xTool MXF-K002-B20

xTool F1 Ultra 20W Fiber & Diode Dual Laser Engraver

INSTRUCTION MANUAL

1. Introduction and Overview

The xTool F1 Ultra is a state-of-the-art 20W Fiber & Diode Dual Laser Engraver, designed for high-speed and high-precision engraving and cutting across a wide range of materials. It features a 16MP smart camera for intelligent processing and supports advanced functionalities like 3D embossing and deep engraving.



Figure 1: The xTool F1 Ultra Dual Laser Engraver and examples of its output.

Key Features:

- **Dual Laser System:** Combines a 20W Fiber laser for metals and a 20W Diode laser for non-metals.
- **Ultra-Fast Engraving:** Achieves speeds up to 10,000mm/s.
- **16MP Smart Camera:** Enables auto-focus, batch recognition, and intelligent pattern filling.
- **3D Engraving & Deep Engraving:** Capable of intricate multi-level and deep engravings.
- **Large Working Area:** 220mm x 220mm, expandable to 220mm x 500mm with optional Auto Conveyor.
- **Versatile Material Compatibility:** Engraves and cuts a wide array of materials including various metals, wood, acrylic, leather, glass, and more.
- **Enhanced Safety:** Features a fully enclosed cover, eye-protection, efficient smoke extraction, fire safety alarm, and emergency stop button.

2. Setup

2.1 Unboxing and Component Identification

Carefully remove all components from the packaging. Verify that all items listed in the packing list are present. Components typically include the xTool F1 Ultra main unit, power adapter, USB cable, material samples, and user manual.

2.2 Initial Assembly and Placement

Place the xTool F1 Ultra on a stable, level surface. Ensure adequate ventilation around the unit. Connect the power adapter to the device and a suitable power outlet. For initial setup and software connection, connect the device to your computer via the provided USB cable.

2.3 Software Installation

Download and install the xTool Creative Space (XCS) software from the official xTool website. Follow the on-screen instructions for installation. XCS is compatible with various operating systems and devices, allowing for flexible control.

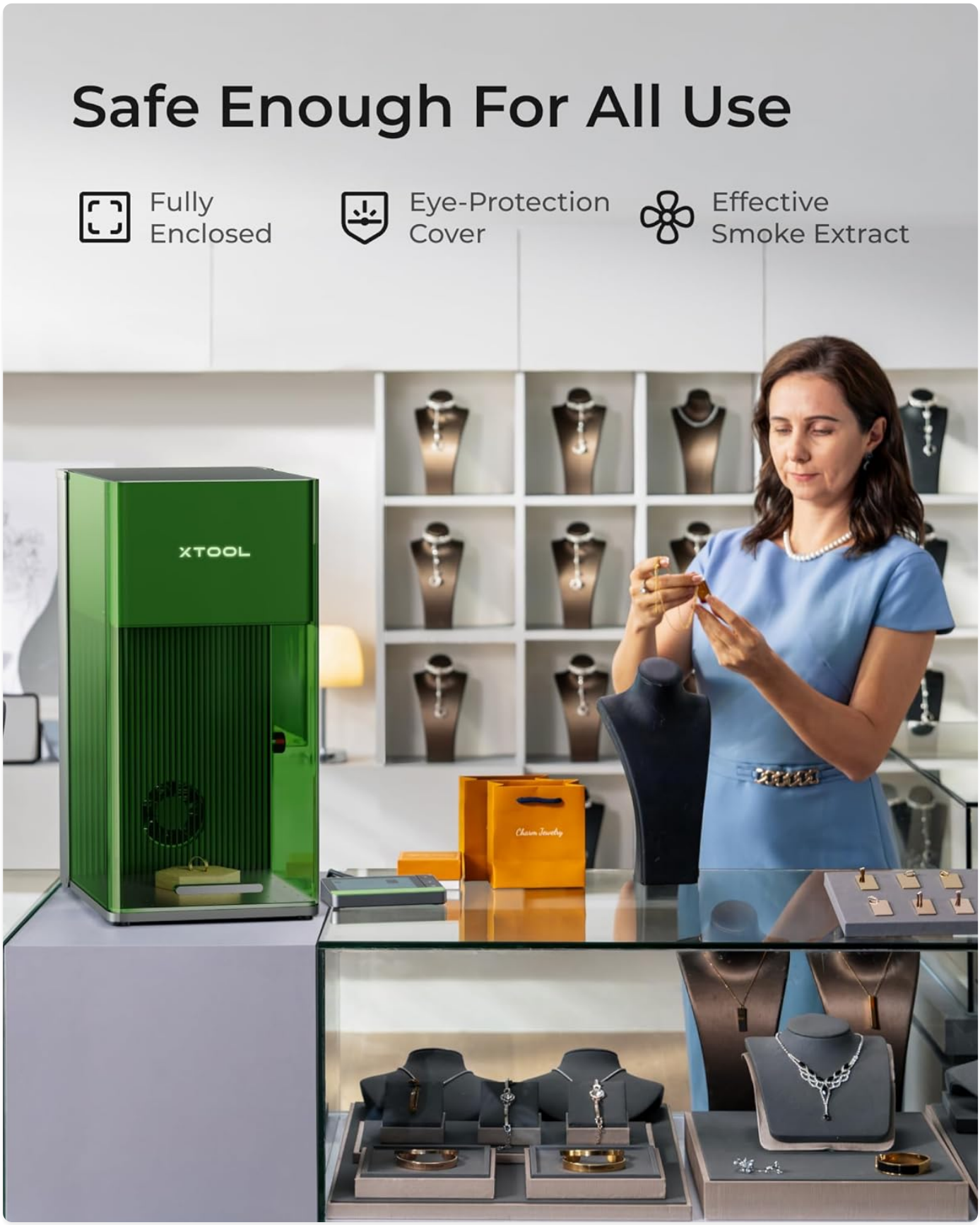


Figure 2: The xTool Creative Space software, adaptable for multi-device use.

3. Operating the xTool F1 Ultra

3.1 Power On and Interface Overview

Press the power button to turn on the device. The integrated control panel provides direct access to project files and basic operations, allowing for offline use without a computer.

3.2 Material Preparation and Placement

Place your material on the working platform. The 16MP smart camera provides a live preview of the material within the XCS software, allowing for precise positioning of your design. The auto-focus feature automatically adjusts the laser height for optimal results.

3.3 Using the xTool Creative Space Software

Within XCS, import or create your design. Utilize the 'Material EasySet' library for pre-tested settings for over 400 materials, simplifying parameter selection. The software supports editing vectors and offers smart AI features for design generation.



Figure 3: High-speed engraving, smart camera, and extensive material compatibility.

3.4 Engraving and Cutting Process

Once your design is positioned and settings are applied, initiate the engraving or cutting process. The F1 Ultra's dual laser system allows for processing a wide variety of materials at high speeds.

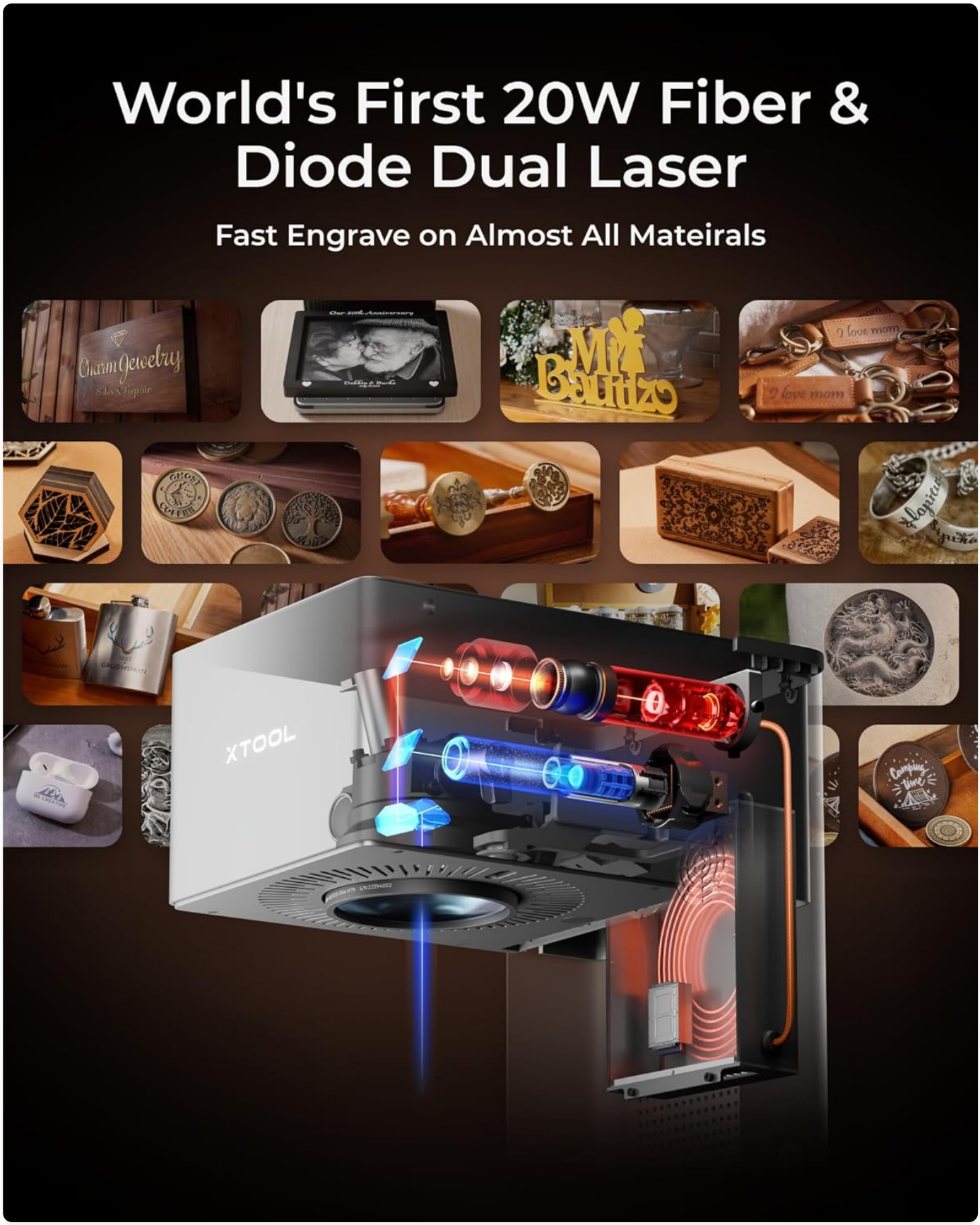


Figure 4: The world's first 20W Fiber & Diode Dual Laser for versatile material processing.

3.5 Batch Production and Auto Streamline

For efficient batch production, the xTool F1 Ultra supports Auto Streamline Production, especially when paired with the optional Auto Conveyor. The smart camera automatically recognizes shapes and fills patterns on multiple pieces continuously, significantly boosting productivity.



Figure 5: Next-level productivity with Auto Streamline Production.

3.6 3D Engraving and Deep Engraving

The 20W power of both fiber and diode lasers enables intricate, multi-level 3D engraving and deep engraving on materials like metal, wood, and rock.

3.7 Curved Surface Engraving

The F1 Ultra supports direct engraving on curved surfaces using xTool's exclusive 3D Curve™ Engraving technology, which automatically creates 3D models for flawless pattern application.

3.8 Official Product Videos

xTool F1 Ultra - 9 High-Profit Batch Items

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This video demonstrates the xTool F1 Ultra's capability for high-volume batch production of various items, including metal tins, cork coasters, 2-sided wood coins, embossed metal coins, silicone coasters, metal dog tags, leather keychains, wooden dice, and poker chips, highlighting its efficiency with the automatic conveyor system.

xTool F1 Ultra: Dual Fiber & Diode Laser for All Material

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This video showcases the versatility of the xTool F1 Ultra's dual fiber and diode lasers, demonstrating its ability to engrave and cut a wide array of materials, from various metals to wood, leather, and acrylic.

xTool F1 Ultra: Ultra-Productive, Ultra-Smart

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This video highlights the xTool F1 Ultra's productivity and smart features, emphasizing its efficiency and advanced capabilities for various engraving tasks.

4. Maintenance

4.1 Cleaning and Care

Regularly clean the laser lens and the interior of the machine to ensure optimal performance and longevity. Refer to the detailed user guide for specific cleaning instructions and recommended cleaning agents.

4.2 Smoke Extraction System

The F1 Ultra is equipped with an efficient smoke extraction system to quickly remove smoke and dust during operation, maintaining a safe and clean working environment. Ensure the exhaust hose is properly connected and clear of obstructions.

4.3 Safety Features

The device incorporates multiple safety features for user protection:

- **Fully Enclosed Cover:** Filters out strong laser light and contains fumes.
- **Eye-Protection:** The green cover blocks harmful light from both the 455nm diode laser and the Fiber laser.
- **Fire Safety Alarm:** Alerts users to potential fire hazards.
- **Emergency Stop Button:** Allows for immediate shutdown in case of an emergency.

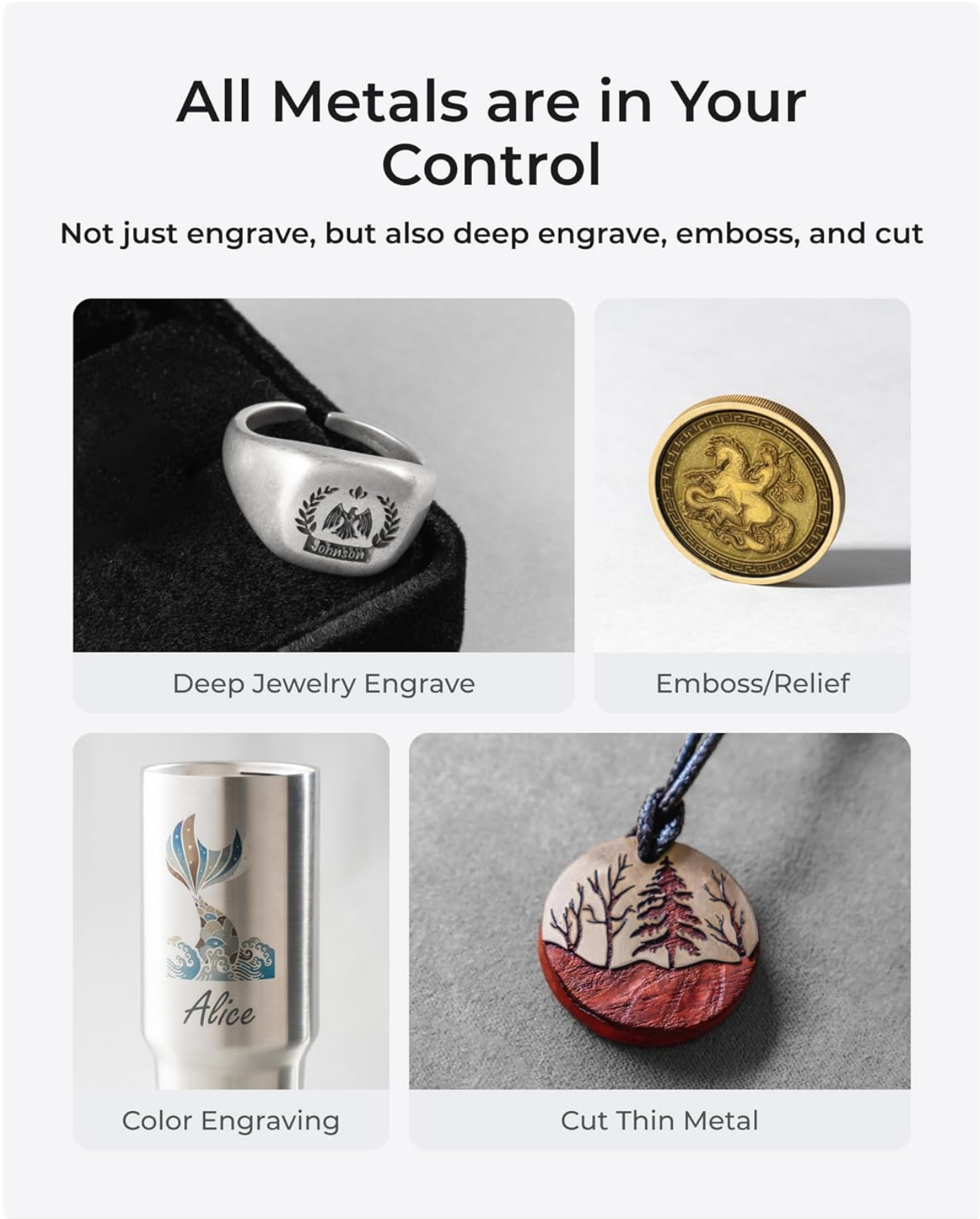


Figure 6: The xTool F1 Ultra's design emphasizes safety for various use environments.

5. Troubleshooting

If you encounter any issues with your xTool F1 Ultra, please refer to the officialUser Guide (PDF) for detailed

troubleshooting steps. Common issues and their solutions are typically covered in the manual's dedicated section.

Common Issues:

- **Software Connection Problems:** Ensure USB cable is securely connected or Wi-Fi is properly configured. Restarting both the device and software can often resolve this.
- **Poor Engraving Quality:** Check material settings in XCS (power, speed, passes). Ensure the material is flat and properly focused. Clean the laser lens if necessary.
- **Device Not Responding:** Verify power connection. Press the emergency stop button and release it to reset the device.

6. Specifications

Feature	Specification
Model Number	MXF-K002-B20
Laser Type	20W Fiber & 20W Diode Dual Laser
Engraving Speed	Up to 10,000mm/s
Working Area	220mm x 220mm (expandable to 220mm x 500mm with Auto Conveyor)
Camera	16MP Smart Camera
Product Dimensions	18 x 17 x 24 inches
Item Weight	51 pounds
Country of Origin	China
Manufacturer	Makeblock Co., Ltd.

7. Warranty

The xTool F1 Ultra comes with a **1-Year Warranty** from the manufacturer, Makeblock Co., Ltd. Please retain your proof of purchase for warranty claims. For detailed terms and conditions, refer to the official warranty documentation provided with your product or contact xTool customer support.

8. Support

For any questions, technical assistance, or support needs, xTool offers multi-channel support:

- **Online Resources:** Visit the official xTool website for FAQs, tutorials, and a knowledge base.
- **Community:** Join the xTool community for over 6,000 free design projects and peer support.
- **Direct Support:** Contact xTool customer service via email, live chat, or phone for personalized assistance.

You can also refer to the User Guide (PDF) for comprehensive information.

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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