ComMarker Titan1 Mopa

ComMarker Titan1 60W JPT Mopa Fiber Laser Engraving Machine User Manual

Model: Titan1 Mopa

1. INTRODUCTION

This manual provides essential information for the safe and effective operation of your ComMarker Titan1 60W JPT Mopa Fiber Laser Engraving Machine. Please read this manual thoroughly before operating the device to ensure proper usage and to prevent damage or injury. The ComMarker Titan1 is designed for high-precision engraving and marking on various materials, including metals, plastics, and jewelry, offering advanced features like color marking and 3D engraving capabilities.

2. SAFETY INFORMATION

The ComMarker Titan1 is a Class 1 Laser Product (IEC 60825-1 Report Number: 2501Q25848E-SFA1, FDA Accession No.: 2521455-000). Despite being a Class 1 product, proper safety precautions are crucial during operation.

- Always wear appropriate laser safety goggles when operating the machine.
- Ensure the work area is well-ventilated to dissipate fumes and particles generated during engraving.
- Never look directly into the laser beam or at reflections from shiny surfaces.
- Keep flammable materials away from the engraving 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 button location and function.

3. PACKAGE CONTENTS

Verify that all items listed below are included in your package. If any items are missing or damaged, contact customer support.
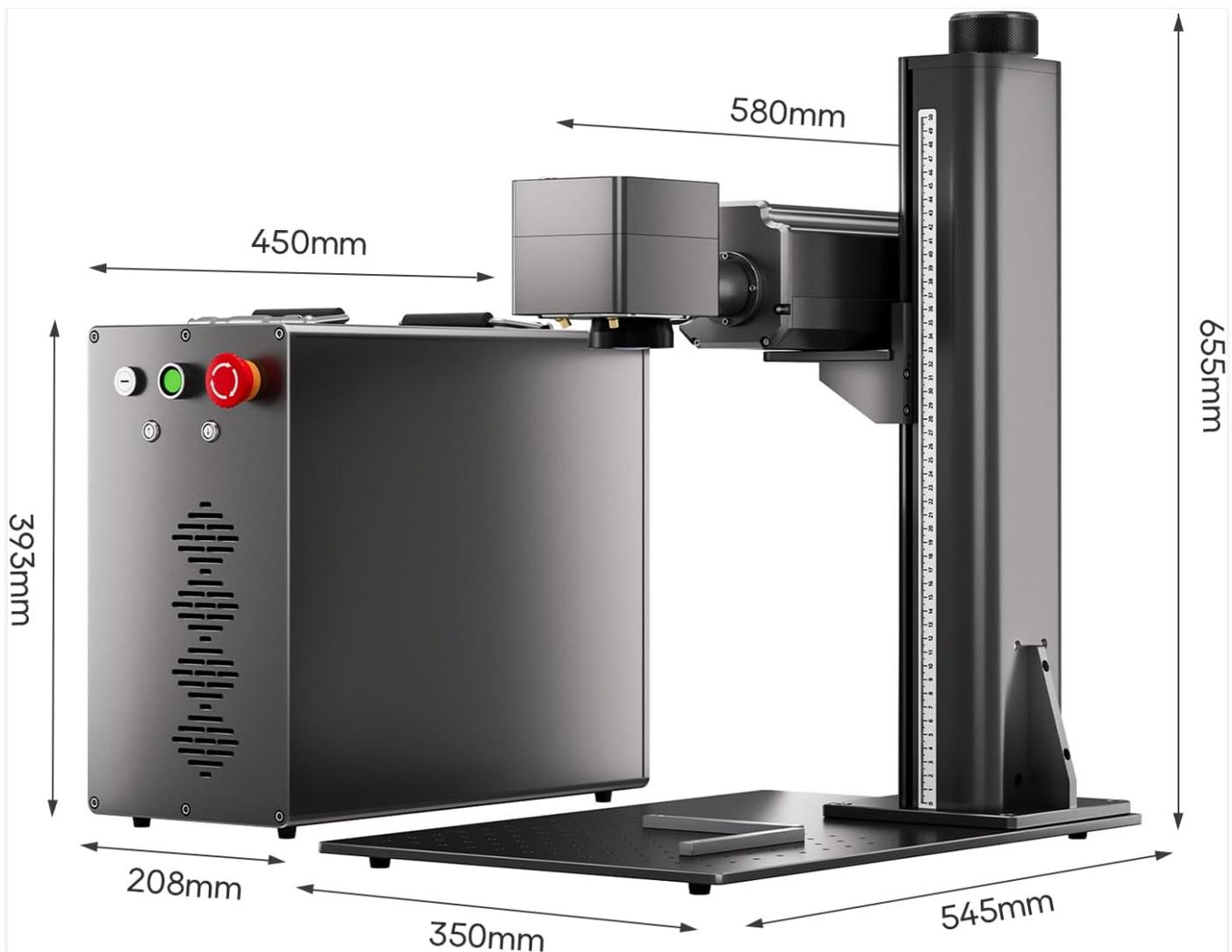
Image: Overview of the ComMarker Titan1 60W JPT Mopa Fiber Laser Engraving Machine and its accessories.

- ComMarker Titan1 Laser Engraver Body
- Power Adaptor
- Data Cable
- Foot Switch
- Laser Safety Goggles
- Allen Wrench Set
- USB Drive (containing software and drivers)
- Ruler
- Ground Wire
- Placing Helper (material positioning aids)
- Sample Materials (Rings, Metal Pendants, Pendants)

4. PRODUCT FEATURES

- **60W JPT Mopa Laser Source:** Provides high-speed engraving up to 15,000mm/s and supports color marking on stainless steel.
- **High Accuracy:** Achieves 8K HD accuracy with a precision of 0.01mm.
- **Large Engraving Area:** Maximum engraving area of 300mm x 300mm.
- **Motorized Elevation:** Features electric lifting for precise height adjustment and focusing.
- **Dual Focusing Modes:** Supports both manual and electric focusing for optimal results.

- **Software Compatibility:** Compatible with Lightburn and EzCad2 software.
- **Wide Material Compatibility:** Engraves stainless steel, aluminum, gold, silver, alloys, most painted products, and non-transparent plastics.
- **3D Engraving & Cutting:** Capable of creating depth effects and performing cutting tasks on suitable materials.
- **Long Lifespan:** Designed for durability with a laser source lifespan of 100,000 hours.

Image: The ComMarker Titan1 demonstrating its large 300mm x 300mm engraving area.

Image: The ComMarker Titan1 control panel highlighting manual and electric focusing options.

Image: Close-up showing the 8K HD engraving capability and 0.01mm precision of the ComMarker Titan1.

Image: The ComMarker Titan1 emphasizing its long operational lifespan of 100,000 hours.

Image: The ComMarker Titan1 shown in a workspace,

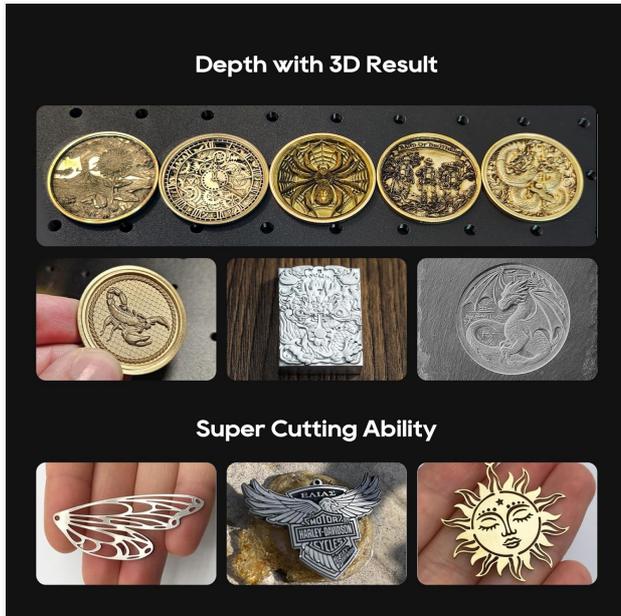indicating its heavy-duty, 24-hour operational capability.

Image: Various samples demonstrating the 3D engraving depth and cutting ability of the ComMarker Titan1.

5. SETUP GUIDE

1. **Unpacking:** Carefully remove all components from the packaging. Retain packaging for future transport or storage.

2. **Assembly:** Place the laser engraver body on a stable, level surface. Connect the laser head assembly to the main unit, ensuring all fasteners are secure.

3. **Power Connection:** Connect the power adaptor to the machine and then to a grounded electrical outlet (110V).

4. **Grounding:** Attach the provided ground wire to the designated grounding point on the machine and to a suitable ground source.

5. **Data Connection:** Connect the data cable from the machine to your computer.

6. **Software Installation:** Insert the USB drive into your computer. Install the provided EzCad2 software and drivers. If using Lightburn, download and install the latest version from the official Lightburn website.

7. **Safety Goggles:** Always put on the laser safety goggles before powering on the machine.

6. OPERATING INSTRUCTIONS

1. **Power On:** Ensure all connections are secure and safety goggles are worn. Press the power button on the machine.

2. **Software Launch:** Open EzCad2 or Lightburn software on your computer.

3. **Material Placement:** Place the material to be engraved on the work platform. Use the placing helpers if needed to secure the material.

4. **Focusing:** Adjust the laser head height using the motorized elevation until the laser is properly focused on the material surface. You can use either manual or electric focusing. Refer to the software's focusing guide for precise adjustment.

5. **Design Import/Creation:** Import your design (BMP, GIF, JPG, JPEG, DXF, DST, AI, etc.) or create a new one within the software.

6. **Parameter Settings:** Set the appropriate laser parameters (power, speed, frequency, passes) based on the material type and desired engraving effect (e.g., color marking, deep engraving, cutting).

7. **Preview (Red Light):** Use the red light preview function in the software to verify the engraving area and position on your material.

8. **Start Engraving:** Once satisfied with the preview and parameters, initiate the engraving process from the software. You may use the foot switch for convenient start/stop control.

9. **Monitoring:** Supervise the engraving process. In case of any issue, press the emergency stop button immediately.

10. **Power Off:** After engraving is complete, power off the machine and disconnect it from the power source.

7. MAINTENANCE

- **Cleaning Lenses:** Regularly inspect and clean the laser lens with a specialized lens cleaning solution and lint-free wipes to ensure optimal laser performance.
- **Work Area:** Keep the work platform and surrounding area clean from debris and dust.
- **Ventilation:** Ensure the ventilation system is clear and functioning properly to prevent accumulation of fumes and particles.
- **Cable Inspection:** Periodically check all cables for signs of wear or damage. Replace any damaged cables immediately.
- **Software Updates:** Keep your engraving software (Lightburn, EzCad2) updated to the latest version for best performance and compatibility.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
Laser not firing	Power not connected; Emergency stop engaged; Software error; Laser source issue.	Check power connections; Release emergency stop; Restart software/computer; Contact support if laser source is suspected.
Poor engraving quality	Incorrect focus; Dirty lens; Incorrect power/speed settings; Material not flat.	Re-focus the laser; Clean the lens; Adjust engraving parameters; Ensure material is flat and secure.
Machine not connecting to computer	Loose data cable; Driver not installed; Software not recognizing device.	Check data cable connection; Install/reinstall drivers from USB drive; Restart software/computer.
Unexpected machine shutdown	Overheating; Power fluctuation; Loose power connection.	Ensure proper ventilation; Check power supply stability; Secure power cable.

9. SPECIFICATIONS

Image: Detailed dimensions of the ComMarker Titan1 60W JPT Mopa Fiber Laser Engraving Machine.

Feature	Detail
Manufacturer	ComMarker
Model Number	Titan1 Mopa
Laser Source	60W JPT Mopa Fiber Laser
Laser Wavelength	1064nm
Engraving Speed	Up to 15,000mm/s
Engraving Accuracy	0.01mm, 8K HD
Maximum Engraving Area	300mm x 300mm
Power Source	AC/DC, 110V

Feature	Detail
System Compatibility	Windows 7/8/10/11, MAC (Lightburn)
Supported Graphic Formats	BMP, GIF, JPG, JPEG, DXF, DST, AI, etc.
Product Dimensions	22 x 25.8 x 21.5 inches (approx. 559 x 655 x 546 mm)
Laser Class	Class 1 Laser Product (IEC 60825-1)

10. WARRANTY AND SUPPORT

For warranty information, please refer to the documentation included with your purchase or contact ComMarker customer support directly. If you encounter any issues not covered in this manual or require technical assistance, please reach out to ComMarker customer service through their official website or the contact information provided at the time of purchase.

Online Resources: For additional guides, software updates, and community support, visit the official ComMarker website.