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Mecpow X3 Pro US

Mecpow X3 Pro Laser Engraver Instruction Manual

Comprehensive guide for setup, operation, and maintenance of your Mecpow X3 Pro Laser Engraver.

INTRODUCTION

Welcome to the Mecpow X3 Pro Laser Engraver. This powerful machine features a true 10W laser module with air assist, designed for high-speed and precise engraving and cutting on various materials. This manual provides essential information for safe and effective use of your device.

SAFETY PRECAUTIONS

WARNING: Laser radiation can cause eye and skin damage. Always wear appropriate laser safety glasses during operation. Never look directly into the laser beam.

- **Multiple Safety Features:** The Mecpow X3 Pro Laser Cutter ensures a safe working environment with a flame sensor, gyroscope sensor, and emergency stop. It alerts and stops operation when detecting fire, smoke, or tilting beyond $\pm 50^\circ$. Additionally, the secure key lock prevents unauthorized access.
- **Material Safety:** Please do not use the laser engraving machine to engrave transparent and reflective objects directly (otherwise the laser module will be damaged); it is recommended to cover the surface with high-temperature adhesive paper before engraving.
- Ensure proper ventilation in your workspace to dissipate fumes and smoke generated during engraving and cutting.
- Keep children and pets away from the laser engraver during operation.
- Do not leave the machine unattended while it is operating.

PACKAGE CONTENTS

Upon unboxing, please verify that all components listed below are present and undamaged.



Figure 1: Main components of the Mecpow X3 Pro Laser Engraver package.

- Mecpow X3 Pro Laser Engraver Frame
- 10W Laser Module
- Air Assist Pump and Tubing
- Control Box with Emergency Stop
- Power Adapter
- USB Cable
- Safety Glasses
- Tools and Fasteners for Assembly
- Sample Materials for Testing
- User Manual (this document)

SETUP

1. Assembly

Follow the detailed instructions in the included printed manual for assembling the laser engraver frame and attaching the laser module and control box. Ensure all connections are secure and belts are properly tensioned.

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Video 1: Unboxing and initial assembly of the Mecpow Honeycomb Working Table (relevant for general assembly steps).

2. Firmware Upgrade (if necessary)

It is recommended to ensure your device has the latest firmware for optimal performance and compatibility. Follow the steps in the videos below for firmware upgrades on Mac or Windows systems.

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Video 2: Guide to upgrading firmware on MAC systems.

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Video 3: Guide to upgrading firmware on Windows systems.

3. Belt Tension Adjustment

Proper belt tension is crucial for accurate engraving. Refer to the video below for instructions on adjusting the belt tension.

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Video 4: Instructions for adjusting a loose pulley/belt.

4. Focus Adjustment

Accurate focus is essential for precise engraving and cutting. Use the provided focusing tool or follow the video guide to set the correct focal length for your material.

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Video 5: Guide for proper focus adjustment of the laser module.

OPERATING INSTRUCTIONS

1. Software and Connectivity

The Mecpow X3 Pro supports various software options including LaserGRBL (free for Windows) and LightBurn (paid for Windows and Mac). It offers flexible connection options: Wi-Fi, USB Cable, TF card, and the MKS Laser smartphone app.

X + Y Limit Swithes

Preventing the laser head from exceeding its safe processing range can effectively improve its lifespan.

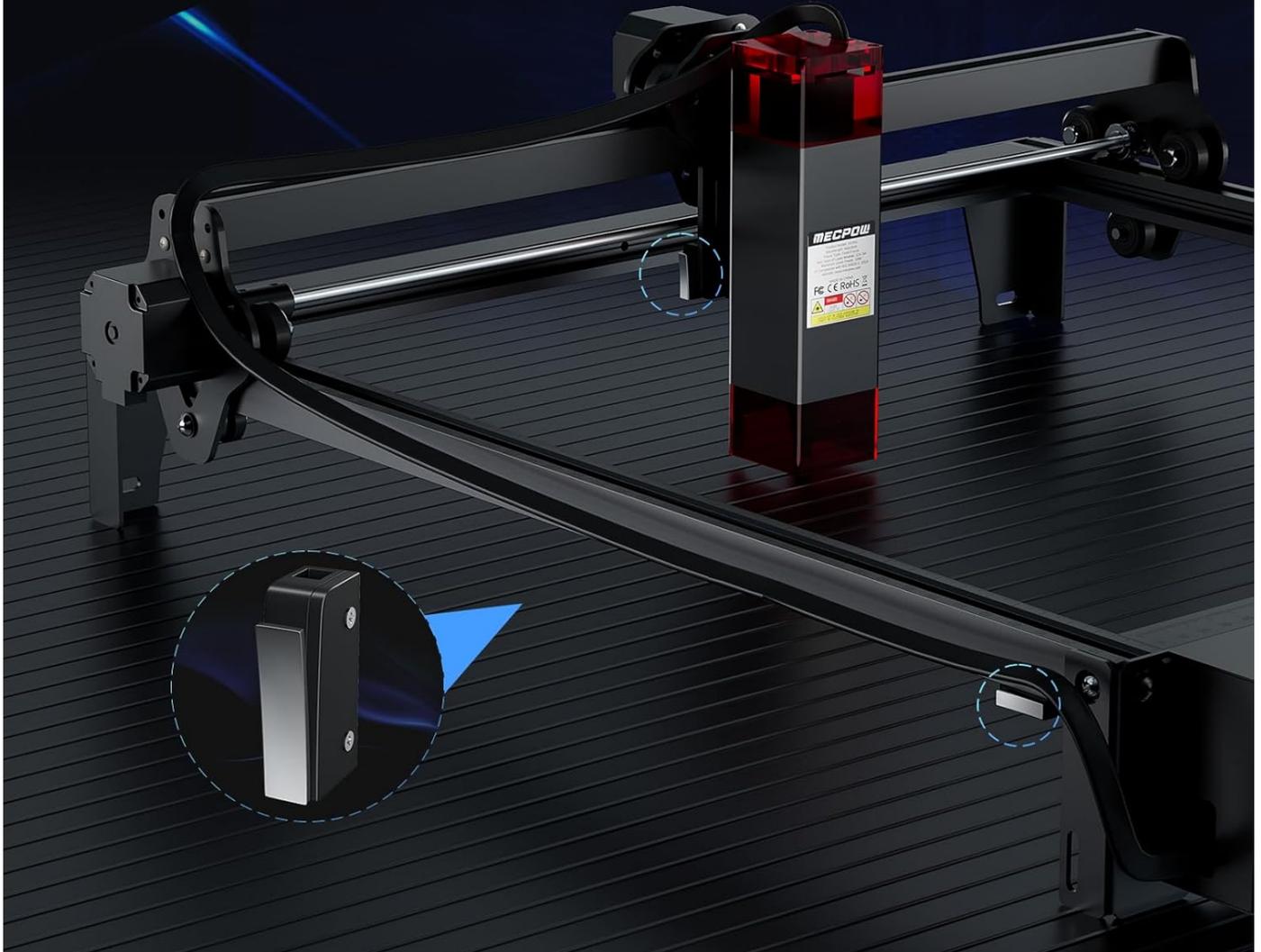


Figure 2: Flexible connectivity options for the Mecpow X3 Pro.

For software-specific operations, refer to the following video guides:

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Video 6: Setting absolute coordinates in LightBurn software.

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Video 7: Connecting to an engraving machine using LightBurn.

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Video 8: Adjusting GRBL speed settings.

2. Engraving and Cutting

The Mecpow X3 Pro laser can engrave wood, plastic, paper, leather, bamboo, sponge paper, alumina, stainless steel, chevron board, acrylic, glass, etc. It can cut up to 5mm plywood, 5mm acrylic board, 5mm carton, 0.8mm leather, and more. The working area is 410x400mm.

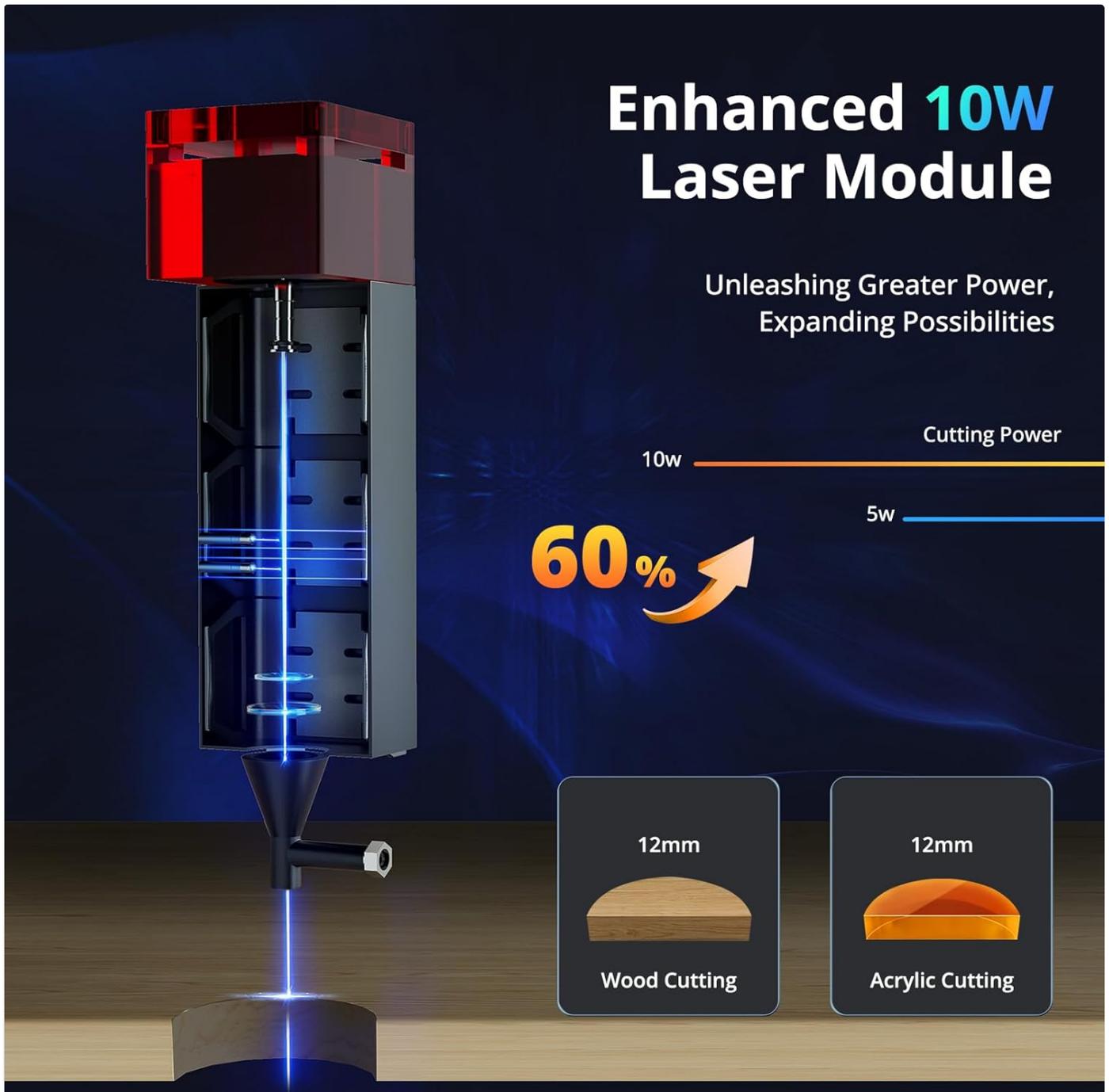


Figure 3: Enhanced 10W laser module for cutting wood and acrylic.

3. Air Assist Function

The integrated Air Assist function effectively clears debris and smoke from the engraving area, ensuring a cleaner workspace and exceptional engraving quality. This also prevents the buildup of combustible materials, reducing fire risk.

Clean and Safe Engraving with Air Assist

The air pump helps to remove debris and smoke for a cleaner cut. It also prevents the buildup of combustible materials, reducing the risk of fire and providing a safer engraving experience.



Figure 4: Clean and safe engraving with Air Assist.

MAINTENANCE

- **Lens Cleaning:** Regularly inspect and clean the laser lens to ensure optimal performance. Use a soft, lint-free cloth and lens cleaning solution.
- **Rail Lubrication:** Periodically lubricate the guide rails with a small amount of machine oil to ensure smooth movement of the laser head.
- **Belt Inspection:** Check the tension and condition of the drive belts. Adjust or replace if necessary (refer to Setup section for adjustment).
- **Workspace Cleanup:** Keep the engraving area and honeycomb bed clean from debris and residue to prevent fire hazards and ensure consistent results.

TROUBLESHOOTING

- **Laser Not Firing:**

- Check power connections and ensure the key lock is in the ON position.
- Verify software settings for laser power and mode.
- Ensure the emergency stop button is not pressed.

- **Poor Engraving Quality:**

- Re-check laser focus (refer to Setup section).
- Adjust engraving speed and power settings in your software.
- Clean the laser lens.
- Ensure the material is flat and securely placed.

- **Machine Not Connecting:**

- Verify USB cable connection and try a different USB port.
- Ensure correct COM port is selected in your software.
- Reinstall or update USB drivers (refer to Firmware Upgrade section).

SPECIFICATIONS

Feature	Detail
Product Dimensions	31.5 x 9.8 x 4.6 inches
Item Model Number	X3 Pro US
Item Weight	14.77 pounds
Laser Output Power	10W (10000mW)
Working Area	410x400mm (16.1x15.7 inches)
Supported Software	LaserGRBL, LightBurn, MKS Laser App
Connectivity	Wi-Fi, USB Cable, TF Card
Safety Features	Flame Sensor, Gyroscope Sensor, Emergency Stop, Key Lock

MATERIALS COMPATIBILITY

The Mecpow X3 Pro is versatile and can engrave and cut a wide range of materials. Below are examples of compatible materials:

- **Engraving:** Wood, plastic, paper, leather, bamboo, sponge paper, alumina, stainless steel, chevron board, acrylic, glass.
- **Cutting:** Up to 5mm plywood, 5mm acrylic board, 5mm carton, 0.8mm leather.



Figure 5: Examples of materials compatible with the Mecpow X3 Pro.

WARRANTY AND SUPPORT

Mecpow focuses on customer satisfaction and provides prompt and friendly answers to any questions within 24 hours. Please contact our professional service team for any assistance or inquiries regarding your product. For additional support, you may refer to the official user manual PDF [Mecpow X3 Pro User Manual \(PDF\)](#)

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For customer service, please refer to the contact information provided with your product packaging.