xTool F1

xTool F1 Dual Laser Engraver Instruction Manual

Model: F1

1. Introduction

The xTool F1 is a versatile 2-in-1 dual laser engraver designed for high-speed and precision engraving and cutting across a wide range of materials. It integrates a 2W infrared laser for metals and a 10W diode laser for organic materials like wood and acrylic. This manual provides essential information for safe operation, setup, maintenance, and troubleshooting of your xTool F1 device.

2. Safety Information

WARNING: The xTool F1 is a Class 4 laser product. Direct exposure to the laser beam can cause severe eye and skin damage. Always follow safety guidelines.

- **Eye Protection:** Always wear appropriate laser safety goggles when operating the device, even with the protective cover.
- **Enclosed Operation:** The xTool F1 features a fully enclosed cover to block smoke and filter the laser. Ensure the cover is properly closed during operation.
- **Ventilation:** Operate the device in a well-ventilated area. Utilize the built-in fan and consider an external air purifier (sold separately) to manage smoke and odors.
- **Material Safety:** Only engrave or cut materials approved for laser processing. Avoid materials that produce toxic fumes or are highly flammable.
- **Supervision:** Never leave the machine unattended during operation.
- **Emergency Stop:** Familiarize yourself with the emergency stop button location and function.

3. Product Components

The xTool F1 comes pre-assembled. Key components include:

- xTool F1 Main Unit (with integrated 2W Infrared and 10W Diode Lasers)
- Protective Enclosure/Cover
- Power Adapter

- USB Cable
- Material Pack (for testing)
- Cutting Panel

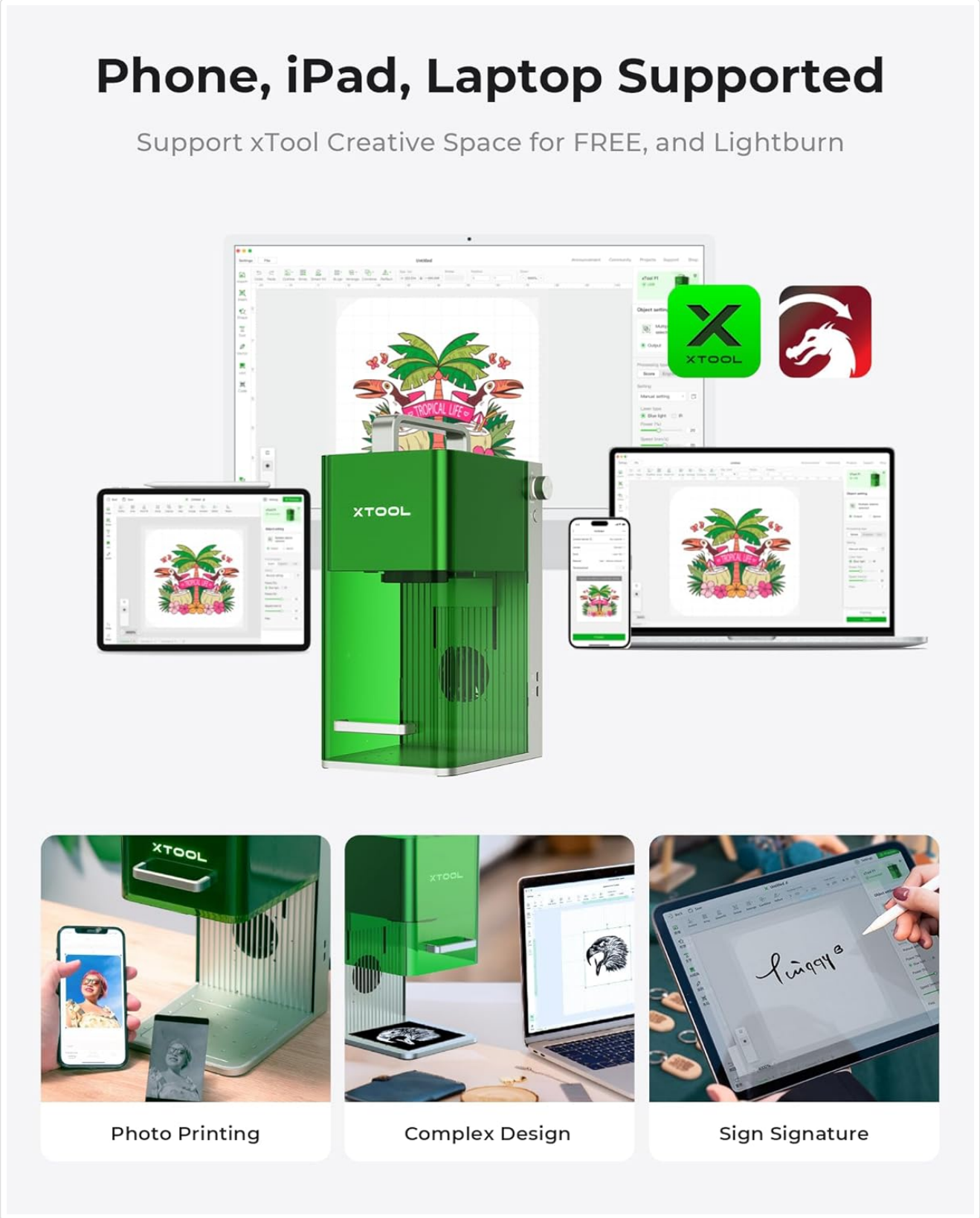

Image: The xTool F1 unit shown with its pre-assembled design and included accessories such as a cutting panel and material samples.

4. Setup

The xTool F1 is designed for quick setup due to its pre-assembled nature.

1. **Unpacking:** Carefully remove the xTool F1 from its packaging.
2. **Placement:** Place the engraver on a stable, level surface in a well-ventilated area.
3. **Power Connection:** Connect the power adapter to the engraver and then to a power outlet.
4. **Computer Connection:** Connect the engraver to your computer using the provided USB cable.
5. **Software Installation:** Download and install the xTool Creative Space software from the official xTool website. Alternatively, LightBurn software is also supported.

5. Operating Instructions

5.1 Software Overview

The xTool F1 is compatible with:

- **xTool Creative Space:** User-friendly software supporting SVG, DXF, JPG, PNG, and BMP formats.
- **LightBurn:** A mature engraving software for common laser cutters.

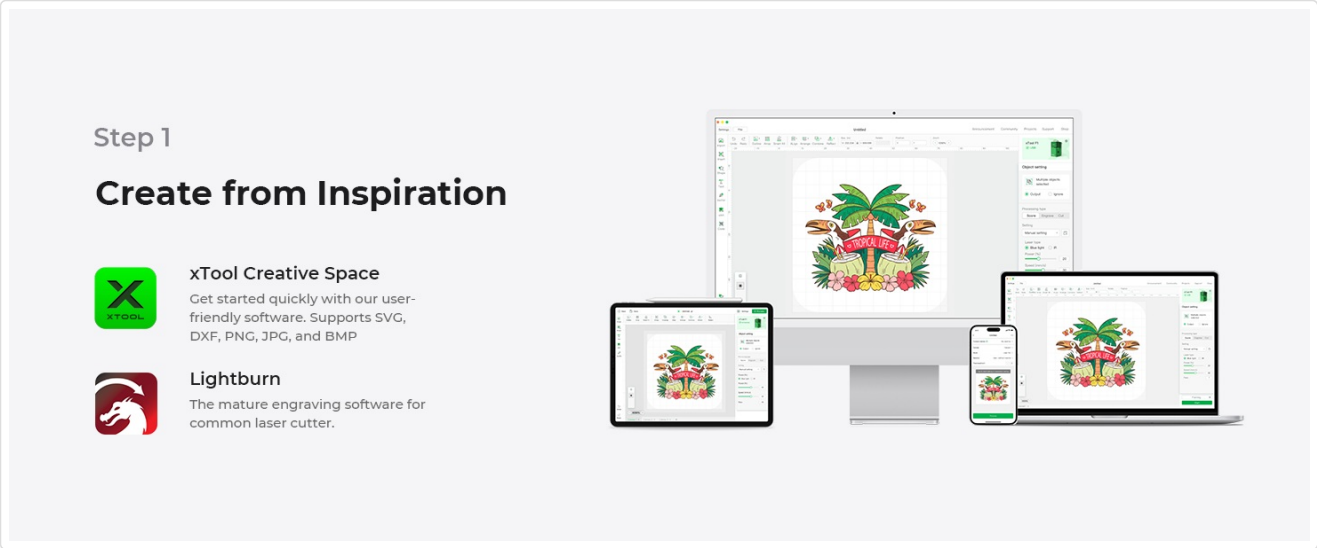

Image: The xTool F1 supports various devices including phones, iPads, and laptops, utilizing xTool Creative Space and Lightburn software for design and control.

5.2 Focusing

Accurate focusing is crucial for optimal engraving results.

- **Auto-Focus:** Enter the material thickness in the software, and the laser head will automatically adjust its height to maintain focus.
- **Manual Focus:** Turn the knob on the device to adjust the laser head height. Ensure the two red dots projected by the laser overlap perfectly on the material surface for precise focus.

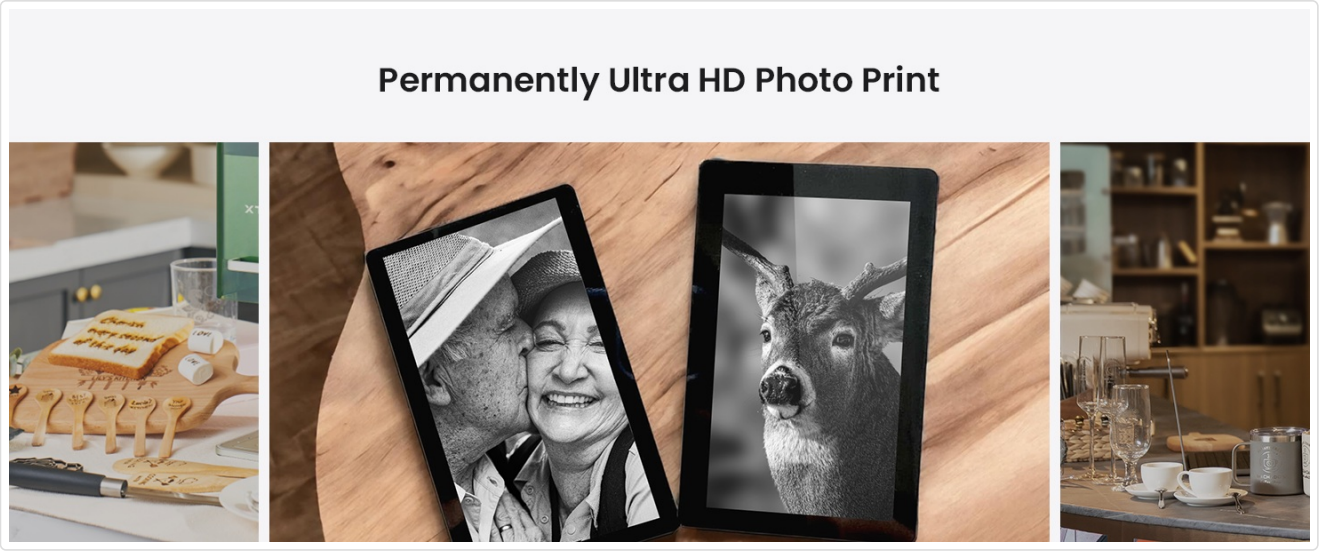

Image: Illustration of auto-focus, where material thickness is input, and manual focus, where a knob is turned to align two red laser dots.

5.3 Engraving Process (3 Steps)

Engraving with the xTool F1 is a straightforward process:

1. **Step 1: Design Creation:** Create or import your design using xTool Creative Space or LightBurn.
2. **Step 2: Preview and Positioning:** Use the live preview function to ensure your design is correctly positioned on the material. The device can project a frame preview or a graph outline preview.
3. **Step 3: Start Engraving:** Once satisfied with the preview, press the button on the device to begin the engraving process.

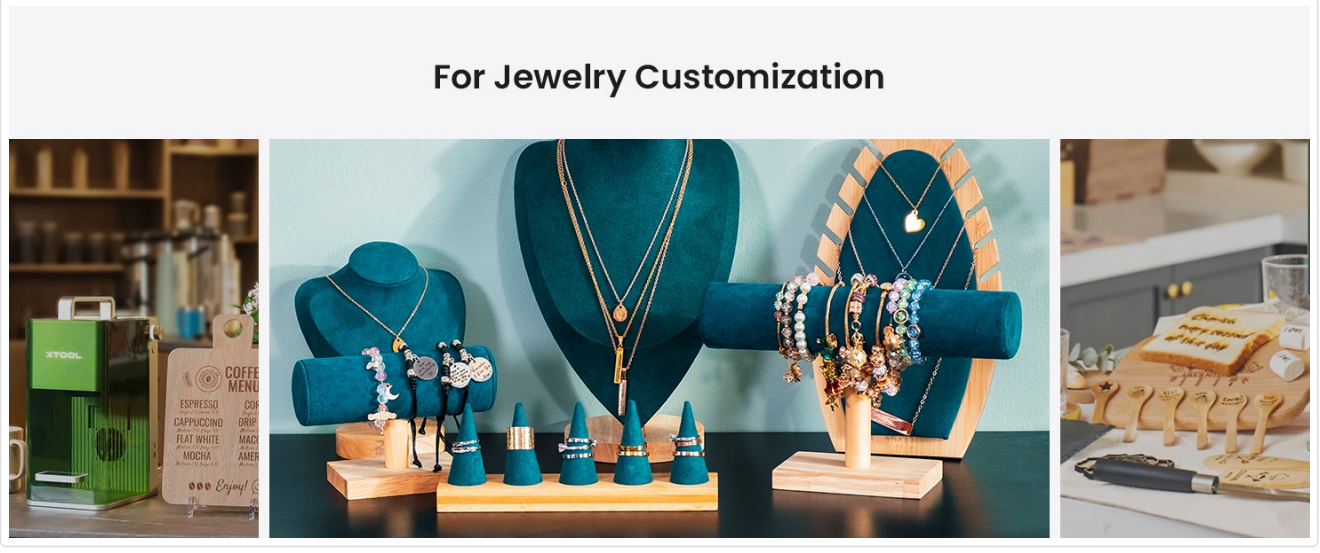

Image: A visual guide to the three-step engraving process: designing on a tablet, previewing on the machine, and pressing the start button.

5.4 Material Compatibility and Dual Lasers

The xTool F1 features two distinct lasers for broad material compatibility:

- **2W 1064nm Infrared Laser:** Ideal for engraving all metal materials and some plastics.
- **10W 455nm Blue Diode Laser:** Suitable for cutting and engraving wood, acrylic, leather, paper, rubber, and other organic materials. It can cut up to 10mm wood and 6mm acrylic.

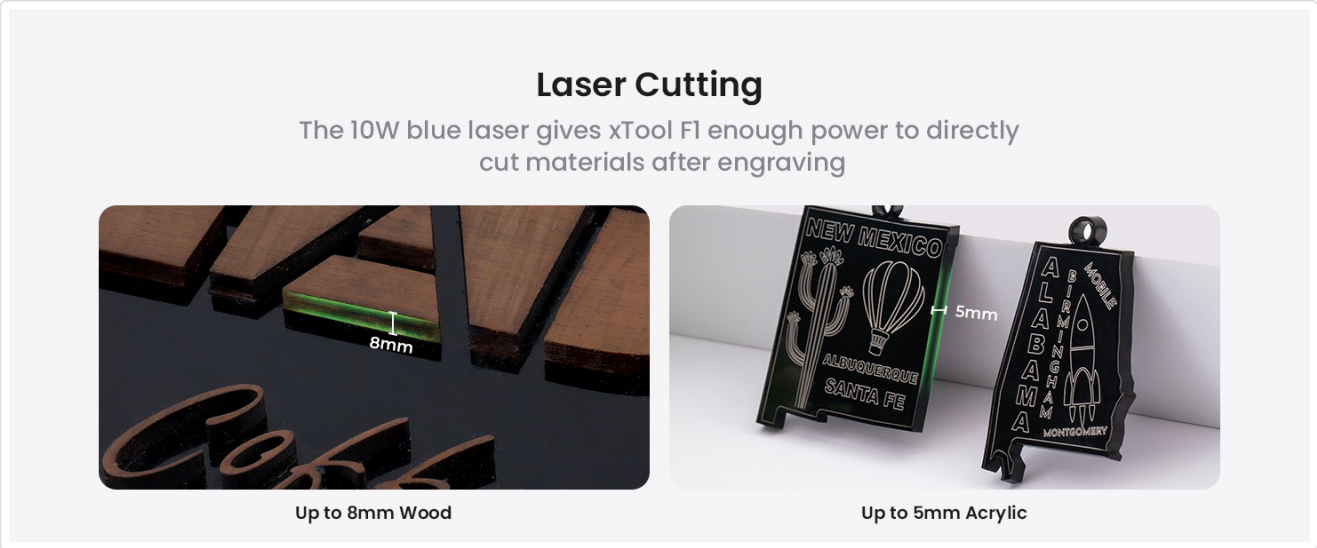

Image: An internal view of the xTool F1, highlighting the distinct paths of the 2W infrared laser (red) for metals and the 10W blue diode laser (blue) for other materials.

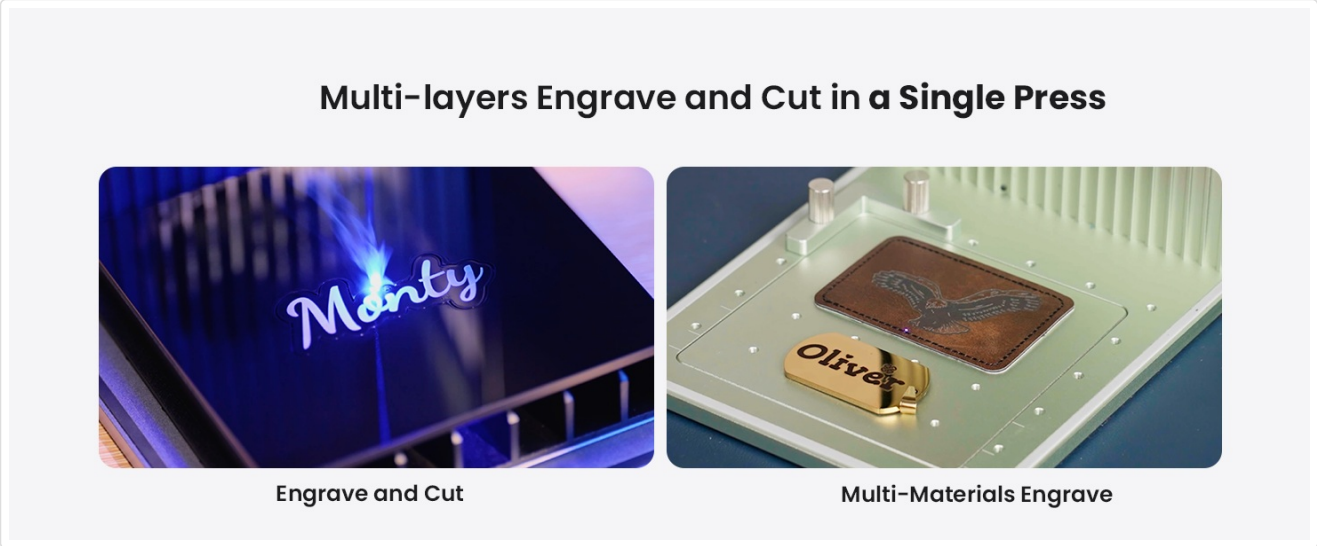

Image: A diverse collection of over 300 materials, including wood, acrylic, glass, aluminum, slate, and leather, demonstrating the xTool F1's engraving capabilities.

5.5 Expanding Working Area with Slide Extension

The xTool F1 can expand its working area for larger projects or batch processing.

- **Standard Working Area:** 115mm x 115mm.
- **With Slide Extension:** Expandable to 115mm x 400mm, allowing for 4 times the engraving area. This is ideal for batch processing multiple items simultaneously.

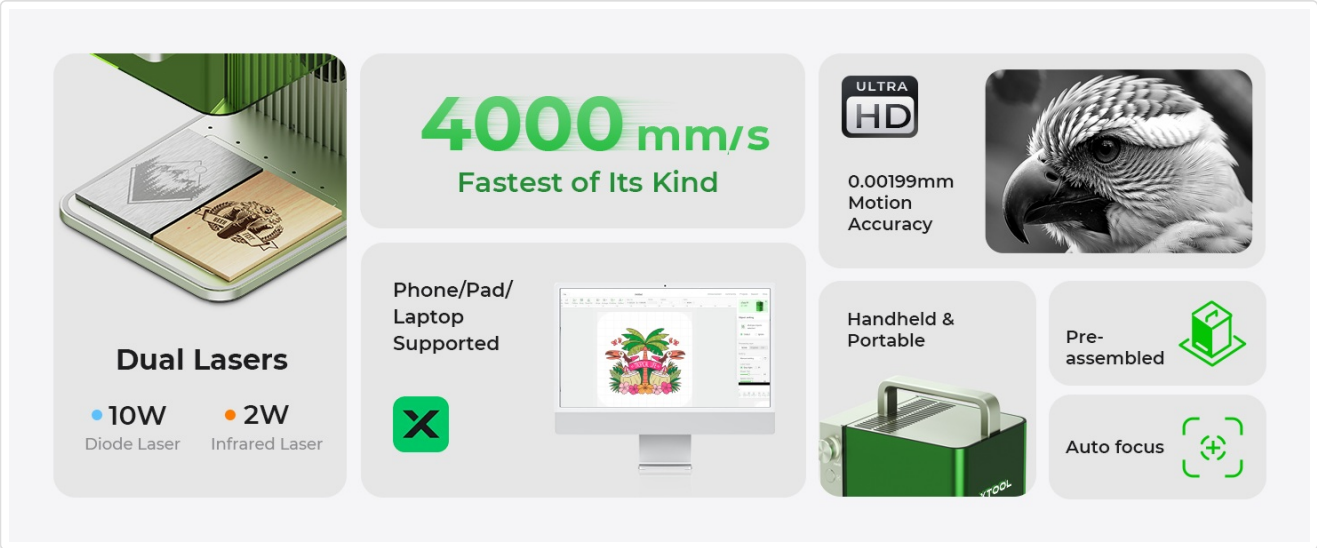

Image: The xTool F1 with its slide extension accessory, visually demonstrating the expansion of the engraving area from 115x115mm to 115x400mm.

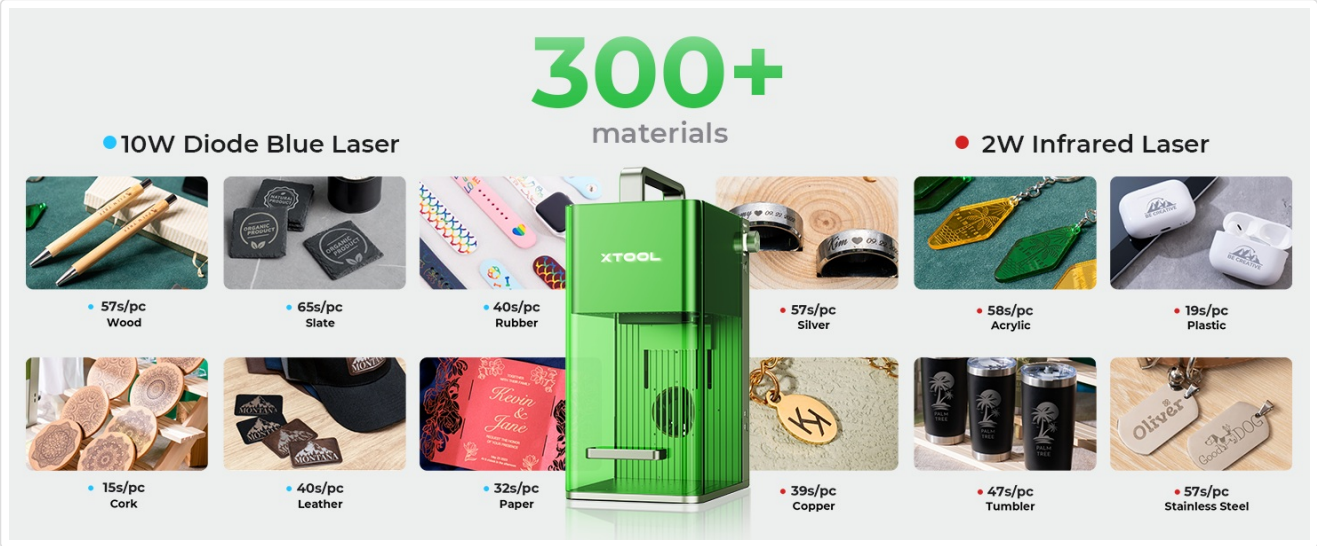

Image: The xTool F1 efficiently engraving multiple spoons in a single batch using the extended working area provided by the slide extension.

6. Maintenance

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

- **Cleaning:** Regularly clean the interior of the machine, especially the lens and work area, to remove dust and debris. Use a soft, lint-free cloth and lens cleaning solution if necessary.
- **Air Filter:** If using an air purifier, regularly check and replace its filter as recommended by the manufacturer.
- **Firmware Updates:** Keep the device firmware and software updated to the latest versions for improved features and stability.

7. Troubleshooting

This section addresses common issues you might encounter.

Problem	Possible Cause	Solution

Problem	Possible Cause	Solution
Laser not firing	Power cable loose; Emergency stop engaged; Software error; Laser module issue	Check power connections; Disengage emergency stop; Restart software/device; Contact support if issue persists.
Poor engraving quality	Incorrect focus; Wrong material settings; Dirty lens; Material not flat	Adjust focus (auto/manual); Verify material settings in software; Clean laser lens; Ensure material is flat and secured.
Device not connecting to computer	USB cable issue; Driver not installed; Software conflict	Try a different USB port/cable; Reinstall drivers; Restart computer and device.

For more detailed troubleshooting or issues not listed here, please refer to the official xTool support resources.

8. Specifications

Feature	Detail
Model	xTool F1
Laser Type	2W 1064nm Infrared Laser & 10W 455nm Blue Diode Laser
Engraving Speed	Up to 4000mm/s
Motion Accuracy	0.00199mm
Standard Working Area	115mm x 115mm
Expanded Working Area (with Slide Extension)	115mm x 400mm
Cutting Capacity (Diode Laser)	Up to 10mm wood, 6mm acrylic
Weight	4.6kg
Connectivity	USB
Supported Software	xTool Creative Space, LightBurn

9. Warranty and Support

For detailed warranty information, product registration, and technical support, please visit the official xTool website or contact their customer service directly. Keep your purchase receipt as proof of purchase for warranty claims.
Online Resources:

- Official xTool Website: www.xtool.com
- Support Page: Refer to the website for FAQs, tutorials, and contact options.