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xTool F1

xTool F1 Portable Dual Laser Engraver Instruction Manual

Model: F1 | Brand: xTool

1. Introduction

The xTool F1 is a portable dual laser engraver designed for high-speed and high-precision engraving and cutting. It integrates both a 2W 1064nm infrared laser and a 10W 455nm diode laser, offering versatility across a wide range of materials. Its compact design and user-friendly features make it suitable for various applications, from personal DIY projects to professional customization services.

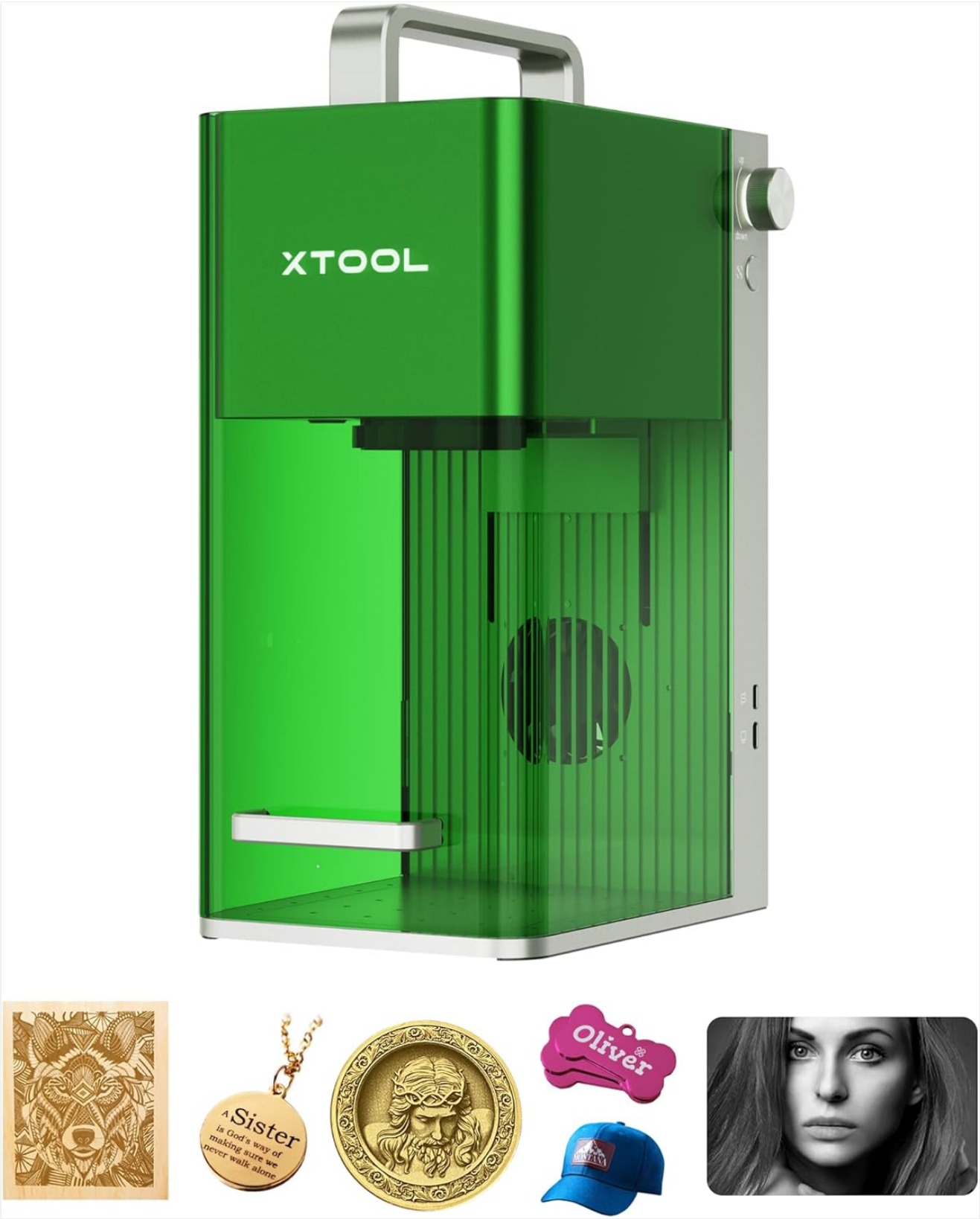


Figure 1: The xTool F1 Portable Dual Laser Engraver, a compact and versatile machine.

2. Safety Instructions

Operating any laser device requires strict adherence to safety guidelines to prevent injury and damage. Please read and understand all safety information before using the xTool F1.

- **Eye Protection:** Always wear appropriate laser safety goggles when the laser is active and the protective cover is open. The xTool F1 features an integrated closed cover designed to seal fumes and protect eyes from direct laser exposure during operation.

- **Ventilation:** Ensure adequate ventilation in the work area. The device has a built-in fume extractor, but additional room ventilation is recommended, especially when engraving materials that produce strong odors or smoke.
- **Material Safety:** Only engrave or cut materials approved for laser processing. Avoid highly flammable, explosive, or toxic materials. Refer to the material compatibility guide for details.
- **Supervision:** Never leave the machine unattended during operation.
- **Emergency Stop:** Familiarize yourself with the location and function of the emergency stop button.
- **Power Supply:** Use only the provided power adapter and ensure it is connected to a grounded outlet.

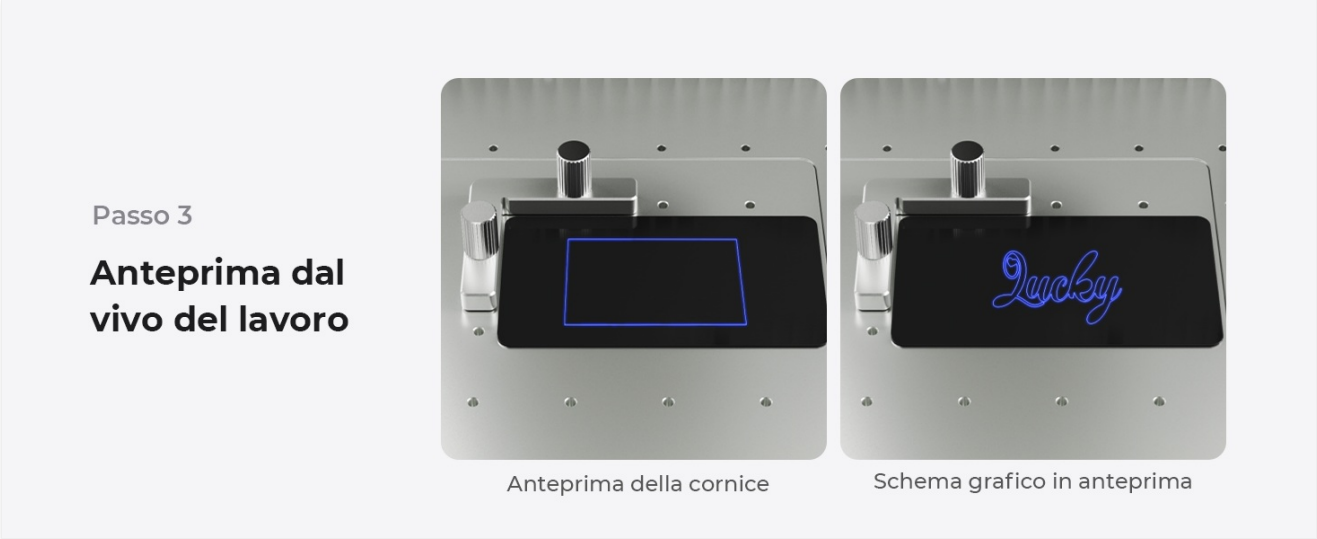


Figure 2: The xTool F1's integrated safety features, including fume extraction and a laser-protective cover.

3. Product Overview

The xTool F1 is distinguished by its innovative dual-laser system and portability, offering a powerful tool for creative and professional applications.

Key Features:

- **Dual Laser System:** Integrates a 10W 455nm Diode Laser for materials like wood, acrylic, leather, and glass, and a 2W 1064nm Infrared Laser for metals and plastics.
- **High-Speed Engraving:** Achieves speeds up to 4000 mm/s, significantly reducing processing time for batch projects.
- **High Precision:** Offers a movement precision of 0.00199 mm for detailed and intricate designs.
- **Portability:** Compact and lightweight (4.6 kg), making it easy to transport and set up in various locations.
- **User-Friendly Software:** Compatible with xTool Creative Space (XCS) and Lightburn, supporting various file formats (SVG, DXF, PNG, JPG, BMP).
- **Auto-Focus & Live Preview:** Simplifies setup and ensures accurate positioning before engraving.
- **Integrated Safety:** Enclosed design with fume extraction and laser light protection.

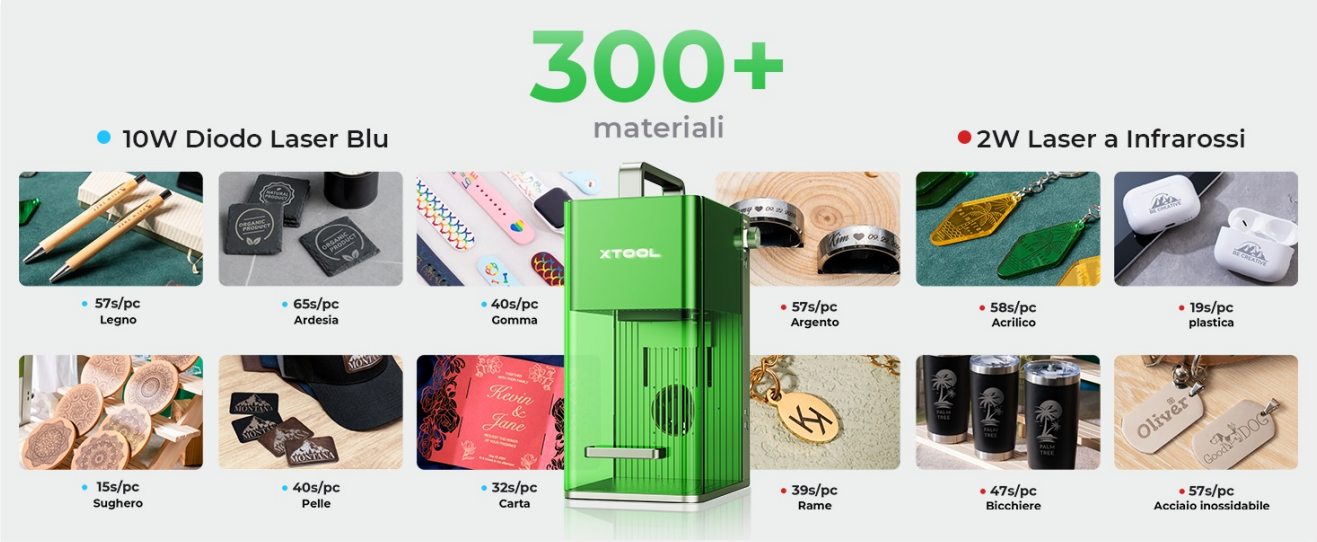


Figure 3: The xTool F1 features two powerful lasers for versatile material processing.

Figure 4: High-speed engraving capabilities of the xTool F1 at 4000 mm/s.

4. Setup

The xTool F1 comes pre-assembled for quick setup. Follow these steps to get started:

1. **Unboxing:** Carefully remove the xTool F1 and all accessories from its packaging. Inspect for any damage.
2. **Placement:** Place the machine on a stable, level surface in a well-ventilated area. Ensure there is enough space around the machine for safe operation and heat dissipation.
3. **Power Connection:** Connect the power adapter to the machine and then to a suitable power outlet.
4. **Software Installation:** Download and install the xTool Creative Space (XCS) software from the official xTool website. Alternatively, Lightburn software can also be used.
5. **Connect Device:** Connect the xTool F1 to your computer via USB or Wi-Fi as prompted by the software.
6. **Initial Test:** Perform a small test engraving on a scrap piece of material to verify functionality and laser alignment.

Figure 5: The xTool F1 is portable and comes pre-assembled for ease of setup.

5. Operating Instructions

This section outlines the general workflow for using your xTool F1 for engraving and cutting tasks.

5.1 Software Workflow

1. **Create or Import Design:** Use xTool Creative Space (XCS) or Lightburn to create your design or import existing files (SVG, DXF, PNG, JPG, BMP).
2. **Material Selection:** Place your material on the work platform. In the software, select the material type and thickness. The software will suggest optimal laser parameters.
3. **Focusing:**
    - **Auto-Focus:** Enter the material thickness in the software, and the laser head will automatically adjust to the correct focal length.
    - **Manual Focus:** Rotate the knob on the side of the machine to adjust the laser head height until the two red laser dots converge into a single point on the material surface.
4. **Live Preview:** Utilize the live preview function in the software to visualize the engraving area on your material, ensuring correct placement and alignment.
5. **Start Operation:** Once satisfied with the preview, initiate the engraving or cutting process from the software. The machine will begin operation.

Figure 6: Step 1 - Creating designs using xTool Creative Space software.

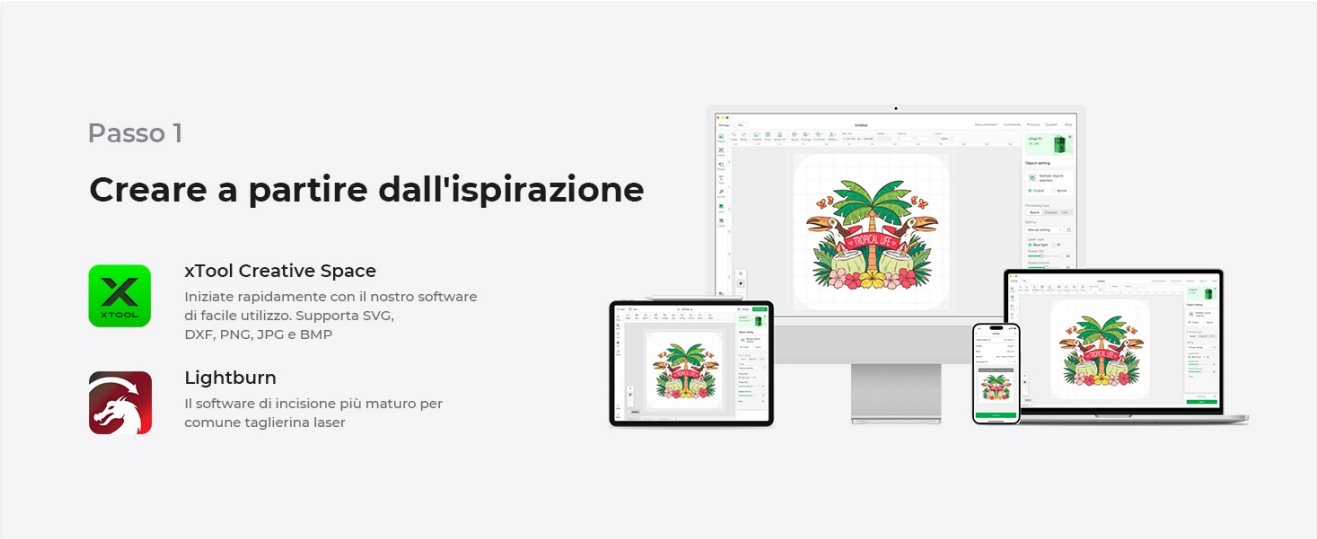


Figure 7: Step 2 - Auto-focus and manual focus methods for the xTool F1.

Figure 8: Step 3 - Using the live preview to confirm design placement.

5.2 Material Compatibility and Laser Selection

The xTool F1's dual laser system allows for processing a wide array of materials:

- **10W 455nm Diode Laser:** Ideal for engraving and cutting materials such as wood, acrylic, leather, glass, paper, cork, rubber, and ceramics.
- **2W 1064nm Infrared Laser:** Best suited for engraving metals (including silver, gold, stainless steel, aluminum, copper) and various plastics.

Figure 9: The xTool F1 supports over 300 materials with its dual laser system.

Figure 10: Examples of laser cutting capabilities on wood (up to 8mm) and acrylic (up to 5mm).

5.3 Advanced Applications

- **Batch Processing:** The high speed of the xTool F1 is ideal for personalizing multiple items efficiently.
- **Rotary Engraving:** With optional accessories like the RA2 Pro, you can engrave cylindrical objects such as tumblers, rings, and spheres.
- **Multi-layer Engraving:** Create intricate designs with varying depths and textures on a single material or across different materials.

Figure 11: Optional accessories like the RA2 Pro and smoke purifier enhance the xTool F1's capabilities.

6. Maintenance

Regular maintenance ensures optimal performance and extends the lifespan of your xTool F1.

- **Cleaning the Lens:** Periodically clean the laser lens with a specialized lens cleaning solution and cloth to maintain engraving quality.
- **Cleaning the Work Area:** Remove debris and dust from the work platform and inside the machine after each use to prevent buildup and ensure proper ventilation.
- **Firmware Updates:** Check for and install the latest firmware updates for the xTool F1 and software to benefit from new features and performance improvements.
- **Storage:** When not in use, store the machine in a clean, dry environment away from direct sunlight and

extreme temperatures.

7. Troubleshooting

This section addresses common issues you might encounter and provides potential solutions.

- **Laser Not Firing:**
  - Ensure the machine is powered on and connected to the software.
  - Check if the protective cover is properly closed.
  - Verify that the material is correctly placed and focused.
  - Confirm that the laser parameters in the software are set appropriately for the material.
- **Poor Engraving/Cutting Quality:**
  - Check the focus of the laser. Re-adjust using auto or manual focus.
  - Clean the laser lens if it appears dirty.
  - Adjust laser power and speed settings in the software. Different materials require different settings.
  - Ensure the material is flat and securely placed on the work platform.
- **Connection Issues:**
  - Restart both the xTool F1 and your computer/device.
  - Check USB cable connections or Wi-Fi signal strength.
  - Ensure your software is up to date.
- **Machine Response Indicators:** Refer to the machine's status lights for diagnostic information. For example, a blinking red light might indicate an error or safety interlock issue.

8. Specifications

Feature	Detail
Brand	xTool
Model Number	F1
Product Dimensions	42.5 x 33 x 44 cm
Item Weight	6.36 Kilograms
Power Type	Electric (corded)
Batteries Included	No
Batteries Required	No
First Available Date	July 4, 2023

9. Warranty and Support

xTool is committed to providing excellent customer service and support for your F1 laser engraver.

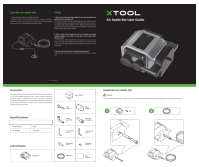
- **Warranty:** The xTool F1 typically comes with a 2-year warranty. Please refer to your purchase documentation for specific terms and conditions.

- **Technical Support:** For any technical assistance, questions, or issues, xTool offers multichannel support including:
    - Email support
    - Live chat
    - Phone support
    - Dedicated Facebook group for community and technical assistance
- **Online Resources:** Visit the official xTool website for FAQs, tutorials, software updates, and a comprehensive knowledge base.

Figure 12: xTool provides comprehensive multichannel support for its products.

Related Documents - F1

	xTool P2 FAQs: Your Guide to the Smart Desktop Laser Cutter Frequently Asked Questions about the xTool P2 laser cutter and engraver, covering compatibility, operation, features, materials, and maintenance.
	xTool M1 User Guide: Operate Laser Engraver with xTool Creative Space (XCS) Learn to use the xTool M1 10W laser engraver and cutter with this comprehensive guide. Covers XCS software setup, device connection, material preparation, design import, and project processing for wood, metal, and acrylic.
	XTOOL S1 Quick Start Guide: Setup, Usage, and Safety A concise guide to setting up and using the XTOOL S1 laser cutter and engraver. Learn about components, installation, software, safety features, and maintenance.

	[xTool P2 Laser Cutter Quick Start Guide] A quick start guide for the xTool P2 laser cutter, covering unboxing, setup, component identification, and initial use instructions.
	[Guide to Operating xTool F1 with xTool Creative Space (XCS)] Learn how to use xTool Creative Space (XCS) software to operate the xTool F1 dual laser engraver. This guide covers installation, connection, material setup, design, parameter settings, preview, and processing.
	[XTOOL Air Assist Set User Guide: Installation and Operation] Comprehensive user guide for the XTOOL Air Assist Set, detailing installation, specifications, and FAQs for enhanced laser cutting and engraving performance with machines like the XTOOL D1.