

WAINLUX L6

WAINLUX L6 Laser Engraver User Manual

Model: L6

1. PRODUCT OVERVIEW

The WAINLUX L6 is a high-precision laser engraving and cutting machine designed for a wide range of materials including wood, metal, acrylic, fabric, and leather. It features a powerful 10W compressed spot laser and an integrated air assist system for enhanced performance and cleaner results.



Figure 1.1: The WAINLUX L6 Laser Engraver actively engraving a detailed wolf design, showcasing its 10W laser output.

Key Features:

- **Enhanced Laser Spot Compression:** Features a 10W laser power with a 0.05×0.08 mm compressed spot, enabling clear engraving of fine details like animal hair and cutting of 10mm templates or 10mm black acrylic sheets in a single pass.
- **Powerful Air Assist:** Equipped with a 75 kPa air assist system that effectively blows away smoke and debris during laser engraving, rapidly reducing material surface temperature, ensuring smooth lines, complete and clear patterns, and protecting the laser lens to extend its service life.
- **Maximum Engraving Speed 12000 mm/min:** Achieves an operating speed of up to 12000 mm/min, supported by a high-speed rotary motor and pulleys, and an ultra-small wheel base for stable operation, significantly improving engraving and cutting efficiency.
- **Newly Upgraded Safe Protection:** Includes a ± 15 degree tilt protection (laser automatically stops if displaced or tilted) and a panoramic filter cover that filters 97% of UV rays for eye protection.
- **Wide Software Compatibility:** Compatible with popular laser software such as LaserGRBL and LightBurn. Supports Windows XP/7/8/10/11 and Mac systems (LightBurn). Engraving file formats supported include NC, BMP, JPG, PNG, DXF.

2. SETUP AND ASSEMBLY

The WAINLUX L6 is designed for easy installation, allowing users to quickly set up and begin their projects.

2.1 Unpacking and Inspection

Carefully unpack all components from the box. Verify that all parts listed in the packing list are present and undamaged. If any parts are missing or damaged, contact customer support immediately.

2.2 Machine Assembly

Follow the detailed assembly instructions provided in the separate assembly guide. The sunken frame design facilitates easier material placement during operation.



Figure 2.1: The WAINLUX L6 engraver demonstrating its user-friendly sunken frame design, allowing for easy placement and removal of engraving materials. This design contributes to easy installation and a long service life.

2.3 Connecting the Air Assist System

Connect the powerful 75KPa air assist pump to the engraver as shown in the diagram. The air assist is crucial

for optimal cutting and engraving quality, preventing charring and ensuring clean lines.

75Kpa Powerful Air Assist Pump



Figure 2.2: The WAINLUX L6 engraver with its 75KPa powerful air assist pump connected, illustrating how air assist improves engraving quality by preventing charring and ensuring smoother results compared to engraving without it.

3. OPERATING INSTRUCTIONS

Operating the WAINLUX L6 involves preparing your design, setting up the machine, and initiating the engraving or cutting process.

3.1 Software Installation and Compatibility

The WAINLUX L6 is compatible with popular laser software such as LaserGRBL and LightBurn. Install the software on your computer. It supports Windows XP/7/8/10/11 and Mac systems (LightBurn). Ensure your engraving file is in a supported format (NC, BMP, JPG, PNG, DXF).

Broad Compatibility

- ✓ **LaserGRBL:** supports Windows XP, 7, 8, 10, 11.
- ✓ **LIGHTBURN:** supports Windows, MacOS and Linux.
- ✓ **Engraving file supports** JPG, DXF, SVG, G-code, NC, BMP, Etc.

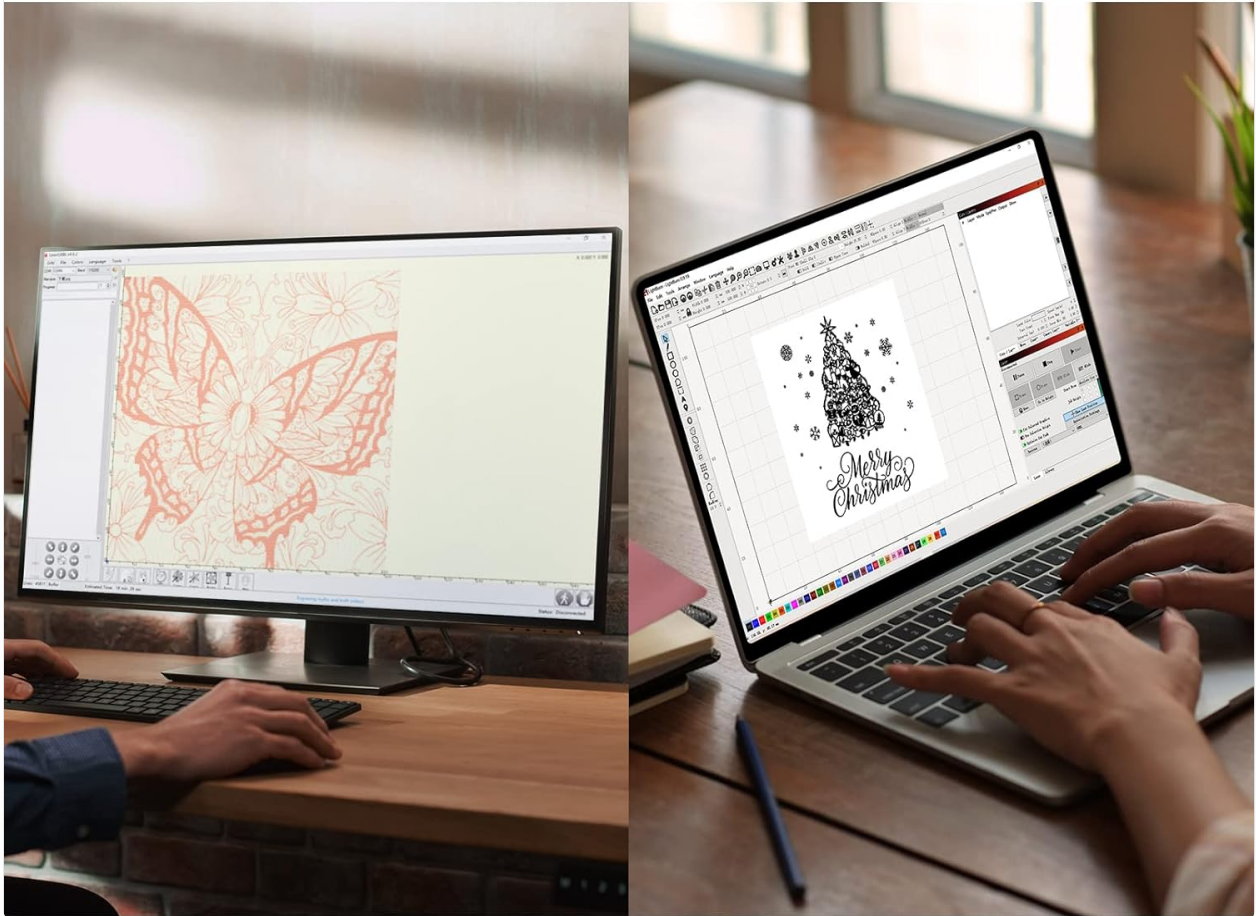


Figure 3.1: Illustration of the WAINLUX L6's broad software compatibility, showing LaserGRBL running on a Windows PC and LightBurn on a macOS laptop, highlighting support for various engraving file formats.

3.2 Material Placement and Focusing

Place your material securely on the engraving bed. Adjust the laser focus using the 90° adjustable rotary knob to ensure optimal laser performance and precision.

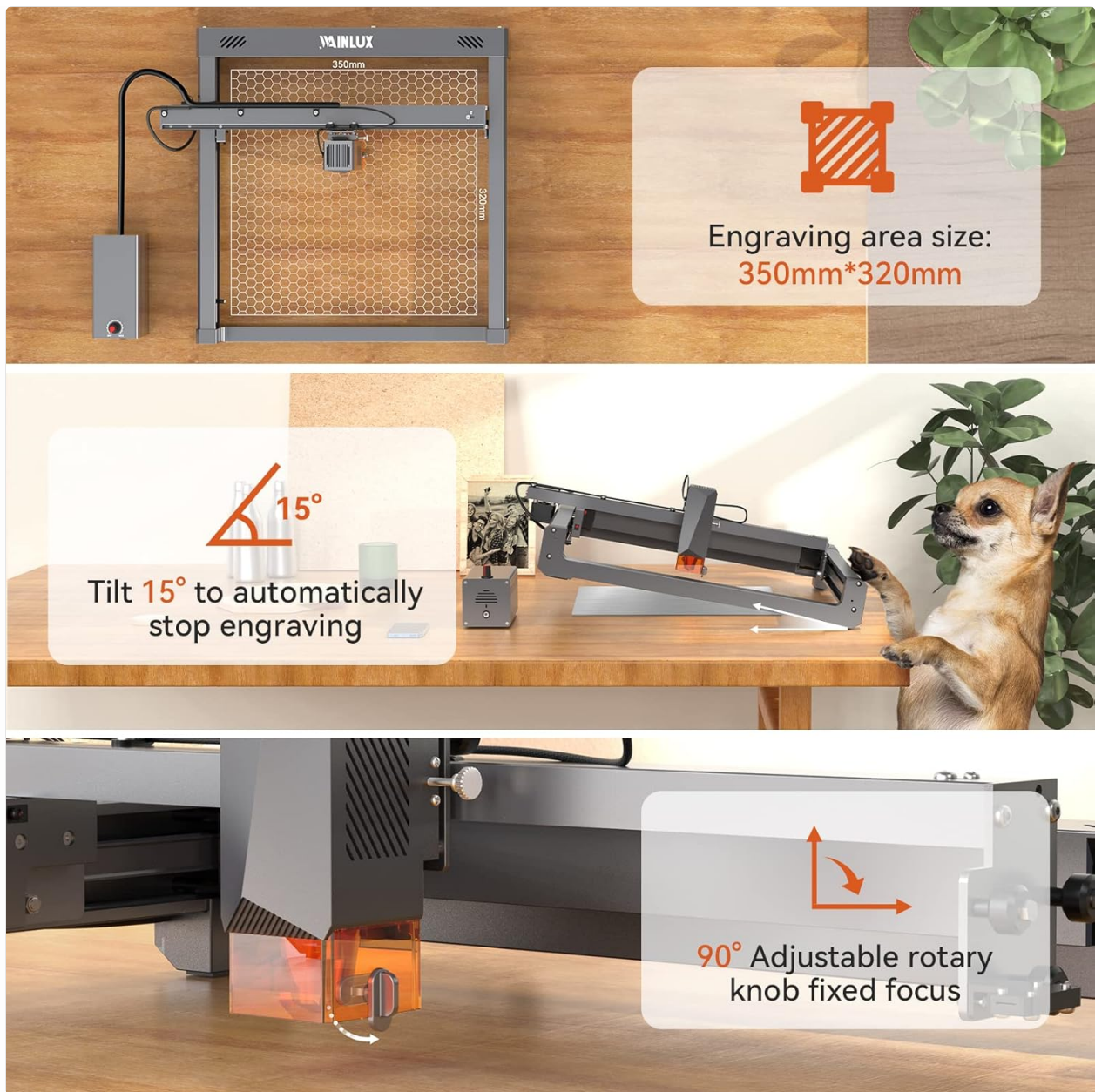


Figure 3.2: Key operational features including the 350mm x 320mm engraving area, the 15° tilt protection that automatically stops engraving for safety, and the 90° adjustable rotary knob for precise fixed focus.

3.3 Engraving and Cutting Process

Load your design into the software and configure the settings (speed, power, passes) according to your material and desired outcome. Initiate the engraving or cutting process. The WAINLUX L6 can achieve speeds up to 12000 mm/min for efficient operation.

Speed Up To 12000mm/min

Faster and more efficient engraving experience

Same engraving time



WAINLUX L6

⌚ 12000mm/min

Others

⌚ 3400mm/min

Figure 3.3: A visual comparison demonstrating the superior engraving speed of the WAINLUX L6 (12000mm/min) versus other machines (3400mm/min), highlighting its efficiency in completing detailed engravings faster.



Figure 3.4: Detailed view of the 10W dual laser output module, illustrating its capability to precisely cut 10mm acrylic and 10mm wood, emphasizing the effectiveness of its 0.05*0.08mm compressed spot.

4. SAFETY PRECAUTIONS

Always prioritize safety when operating the laser engraver. Failure to follow safety guidelines can result in injury or damage to the machine.

- **Eye Protection:** Always wear appropriate laser safety goggles when the machine is in operation. The panoramic filter cover helps filter 97% of UV rays, but additional eye protection is recommended.
- **Ventilation:** Ensure adequate ventilation in your workspace to dissipate fumes and smoke generated during engraving.
- **Material Safety:** Only engrave or cut materials that are safe for laser processing. Avoid materials that produce toxic fumes or are highly flammable.
- **Tilt Protection:** The machine is equipped with a ± 15 degree tilt protection. If the engraver is displaced or

tilted beyond this angle, the laser will automatically stop. Do not attempt to bypass this safety feature.

- **Supervision:** Never leave the machine unattended while it is operating.
- **Emergency Stop:** Familiarize yourself with the location of the emergency stop button or power switch to quickly shut down the machine if necessary.

5. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your WAINLUX L6 laser engraver.

- **Lens Cleaning:** Regularly inspect and clean the laser lens to ensure clear laser beam transmission. Use a soft, lint-free cloth and appropriate lens cleaning solution.
- **Rail and Belt Cleaning:** Keep the guide rails and belts clean and free of dust and debris. Lubricate moving parts as recommended in the full maintenance guide.
- **Air Assist System Check:** Periodically check the air assist pump and tubing for blockages or damage. Ensure consistent airflow to protect the laser lens and improve engraving quality.
- **Firmware Updates:** Check the manufacturer's website for any available firmware updates to ensure your machine has the latest features and performance improvements.

6. TROUBLESHOOTING

This section addresses common issues you might encounter and provides solutions.

6.1 Common Issues and Solutions

- **Laser Not Firing:**
 - Check power connection and ensure the machine is turned on.
 - Verify software settings for laser power and output.
 - Ensure the tilt protection sensor has not been triggered (machine is level and stable).
- **Poor Engraving Quality (Fuzzy/Weak):**
 - Check laser focus. Adjust the rotary knob.
 - Clean the laser lens.
 - Increase laser power or reduce engraving speed in software.
 - Ensure air assist is functioning correctly to clear debris.
- **Machine Not Connecting to Computer:**
 - Verify USB cable connection.
 - Reinstall software drivers.
 - Try a different USB port or cable.

- **Unexpected Stops During Operation:**

- Check if the machine was bumped or tilted, triggering the safety sensor.
- Ensure the workspace is stable and free from vibrations.

6.2 Contacting Support

If you encounter issues not covered in this manual or require further assistance, please contact WAINLUX customer support through their official website or the retailer where you purchased the product. Provide your model number (L6) and a detailed description of the problem.

7. SPECIFICATIONS

Specification	Value
Manufacturer	WAINLUX
Model Number	L6
Item Weight	5.33 Kilograms
Product Dimensions	57.5 x 22.5 x 18.5 cm
Color	Space Gray
Material	Stainless Steel
Voltage	12 Volts
Power (Electrical)	60 Watts
Laser Power Output	10 Watts
Compressed Spot Size	0.05 x 0.08 mm
Max Engraving Speed	12000 mm/min
Engraving Area Size	350mm x 320mm
Air Assist Pressure	75 kPa
Specific Uses	Laser engraver for wood and metal
Included Components	Air Assist
Batteries Required	No
Date First Available	January 31, 2023

8. CREATIVE APPLICATIONS

The WAINLUX L6 is a versatile tool for various creative and practical applications. Its precision and speed allow for detailed work on a multitude of materials.



Figure 8.1: A man and a child collaboratively using the WAINLUX L6 laser engraver, surrounded by various engraved items, demonstrating the machine's suitability for diverse creative projects and its ease of use for different age groups.

Explore possibilities such as:

- Personalized gifts and crafts
- Custom signage and decor
- Prototyping and model making
- Jewelry and accessory creation
- Industrial marking and part identification



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For warranty information and further support, please refer to the official WAINLUX website or contact your local distributor.