xTool F1 Lite

xTool F1 Lite Laser Engraver with RA2 Pro Rotary Instruction Manual

Model: F1 Lite

1. INTRODUCTION

The xTool F1 Lite is a portable laser engraver designed for high-speed and high-precision engraving and cutting on a wide range of materials. This manual provides essential information for setting up, operating, maintaining, and troubleshooting your device, ensuring safe and effective use.

F1 Lite vs F1

The laser type sets them apart.

	xTool F1 Lite	xTool F1
Diode Laser	✓	✓
Infrared Laser	✕	✓
Cut Capability	✓	✓
Metal Materials	Stainless Steel Coated Metals	Gold, Silver, Brass, Platinum, and more.

*Choose F1 Lite for simplicity and affordability, or F1 for broader metal engraving capabilities.

Image 1.1: The xTool F1 Lite Laser Engraver with the RA2 Pro Rotary attachment.

2. SAFETY INFORMATION

The xTool F1 Lite is a Class 4 laser engraver. Always prioritize safety when operating the device. This unit features a fully enclosed safe cover for user protection. Adhere to the following safety guidelines:

- **Eye Protection:** Never look directly into the laser beam. Always use appropriate laser safety glasses.
- **Ventilation:** Ensure adequate ventilation to dissipate fumes and smoke generated during engraving and cutting.
- **Material Compatibility:** Only engrave or cut materials specified as safe for laser processing. Avoid highly reflective,

flammable, or unknown materials.

- **Emergency Stop:** Familiarize yourself with the emergency stop button location and function.
- **Supervision:** Do not leave the machine unattended during operation.
- **Children and Pets:** Keep children and pets away from the operating area.

Image 2.1: Visual representation of xTool F1 Lite safety features including laser light proof enclosure, emergency button, overheat protection, and smoke-free built-in fan.

3. SETUP GUIDE

The xTool F1 Lite is designed for quick and easy setup, arriving pre-assembled and ready for use.

3.1 Unpacking and Placement

1. Carefully remove the engraver and all accessories from the packaging.
2. Place the xTool F1 Lite on a stable, level surface in a well-ventilated area.
3. Ensure there is sufficient space around the machine for operation and heat dissipation.

3.2 Power Connection

- Connect the power adapter to the engraver and then to a suitable power outlet.
- Press the power button to turn on the device.

3.3 Software Installation

- Download and install the latest version of the xTool Creative Space (XCS) software from the official xTool website.
- Follow the on-screen instructions to complete the software installation and connect your device.

Image 3.1: The xTool Creative Space (XCS) software interface, showing design capabilities and project ideas.

4. OPERATING INSTRUCTIONS

4.1 Basic Engraving Process

1. **Prepare Material:** Place your material inside the engraving area.

2. **Design in XCS:** Open the XCS software and create or import your design.

3. **Auto-Focus:** The F1 Lite features auto-focus. Ensure the material is correctly positioned for the laser to focus automatically.

4. **Live Preview:** Use the live preview function in the software to verify the design placement on your material.

5. **Start Engraving:** Initiate the engraving process from the software. The F1 Lite can achieve speeds up to 4000mm/s.

Laser Cutting

The 10W diode laser enables F1 Lite to cut materials like paper, wood, leather, and some dark opaque acrylic, with a maximum cutting depth of 8mm for basswood and 6mm for acrylic.

Up to 8mm Wood (Multiple Cuts)   **Up to 6mm Acrylic (Multiple Cuts)**

Image 4.1: The three-step process for customization: Design, Preview Position, and Get the Result.

4.2 Supported Materials and Capabilities

The xTool F1 Lite supports over 300 materials for engraving and cutting, including:

- **Engraving:** Wood, leather, acrylic, glass, metal (stainless steel, coated metals), rock, paper, cork, and more.
- **Cutting:** Up to 8mm wood (multiple passes) and up to 6mm acrylic (multiple passes).
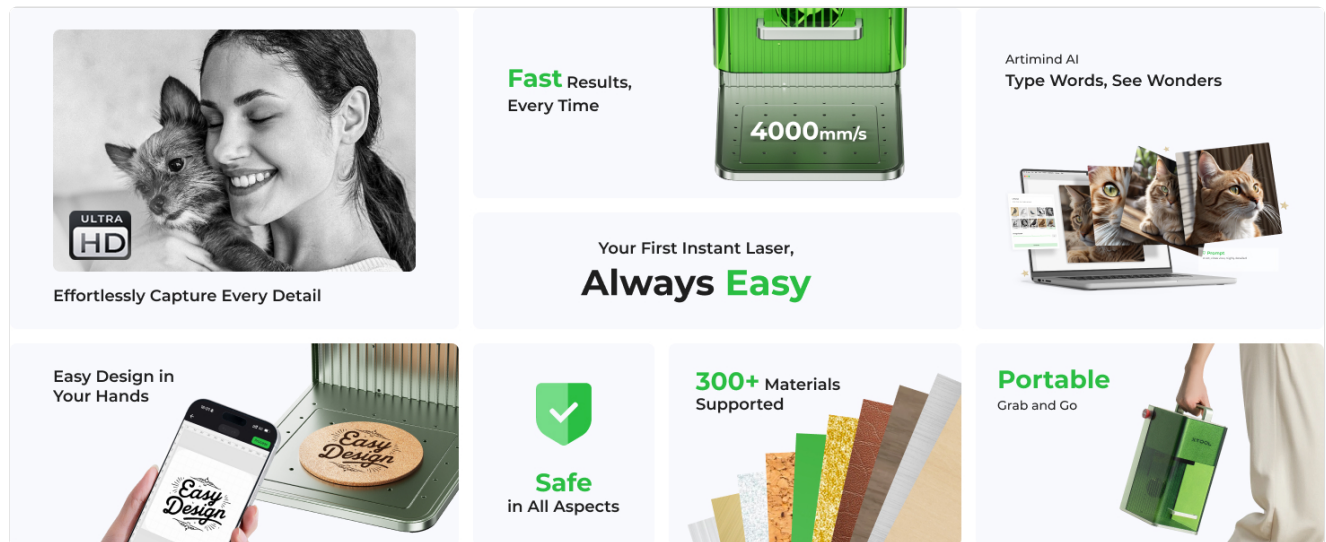

Image 4.2: A collage showing the xTool F1 Lite surrounded by various materials it can engrave and cut, such as wood, leather, acrylic, and metal.

4.3 Using the RA2 Pro Rotary Attachment

The xTool RA2 Pro is a versatile 4-in-1 rotary attachment, enabling engraving on cylindrical and spherical objects. It includes Roller Rotary, Chuck Rotary, Sphere-Engraving Module, and Ring-Engraving Stud.

1. **Installation:** Refer to the RA2 Pro specific manual for detailed installation instructions.

2. **Object Placement:** Securely mount your cylindrical or spherical object using the appropriate rotary module.

3. **Software Settings:** In XCS, select the rotary engraving mode and adjust parameters according to the object's dimensions and material.

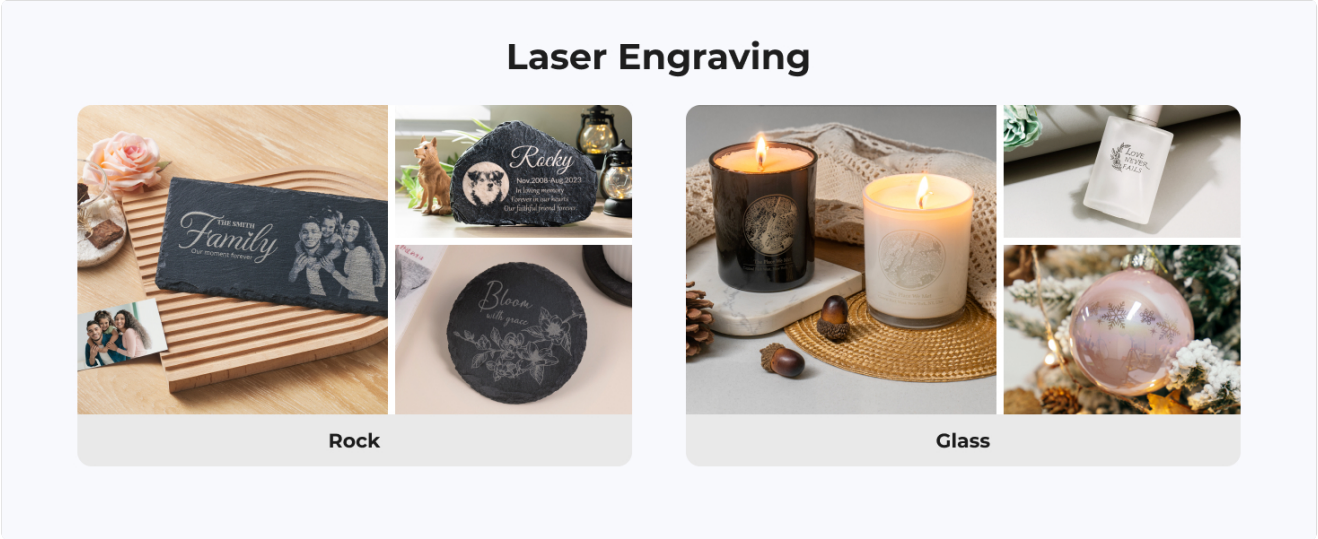## Laser Engraving

Rock

Glass

Image 4.3: A display of the four functions of the RA2 Pro Rotary: Roller Rotary, Chuck Rotary, Sphere Rotary, and Ring Rotary, demonstrating its versatility for various object shapes.

5. MAINTENANCE

Regular maintenance ensures optimal performance and longevity of your xTool F1 Lite.

5.1 Cleaning the Device

- **Exterior:** Wipe the exterior with a soft, dry cloth. Avoid abrasive cleaners.
- **Engraving Area:** Regularly clean the engraving platform and surrounding areas to remove debris and dust.
- **Lens:** Carefully clean the laser lens with a specialized lens cleaning solution and cloth to maintain engraving quality.

5.2 Software Updates

- Periodically check for and install software updates for XCS to benefit from new features and performance improvements.

6. TROUBLESHOOTING

This section addresses common issues you might encounter.

6.1 Common Issues and Solutions

Problem	Possible Cause	Solution
Device not powering on	Power cable loose, power outlet issue	Check power connections, try a different outlet.
Laser not firing	Safety cover open, emergency stop engaged, software error	Ensure cover is closed, release emergency stop, restart software/device.
Poor engraving quality	Incorrect focus, dirty lens, wrong material settings	Perform auto-focus, clean lens, adjust power/speed settings in XCS.

Problem	Possible Cause	Solution
Software not connecting	USB cable issue, driver problem, software version outdated	Try a different USB port/cable, reinstall drivers, update XCS.

If you encounter issues not listed here, please refer to the official xTool support resources or contact customer service.

7. SPECIFICATIONS

Key technical specifications for the xTool F1 Lite Laser Engraver:

- **Laser Type:** Diode Laser

- **Output Power:** 10000mW (10W)

- **Engraving Speed:** Up to 4000mm/s

- **Motion Precision:** 0.00199mm

- **Repeat Precision:** 0.000248mm

- **Engraving Accuracy:** 0.002mm

- **Imaging:** 4K Ultra-HD

- **Cutting Capability:** Up to 8mm wood, up to 6mm acrylic

- **Safety Features:** Fully Enclosed Safe Cover, Emergency Button, Overheat Protection, Smoke-Free Built-in Fan

- **Weight:** Approximately 4.45kg

Image 7.1: A comparison table highlighting the superior specifications of the xTool F1 Lite in terms of power, speed, engraving accuracy, cutting capability, and safety compared to other lasers.

8. WARRANTY AND SUPPORT

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

8.1 Warranty Information

For detailed warranty terms and conditions, please refer to the official xTool website or the warranty card included with your product. Keep your proof of purchase for warranty claims.

8.2 Customer Support

If you require assistance, xTool offers multi-channel support:

- **Email Support:** Contact via email for non-urgent inquiries.

- **Live Chat:** Available on the official xTool website for real-time assistance.

- **Phone Support:** For direct communication with a technical service team member.

- **Community Forums/Facebook Group:** Engage with other users and xTool experts for tips and solutions.

Image 8.1: An illustration showing the various customer support channels offered by xTool, including email, live chat, phone, and Facebook group.