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ACMER ACMER S1

ACMER S1 2.5W Mini Laser Engraver and Cutter User Manual

Model: ACMER S1 | Brand: ACMER

1. INTRODUCTION

Welcome to the user manual for your ACMER S1 2.5W Mini Laser Engraver and Cutter. This device is designed for precise engraving and cutting on a variety of materials, offering a compact design with a 130x130mm working area and an ultra-fine 0.04mm laser spot for detailed work. Please read this manual thoroughly before operating the machine to ensure safe and efficient use.

Safety Information

Laser engravers use high-power lasers that can cause serious injury if not handled properly. Always observe the following safety precautions:

- **Wear Protective Eyewear:** Always wear the provided laser safety glasses when the machine is operating. Never look directly at the laser beam.
- **Ventilation:** Operate the machine in a well-ventilated area to dissipate fumes and smoke produced during engraving or cutting.
- **Fire Safety:** Keep a fire extinguisher nearby. Do not leave the machine unattended during operation, especially when working with flammable materials.
- **Material Compatibility:** Only engrave or cut materials known to be safe for laser processing. Avoid materials that produce toxic fumes or can catch fire easily.
- **Emergency Stop:** Familiarize yourself with the location of the emergency stop button (if present) or the power switch to quickly shut down the machine in an emergency.
- **Children and Pets:** Keep children and pets away from the operating area.

Finest Spot Size

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

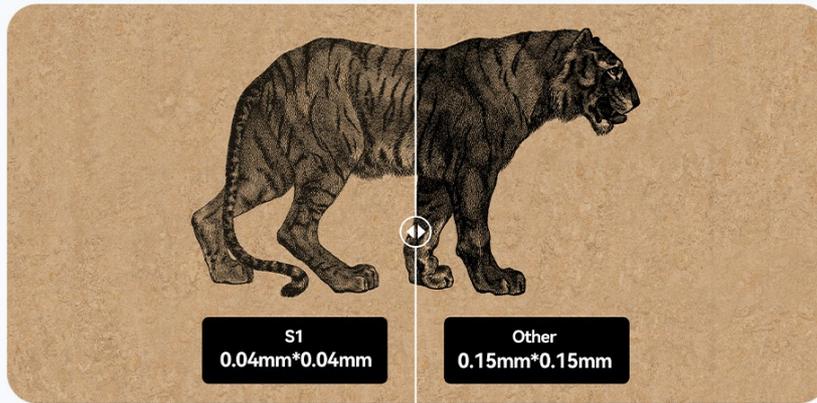


Image: The laser module with its protective filter cover, designed to reduce laser exposure and enhance eye safety during operation.

2. SETUP

The ACMER S1 is designed for ease of use, arriving pre-assembled and tested. This section guides you through the minimal steps required to get your machine ready for its first use.

2.1 Unboxing and Initial Inspection

1. Carefully remove the ACMER S1 from its packaging.
2. Inspect the machine for any visible damage that may have occurred during shipping. If you find any damage, contact customer support immediately.
3. Ensure all components listed in the packing list are present. The package typically includes the ACMER S1 2.5W Mini Laser Engraver unit.



Continuous Quality Assurance

ACMER ensures every laser machine undergoes thorough inspection and testing before packaging and shipping, guaranteeing optimal performance and quality.

Image: The ACMER S1 laser engraver being unboxed, demonstrating its pre-assembled design for immediate use.

2.2 Connecting Power and USB

1. Place the engraver on a stable, level surface in a well-ventilated area.
2. Connect the power adapter to the machine's power input port and then plug it into a suitable electrical outlet.
3. Connect the USB cable from the machine to your computer.

4. Turn on the machine using the ON/OFF switch. The indicator light should illuminate.

2.3 Understanding Limit Switches and Frame Scale

The ACMER S1 features integrated limit switches and a frame scale for enhanced precision and user convenience.

- **Limit Switches:** Located on both the X and Y axes, these switches ensure the laser module returns to its exact home position, simplifying setup and preventing the laser head from moving beyond the working area.
- **Frame Scale:** The integrated scale on the frame provides clear reference points, allowing for accurate placement of your materials and precise measurement of your engraving area.

Precise and Convenient Origin Return

Limit switches ensure the laser module returns to its exact position, making resets quick and easy without the need for manual calibration.

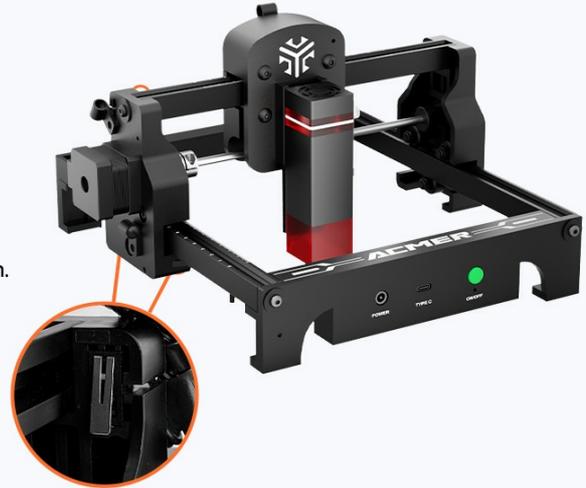


Image: Detailed view of the precision limit switches on the X and Y axes of the ACMER S1, crucial for accurate positioning and safety.



Image: A close-up illustrating the convenient frame scale design, providing visual reference points for precise material alignment.

3. OPERATING INSTRUCTIONS

This section provides guidance on how to operate your ACMER S1 laser engraver for various projects.

3.1 Software Compatibility

The ACMER S1 is compatible with popular laser control software such as LightBurn (sold separately) and LaserGRBL. These software platforms allow you to design, import, and control your engraving and cutting projects. Ensure you have the

correct drivers installed for your operating system (Windows or macOS).

Unbox and start right away!

The ACMER S1 comes fully assembled and pre-tested, ensuring a hassle-free setup and a superior user experience.



Image: The ACMER S1 connected to a laptop, showcasing its compatibility with LightBurn and LaserGRBL software for design and control.

3.2 Material Preparation

The ACMER S1 can engrave and cut over 100 types of materials. Common materials include:

- Wood
- Acrylic
- Leather
- Cork
- Rock
- Glass
- Paper

Before starting a job:

1. Place your material flat on the working surface within the 130x130mm area.
2. Use clamps or tape to secure the material to prevent movement during operation.
3. Ensure the material is clean and free of debris.

 Lightburn	 LaserGRBL	 130×130 mm Working Area	10,000 mm/min Engraving Speed
 100+ Materials Can be engraved	 lightweightg everyway engraving	 0.04*0.04 mm finest Laser Spot Size	

Image: Illustration of the ACMER S1's balanced engraving and cutting capabilities across diverse materials like wood, acrylic, leather, cork, rock, glass, and paper.



Balanced Engraving and Cutting Capabilities

Acmer S1 2.5W/3.5W Engraver Can Engrave Over 100 Materials.

Laser Engraving

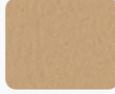
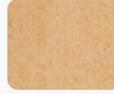
			
Wood	Acrylic	Leather	Cork
			
Rock	Glass	Paper	

Image: A top-down view of the ACMER S1, highlighting its compact yet functional 130x130mm working area, suitable for various projects.

3.3 Focusing the Laser

Achieving the correct laser focus is crucial for optimal engraving and cutting results. Refer to your software's instructions for specific focusing procedures. Generally, this involves adjusting the laser module's height until the laser spot is at its finest point on the material surface.

ACMER S1

2.5W/3.5W Laser Engraving Machine

2.5W/3.5W Präzisionsgravur	0.04mm Ultrafine Punktgröße
Vorgebaut Plug-and-Play	1.5kg Ultraleichtgewicht



Image: A visual comparison demonstrating the superior engraving precision of the ACMER S1 with its 0.04mm laser spot size compared to other machines.

3.4 Starting an Engraving/Cutting Job

1. Load your design into the chosen software (LightBurn or LaserGRBL).
2. Set the appropriate power, speed, and passes for your material and desired effect. Consult material settings guides for recommendations.
3. Position the laser head to the desired starting point on your material.
4. Initiate the job from the software. Always monitor the process closely.

4. MAINTENANCE

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

4.1 Cleaning the Laser Lens

A dirty laser lens can significantly reduce engraving quality and laser power. Clean the lens regularly using a specialized lens cleaning solution and a lint-free cloth or cotton swab. Refer to the laser module's specific instructions for lens access.

4.2 Keeping the Working Area Clear

After each use, clear any debris, dust, or small material scraps from the working area and around the machine's rails and belts. Accumulation can hinder smooth movement and affect precision.

4.3 General Care

- Keep the machine in a dry, dust-free environment.
- Avoid exposing the machine to extreme temperatures.
- Periodically check all screws and connections to ensure they are secure.

5. TROUBLESHOOTING

This section addresses common issues you might encounter and provides basic troubleshooting steps.

5.1 Laser Not Firing or Weak Output

- **Check Power:** Ensure the machine is powered on and the power adapter is securely connected.
- **Software Settings:** Verify that the laser power setting in your software is not set too low or to zero.
- **Lens Cleanliness:** A dirty laser lens can significantly reduce output. Clean the lens as described in the Maintenance section.
- **Focus:** Incorrect focus can lead to weak or no engraving. Re-focus the laser.

5.2 Poor Engraving Quality or Inaccurate Cuts

- **Material Stability:** Ensure the material is firmly secured and not moving during operation.
- **Focus:** Verify the laser is correctly focused on the material surface.
- **Software Settings:** Adjust power, speed, and passes. Different materials require different settings.
- **Mechanical Check:** Inspect belts for proper tension and ensure no debris is obstructing the movement of the laser head.

5.3 Machine Not Connecting to Computer

- **USB Connection:** Ensure the USB cable is securely connected to both the machine and the computer. Try a different USB port or cable.
- **Drivers:** Verify that the necessary drivers for the ACMER S1 are correctly installed on your computer.
- **Software Recognition:** Check your laser control software to ensure it recognizes the connected device. You may need to select the correct COM port.
- **Restart:** Try restarting both the machine and your computer.

6. SPECIFICATIONS

Detailed technical specifications for the ACMER S1 2.5W Mini Laser Engraver.

Feature	Specification
Manufacturer	ACMER
Model Number	ACMER S1 2.5W
Laser Output Power	2.5W
Engraving Precision	0.04mm
Working Speed	Up to 10000mm/min
Working Area	130 x 130 mm (5.1 x 5.1 inches)
Power Type	AC/DC
Included Components	ACMER S1 2.5W Mini Laser Engraver x 1

Convenient Frame Scale Design

The integrated laser scale offers clear reference points for precise measurements along both X and Y axes, ensuring accurate positioning for intricate projects where even small misalignments can affect the outcome.

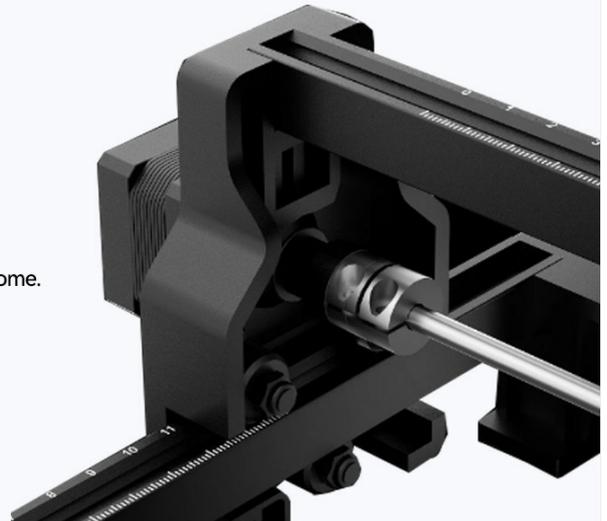


Image: A comparison table detailing specifications such as laser output, working speed, working area, and engraving accuracy for different ACMER S1 models and other similar devices.

7. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please refer to the documentation included with your product or visit the official ACMER website. Contact details for customer support are typically available on the manufacturer's website or in your purchase documentation.

8. OFFICIAL PRODUCT VIDEOS

No official product videos from the seller were found for this product in the provided data. Please check the product page or manufacturer's website for any available video resources.

