Monport YXF100

Monport 100W MOPA Fiber Laser Engraver with Rotary Axis User Manual

Model: YXF100

1. Introduction

This manual provides essential instructions for the safe and efficient operation, maintenance, and troubleshooting of your Monport 100W MOPA Fiber Laser Engraver with Rotary Axis. Please read this manual thoroughly before operating the machine.

The Monport 100W MOPA Fiber Laser Engraver is an advanced marking machine designed for high-precision engraving and marking on various materials, including metals and certain plastics. It features an autofocus system, a 6.9" x 6.9" work area, and a rotary axis for cylindrical objects.

2. Safety Instructions

WARNING: Laser radiation can cause severe injury. Always follow safety precautions.

- Always wear appropriate laser safety glasses when operating the machine.
- Ensure the work area is well-ventilated to remove fumes and dust generated during engraving.
- Never look directly into the laser beam or at reflections.
- Keep flammable materials away from the laser work area.
- Do not operate the machine if any covers are removed or safety interlocks are bypassed.
- Ensure the machine is properly grounded.
- Familiarize yourself with the emergency stop procedure.

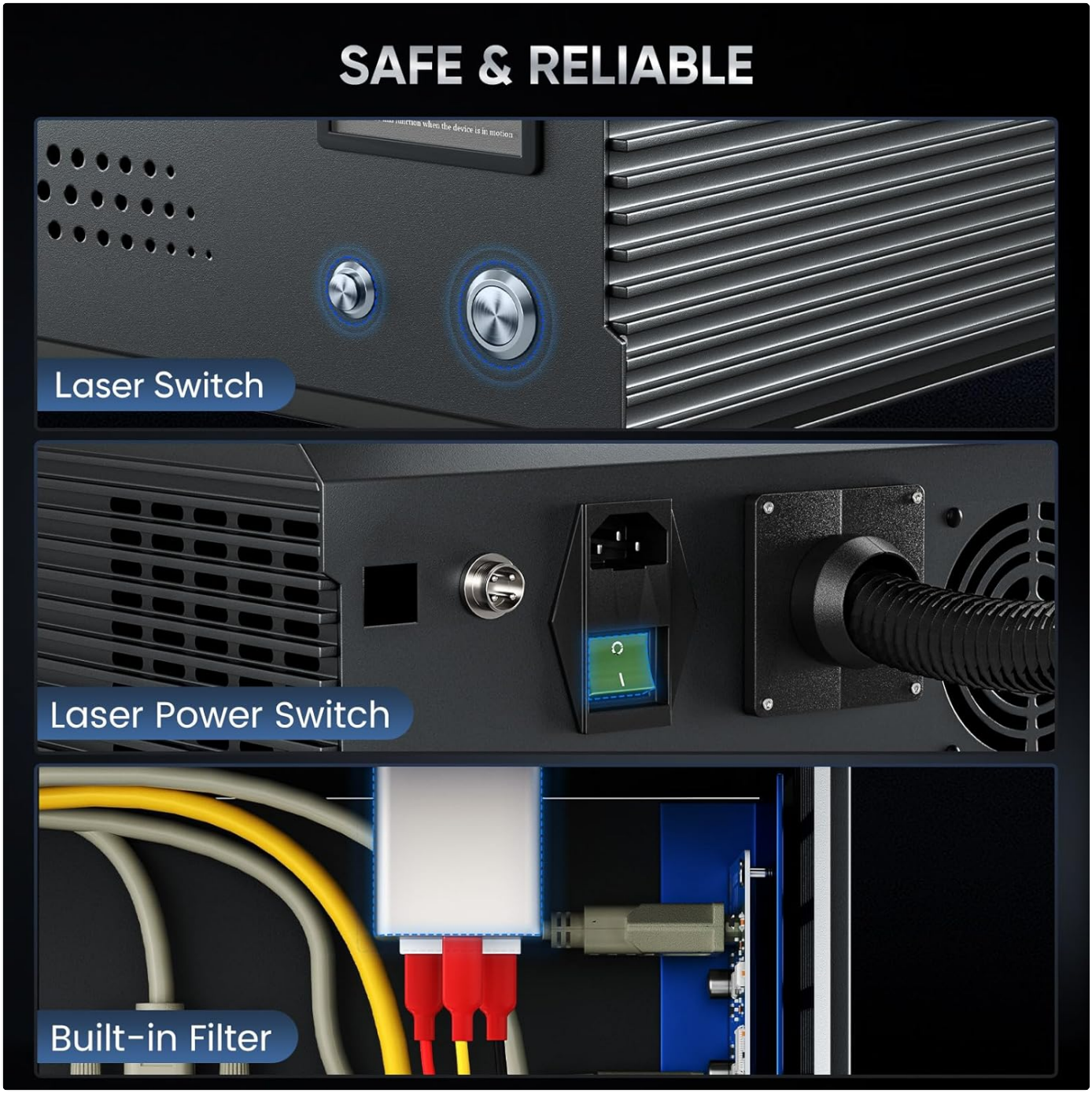

Image: Control panel of the Monport laser engraver, highlighting the laser switch, laser power switch, and the location of the built-in filter for safety and maintenance.

3. Setup and Installation

The Monport 100W MOPA Fiber Laser Engraver is designed for quick and easy setup. Follow these steps for initial installation:

1. **Unboxing:** Carefully remove all components from the packaging. Verify all parts listed in the packing list are present.
2. **Vertical Arm Installation:** The vertical arm is foldable for shipping. To install, position the arm onto the base unit. Align the mounting holes and secure it with the provided screws. Tighten the screws firmly but do not overtighten.

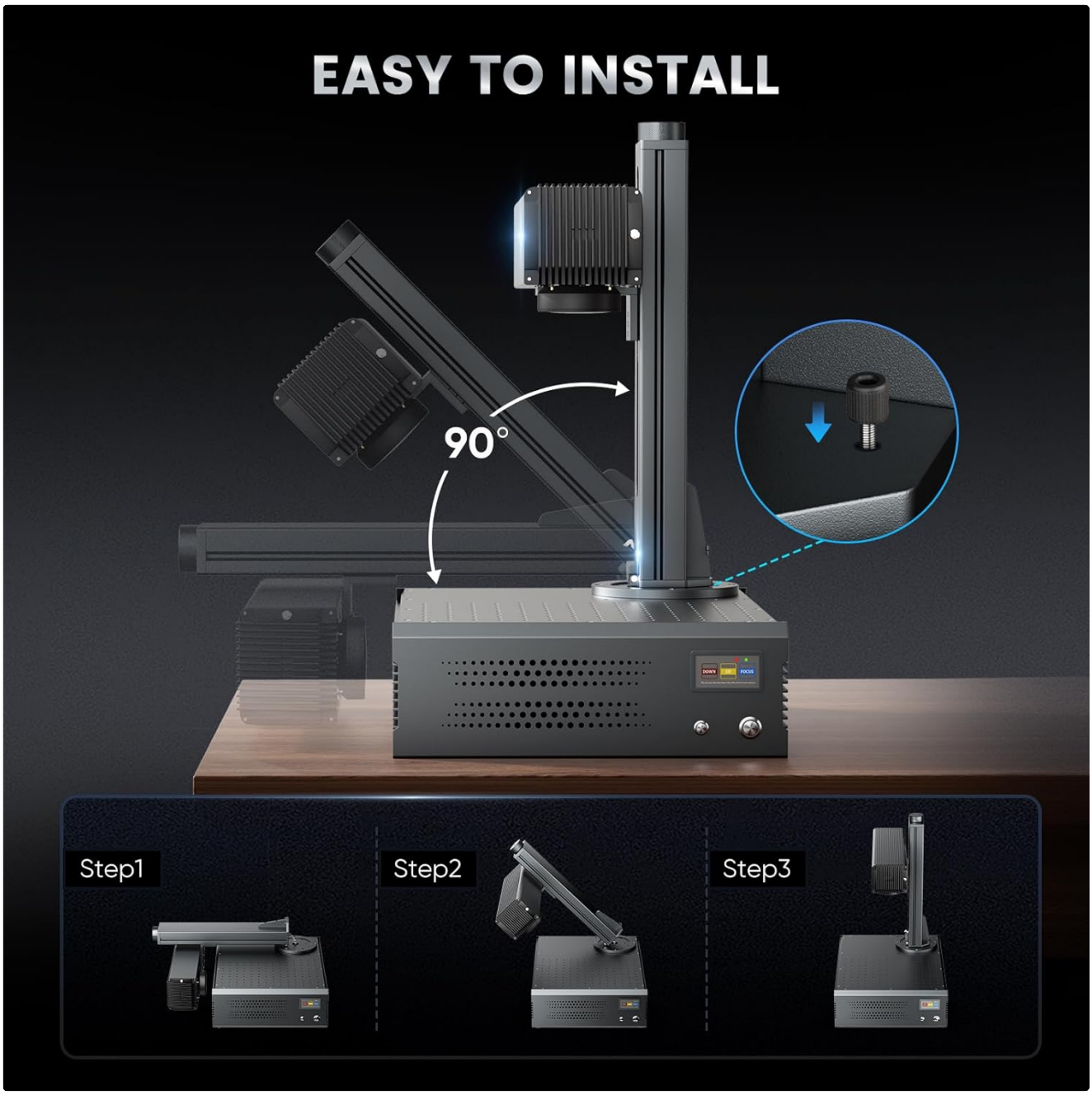

Image: Step-by-step guide for installing the vertical arm of the laser engraver, demonstrating how to unfold and secure it to the base.

3. **Power Connection:** Connect the power cable to the machine and a grounded electrical outlet.
4. **Software Installation:** Install the provided BSL (Free) or LightBurn (Paid) software on your computer. Refer to the software-specific instructions for detailed installation steps.

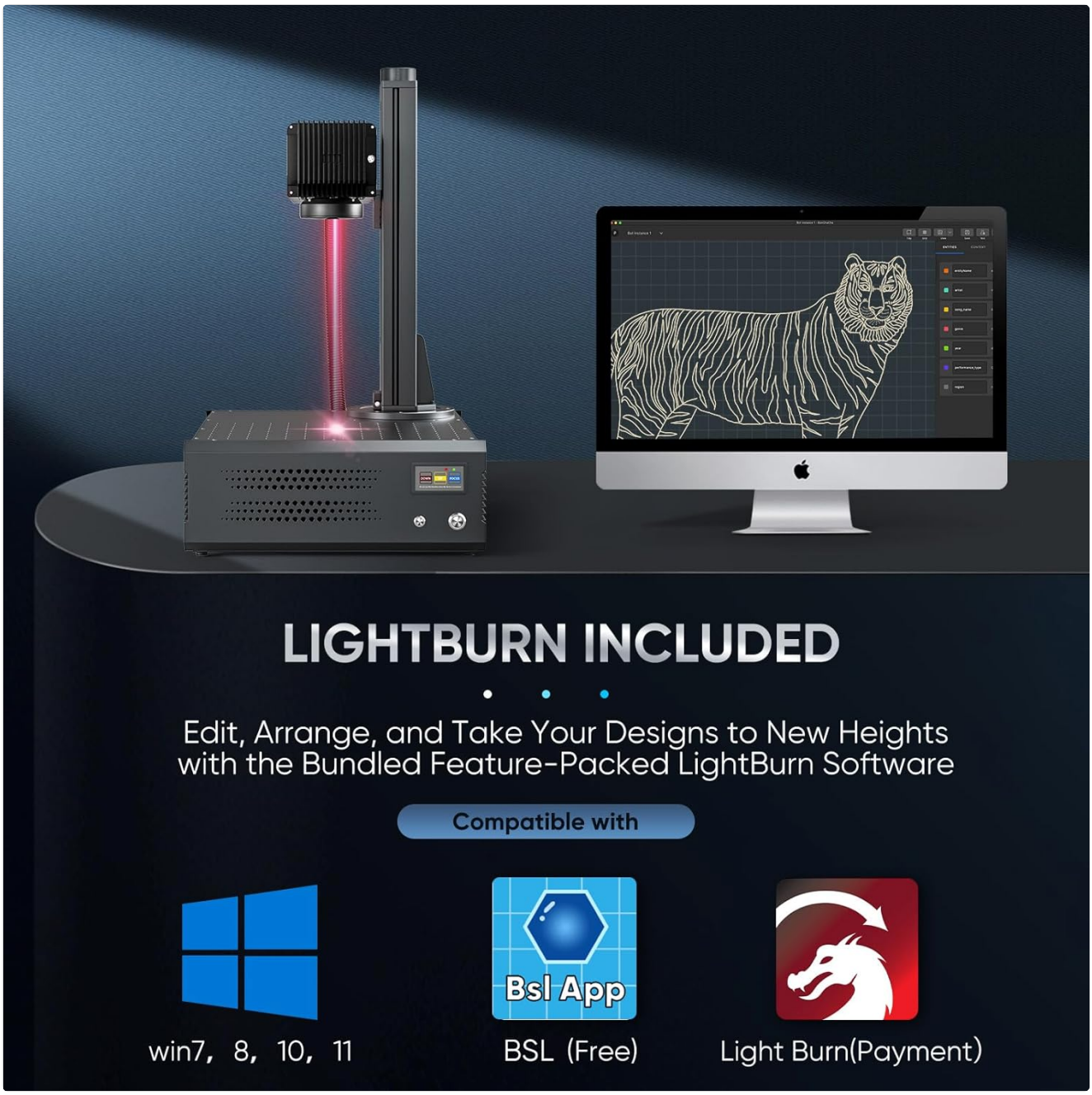

Image: The Monport laser engraver connected to a computer, illustrating compatibility with Windows operating systems and software like BSL App and LightBurn.

5. **Rotary Axis (Optional):** If using the rotary axis, connect it according to the separate rotary axis manual.

4. Operating Instructions

4.1 Basic Operation

1. **Power On:** Turn on the main power switch on the machine.
2. **Software Launch:** Launch the engraving software (BSL or LightBurn) on your computer.
3. **Material Placement:** Place the material to be engraved on the work platform. Ensure it is stable and correctly positioned.
4. **Autofocus:** The machine features one-button autofocus. Press the "FOCUS" button on the control panel. The laser head will automatically adjust its height to achieve optimal focus. Manual focus is also available using the "UP" and "DOWN" buttons, guided by three red lights.

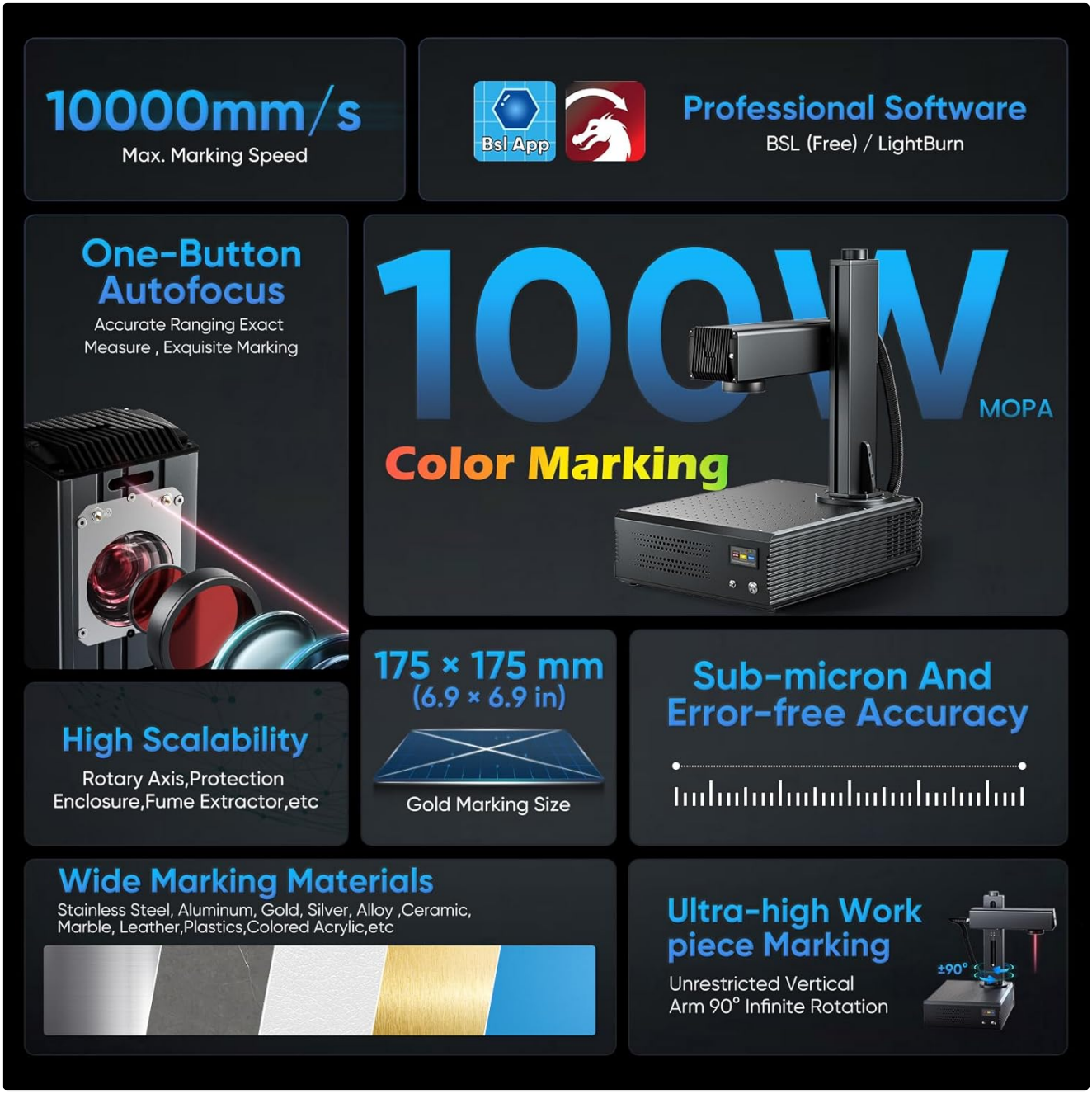

Image: Overview of the Monport laser engraver, highlighting its 100W MOPA laser source, autofocus feature, and 175x175mm (6.9x6.9 inch) marking area.

5. **Design Import and Settings:** Import your design into the software. Adjust laser parameters such as power, speed, frequency, and pulse width according to the material and desired effect.
6. **Start Engraving:** Initiate the engraving process from the software. Monitor the process closely.

4.2 Using the Rotary Axis

The rotary axis allows for engraving on cylindrical or irregularly shaped objects. To use it:

1. Install the rotary axis as per its dedicated manual.
2. Mount the cylindrical object securely onto the rotary axis chuck.
3. Adjust the vertical arm for optimal working height. The arm offers a ±90° rotation for flexible positioning. Loosen the screws, adjust the angle, and re-tighten.

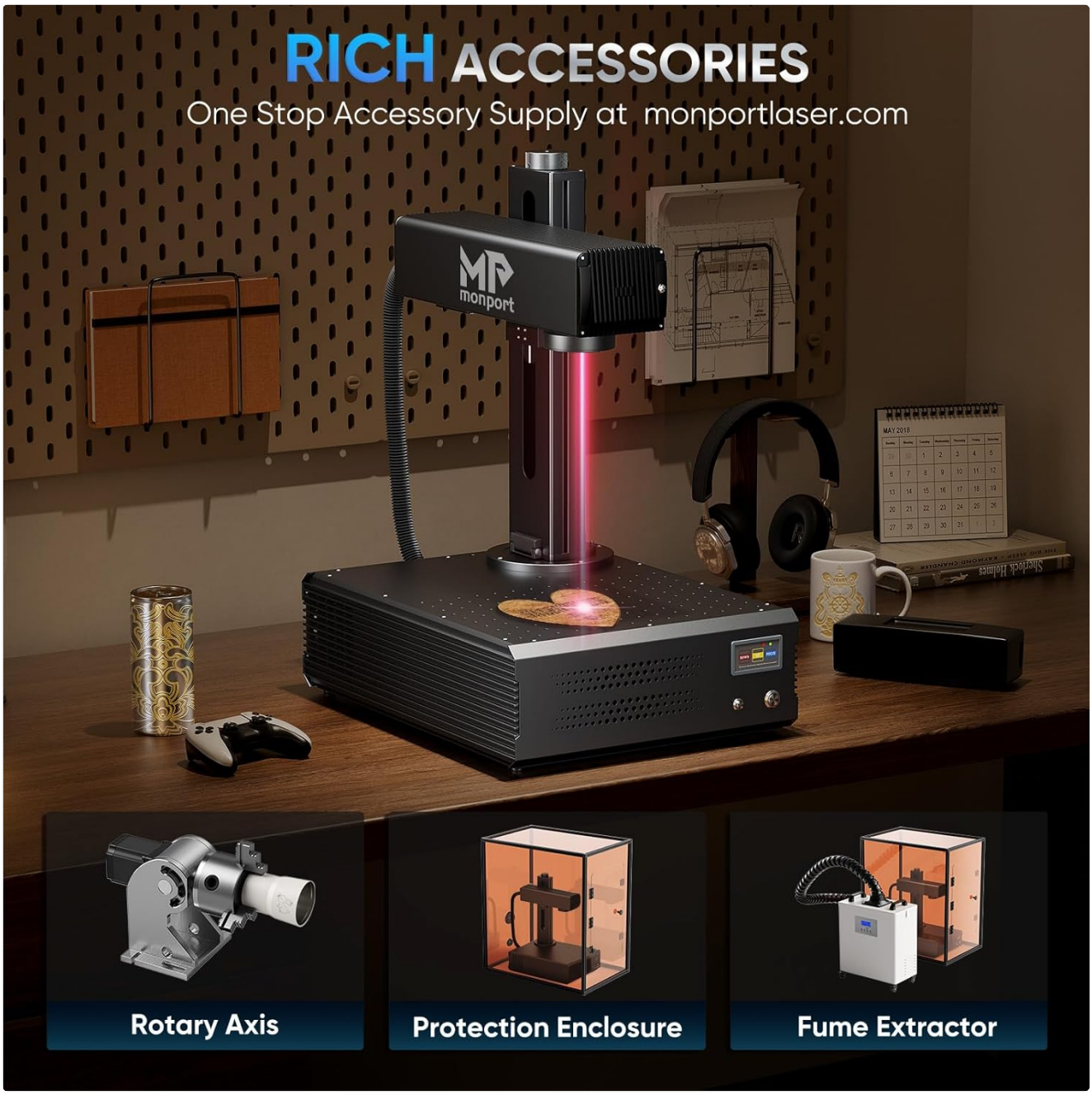

Image: The laser engraver's vertical arm adjusted to a rotated position, allowing for engraving on a cylindrical object, showcasing its flexibility.

4. In the software, enable and configure the rotary axis settings.
5. Proceed with autofocus and engraving as described in Basic Operation.

4.3 Material Compatibility and Effects

The Monport 100W MOPA Fiber Laser is suitable for a wide range of materials and effects:

- **Metals:** Stainless steel, aluminum, gold, silver, alloy, steel, jewelry. Capable of color marking on stainless steel and anodized aluminum black engraving.
- **Non-metals:** Ceramic, marble, leather, plastics, colored acrylic.
- **Effects:** Precise cutting, drilling, intricate designs, vibrant color markings.

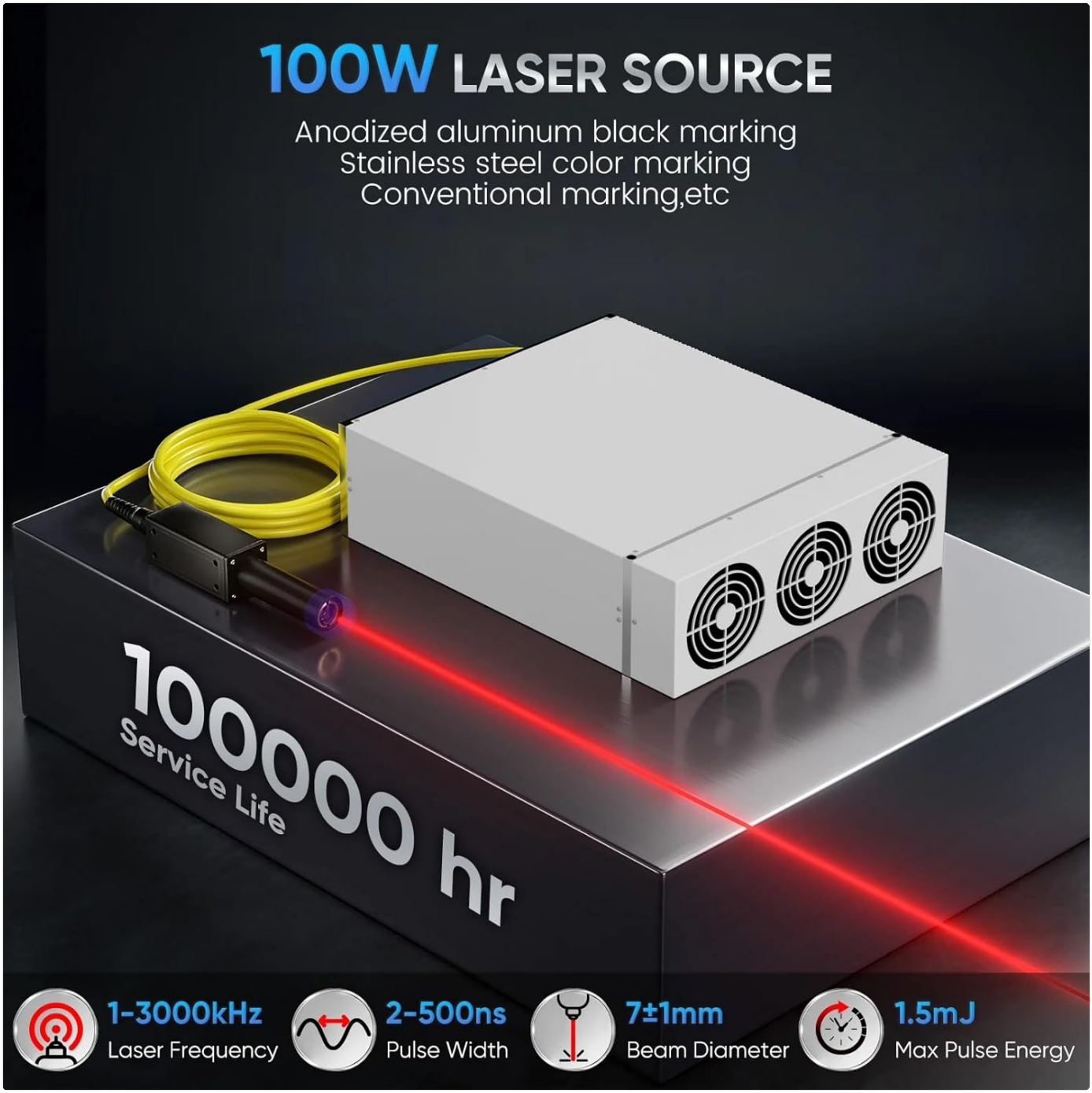

Image: Technical specifications of the 100W laser source, detailing its frequency range (1-3000kHz), pulse width (2-500ns), beam diameter (7±1mm), and max pulse energy (1.5mJ), along with its extended service life.

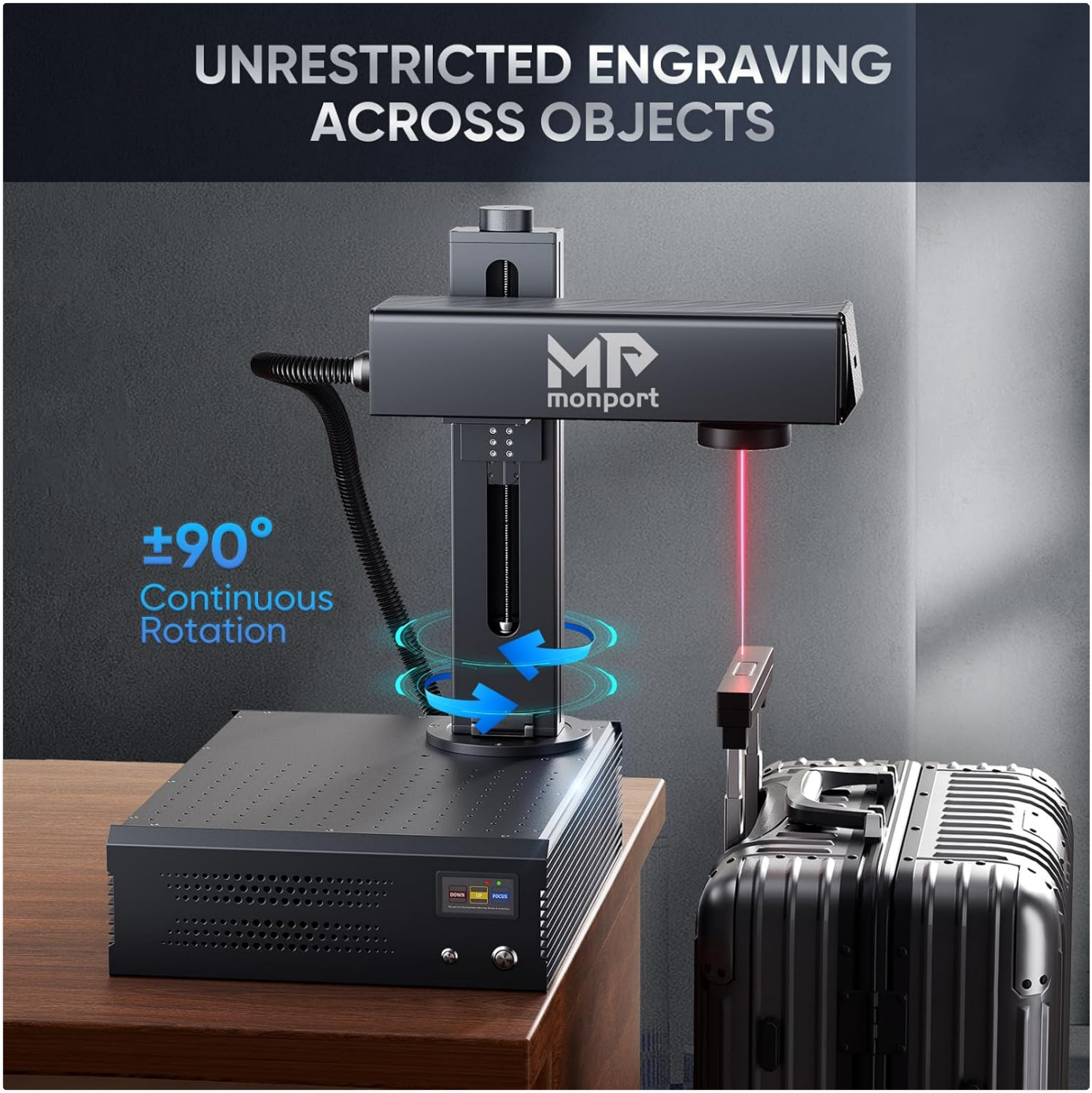

Image: The Monport laser engraver demonstrating its capability to create vibrant color markings, shown with a colorful butterfly design on a workpiece.

5. Maintenance

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

- **Cleaning:** Regularly clean the work area, lens, and mirrors with a soft, lint-free cloth and appropriate cleaning solution.
- **Dust Filter:** Check and clean or replace the built-in dust filter periodically to maintain proper ventilation and prevent dust accumulation inside the machine.
- **Cable Inspection:** Inspect all cables and connections for wear or damage.
- **Software Updates:** Keep your engraving software updated to the latest version for new features and bug fixes.

6. Troubleshooting

Problem	Possible Cause	Solution
No laser output	Laser switch off, power cable loose, software error.	Ensure laser switch is on. Check power connections. Restart software and machine.
Poor engraving quality	Incorrect focus, wrong parameters, dirty lens.	Perform autofocus. Adjust laser power/speed. Clean the lens.
Machine not connecting to computer	USB cable issue, driver not installed, software not recognizing device.	Check USB cable. Reinstall drivers. Verify software device settings.
Rotary axis not rotating	Incorrect connection, software not configured for rotary axis.	Check rotary axis connection. Enable and configure rotary axis in software.

7. Specifications

- **Brand:** Monport
- **Model Number:** YXF100
- **Laser Type:** 100W MOPA Fiber Laser
- **Work Area:** 175 x 175 mm (6.9" x 6.9")
- **Autofocus:** One-button autofocus (error < ±1mm)
- **Vertical Arm Rotation:** ±90° adjustable
- **Max Marking Speed:** Up to 10000mm/s
- **Spot Size:** 0.01mm ultra-fine spot
- **Laser Frequency:** 1-3000kHz
- **Pulse Width:** 2-500ns
- **Beam Diameter:** 7±1mm
- **Max Pulse Energy:** 1.5mJ
- **Material:** Aluminum (casing)
- **Operation Mode:** Automatic
- **Software Compatibility:** BSL (Free), LightBurn (Paid)
- **Included:** Mopa AF Fiber Laser Engraver with Rotary Axis

8. Warranty and Support

For warranty information and technical support, please refer to the official Monport website or contact Monport customer service directly. Keep your purchase receipt for warranty claims.
Monport Customer Service: Monport Store on Amazon

9. Product Videos

Monport Autofocus Fiber Laser Overview

Your browser does not support the video tag.

Video: An overview of the Monport Autofocus Fiber Laser, demonstrating its key features and capabilities, including quick installation, autofocus innovation, and flexible vertical arm rotation.

Monport Fiber Laser Engraver in Action

Your browser does not support the video tag.

Video: This video showcases the Monport Fiber Laser Engraver performing various marking tasks, including engraving on a ring and a metal bottle, demonstrating its precision and versatility.