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› AlgoLaser DIY KIT MK2 Laser Engraver User Manual

AlgoLaser DIY KIT MK2 5W

AlgoLaser DIY KIT MK2 Laser Engraver User Manual

Comprehensive instructions for setup, operation, and maintenance of your AlgoLaser DIY KIT MK2 Laser Engraver.

1. INTRODUCTION

The AlgoLaser DIY KIT MK2 is a versatile laser engraver and cutter designed for precision and efficiency across various materials. Featuring a built-in 3.5" IPS touchscreen with AlgoOS, it offers intuitive touch-to-engrave functionality without requiring a computer for basic operations. This manual provides essential information to help you assemble, operate, and maintain your device safely and effectively.



Figure 1.1: The AlgoLaser DIY KIT MK2 Laser Engraver, showcasing its design and a detailed engraving example.

2. SAFETY INFORMATION

Operating a laser engraver involves potential hazards. Adhere strictly to the following safety guidelines to prevent injury or damage:

- **Eye Protection:** Always wear the provided laser safety goggles when the laser is active. Direct exposure to the laser beam can cause severe eye damage.
- **Ventilation:** Laser engraving and cutting produce smoke, fumes, and potentially harmful particles. Operate the machine in a well-ventilated area or use an appropriate fume extraction system.
- **Fire Hazard:** Do not leave the machine unattended during operation. Flammable materials can ignite. Keep a fire extinguisher nearby.
- **Material Compatibility:** Only engrave or cut materials recommended by the manufacturer. Certain materials can produce toxic fumes or catch fire easily.
- **Emergency Stop:** Familiarize yourself with the emergency stop button and its location. In case of an emergency, press it immediately to halt all operations.
- **Child Lock:** Utilize the child lock feature to prevent unauthorized use.
- **Stable Surface:** Ensure the machine is placed on a stable, level, and non-flammable surface.

3. PACKAGE CONTENTS

Verify that all components are present upon unboxing:

- Rear Panel Assembly
- X-Axis Assembly
- Control Box
- ALM-108D Laser Module (5W variant)
- Laser Goggles
- Power Cable
- Power Adapter
- Left Y-Axis Assembly
- Front Assembly
- Right Y-Axis Assembly

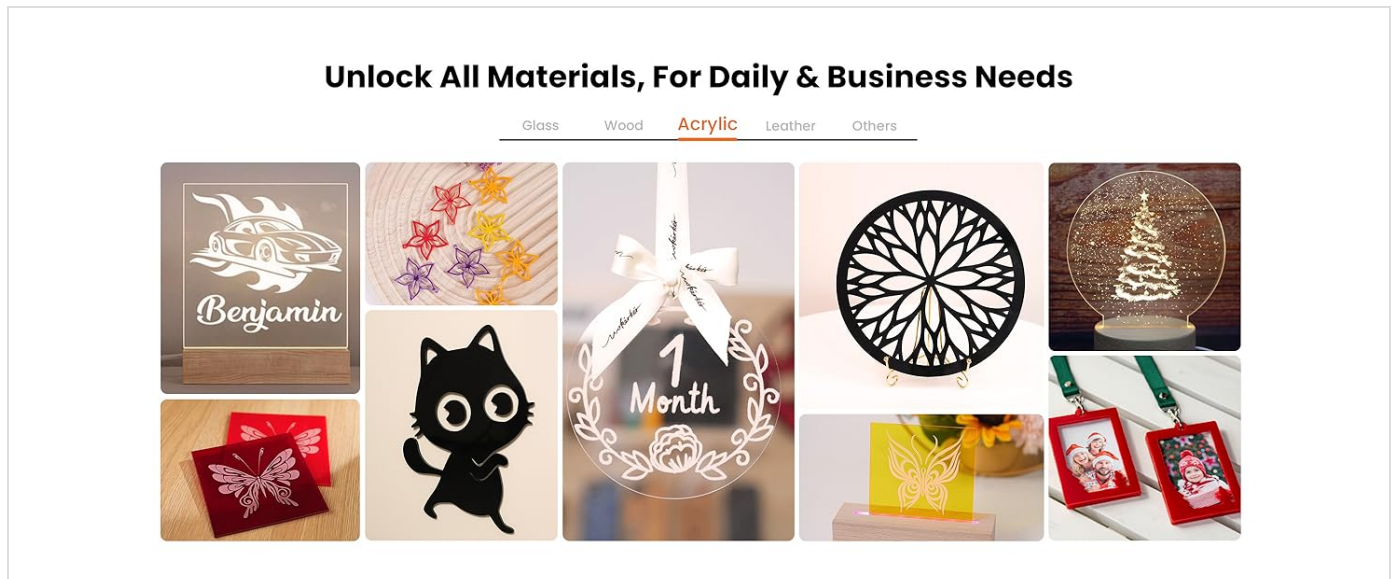


Figure 3.1: Exploded view of the AlgoLaser DIY KIT MK2 components.

4. SETUP

The AlgoLaser DIY KIT MK2 requires assembly. Follow the included assembly guide for detailed step-by-step instructions. Ensure all connections are secure before powering on the device.

This modular system allows for future upgrades, such as different laser modules or extended rails. For initial setup, ensure the 5W laser module is correctly installed.

Easiest Operation with Algoos

The DIY KIT MK2 features a built-in 3.5 inch IPS touchscreen with AlgoOS, which offers intuitive touch-to-engrave functionality-no need for a computer



Figure 4.1: The AlgoOS touchscreen control panel.

5. OPERATING INSTRUCTIONS

5.1 AlgoOS Touchscreen Operation

The AlgoOS system provides intuitive control directly from the 3.5" IPS touchscreen. You can select designs, adjust parameters, and initiate engraving without a computer.

- **Selecting Designs:** Access the built-in image library or load designs from an SD card or USB disk.
- **Setting Parameters:** AlgoOS offers preset engraving parameters for various materials. Select the material and desired effect, and the system will automatically suggest optimal settings.
- **Fault Reporting:** The AlgoOS system includes fault reporting to help identify and resolve operational issues.

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Video 5.1: Algo OS Operation Demonstration - Carving. This video demonstrates how to select a design and initiate a carving process using the AlgoOS touchscreen interface.

5.2 Software Compatibility

Beyond AlgoOS, the engraver is compatible with popular software:

- **AlgoLaser APP:** Control the device wirelessly via 2.4G Wi-Fi.
- **LaserGRBL:** A free, open-source software for laser engraving.
- **LightBurn:** A powerful, paid software for laser engraving and cutting.

Supported file formats include JPG, SVG, PNG, BMP, G-code, and DWG.

Highly compatible, Perfect for Beginners and Pros

The DIY KIT MK2 offers unmatched versatility across popular engraving software. Whether you use LightBurn, LaserGRBL, or our AlgoLaser App, it integrates effortlessly into any workflow, Catering to both beginners and seasoned professionals.



Algolaser APP



Lightburn



LaserGRBL

Figure 5.2: Software compatibility of the AlgoLaser DIY KIT MK2.

5.3 Engraving and Cutting Process

The 5W laser module offers a spot size of 0.05*0.1mm for high precision. The engraving rate can reach 12,000mm/min.

- **Material Versatility:** Engrave on paper, bamboo, wood, leather, PCB boards, aluminum oxide, metal, glass, and acrylic.
- **Precision:** Achieve 0.01mm movement accuracy for intricate designs.

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Video 5.3: Algo OS Operation Demonstration - Cutting Wood Board. This video illustrates the process of cutting a design into a wood board using the AlgoLaser engraver.

6. MAINTENANCE

Regular maintenance ensures optimal performance and longevity of your AlgoLaser DIY KIT MK2:

- **Cleaning:** Regularly clean the laser lens and the honeycomb platform to remove debris and residue from engraving/cutting. Use a soft, lint-free cloth and appropriate cleaning solutions.
- **Lubrication:** Periodically lubricate the guide rails and moving parts as recommended in the detailed assembly guide to ensure smooth operation.
- **Firmware Updates:** Keep your AlgoOS firmware updated to the latest version to access new features and performance improvements.

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Video 6.1: How to Upgrade DIY KIT MK2 Firmware to AlgoOS 2.3. This video provides a step-by-step guide on updating the device firmware.

7. TROUBLESHOOTING

Refer to the following common issues and their potential solutions:

Issue	Possible Cause	Solution
Engraving not starting/stopping unexpectedly	Unplanned interruption (power loss, USB disconnection)	Utilize the "Interruption Recovery" feature in AlgoOS to resume from the last stopping point. Check power and USB connections.
Poor engraving quality/uneven results	Incorrect parameters, dirty lens, material not flat	Adjust engraving parameters (speed, power) using AlgoOS presets. Clean the laser lens. Ensure material is flat and secured.
Machine not responding	Connection issue, emergency stop engaged	Check Wi-Fi/USB-C connection. Ensure the emergency stop button is disengaged. Restart the machine.
Smoke/fumes excessive	Inadequate ventilation, incorrect material settings	Ensure proper ventilation. Verify material settings are appropriate to minimize burning.

8. SPECIFICATIONS

Feature	Detail
Model Number	AlgoLaser Laser Engraver (DIY KIT MK2 5W)
Laser Power	5W
Laser Spot Size	0.05*0.1mm
Engraving Speed	Up to 12,000mm/min
Movement Accuracy	0.01mm
Control System	AlgoOS (3.5" IPS Touchscreen)
Connectivity	2.4G Wi-Fi, USB-C
Supported File Formats	JPG, SVG, PNG, BMP, G-code, DWG
Product Dimensions	26.23 x 23.67 x 7.01 inches
Item Weight	10.48 pounds
Manufacturer	Algolaser

9. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please refer to the official AlgoLaser website or contact their customer service directly. Keep your purchase receipt for warranty claims.

Visit the official AlgoLaser Store for additional resources and product information: [AlgoLaser Store](#)