

[Manuals.plus](#) /

- › [CREALITY FALCON](#) /
- › CREALITY FALCON2 22W Laser Engraver Machine User Manual

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CREALITY FALCON2 22W Laser Engraver Machine User Manual

Model: Creality Falcon2 22W | Brand: CREALITY FALCON

1. INTRODUCTION AND OVERVIEW

The CREALITY FALCON2 22W Laser Engraver is a high-accuracy laser engraving and cutting machine designed for various materials and applications. It features a powerful 22W laser output, capable of fast engraving speeds up to 25,000mm/min, and can cut through materials like 15mm basswood or 10mm black acrylic in a single pass. This machine is equipped with integrated air assist, triple monitoring systems for enhanced safety, and a versatile 4-in-1 rotary roller for cylindrical object engraving. It offers extensive compatibility with popular software like LaserGRBL and LightBurn, supporting both Windows and macOS, and allows for offline operation via TF card.



Figure 1.1: CREALITY FALCON2 22W Laser Engraver Machine with included accessories.

2. SAFETY INFORMATION

Your CREALITY FALCON2 22W Laser Engraver is equipped with multiple safety features to ensure safe operation. Always prioritize safety when operating the machine.

- **Anti-UV Filter Acrylic Cover:** The laser module features an anti-UV filter acrylic cover for eye protection. Always wear the provided safety goggles during operation.
- **EMERGENCY STOP Button:** A prominent red EMERGENCY STOP button is located on the control panel for immediate shutdown in case of an emergency.
- **SAFETY LOCK:** A key-operated safety lock controls the on/off function, preventing unauthorized use.
- **ACTIVE STOP Function:** The machine will automatically stop and alert with a buzzer and indicator if it detects accidental tilt, flip, or drop.
- **Flame Detection:** The machine includes a flame detection system that automatically stops operation if a flame is detected.
- **Triple Monitoring Systems:** Real-time monitoring for Airflow, Fire, and Lens status helps prevent damage and ensures safe operation.

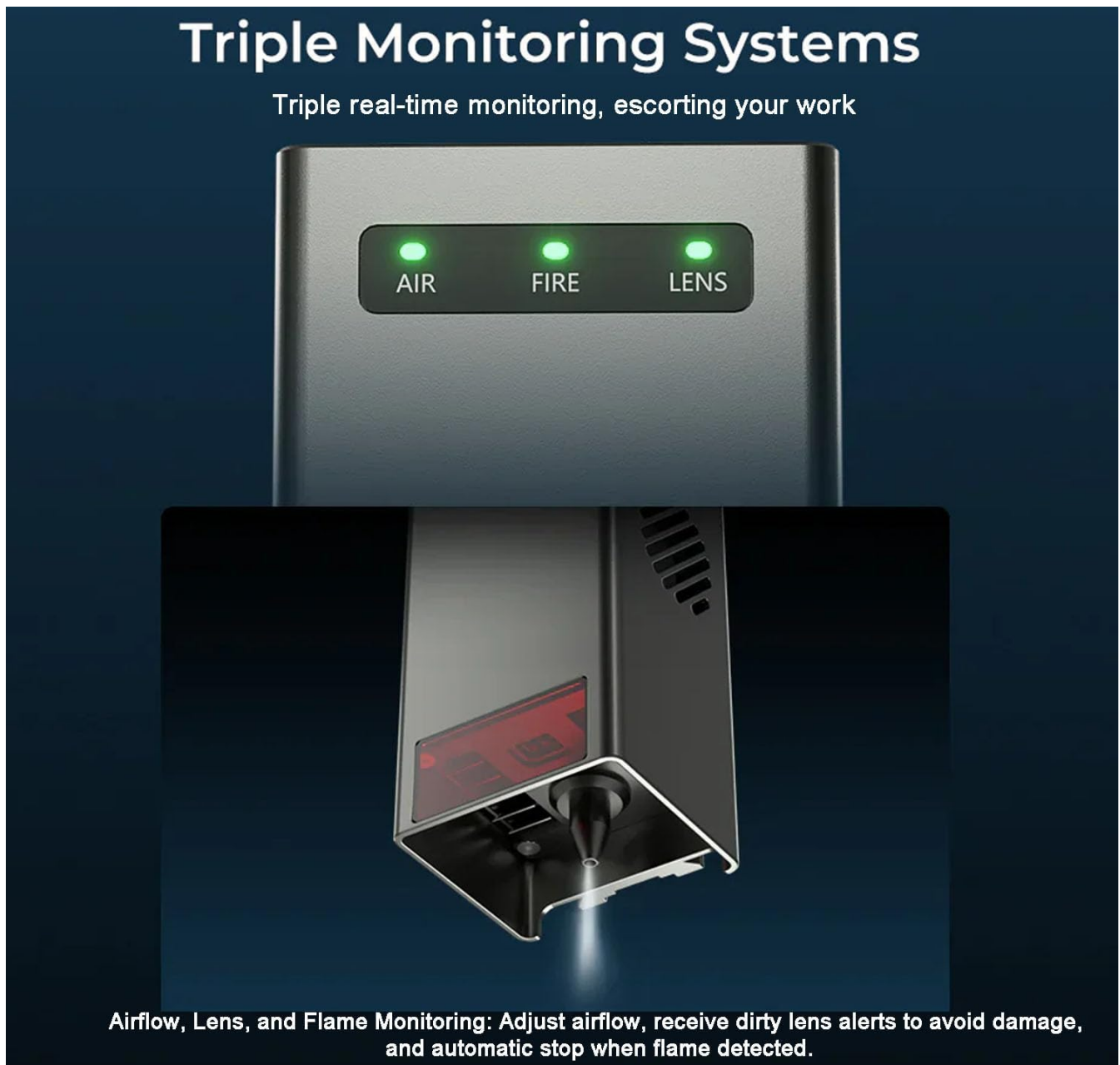


Figure 2.1: Triple Monitoring Systems (Air, Fire, Lens) for enhanced safety.

The flame detection system is designed to protect your project and the machine. If a flame is detected, the laser head will automatically move away from the flame and dock, and an audible alarm will sound. If it's a false alarm, you can press the reset button on the laser head and hit play to resume the project from where it left off.

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3. SETUP

3.1 Unboxing and Initial Assembly

The CREALITY FALCON2 22W Laser Engraver comes largely pre-assembled, requiring minimal setup. Follow these steps for initial assembly:

1. Carefully remove all components from the packaging.
2. Place the machine frame on a stable, level surface.
3. Install the laser module onto the gantry. Secure it using the provided thumb screws.
4. Connect the air assist tube from the air pump to the laser module.
5. Connect the air pump power cable to the designated port on the machine.
6. Connect the main power cable to the machine and then to a power outlet.
7. Unlock the safety lock and ensure the emergency stop button is disengaged.



Figure 3.1: The Creality Falcon2 features hassle-free assembly in just 3 steps for beginners.

3.2 Software Installation and Connectivity

The CREALITY FALCON2 is compatible with LightBurn and LaserGRBL software. It supports Windows and macOS operating systems.

- **USB-C Connection:** Connect the machine to your computer using the provided USB-C cable.
- **TF Card (Offline Use):** For offline operation, you can load design files onto a TF card and insert it into the machine's TF card slot.

Wider Compatibility

File Format: **SVG/PNG/DX/TIF/BMP/PDF/NC**



Figure 3.2: The laser engraver offers wider compatibility with various file formats and operating systems.

3.3 Focus Adjustment

Proper focus is crucial for optimal engraving and cutting results. The machine comes with a multi-level fixed focus strip to assist with this process.

1. Place the material you intend to engrave or cut on the honeycomb worktable.
2. Select the appropriate thickness level on the focus strip (e.g., 1-3mm for engraving/cutting basswood, 4-6mm for cutting, or >6mm for thicker cuts).
3. Loosen the thumb screw on the laser module.
4. Lower the laser module until the bottom of the focus strip rests gently on the material surface.
5. Tighten the thumb screw to secure the laser module in place.
6. Remove the focus strip before starting your project.

4. OPERATING INSTRUCTIONS

4.1 Material Testing

Before starting a large project, it is recommended to perform material tests to determine the optimal speed and power settings for your specific material. The machine can engrave/cut various materials including wood (basswood, maple, walnut), acrylic, leather, slate, glass, and metal.



Figure 4.1: The 22W laser can cut 15mm basswood or 10mm black acrylic in one pass.

4.2 Framing Your Project

To ensure your design is placed correctly on the material, use the framing function:

1. Insert your TF card with the design file (if working offline).
2. Press the "Frame" button on the control panel. The laser module will emit a very low-power laser beam and trace the outline of your design on the material.
3. Adjust the material's position as needed until the framed outline matches your desired placement.

4.3 Engraving and Cutting

Once framed and settings are adjusted, you can start the engraving or cutting process:

1. Press the "Play" button on the control panel. The laser will begin processing your design.
2. The integrated air assist will automatically adjust its airflow based on the operation (e.g., lower airflow for engraving, higher for

cutting) to ensure clean lines and prevent discoloration.

New advance air assist largely help to remove the smoke and protect the laser lens, cut deeper and faster.



Figure 4.2: Integrated air assist helps remove smoke and debris, protecting the laser lens and improving cut quality.

5. ROTARY ROLLER USAGE

The Creality Rotary Kit Pro offers versatile functions for engraving cylindrical, spherical, or ring-shaped objects.

- **Cylindrical Objects (Outside Clamping):** Clamp objects with a diameter of 1-110mm from the outside using the adjustable jaws.
- **Cylindrical Objects (Inside Propping):** Prop up objects with a diameter of 25-75mm from the inside.
- **Spherical Objects:** Utilize the hex stud for spheres with a diameter of 10-130mm.
- **Ring-shaped Items:** Engrave ring-shaped items with a diameter of 15-100mm.

ROTARY KIT PRO FOR CURVED SURFACE ENGRAVING

One set of jaws for multiple needs



No Assembly Required



Multifunctional Adjustable Jaws



One-handed Clamping of Engraved Items



Adjustable Rotary Chuck



Figure 5.1: The CREALITY Rotary Kit Pro allows engraving on various curved surfaces.

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Video 5.1: Demonstration of the 3-in-1 Multi-Functional Laser Rotary Roller for Engraving.

6. MAINTENANCE

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

- **Lens Cleaning:** Periodically check the laser lens for smoke residue or debris. If the "Lens" indicator light turns red, it signifies a dirty lens. Clean the lens carefully to prevent permanent damage and maintain engraving quality.
- **General Cleaning:** Keep the honeycomb worktable and the machine's rails clean from debris and dust.

7. TROUBLESHOOTING

Here are solutions to common issues you might encounter:

- **False Flame Sensor Alarms:** If the flame sensor triggers due to external light sources (e.g., direct sunlight), you can reset the alarm by pressing the reset button on the laser head. The machine will resume operation from the last point.

- **Connectivity Issues:** Ensure the USB-C cable is securely connected to both the machine and your computer. Verify that the correct COM port is selected in your software (LightBurn/LaserGRBL).
- **Inaccurate Engraving/Cutting:** Check the focus adjustment of the laser module. Ensure the material is flat and securely placed on the worktable. Verify software settings for speed and power are appropriate for the material.
- **Dirty Lens Indicator:** If the "Lens" light is red, clean the laser lens immediately to prevent damage and maintain output quality.

8. SPECIFICATIONS

Feature	Specification
Brand	CREALITY FALCON
Model Number	Crealty Falcon2 22W
Laser Output Power	22W
Machine Power	120W
Engraving Speed	Up to 25,000mm/min
Cutting Thickness (Basswood)	15mm (one pass)
Cutting Thickness (Black Acrylic)	10mm (one pass)
Product Dimensions	24.97 x 5 x 28 inches
Item Weight	27.9 pounds
Material	Alloy Steel
Operation Mode	Manual

9. WARRANTY AND SUPPORT

CREALITY FALCON offers a 3-month money-back or replacement warranty for this product. For any support inquiries or to claim your warranty, please follow these steps:

1. Go to "Account Service" on your purchase platform.
2. Navigate to "Order History".
3. Find your order for the CREALITY FALCON2 22W Laser Engraver.
4. Click on "Sold By" and then "Ask Question" to reach customer support.