

ACMER P2 33W

ACMER Laser Engraver Machine 3500mW (Model P2 33W) Instruction Manual

Brand: ACMER

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your ACMER Laser Engraver Machine 3500mW (Model P2 33W). This high-precision device is designed for both engraving and cutting a wide range of materials, offering versatility for DIY projects, small businesses, and hobbyists. Please read this manual thoroughly before initial use and retain it for future reference.

2. SAFETY INFORMATION

The ACMER Laser Engraver Machine is a Class 4 laser product. Proper safety precautions are paramount to prevent injury. Always wear the provided safety goggles during operation to protect your eyes from direct or reflected laser light. Ensure the work area is well-ventilated to dissipate fumes generated during engraving or cutting. Keep children and pets away from the machine during operation.

Mini Laser Engraver for Beginners



Figure 2.1: Always wear safety goggles when operating the laser engraver.

3. PACKAGE CONTENTS

Verify that all items are present in the package:

- ACMER Laser Engraver Machine (Main Unit)
- 3500mW Laser Head

- Power Adapter (DC 12V 2A)
- USB Type-C Cable
- Safety Goggles
- Assorted Tools (Allen wrenches, etc.)
- Cleaning Cloth
- Sample Materials (wood, metal, cardboard)
- Instruction Manual



Figure 3.1: Main unit of the ACMER Laser Engraver Machine.

4. SETUP

4.1 Unboxing and Initial Assembly

The Acmer S1 laser engraving machine comes largely preassembled. Only minimal setup is required.

1. Carefully remove all components from the packaging.

2. Install the laser head by sliding it into the designated slot on the machine's gantry. Secure it with the tensioning knob.
3. Connect the power adapter to the machine's 'POWER' port and plug it into an electrical outlet.
4. Connect the USB Type-C cable to the machine's 'TYPE C' port and the other end to your computer.
5. Press the 'ON/OFF' button to power on the machine. The indicator light will illuminate.

Video 4.1: Visual guide to the initial setup and assembly of the ACMER S1 Laser Engraver.

4.2 Software Installation

The laser engraver supports popular programs like LaserGRBL (Windows) and LightBurn (macOS, Windows, Linux). Refer to the instruction manual for download links and detailed installation steps.

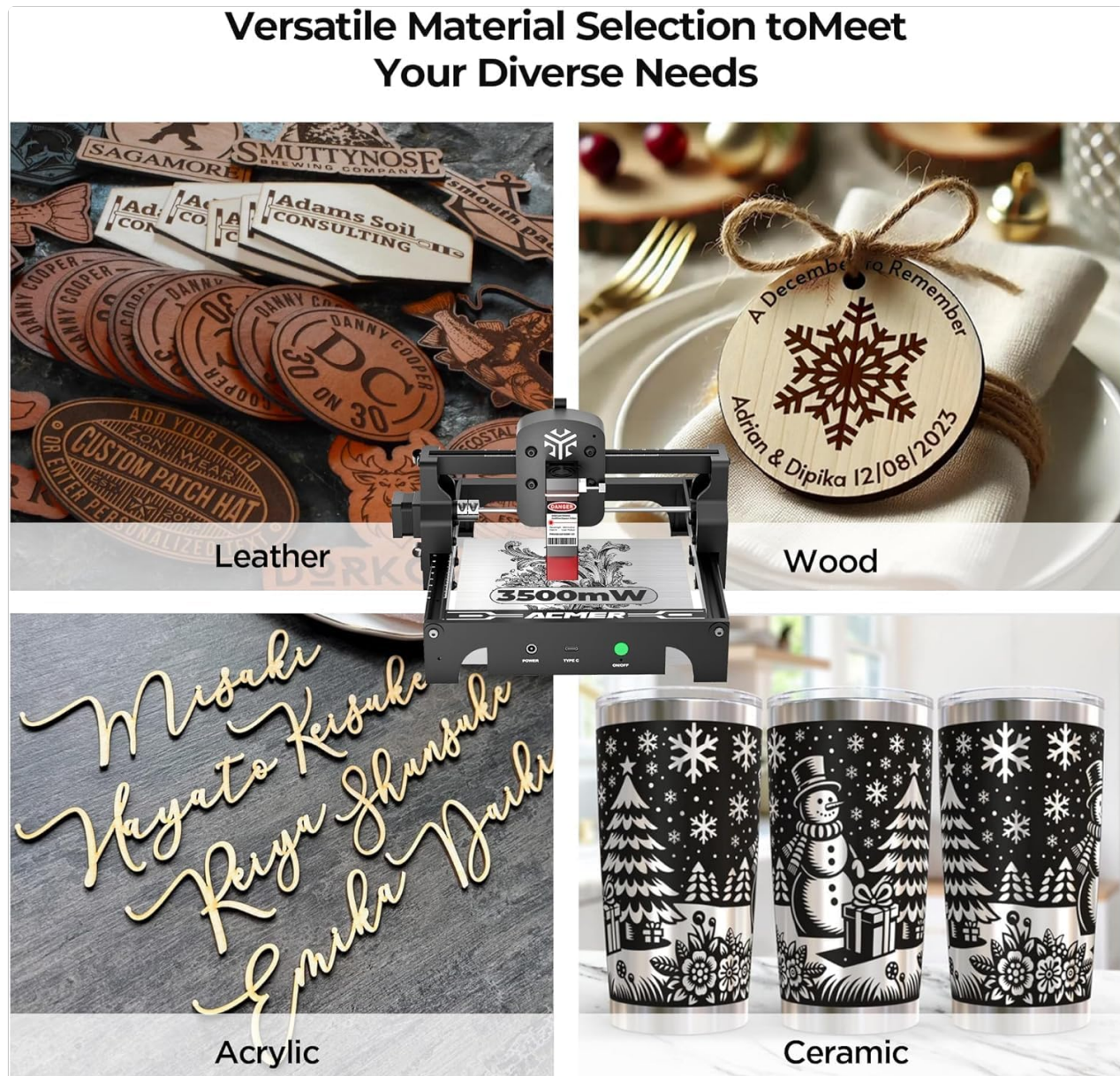


Figure 4.2: Software interface for controlling the laser engraver.

4.3 Focal Length Adjustment

Accurate focal length is crucial for optimal engraving and cutting results. Use the provided 2mm measurement plate:

1. Place the material to be engraved/cut on the working area.
2. Place the 2mm measurement plate on top of your material.

3. Loosen the screw on the laser head to allow vertical movement.
4. Lower the laser head until it rests gently on the measurement plate.
5. Tighten the screw to secure the laser head's position.
6. Remove the measurement plate. The laser is now at the correct focal length.

5. OPERATING INSTRUCTIONS

5.1 Engraving Process

After setting up the hardware and software:

1. Open your chosen software (LightBurn or LaserGRBL).
2. Import your desired image (NC, DXF, BMP, JPG, PNG formats supported).
3. Adjust engraving parameters such as speed (up to 10,000mm/min), power, and resolution (0.01mm repeatable positioning accuracy).
4. Use the software's framing function to preview the engraving area on your material. Adjust material position as needed.
5. Ensure safety goggles are worn by all individuals in the vicinity.
6. Initiate the engraving process through the software.

Video 5.1: Demonstration of the engraving process on various materials.

Video 5.2: Engraving demonstration showcasing the machine's precision.

6. MATERIAL COMPATIBILITY & SETTINGS

The Acmer S1 is versatile, supporting a wide array of materials:

- **Engraving:** Wood, bamboo, leather, plastic, PCB, aluminum oxide, coated metals, ceramics, and more.
- **Cutting:** Thin plywood, MDF, and opaque acrylic.

Optimal settings (speed, power, passes) vary significantly by material type and desired effect. Refer to the detailed charts in the full instruction manual or conduct small test engravings on scrap material to determine the best parameters for your specific project.

10000mm/min Processing speed

Faster Speed, More effective



VS



Figure 6.1: Versatile material selection for engraving and cutting.

Video 6.1: Demonstration of multi-material engraving capabilities.

7. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your laser engraver:

- Keep the working area and laser lens clean from dust and debris.
- Periodically check all connections (power, USB) to ensure they are secure.
- Inspect the moving parts for any obstructions or wear.

8. TROUBLESHOOTING

If you encounter issues, consider the following:

- **Machine not powering on:** Check power adapter connection and ensure the power outlet is functional.
- **Software not detecting machine:** Verify USB connection and ensure necessary drivers are installed. Restart software and machine.
- **Poor engraving quality:** Re-adjust focal length, check material settings (speed/power), and ensure the material is flat and secure.
- **Laser not firing:** Ensure the machine is powered on, connected to software, and the software is sending engraving commands.

For further assistance, refer to the comprehensive troubleshooting section in the full instruction manual or contact ACMER customer support.

9. SPECIFICATIONS

Product Dimensions	12.6 x 12.6 x 7.87 inches
Item Model Number	P2 33W
Item Weight	4.13 pounds (2kg)
Working Area	130x130mm
Laser Output Power	3500mW
Overall Machine Power	Up to 36W
Laser Wavelength	455±5nm
Focal Length	2mm
Max Engraving Speed	10,000mm/min
Repeatable Positioning Accuracy	0.01mm
Power Input	DC 12V 2A

Double Protection Delivery Goggles to Protect Eyes Red Laser Headset Intercepts Over **97%** of Lasers



Figure 9.1: Machine dimensions and working area.

10. WARRANTY AND SUPPORT

The ACMER Laser Engraver Machine comes with a 12-month warranty period. For any inquiries, technical assistance, or warranty claims, please contact ACMER customer support. Our support team is available 24/7 to provide you with any help you need.

The product holds Class 4 laser certification and has been tested according to IEC 60825-1 standards.