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› ACMER P1 S Pro 6W Laser Engraver Machine User Manual

ACMER P1 S Pro

ACMER P1 S Pro 6W Laser Engraver Machine User Manual

Model: P1 S Pro-6W

1. INTRODUCTION

This manual provides essential instructions for the safe and efficient operation of your ACMER P1 S Pro 6W Laser Engraver Machine. Please read this manual thoroughly before assembly, operation, or maintenance to ensure proper usage and to prevent damage or injury.



Image 1.1: The ACMER P1 S Pro 6W Laser Engraver Machine with example engravings on wood and metal.

2. SAFETY INFORMATION

Operating a laser engraver requires strict adherence to safety protocols. This device is a Class 4 laser product and can cause serious injury if not handled correctly.

- **Eye Protection:** Always wear the provided protective laser glasses (97% UV filtering) during operation. Never look directly at the laser beam.
- **Ventilation:** Operate the machine in a well-ventilated area to dissipate fumes and smoke produced during engraving and cutting.
- **Movement Protection:** The machine features movement protection that automatically shuts down the laser if unexpected movement is detected.
- **Emergency Stop:** Familiarize yourself with the power on/off button for quick shutdown in emergencies.
- **Material Safety:** Ensure materials being processed are safe for laser engraving/cutting and do not produce toxic fumes or ignite easily.

- **Supervision:** Never leave the machine unattended during operation.



Eyes Protection

Equipped with a protective cover and glasses, avoid eye irritation.



High-performance ESP32 MCU

Optimized motion algorithms, Combining high-performance chip with maximum speed can reach 10,000mm/min



Movement Protection

If the laser machine move while in use, the move protection will auto shutdown.



Power off/on Button

Longer laser engraver has a power switch button, which is more convenient and safer.

Image 2.1: Overview of the ACMER P1 S Pro's safety features, including eye protection and movement sensors.

3. PACKAGE CONTENTS

Verify that all components listed below are present in your package. If any items are missing or damaged, please contact customer support.

Package List

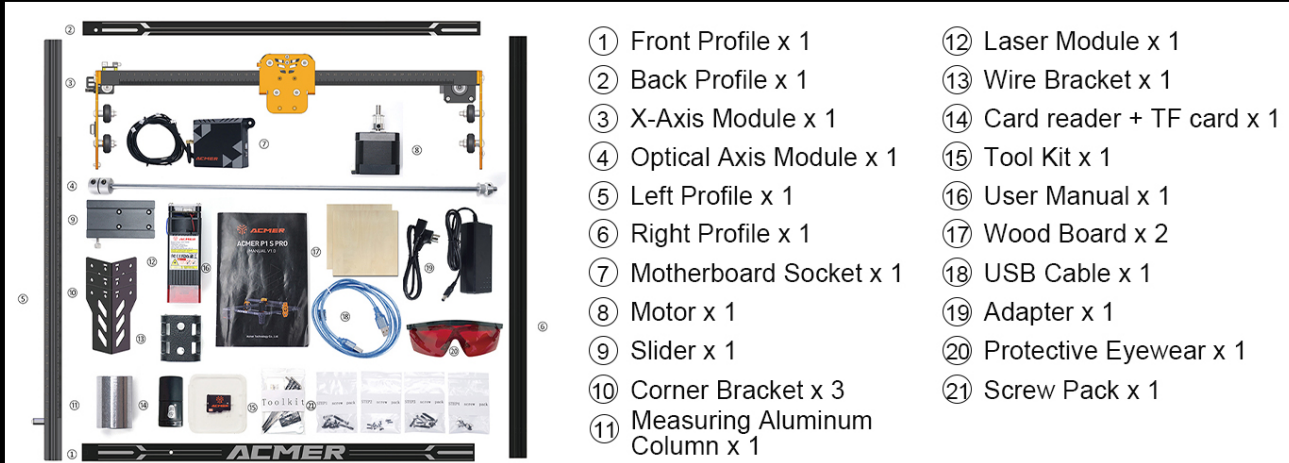


Image 3.1: Visual representation of the package contents.

1. Front Profile x 1
2. Back Profile x 1
3. X-Axis Module x 1
4. Optical Axis Module x 1
5. Left Profile x 1
6. Right Profile x 1
7. Motherboard Socket x 1
8. Motor x 1
9. Slider x 1
10. Corner Bracket x 3
11. Measuring Aluminum Column x 1
12. Laser Module x 1
13. Wire Bracket x 1
14. Card reader + TF card x 1
15. Tool Kit x 1
16. User Manual x 1
17. Wood Board x 2
18. USB Cable x 1
19. Adapter x 1
20. Protective Eyewear x 1
21. Screw Pack x 1

4. SETUP GUIDE

The ACMER P1 S Pro features a modular frame design for quick and straightforward assembly. The estimated assembly time is approximately 25 minutes.

4.1 Assembly Steps

Refer to the detailed instructions and diagrams in the included User Manual (item 16 in Package Contents) for step-by-

step assembly. Ensure all connections are secure before proceeding.

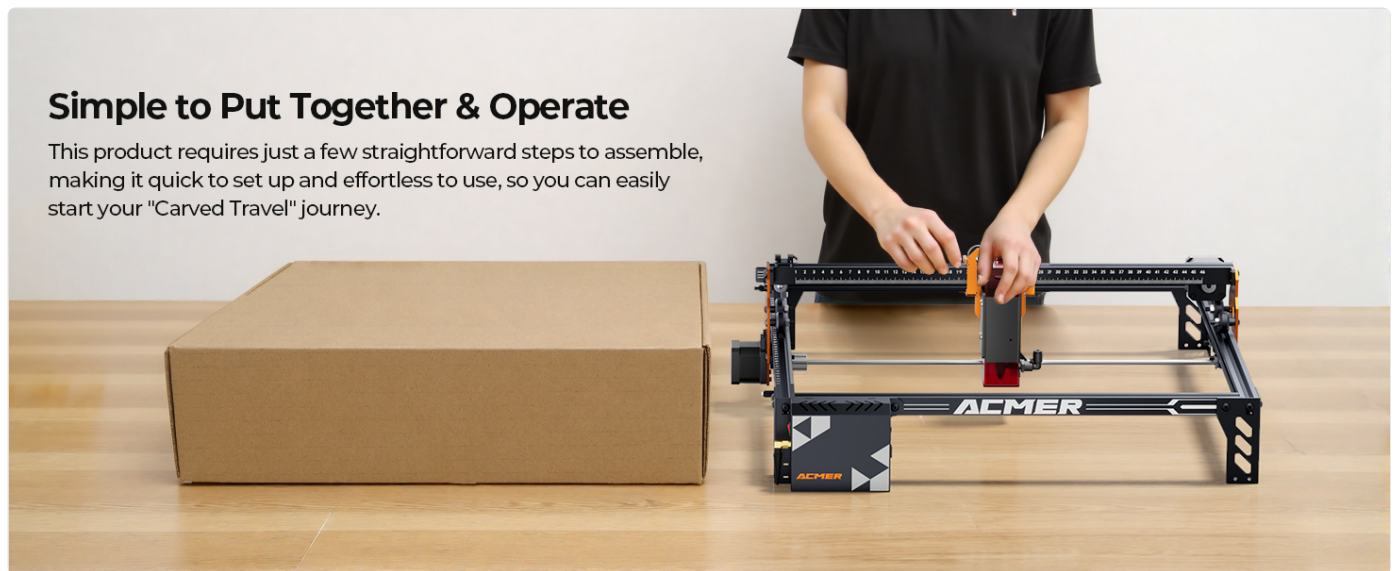


Image 4.1: The ACMER P1 S Pro is designed for simple assembly.

4.2 Initial Power-Up

1. Connect the power adapter to the machine and a suitable power outlet.
2. Press the power on/off button to turn on the machine.
3. Observe the indicator lights for proper function.

5. OPERATING INSTRUCTIONS

The ACMER P1 S Pro offers versatile engraving and cutting capabilities across a wide range of materials.

5.1 Connectivity and Software

The machine supports flexible data transfer and control options:

- **Connectivity:** WiFi, USB, and TF card.
- **Software Compatibility:** Works seamlessly with PC software like LightBurn and LaserGRBL.
- **Mobile Apps:** Compatible with ACMER APP (Android) and MKS APP (iOS) for mobile operation.

Broad Compatibility

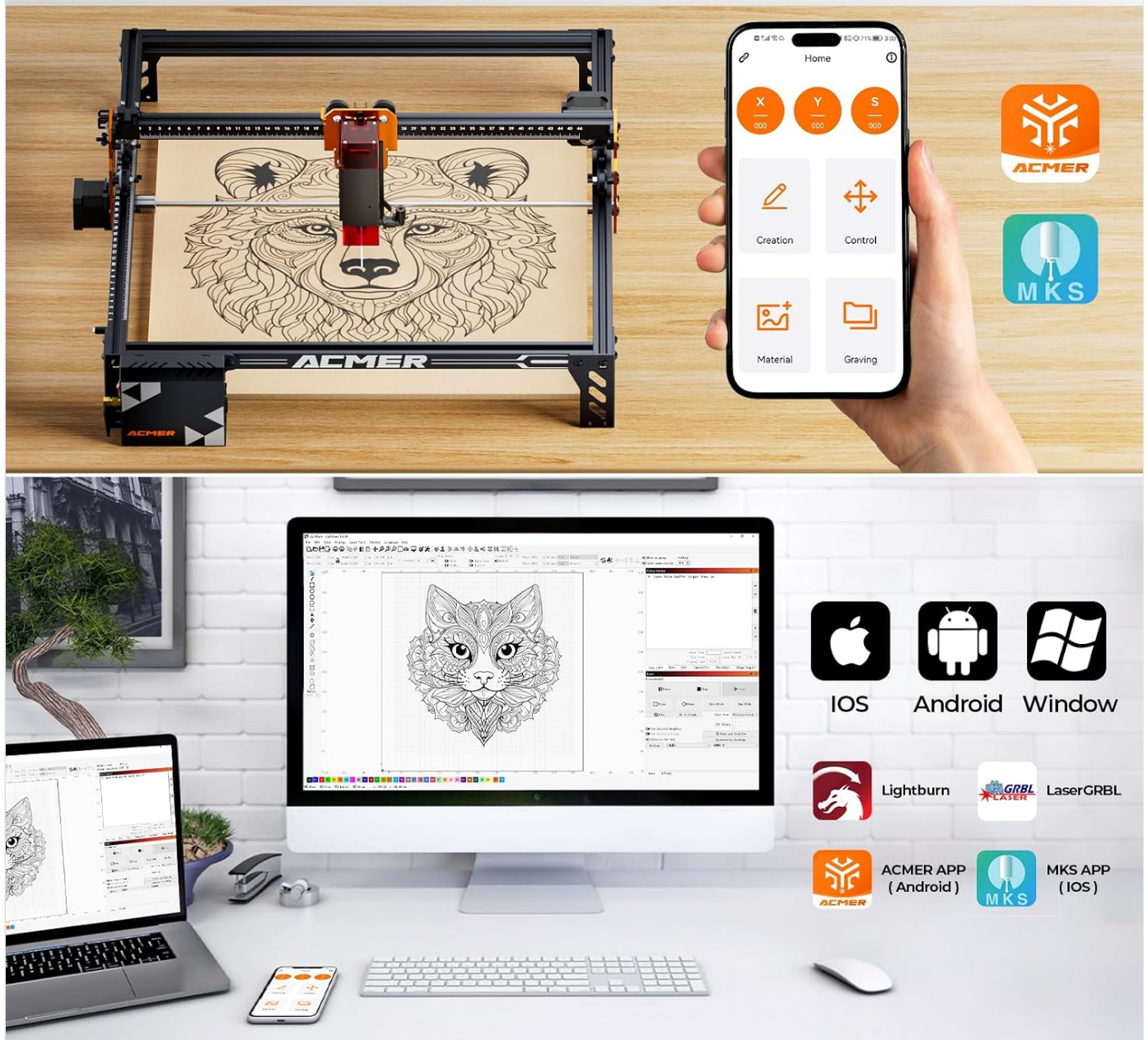


Image 5.1: The machine offers broad compatibility with various software and mobile applications.

5.2 Engraving and Cutting Process

1. **Design Preparation:** Create or import your design using compatible software.
2. **Material Placement:** Place the material securely within the 380 x 370 mm working area.
3. **Focus Adjustment:** Adjust the laser focus for optimal precision. The machine features a fine 0.06 mm spot size for detailed work.
4. **Parameter Settings:** Set appropriate power and speed parameters based on the material type and desired outcome. The machine supports speeds up to 10,000 mm/min.
5. **Start Operation:** Initiate the engraving or cutting process through your chosen software or app.

Finest Spot Size

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

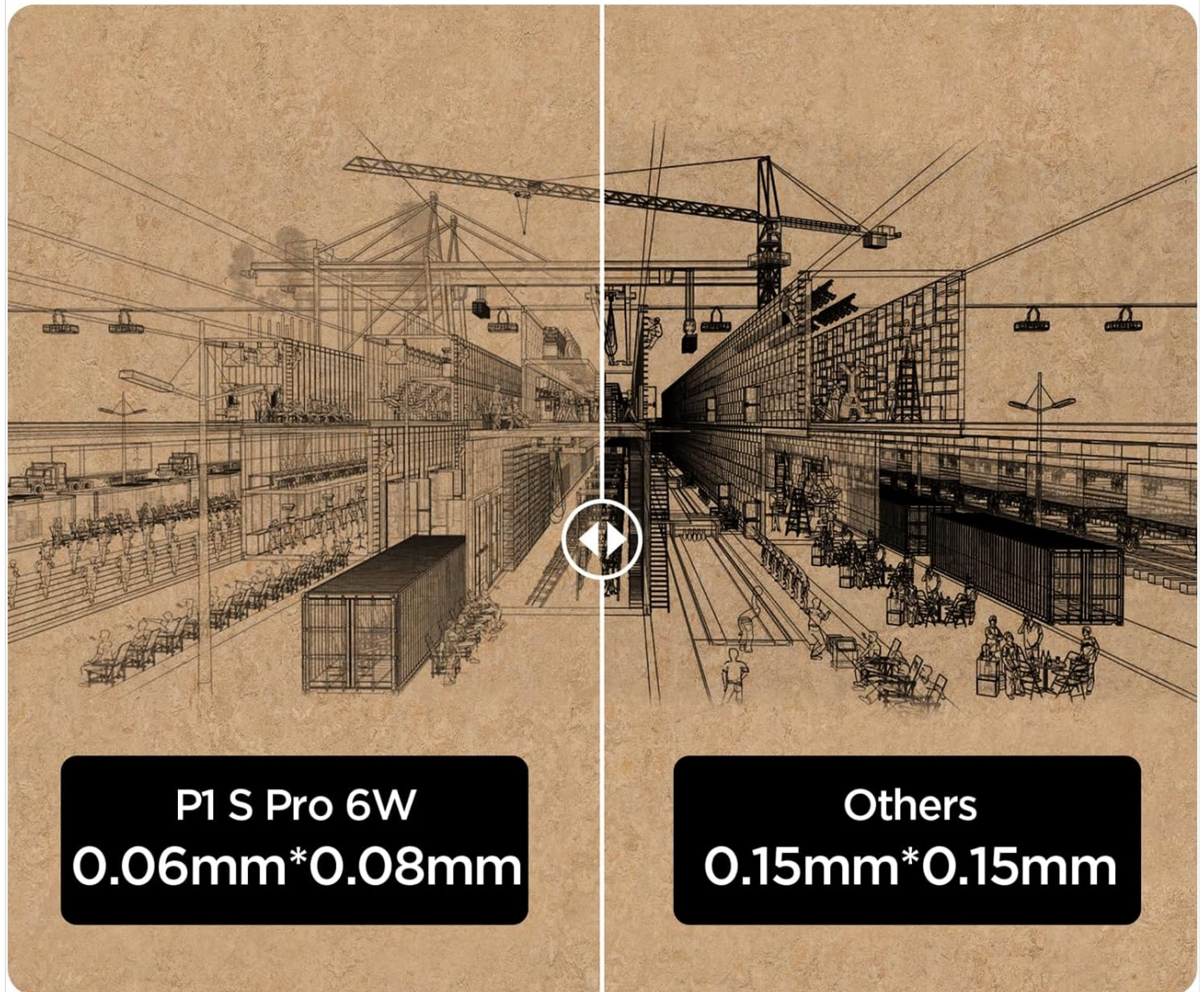


Image 5.2: The P1 S Pro's ultra-fine laser spot ensures high precision and detail.

5.3 Supported Materials

The ACMER P1 S Pro can engrave over 100 materials and offers robust cutting capabilities.

- **Engraving:** Wood, bamboo, acrylic, leather, coated metals, anodized aluminum, glass, paper, and more.
- **Cutting:** Capable of cutting 12 mm wood and 8 mm acrylic in a single pass.

Balanced Engraving and Cutting Capabilities

The 6W is not only more sophisticated in engraving, it can engrave more than 100 materials, but also has comprehensive cutting capabilities.



Laser Engraving



Wood



Acrylic



Leather



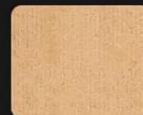
Cork



Rock



Glass



Paper

Laser Cutting (max)



Plywood
10mm



Acrylic
6mm



MDF
5mm

Image 5.3: The machine's versatility in engraving and cutting different materials.

5.4 Optional Rotary Attachment

For engraving curved objects such as tumblers, bottles, and mugs, an optional rotary attachment can be used. Refer to the rotary attachment's specific manual for installation and operation details.

6. MAINTENANCE

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

- **Cleaning:** Regularly clean the laser lens and the machine's rails to prevent dust and debris buildup, which can affect performance and accuracy. Use a soft, lint-free cloth and appropriate cleaning solutions.
- **Lubrication:** Periodically lubricate moving parts as recommended in the detailed user manual to ensure smooth operation.

- **Laser Module Replacement:** The laser module is interchangeable. If replacement is needed, ensure the machine is powered off and follow the specific instructions for module removal and installation.

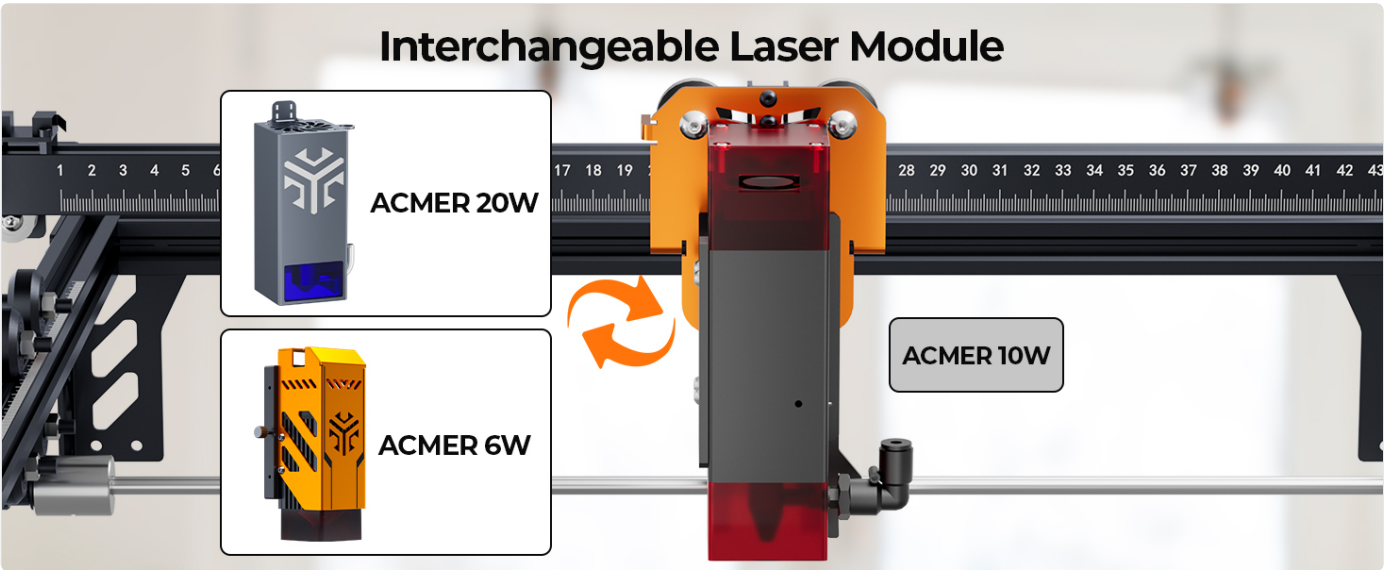


Image 6.1: The laser module can be interchanged for different power outputs.

7. TROUBLESHOOTING

This section addresses common issues you might encounter. For more complex problems, refer to the full user manual or contact customer support.

Problem	Possible Cause	Solution
Laser not firing	Power cable loose; Laser module not properly connected; Software settings incorrect; Emergency stop engaged.	Check all cable connections; Re-seat the laser module; Verify software power settings; Disengage emergency stop.
Poor engraving quality	Incorrect focus; Material not flat; Speed/power settings unsuitable; Dirty lens.	Adjust laser focus; Ensure material is flat and secure; Optimize speed and power settings for the material; Clean the laser lens.
Machine not connecting to software/app	WiFi/USB connection issues; Driver not installed; App/software outdated.	Verify WiFi connection or USB cable; Install necessary drivers; Update software/app to the latest version.
Machine stops unexpectedly	Movement protection triggered; Overheating; Power interruption.	Check for obstructions or accidental bumps; Allow machine to cool down; Ensure stable power supply.

8. SPECIFICATIONS

Key technical specifications for the ACMER P1 S Pro 6W Laser Engraver Machine:

Feature	Specification
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Feature	Specification
Brand	ACMER
Model	P1 S Pro-6W
Laser Output Power	6W (6000mW)
Laser Spot Size	0.06 x 0.08 mm
Engraving Precision	0.01 mm
Engraving Speed	Up to 10,000 mm/min
Working Area	380 x 370 mm
Material	Metal frame
Connectivity	WiFi, USB, TF Card
Supported OS	Windows, Mac, Android, iOS
Item Weight	3.6 Kilograms (7.92 pounds)
Product Dimensions	1"D x 1"W x 1"H (Note: This dimension seems generic, refer to working area for actual engraving space)
Certifications	IEC 60825-1 (Class 4 laser)

Laser Focus Spot
0.06mm

Engraving Accuracy
0.01mm



ESP32 MCU
10000
mm/min



Laser Output Power
6/10/20W

Cut **4mm**
plywood
in a single pass

10000H
Up To 10000H Life



Assembly only
25minutes

Image 8.1: Key performance and assembly specifications.

9. WARRANTY AND SUPPORT

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

9.1 Warranty Information

Please refer to the warranty card included with your product or visit the official [ACMER website](#) for detailed warranty terms and conditions.

9.2 Customer Support

For technical assistance, troubleshooting, or any inquiries, [ACMER](#) offers 24/7 online support.

- **Online Support:** Access 24/7 online support for immediate assistance.
- **Brand Store:** Visit the [ACMER Brand Store](#) for product information, accessories, and support resources.



Image 9.1: [ACMER](#) provides 24/7 online customer support.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. [Manuals+](#) will review the question and use this page’s manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to [Microsoft Advertising](#) for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question