Monport YXF100

Monport 100W Fiber Laser Engraver with Rotary Axis User Manual

Model: YXF100

1. Introduction

This manual provides essential instructions for the safe and efficient operation, setup, and maintenance of your Monport 100W Fiber Laser Engraver with Rotary Axis. This MOPA laser marking machine is designed for precise engraving and marking on various materials, featuring an autofocus system and compatibility with LightBurn software. Please read this manual thoroughly before operating the device.

Figure 1.1: Monport 100W Fiber Laser Engraver with Rotary Axis.

2. Safety Information

Operating a Class 4 laser device requires strict adherence to safety protocols to prevent injury. Failure to follow these guidelines can result in serious harm.

- **Eye Protection:** Always wear certified laser safety goggles appropriate for the laser's wavelength (1064nm) when the laser is in operation.
- **Skin Protection:** Avoid direct exposure of skin to the laser beam.

- **Ventilation:** Ensure adequate ventilation to remove fumes and particles generated during engraving, especially when working with materials that produce hazardous byproducts.
- **Fire Safety:** Keep a fire extinguisher nearby. Certain materials can ignite when exposed to laser energy. Never leave the machine unattended during operation.
- **Enclosure:** Operate the laser within a protective enclosure to contain the laser beam and debris.
- **Emergency Stop:** Familiarize yourself with the location and operation of the emergency stop button.
- **Authorized Personnel:** Only trained and authorized personnel should operate the laser engraver.

3. Package Contents

Verify that all items listed below are present in your package upon unboxing:

- Mopa Fiber Laser Engraver with Rotary Axis
- Power Line
- Wrench
- Positioning Bar & Screw
- Steel Ruler
- Instructions Manual (this document)
- U Disk (containing software and drivers)
- Marking Test Cards
- USB Data Cable

Figure 3.1: Illustration of the Monport 100W Fiber Laser Engraver and its included accessories.

4. Setup

The Monport 100W Fiber Laser Engraver is designed for quick and straightforward setup. The foldable vertical arm simplifies initial assembly.

4.1 Initial Assembly

1. Carefully remove all components from the packaging.
2. Place the main unit on a stable, level surface.
3. Unfold the vertical arm into its upright position.
4. Secure the vertical arm by tightening the two designated screws using the provided wrench. Ensure the arm is firmly fixed to prevent movement during operation.
5. Connect the power line to the machine and a suitable power outlet.
6. Connect the USB data cable from the machine to your computer.

4.2 Software Installation

Insert the provided U Disk into your computer. Install the necessary drivers and software (BSL App or LightBurn) as instructed on the disk. Refer to the software-specific documentation for detailed installation and configuration steps.

5. Operating Instructions

This section outlines the general steps for operating your laser engraver. Detailed operational procedures will be found within the specific software documentation (LightBurn or BSL App).

5.1 Power On and Connection

1. Ensure all cables are securely connected.
2. Turn on the main power switch on the laser engraver.
3. Launch your chosen laser control software (LightBurn or BSL App) on your computer.
4. Verify that the software recognizes and connects to the laser engraver.

5.2 Material Placement and Focusing

1. Place the material to be marked on the work platform.
2. Utilize the autofocus feature or manual focus to set the correct focal distance (refer to Section 5.3).

5.3 Autofocus Feature

The Monport 100W Fiber Laser Engraver features proprietary autofocus technology for precise and efficient focusing. This system uses three red lights for guidance and achieves high precision with an error of less than ±1mm.

1. Ensure the material is positioned correctly under the laser head.
2. Press the dedicated autofocus button on the machine or activate it through the software interface.
3. The laser head will automatically adjust its height until optimal focus is achieved.
4. For manual focusing, adjust the vertical arm until the three red dot guides converge into a single point on the material surface.

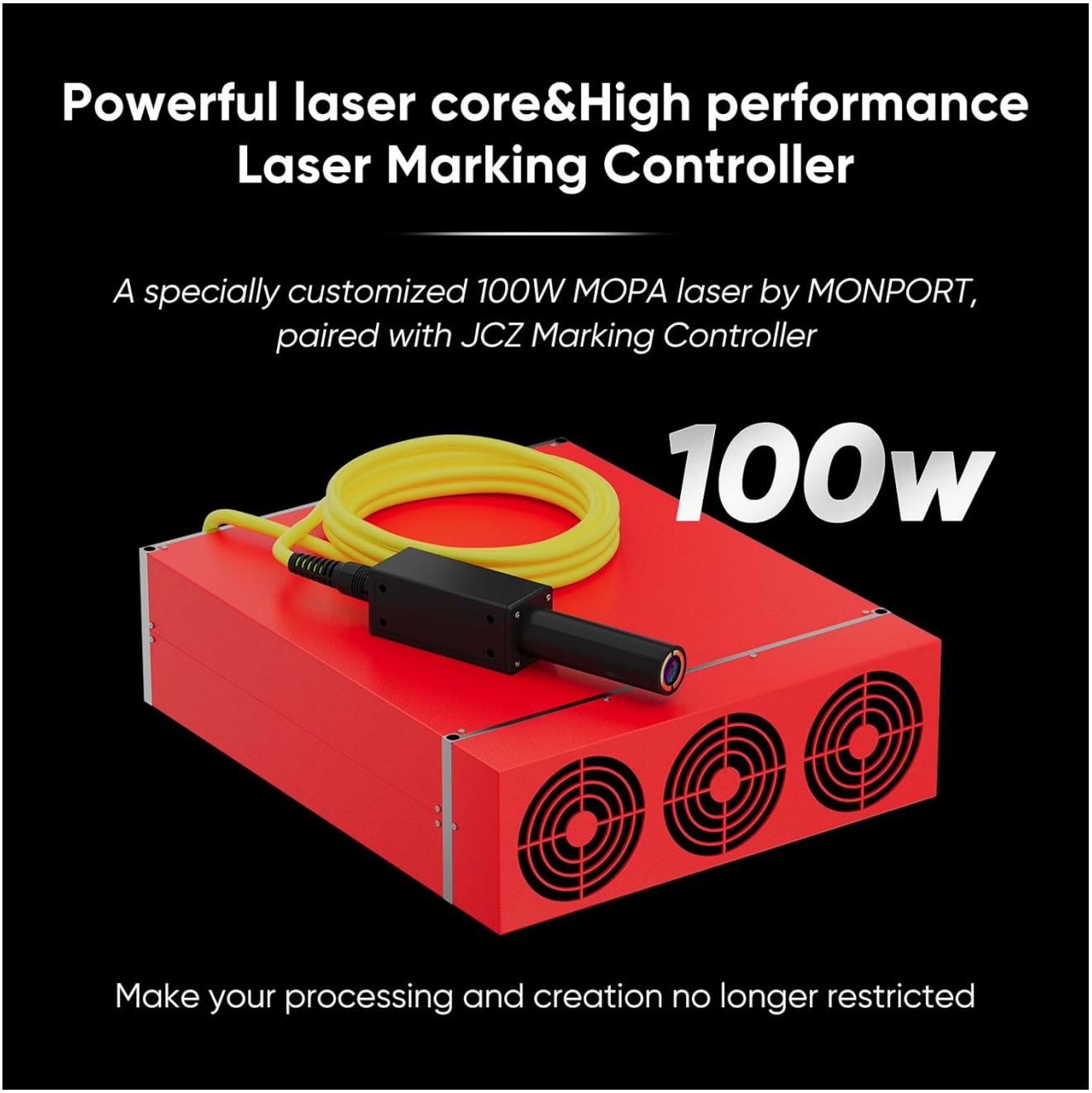

Figure 5.3.1: Diagram illustrating the autofocus mechanism with red dot guides.

Figure 5.3.2: Control panel display for autofocus operation.

5.4 Vertical Arm Rotation

The vertical arm of the engraver offers an adjustable range of ±90° for increased versatility in marking applications.

1. To adjust the arm angle, slightly loosen the screws securing the arm.
2. Carefully rotate the arm to the desired angle within the ±90° range.
3. Once the desired angle is set, re-tighten the screws to secure the arm in position.

5.5 Design and Engraving

1. Create or import your design within the LightBurn or BSL App software.
2. Configure laser parameters such as power, speed, frequency, and pulse width according to the material and desired effect.
3. Perform a test mark on a scrap piece of the same material to verify settings.
4. Initiate the engraving process from the software. Monitor the operation closely.

6. Software Compatibility

The Monport 100W Fiber Laser Engraver is compatible with industry-standard laser control software.

- **LightBurn:** A powerful and widely used laser control software (paid license required).
- **BSL App:** Monport's free proprietary software.

Both software options allow for design editing, arrangement, and control of the laser marking process. Refer to the respective software documentation for detailed usage instructions.

Figure 6.1: Software compatibility with LightBurn and BSL App.

7. Material Compatibility

This fiber laser engraver is capable of marking a wide range of materials, including but not limited to:

- Metals: Stainless Steel (including color marking), Aluminum (including anodized black engraving), Gold, Silver, Alloys, Copper, Brass, Titanium, etc.
- Plastics: Various types of plastics, including colored acrylics.

- Other Materials: Leather, Marble, Ceramic.

The adjustable frequency (1-3000kHz) and pulse width (2-500ns) allow for diverse applications such as vibrant stainless steel markings, precise cutting, drilling, and intricate designs.

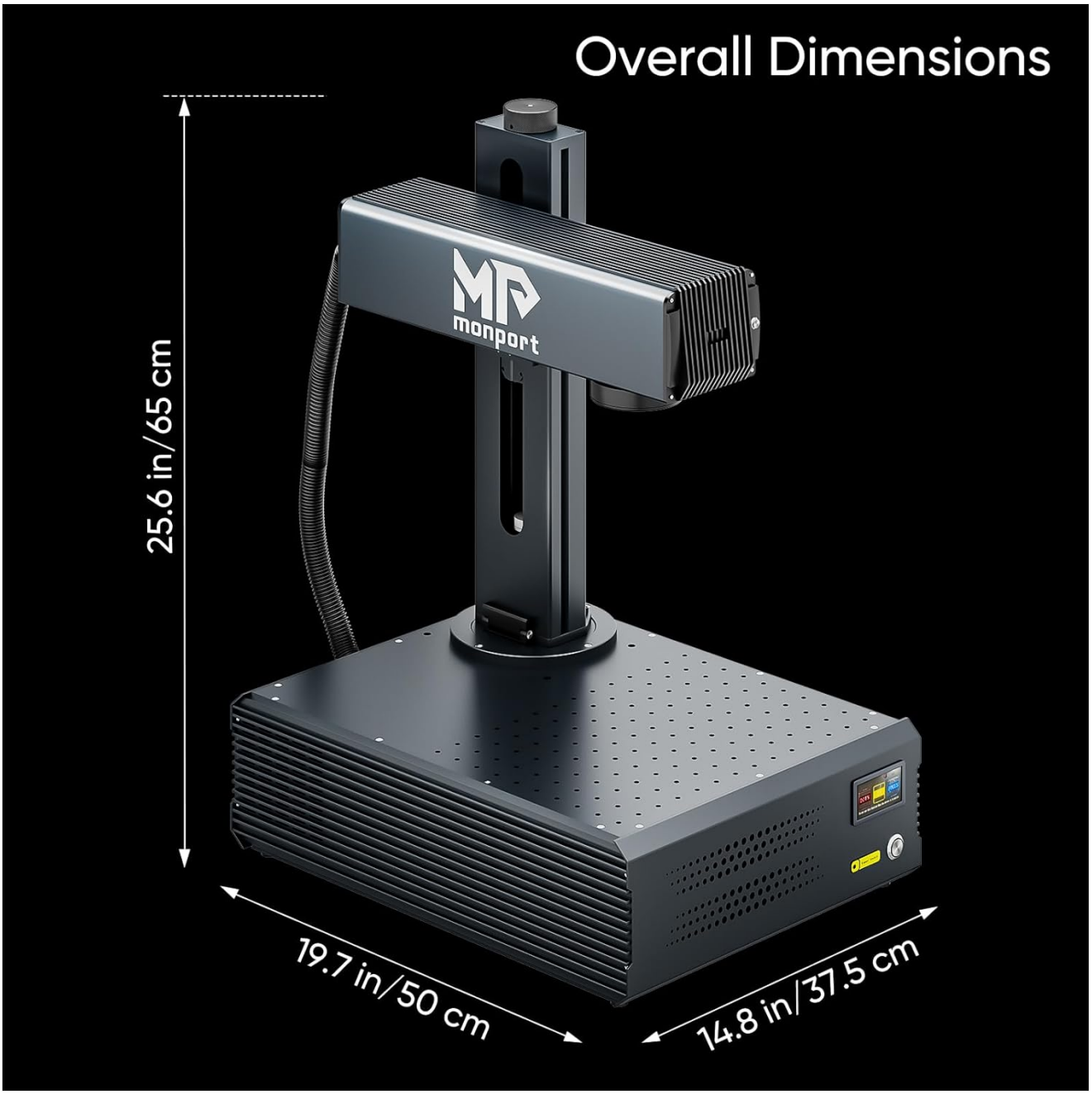

Figure 7.1: Visual representation of various materials suitable for marking.

8. Maintenance

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

- **Cleaning the Lens:** Periodically inspect and clean the laser lens using specialized lens cleaning solution and wipes. Avoid touching the lens with bare hands.
- **Dust Removal:** Keep the machine free of dust and debris. Use compressed air or a soft brush to clean vents and internal components. The machine includes dust shields at the back of the work area for enhanced service life.
- **Cable Inspection:** Regularly check all cables for signs of wear or damage. Replace any damaged cables immediately.
- **Software Updates:** Keep your laser control software updated to the latest version for improved performance and

features.

9. Troubleshooting

This section addresses common issues you might encounter. For more complex problems, contact Monport customer support.

9.1 Common Issues and Solutions

- **Laser Not Firing:**
  - Check power connection and ensure the machine is turned on.
  - Verify software connection and ensure the laser is enabled in the software.
  - Ensure the emergency stop button is not engaged.
- **Poor Engraving Quality:**
  - Check focal distance. Re-run autofocus or manually adjust.
  - Verify laser parameters (power, speed, frequency, pulse width) are appropriate for the material.
  - Clean the laser lens if it appears dirty.
- **Software Not Connecting:**
  - Ensure USB cable is securely connected to both the machine and computer.
  - Restart both the machine and the computer.
  - Reinstall drivers from the U Disk or Monport's official website.
- **Rotary Axis Not Functioning:**
  - Ensure the rotary axis is properly connected to the machine.
  - Check software settings for rotary axis activation and configuration.

10. Specifications

Feature	Specification
Brand	Monport
Model Number	YXF100
Laser Power	100W
Laser Type	MOPA Fiber Laser
Laser Class	Class 4
Operation Mode	Automatic
Material	Aluminum Casing
Color	Dark Gray
Product Dimensions (L x W)	6.9" x 6.9" (Working Area)
Autofocus Accuracy	< ±1mm

Feature	Specification
Vertical Arm Rotation	±90° Adjustable
Laser Frequency	1-3000kHz
Pulse Width	2-500ns

Figure 10.1: Overall dimensions of the Monport 100W Fiber Laser Engraver.

11. Warranty and Support

For warranty information, technical support, or service inquiries, please refer to the warranty card included with your product or visit the official Monport website. Contact Monport customer service for assistance with any issues not covered in this manual.

Related Documents - YXF100

	Monport Fiber Laser Marking Machine User Manual This user manual provides comprehensive instructions for the installation, setup, safe operation, and maintenance of the Monport Fiber Laser Marking Machine. It covers general information, safety precautions, installation steps, operation procedures, maintenance guidelines, and troubleshooting.
	Monport Laser Rotary Attachment User Manual Comprehensive user manual for the Monport laser rotary attachment, detailing installation, software configuration, operation, fine-tuning, and maintenance for cylindrical object engraving with laser cutters.
	Monport 30W Fiber Laser Machine User Manual Comprehensive user manual for the Monport 30W Fiber Laser Machine, covering installation, operation, safety, and maintenance.
	Monport Fiber Laser Marking Machine User Manual This user manual provides comprehensive guidance on the installation, operation, safety, maintenance, and troubleshooting of Monport Fiber Laser Marking Machines, including the GQ and Gpro series. It details software setup for BslAppSimple and LightBurn, material handling, and technical specifications.
	Monport GM Pro Laser Engraver Quick Start Guide A concise guide to setting up and connecting your Monport GM Pro Fiber Laser Engraver with LightBurn software, covering unpacking, installation, and initial parameter configuration.
	Monport 20W Fiber Laser Machine User Manual User manual for the Monport 20W Fiber Laser Marking Machine, covering installation, safety, operation, and maintenance.