

Monport GM60

Monport 60W JPT & MOPA Fiber Laser Engraver (Model GM60) User Manual

Model: GM60

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1. PRODUCT OVERVIEW

The Monport 60W JPT & MOPA Fiber Laser Engraver (Model GM60) is a compact and powerful laser marking machine designed for precision engraving and cutting on various materials. It features a JPT MOPA laser source, enabling true color marking and deep engraving capabilities. The system is equipped with a customized galvanometer for high speed and accuracy.

Key Features:

- **Integrated Design:** Smaller footprint and lighter weight while maintaining high performance.
- **High Speed & Accuracy:** Max marking speed of 10,000mm/s and carving accuracy of 0.01mm.
- **Optimal Marking Area:** A 175x175mm marking area is optimized for consistent engraving quality.
- **True Color Marking:** JPT MOPA laser allows for color marking on stainless steel, brass, and aluminum blackening.
- **Deep Engraving & Cutting:** Capable of 2.5D and deep metal engraving, and some metal sheet cutting.
- **Long Lifespan:** Laser source designed for up to 100,000 hours of operation.
- **Software Compatibility:** Supports BSLcad and LightBurn.

10000mm/s

Max, Marking Speed



professional Software

BsIAppSimple/Lightburn



Smaller, But still Powerful

60W

MOPA Fiber Laser

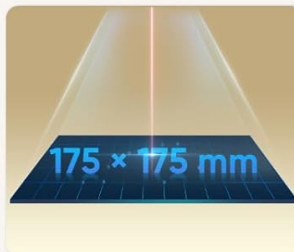
Peak power up to 22 kW

Color Marking



High Scalability

Rotary Axis, Protection
Enclosure, Fume Extractor, etc



**Sub-micron And
Error-free Accuracy**



Wide Marking Materials

Stainless Steel, Aluminum, Gold, Silver, Alloy, Ceramic,
Marble, Leather, Plastics, Colored Acrylic, etc



**Metal 3D
Engraving & Cutting**

Image 1.1: Overview of the Monport 60W JPT & MOPA Fiber Laser Engraver.

2. SAFETY GUIDELINES

Operating a fiber laser engraver involves potential hazards. Adhere to all safety precautions to prevent injury and damage to the equipment. This section outlines general safety practices; always refer to local regulations and specific safety instructions provided with the machine.

General Safety Precautions:

- **Eye Protection:** Always wear certified laser safety glasses appropriate for the laser's wavelength (1064nm for fiber lasers) when the machine is in operation.
- **Skin Protection:** Avoid direct exposure of skin to the laser beam.
- **Ventilation:** Ensure adequate ventilation or use a fume extractor to remove fumes and particles generated during engraving, especially when working with materials like leather or certain plastics.
- **Fire Safety:** Keep a fire extinguisher nearby. Do not engrave highly flammable materials without proper precautions.
- **Electrical Safety:** Ensure the machine is properly grounded and connected to a stable power supply. Do not operate with wet hands or in damp environments.

- **Work Area:** Keep the work area clear of clutter and unauthorized personnel. Consider using a protection enclosure.
- **Emergency Stop:** Familiarize yourself with the location and operation of the emergency stop button.
- **Material Compatibility:** Only engrave materials known to be safe for fiber lasers. Avoid materials that produce toxic fumes or reflect the laser beam dangerously.

3. PACKAGE CONTENTS

Upon unpacking, verify that all items listed below are present and undamaged. If any components are missing or damaged, contact Monport customer support immediately.

- GM 60 Fiber Laser Engraver Unit
- Power Cable
- USB Cable
- Laser Safety Glasses
- Focusing Ruler/Gauge
- Software Installation Media (or download instructions)
- User Manual (this document)

4. SETUP INSTRUCTIONS

4.1 Unpacking and Placement

1. Carefully remove the laser engraver and all accessories from the packaging.
2. Place the engraver on a stable, level surface in a well-ventilated area. Ensure sufficient space around the machine for operation and maintenance.
3. Note the machine's dimensions: approximately 370mm (width) x 300mm (depth) x 550mm (height).



Image 4.1: The Monport 60W Fiber Laser Engraver with approximate dimensions.

4.2 Connecting the Machine

1. Connect the power cable to the engraver's power input and then to a grounded electrical outlet.
2. Connect the USB cable from the engraver to your computer. If experiencing connectivity issues, try routing the USB through a powered port or using an adapter for USB-C to standard USB.
3. Ensure all connections are secure.

4.3 Software Installation

The Monport GM60 supports BSLcad and LightBurn software. Refer to the provided software installation guide for detailed instructions.

1. Insert the software installation media or download the latest version of BSLcad or LightBurn from the official Monport website.
2. Follow the on-screen prompts to install the software and necessary drivers.
3. Launch the software and configure the machine settings according to the software's documentation.

5. OPERATING INSTRUCTIONS

5.1 Powering On and Initial Checks

1. Ensure all safety precautions are in place, including wearing laser safety glasses.
2. Turn on the main power switch on the engraver.
3. Launch the engraving software (BSLcad or LightBurn) on your computer.

5.2 Material Preparation and Placement

1. Select a suitable material for engraving (e.g., metal, leather, certain plastics).
2. Place the material securely within the 175x175mm marking area on the work platform.
3. Use the red dot pointer and the focusing ruler to set the correct focal distance for your material. Adjust the Z-axis (laser head height) until the red dots converge or the ruler indicates optimal focus.

5.3 Engraving Process

1. **Design Import:** Import or create your design within the engraving software.
2. **Parameter Settings:** Adjust laser parameters such as power, speed, frequency, and pulse width based on the material and desired effect. Monport provides reference parameters for various materials and color marking.
3. **Preview:** Use the software's preview function to ensure the design is correctly positioned on the material.
4. **Start Engraving:** Initiate the engraving process from the software. Monitor the process closely.



Image 5.1: Illustration of the laser's precision, capable of 0.01mm accuracy.

5.4 Advanced Engraving Techniques

- **Color Marking:** Utilize the JPT MOPA laser's adjustable frequency (1-4000kHz) and pulse width (2-500ns) to achieve various colors on metals like stainless steel and brass. Experiment with parameters to achieve desired hues.
- **Deep Engraving & 2.5D Engraving:** For deeper marks or 2.5D effects, adjust power and multiple passes. Higher power generally enhances deep engraving and cutting capabilities.
- **Rotary Axis (Optional):** If using an optional rotary axis, refer to its specific manual for setup and operation with cylindrical objects.

Smaller, But still Powerful 60W MOPA Fiber Laser

Peak power up to 22 kW

Color Marking

For all-metals and plastic, etc.



Stainless Steel



Aluminum



Brass



Silver



Plastic



Platinum



Titanium



Gold



Image 5.2: Examples of materials compatible with the Monport fiber laser, including color marking capabilities.

6. MAINTENANCE AND CARE

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

6.1 Cleaning

- **Lens Cleaning:** The F-theta field mirror and protective lens should be cleaned regularly with specialized lens cleaning solution and wipes to prevent dust and debris from affecting laser quality.
- **Work Area:** Keep the work platform and surrounding area clean from debris and dust.
- **Exterior:** Wipe down the exterior of the machine with a soft, dry cloth.

6.2 General Upkeep

- **Cable Inspection:** Periodically check all cables for signs of wear or damage.
- **Software Updates:** Keep your engraving software updated to the latest version for performance improvements and new features.

- **Environmental Conditions:** Operate the machine in a stable environment, avoiding extreme temperatures or humidity.

7. TROUBLESHOOTING

This section addresses common issues you might encounter. For problems not listed here, contact Monport customer support.

Problem	Possible Cause	Solution
Laser not firing or weak output	Incorrect focus, dirty lens, incorrect software parameters, laser source issue.	Verify focal distance. Clean the lens. Check power and frequency settings in software. Contact support if issue persists.
Machine not recognized by computer	USB connection issue, driver not installed, faulty USB port.	Ensure USB cable is securely connected. Try a different USB port, preferably a powered one. Reinstall USB drivers.
Engraving quality is poor or inconsistent	Incorrect parameters, material inconsistencies, dirty lens, unstable work surface.	Adjust power, speed, and frequency settings. Ensure material is flat and clean. Clean the lens. Secure the machine on a stable surface.
Buttons on laser head unresponsive	Faulty button, internal connection issue.	Contact Monport support for a replacement button or service.

8. TECHNICAL SPECIFICATIONS

Feature	Specification
Model Number	GM60
Laser Type	JPT MOPA Fiber Laser
Laser Power	60W
Max Marking Speed	10,000 mm/s
Carving Accuracy	0.01 mm
Marking Area	175 x 175 mm (6.9" x 6.9")
Frequency Adjustable Range	1-4000 kHz
Pulse Width Adjustable Range	2-500 ns
Product Weight	37 pounds (approx. 16.8 kg)
Package Dimensions	22 x 16 x 15 inches
Expected Service Life	100,000 hours
Compatible Software	BSLcad, LightBurn
Compatible Operating Systems	Windows, macOS

9. CUSTOMER SUPPORT AND WARRANTY

Monport is committed to providing excellent customer service. If you encounter any issues or have questions regarding your Monport 60W JPT & MOPA Fiber Laser Engraver, please contact our support team.

Contact Information:

- **Website:** Visit the official Monport website for support resources, FAQs, and contact details.
- **Email:** Refer to your purchase documentation for the dedicated support email address.
- **Phone:** Check the Monport website for customer service phone numbers.

Warranty Information:

Your Monport 60W JPT & MOPA Fiber Laser Engraver is covered by a manufacturer's warranty. Please refer to the warranty card included with your product or the official Monport website for detailed terms and conditions, including warranty duration and coverage.