for versatility and ease of use, allowing you to bring your creative visions to life on a wide range of materials. This manual provides essential information for safe operation, proper setup, effective use, and maintenance of your device.

The ACMER S1 features a 6000mW laser output, an overall effective power of up to 36W, and a maximum engraving speed of 10000mm/min. Its 0.04mm x 0.04mm ultra-fine compressed light spot ensures vivid and detailed results. With its compact design and robust aluminum construction, the S1 is a durable and portable tool for DIY enthusiasts.

SAFETY INFORMATION

Your ACMER S1 is a Class 4 laser product. It emits high-power laser radiation that can cause severe eye and skin injuries, and can ignite flammable materials. Always adhere to the following safety precautions:

- **Wear Protective Goggles:** Always wear the provided laser protective goggles when the machine is in operation. Ensure anyone in the vicinity also wears appropriate eye protection.
- **Never Look Directly at the Laser:** Direct exposure to the laser beam, even reflected, can cause permanent eye damage.
- **Operate in a Well-Ventilated Area:** Engraving and cutting can produce fumes and particles. Ensure adequate ventilation to avoid inhaling harmful substances.
- **Keep Flammable Materials Away:** Do not operate the machine near flammable liquids, gases, or materials. Always have a fire extinguisher readily available.
- **Supervise Operation:** Never leave the machine unattended while it is operating.
- **Disconnect Power Before Maintenance:** Always unplug the machine before performing any maintenance,

cleaning, or adjustments.

- **Keep Out of Reach of Children:** This is not a toy. Ensure children and unauthorized persons cannot access the machine.



Suitable for Carving Over 100 Types of Materials

								
Wood	Bamboo	Paper	Plastic	Leatherwear	Acrylic	Alumina	Ceramics	Painted metal

Image: Double Protection - Always wear the provided laser protective goggles to protect your eyes during operation.

WHAT'S IN THE BOX

Upon unpacking, please verify that all components listed below are present:

- S1 Laser Machine
- Laser Module
- Focus Block
- Hexagonal Wrench (multiple sizes)
- Plywood sample

- Aluminum Business Card sample
- Protective Goggles
- Power Adapter
- Data Cable (USB)
- User Manual

Full Machine Laser Engraving Set



Laser engraving machine

Laser head

Easy to install



Plywood



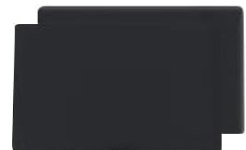
Hexagonal wrench



Hexagonal wrench



Cardboard



Aluminum business card



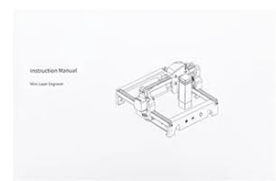
Protective goggles



Power adapter



Data cable



Instructions

Image: Full Machine Laser Engraving Set - All components included with your ACMER S1.

SETUP INSTRUCTIONS

The ACMER S1 is designed for quick and easy setup, coming largely pre-assembled. Follow these steps to get started:

1. **Unpack Components:** Carefully remove all items from the packaging and verify against the 'What's in the Box' list.
2. **Attach Laser Head:** The laser machine comes preassembled, requiring only about 1 minute to attach the

laser head. Securely mount the laser module onto the designated slot on the machine's gantry. Ensure it clicks into place or is fastened according to the quick-start guide.

3. **Connect Power:** Plug the power adapter into the machine's power input port and then into a suitable electrical outlet.
4. **Connect to Computer:** Use the provided data cable to connect the machine to your computer's USB port.
5. **Focusing:** Perform the 1-minute focusing procedure using the focus block. Place the focus block under the laser head, lower the laser head until it touches the block, then tighten the securing screw. This sets the optimal focal length for engraving and cutting.
6. **Install Software:** Install the recommended carving software (LightBurn or LaserGRBL) on your computer. Drivers may be required for initial connection.

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Video: S1 Machine Laser Engraving - Laser Cutter 0.01mm Accuracy. This short video demonstrates the precision of the laser engraver in action, showcasing its ability to create fine details on a surface.

OPERATING INSTRUCTIONS

Once your ACMER S1 is set up, you can begin your engraving and cutting projects. The machine is compatible with various software and materials.

Software Compatibility

The ACMER S1 is compatible with professional carving software such as [LightBurn](#) and [LaserGRBL](#). It supports NC, DXF, BMP, JPG, PNG, and other file formats. The operating system compatibility includes macOS, Windows, and Linux.

More Compatibility and Multi Device Control

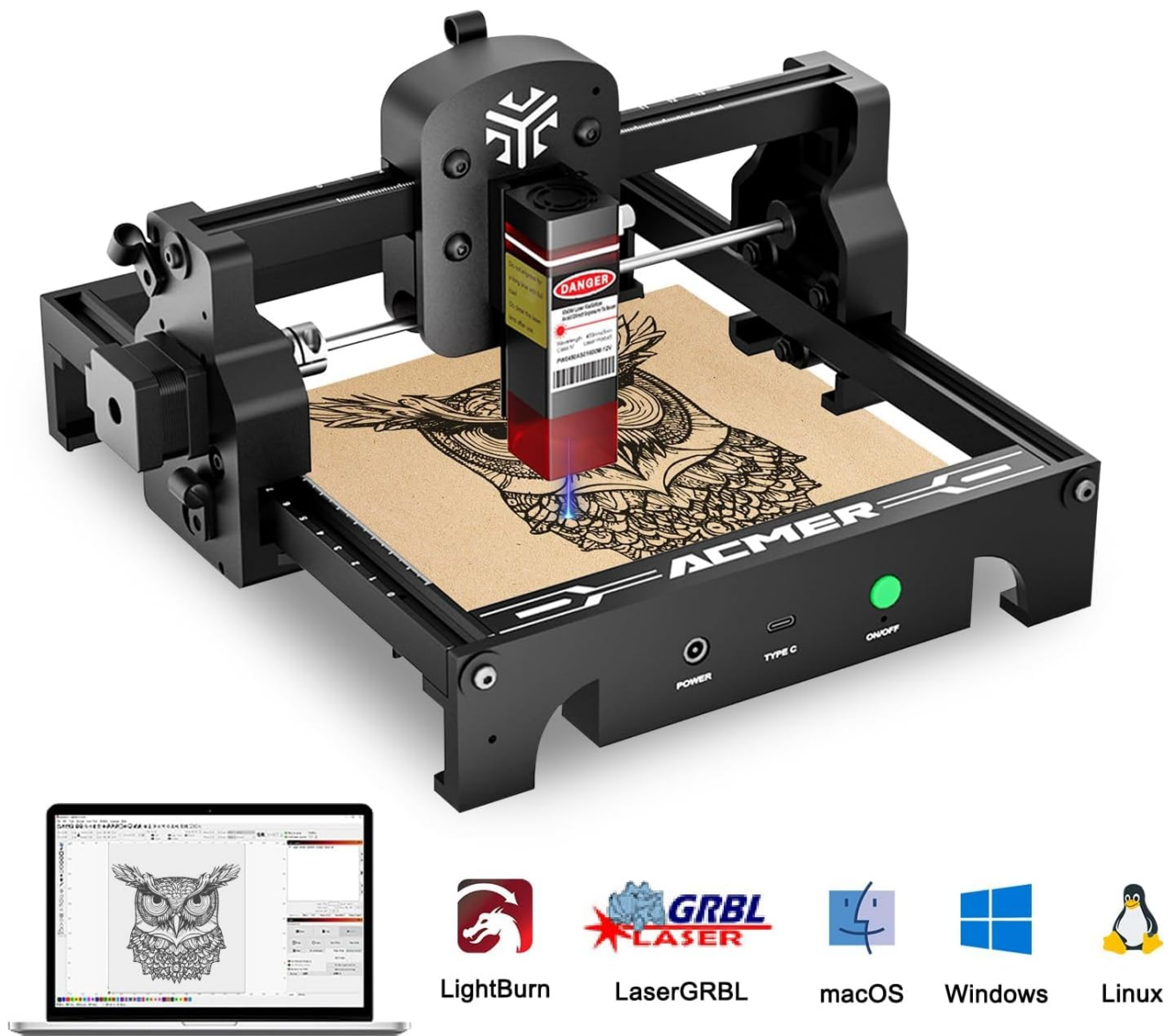


Image: More Compatibility and Multi Device Control - The ACMER S1 supports various operating systems and software.

Material Compatibility

The S1 is suitable for engraving and cutting a wide range of materials:

- **Engraving Materials:** Wood, bamboo, paper, plastic, leather, PCB board, aluminum oxide, non-reflective coating and lacquered metal, ceramic, etc.
- **Cutting Materials:** Thin wood, plywood, acrylic (opaque), MDF, and ultra-thin metal (0.01-0.1mm).

Engraving and Cutting Process

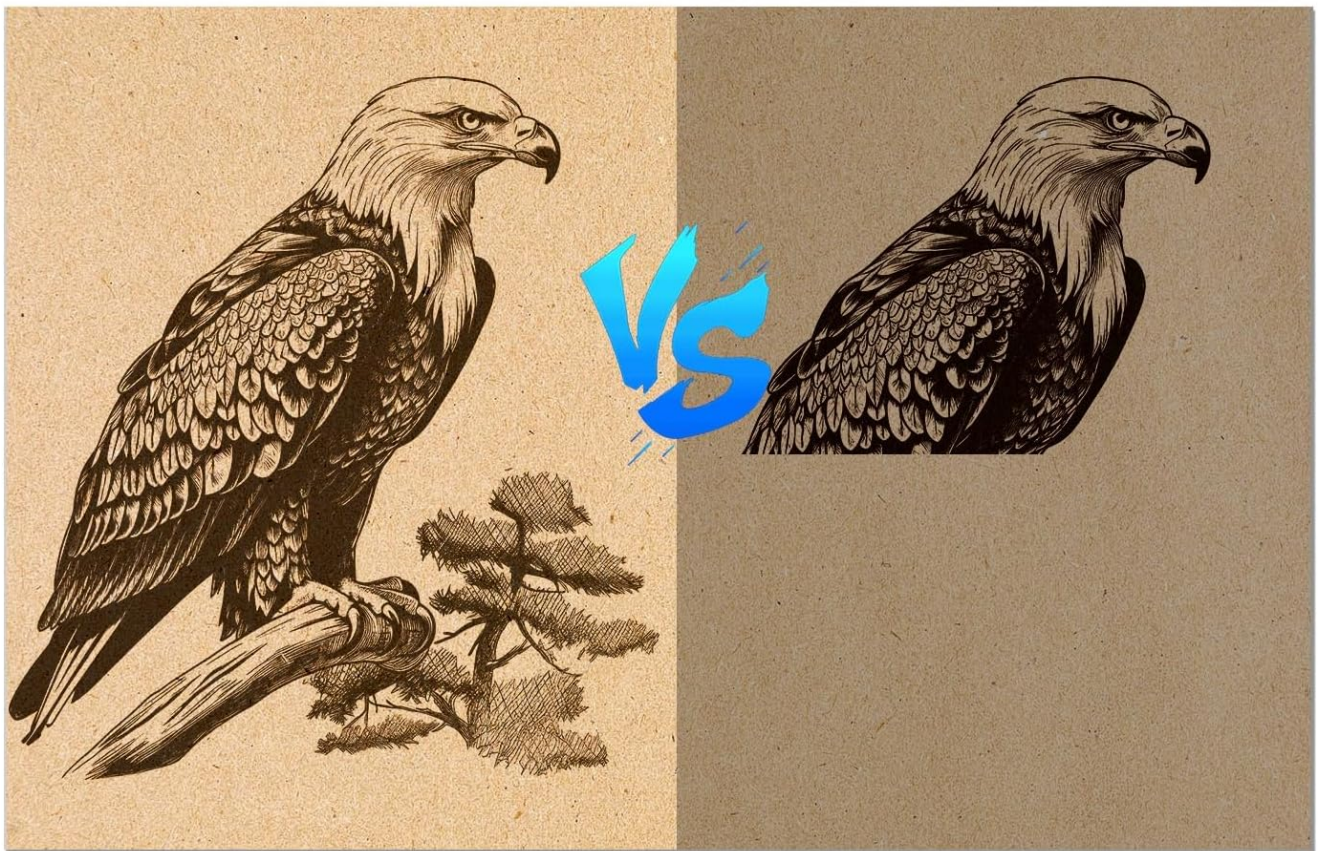
To begin a project:

1. **Prepare Material:** Place your chosen material on the working area (130x130mm). Ensure it is flat and secured.
2. **Load Design:** Open your design file in the chosen software (e.g., LightBurn).
3. **Adjust Settings:** Configure laser power, speed, and passes based on the material type and desired effect.

The S1 offers a maximum engraving speed of 10000mm/min and a 0.04mm x 0.04mm ultra-fine compressed light spot for precise results.

4. **Preview and Frame:** Use the software's preview function to ensure the design is positioned correctly on your material. The convenient frame scale design on the machine provides clearly visible reference points for accurate placement.
5. **Start Operation:** Initiate the engraving or cutting process from the software. Monitor the machine during operation.

Maximum Engraving Speed 10000mm/min



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

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

Image: Maximum Engraving Speed - Achieve faster and more efficient engraving with the S1's 10000mm/min speed.

Finest Spot Size

Ours



Finely & Vivid

Others



Coarse & Blurry

Image: Finest Spot Size - The 0.04mm x 0.04mm ultra-fine laser spot ensures finely detailed and vivid engravings.

MAINTENANCE

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

- **Cleaning the Lens:** Periodically clean the laser lens with a soft, lint-free cloth and lens cleaning solution. Ensure the machine is powered off and unplugged before cleaning.
- **Cleaning the Rails:** Keep the guide rails clean and free of dust and debris to ensure smooth movement of the laser module. You can use a soft brush or cloth.
- **Check Connections:** Regularly inspect all cable connections (power, USB) to ensure they are secure.
- **Storage:** When not in use, store the machine in a clean, dry environment away from direct sunlight and extreme temperatures.

TROUBLESHOOTING

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

Problem	Possible Cause	Solution
Machine not powering on	Power adapter not connected; faulty outlet	Ensure power adapter is securely plugged into machine and a working outlet.
Laser not firing or weak	Incorrect focus; dirty lens; low power setting; laser module issue	Re-focus the laser. Clean the laser lens. Increase power setting in software. Contact support if issue persists.
Machine not connecting to computer	USB cable issue; driver not installed; software not recognizing port	Try a different USB port or cable. Install necessary drivers. Ensure correct COM port is selected in software.
Engraving/cutting results are poor or inconsistent	Incorrect speed/power settings; material not flat; eccentric nuts need adjustment	Adjust settings for material. Ensure material is flat. Refer to online resources or support for eccentric nut adjustment if needed.

For more complex issues or if the problem persists, please contact ACMER customer support.

SPECIFICATIONS

Detailed technical specifications for the ACMER S1 Laser Engraving Machine:

Feature	Specification
Product Dimensions	9.84 x 9.84 x 5.91 inches
Item Model Number	ACMER S1 6W
Item Weight	4.24 pounds
Manufacturer	ACMER
Brand	ACMER
Material	Aluminum
Color	Black
Operation Mode	Manual
Laser Output Power	6000mW

Feature	Specification
Overall Effective Power	Up to 36W
Maximum Engraving Speed	10000mm/min
Laser Type	Diode Laser
Laser Wavelength	455±5nm
Focal Length	2mm
Laser Head Lifespan	Approx. 10000H
Laser Class	4
Ultra-fine Compressed Spot	0.04mm x 0.04mm
Repeatable Positioning Accuracy	0.001mm
Working Area Size	130mm x 130mm
Machine Size	250mm x 250mm x 162mm
Power Input	DC 12V 3A

Mini Laser Engraving Easy to Carry



Image: Mini Laser Engraving Easy to Carry - Illustrates the compact dimensions of the ACMER S1.

WARRANTY AND SUPPORT

ACMER provides a standard warranty for the S1 Laser Engraving Machine. Please refer to the warranty card included in your package or visit the official ACMER website for detailed warranty terms and conditions.

For technical support, troubleshooting assistance, or any inquiries regarding your product, please contact ACMER customer service through their official channels. Providing your model number (ACMER S1 6W) and purchase details will help expedite your support request.