LaserPecker

LP2 Plus Safeguard

User Manual | Benutzerhandbuch
Manual de Usuario | Manuel d'utilisation

v1.0

Contents

Safety Information

1 General Safety

- The use and operation of this product, including the handling and disposal of any emissions generated during engraving processes, must comply with all applicable laws and regulations in your country or region.
- Always operate and maintain the product according to this manual's instructions to ensure safe operation.
- DO NOT allow use by minors, by untrained personnel, or by any personnel suffering from any physical or mental limitation that might affect their ability to use the machine safely and properly.
- Place the product on a stable and level work surface.
- Keep the area around the machine dry, well ventilated, and enviromentally controlled to 0-65°C and 5-80% humidity.
- Do NOT leave the machine unattended during operation.

Immediately stop operation and disconnect power if any of the following occurs:

- A burning smell is detected coming from the machine.
- Open flames or sparks are observed being generated from the engraving material.
- Any components of the machine appear to be damaged or malfunctioning.
- Unexpected cessation of machine operation for no clear reason.
- Abnormal sounds, smoke, or unusual lighting are emitted from the machine.

Safety Information

2 Laser Safety

- The LP2 Plus laser engraving machine is initially classified as a Class 4 laser device. When properly equipped with the standard enclosure, and operated strictly according to the operational guidelines, its laser safety level can be classified as Class1, ensuring safer operation.
- The active laser and its reflections can rapidly cause fires, burns, and permanent vision damage. Under normal circumstances, the laser is blocked by the protective cover during operation. Before using the machine, ensure that the protective cover is installed properly.
- Before operating the device, users should fully understand the physical characteristics of laser radiation, its hazard classifications, related health effects, and the necessary safety precautions.
- When operating the device, avoid direct skin contact with the laser to prevent potential burns or other injuries.
- Ensure that the protective cover or standard enclosure is properly installed and securely closed. When the protective cover or front door is open, the equipment should automatically stop laser operation to prevent laser leakage, thereby protecting the operator's personal safety.
- During operation, the materials being engraved or cut may release toxic and harmful gases or fumes. Depending on the type and composition of the engraving/cutting materials, these emissions can pose health and environmental risks. To ensure safe use, it is recommended to use this machine with an air purifier to effectively absorb and filter any toxic or harmful gases and fumes generated.
- DO NOT use this laser in dewy, dusty, or high-EMI conditions where the active laser might easily be deflected or reflected.
- Only use the machine with stable and compatible power sources. This machine requires a 24V/5A power adapter. Failure to use the compatible power adapter can result in machine malfunction.
- Before starting the device for engraving, ensure that all safety precautions are in place. Wear protective goggles to prevent accidental laser injury to the eyes or skin. Remove unrelated items to avoid unnecessary damage from laser exposure. In particular, remove any flammable or explosive materials to prevent the risk of fire.

3 Fire Safety

When the device cuts or engraves materials, it uses a high-density laser beam to irradiate the material, causing its surface to reach high temperatures with the aim of vaporizing the material without combustion. However, most materials are inherently flammable and may ignite, leading to open flames. Such flames could potentially damage the device (even if it is made of flame-retardant materials) and its surrounding environment. Experience shows that vector cutting with lasers is the most likely to produce open flames.

- Ensure the workspace is well-ventilated when operating the device to allow for the timely evacuation of any generated smoke.
- Do not stack materials around the device that could lead to the spread of flames or increase the risk of ignition (especially organic materials like paper).
- Do not operate the device unattended. If the device is improperly set up to run for a prolonged period without supervision, or if a mechanical or electrical malfunction occurs during operation, it could lead to a fire.
- Regularly clean the device. An accumulation of residues and debris from excessive cutting and engraving increases the risk of fire. Ensure that the working area of the device is regularly cleaned and free of any residues and debris.
- Keep the area around the device clean and free of flammable materials, explosives, or volatile solvents such as acetone, alcohol, or gasoline.
- Have a fire extinguisher ready for use and ensure it is regularly maintained and inspected.
- When cutting or engraving flammable materials at low speeds with high power in the LaserPecker Standard Enclosure, fire may occur. If you notice any flames, immediately stop the operation.

Safety Information

4 Safety Labels

The warning and instruction signs are labeled where physical injuries or damage to the machine may be caused before and/or during operationn.
If a sign is damaged or lost, replace it immediately. You can use the following template to print the sign you need.

CLASS 1 LASER PRODUCT

LASER 1

CAUTION –VISIBLE LASER LIGHT WHEN OPEN AND INTERLOCKS DEFEATED AVOID EYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION

DANGER
LASER
4

DANGER - CLASS 4 LASER LIGHT WHEN OPEN AVOIDEYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION

LASER APERTURE

AVOID EXPOSURE LASERRADIATION IS EMITTEDFROM THIS APERTURE

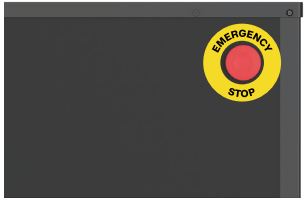
ENSURE YOU HAVE SAFETY PROTECTIONS BEFORE USE

DANGER

LASER RADIATION AVOID EYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION OPTICAL

Maximum Output: 10w(450nm)
Wave length: 450nm
Laser Medium: SolidStateSemiconductor

CLASS IV LASER PRODUCT



EMERGENCY

STOP

Software Download

Download App

Scan the QR code below to download and install the LaserPecker Design Space App. Please follow the operation guide and read the warnings and precautions in the App carefully.

LaserPecker Design Space

Download PC Software

Please visit https://www.laserpecker.net/pages/software to download the PC software.

Getting Help

Technical Support

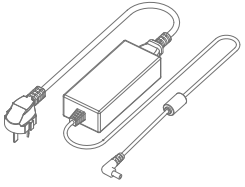
If you encounter any issues, please do not hesitate to reach out to our customer support team at support@laserpecker.com.
YouTube: @LaserPecker
Facebook Group: LaserPecker LP2 Official Group

Video Tutorials

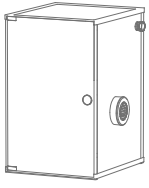
Scan the QR code below to learn how to use the LP2 Plus Safeguard.

Package List

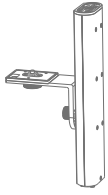
LP2-Plus Laser Unit x 1



AC Power Adapter & Power Cable x 1

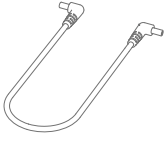


Standard Enclosure x 1

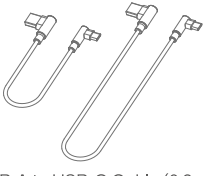


Electric Stand x 1

USB-C to USB-C Cable (0.35 m) x1



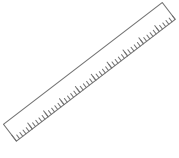
DC Power Cable (0.4 m) x1



USB-A to USB-C Cable (0.6 m) x1
USB-A to USB-C Cable (1.5 m) x1

Hex Key H2.5 x 1
M4*5 Screws x 5

Security Key x 2

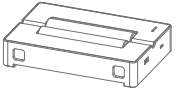


Ruler x 1

User Manual x 1

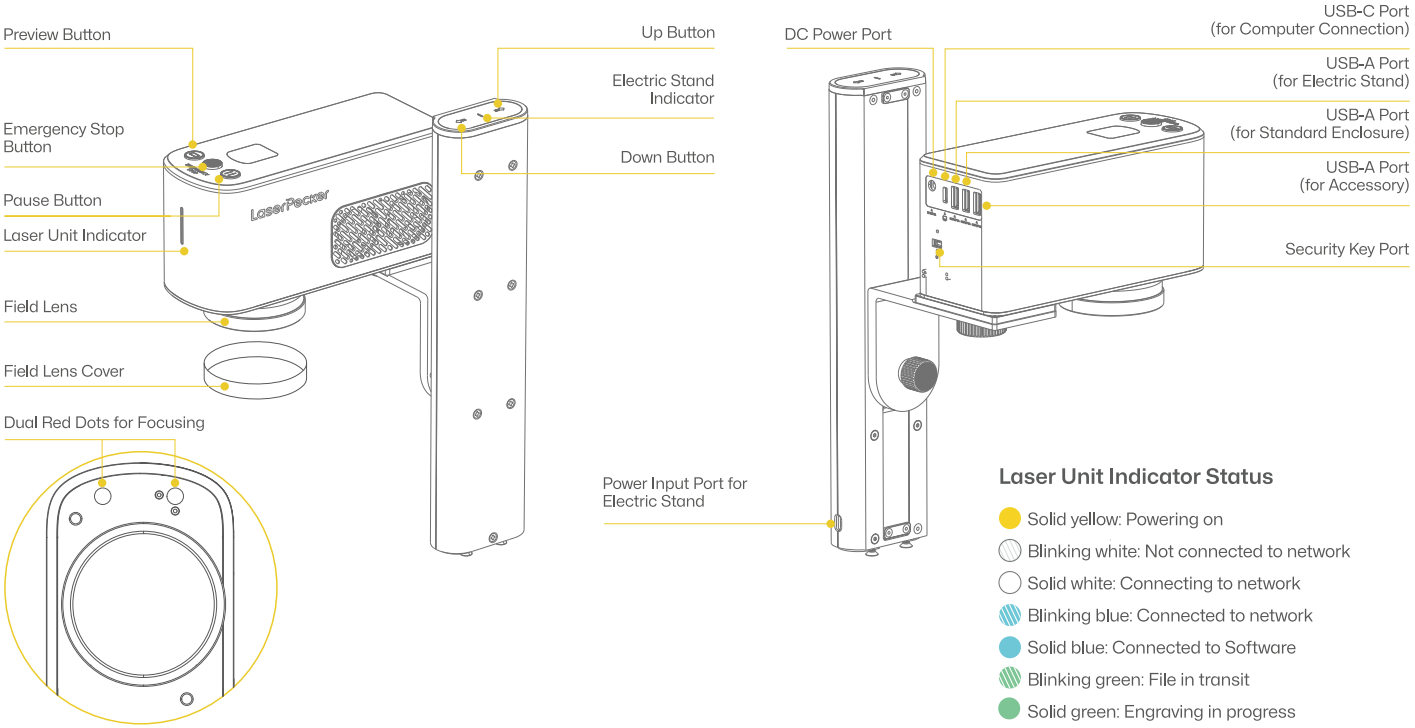
Material Pack x 1

USB-A to USB-C Cable (0.6 m) x 1
(Optional)



Versatile Electric Roller
(Optional)

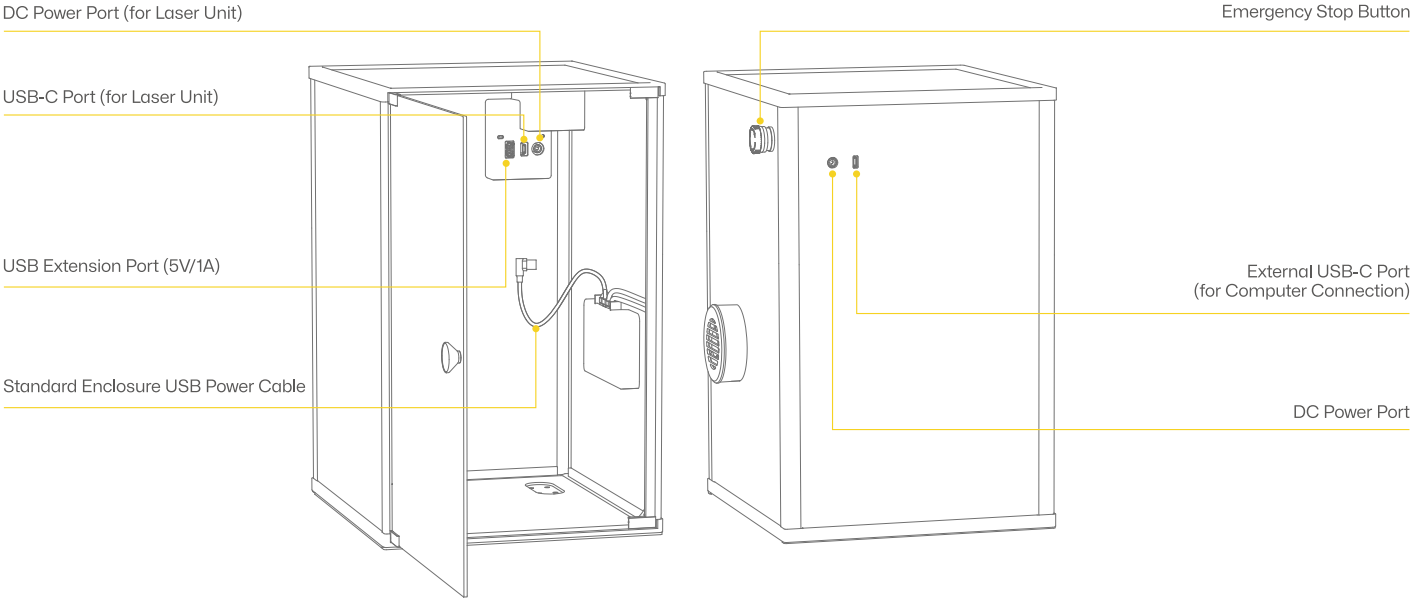
Component Introduction (LP2-Plus)



Laser Unit Indicator Status

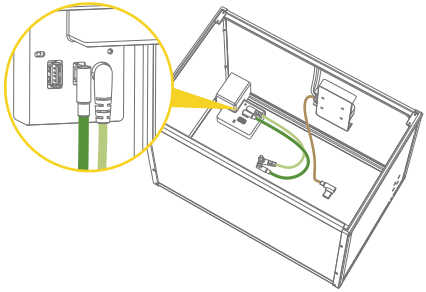
- Solid yellow: Powering on
- Blinking white: Not connected to network
- Solid white: Connecting to network
- Blinking blue: Connected to network
- Solid blue: Connected to Software
- Blinking green: File in transit
- Solid green: Engraving in progress
- Solid red: Emergency stopped and disconnected
- Blinking red, blue: Firmware updating

Component Introduction (Standard Enclosure)

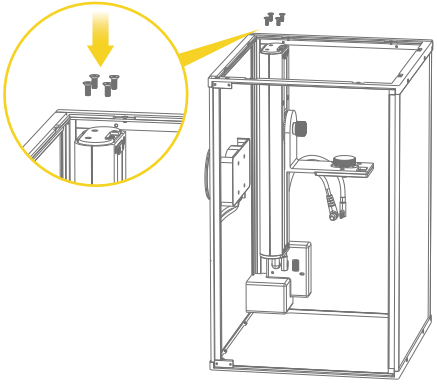


Quick Assembly

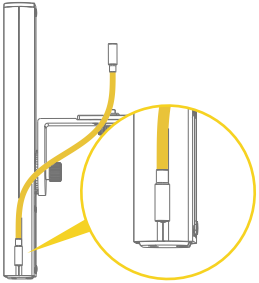
1. Lay the Standard Enclosure on its back.
   Plug the 0.35m USB-C to USB-C Cable to the Standard Enclosure.
   Plug the 0.4m DC Power Cable into the Standard Enclosure.



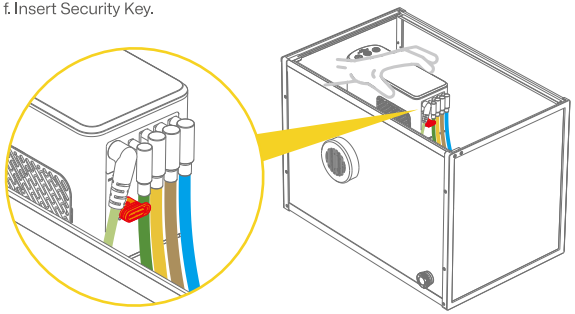
3. Flip the Standard Enclosure upside down, position the Electric Stand so that its grooves align with the base plate. Then secure it using an H2.5 hex key and four M4*5 screws.



2. Plug the 0.6m USB-A to USB-C cable into the Electric Stand.

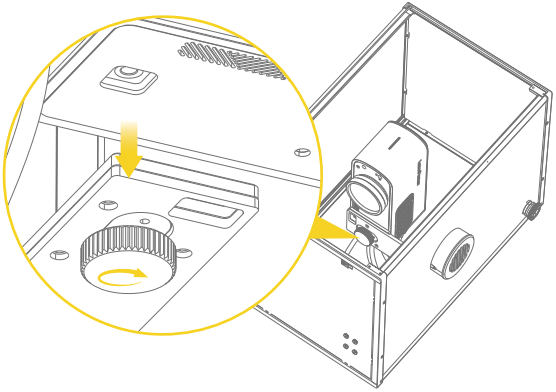


4. Lay the Standard Enclosure on its back, and hold the LP2-Plus as shown below:
   a. Plug the 0.4m DC Power Cable into the Laser Unit.
   b. Plug the 0.35m USB-C to USB-C Cable to the Laser Unit.
   c. Plug the 0.6m USB-A to USB-C Cable to the third USB port on the Laser Unit.
   d. Plug the Standard Enclosure USB Power Cable to the fourth USB port on the Laser Unit.
   e. Plug the 0.6m USB-A to USB-C cable into the laser USB port on the Laser Unit
      (skip this step if the Versatile Electric Roller is not included).
   f. Insert Security Key.

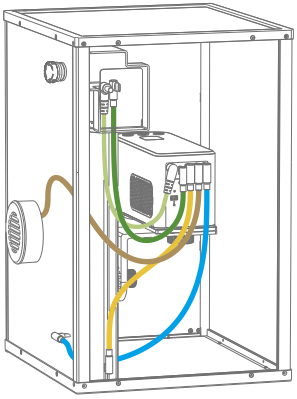


Quick Assembly

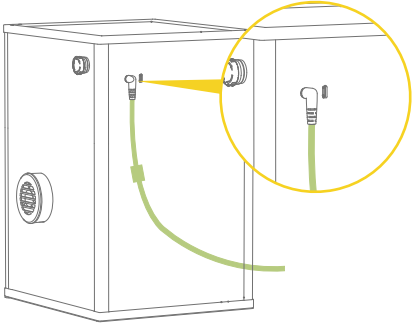
5. Tighten the fixing knob counterclockwise until it is securely attached.



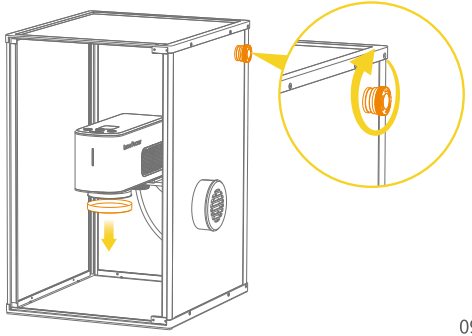
6. Flip the Standard Enclosure to its upright position and make sure all cables are properly connected.



7. Next, connect the AC power cable to the power adapter, then connect the adapter to the DC Power Port on the back of the enclosure.



8. Before use, remove the field lens cover and release the emergency stop button by turning it clockwise.

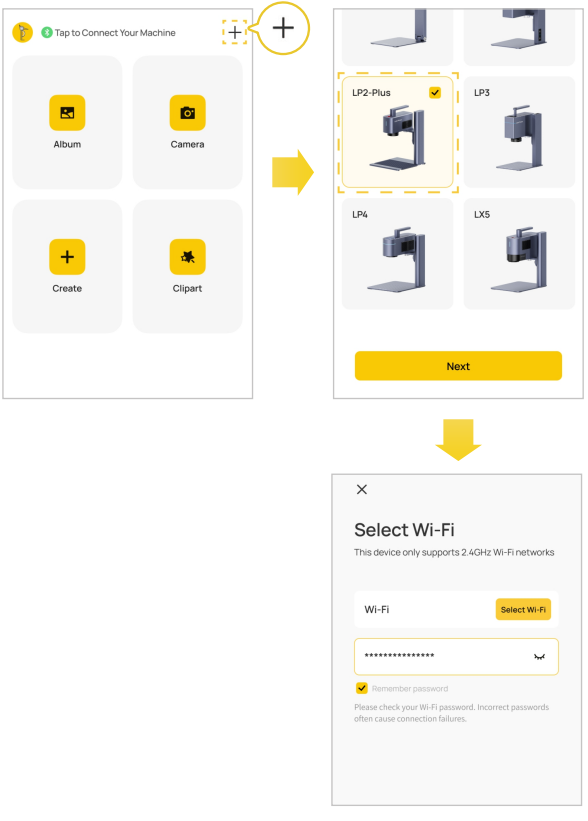


Connecting Software

Connect to App through Wi-Fi (First time WiFi setup or changing the network)

Open the LaserPecker Design Space App, click the "+" in the upper right corner, select the machine model "LP2-PLUS" and follow the instructions to configure the WiFi network for the machine.

Both the machine and the phone must be under the same 2.4GHz WiFi network.



The Laser Unit indicator is in solid blue if the connection is successful.

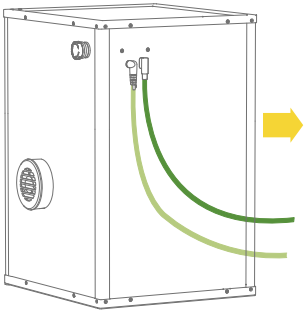
- Blinking white: Not connected to network
- Solid white: Connecting to network
- Blinking blue: Connected to network
- Solid blue: Connected to APP

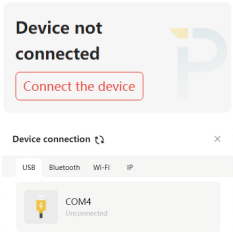
Connecting Software

Connect to PC Software

Make sure the device is properly installed and powered on. Then open the LaserPecker Design Space and connect the device to the PC using a USB cable.

Option 1 Connect directly via USB cable



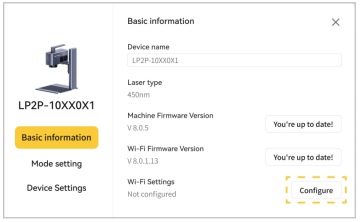


Open LDS PC software and navigate to the canvas. Click “Connect the Device” (top-right corner) and select “USB” as the connection method and proceed.

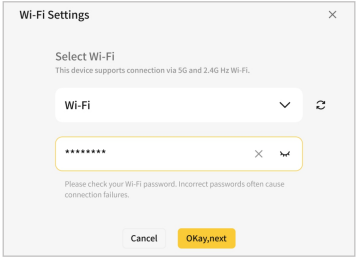
Option 2 Connect to PC Software through WiFi (First-time WiFi setup or changing the network)

1. Before setting up the WiFi connection, you must first connect the machine to a computer using the 1.5m USB cable. This USB connection allows you to configure the WiFi settings on the machine.

2. After connected, entering the machine setting page on the upper right corner in the software. Select "Wi-Fi configuration" and follow the instructions to configure the WiFi network for the machine.



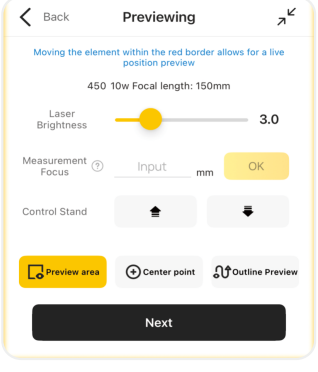
Both the machine and the computer must be under the same 2.4GHz WiFi network.



Using the Product

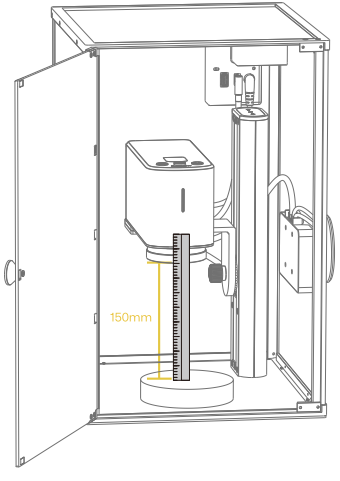
Focal Adjustment

Use the up and down buttons on the top of the Electric Stand to adjust the height of the Laser Unit. (Recommended) Alternatively, you may adjust focal length through the LDS App or PC software during the preview stage.



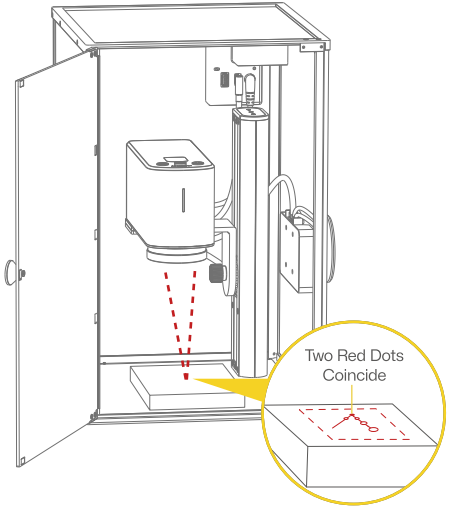
Ruler Ranging

The LP2-Plus has a fixed focal length of 150mm. After placing your material, adjust the Electric Stand's height and use a ruler to make sure there's exactly 150mm between the Field Lens and your material's surface.



Red Dots Focusing

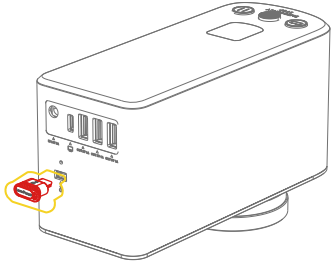
Use the Up/Down buttons to adjust until the two red dots coincide for proper focus. When using LaserPecker DesignSpace, you can enable "Red Light Stay" feature in the Settings.



Using the Product

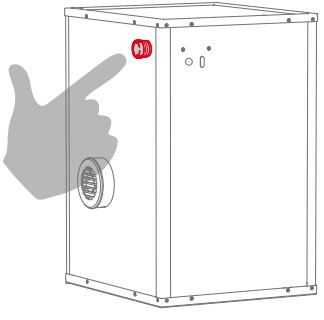
Operation Access Control

To prevent unauthorized use, remove the security key to lock engraving and all related functions. Insert the Security Key to unlock and restore normal operation.



Emergency Stop

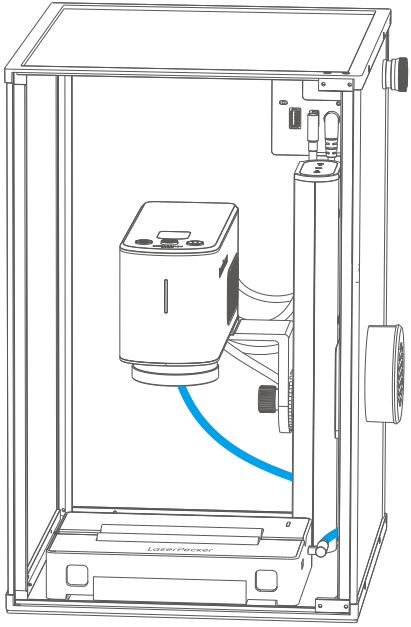
In the event of an error or malfunction during processing, press the emergency stop button to immediately halt the machine and disconnect power to the Laser Unit.

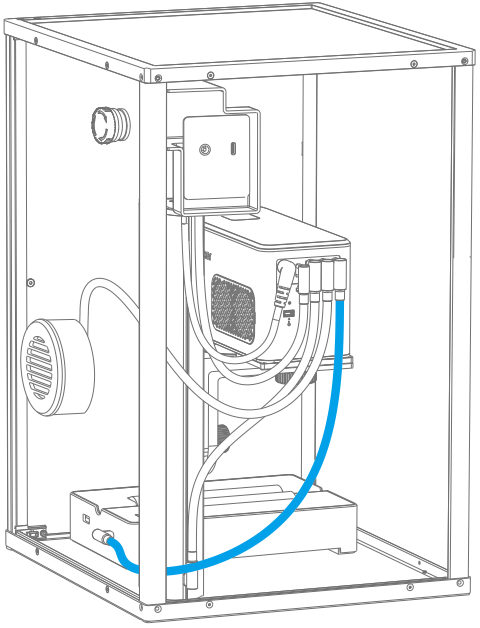


Using the Accessory

Versatile Electric Roller

When using the Versatile Electric Roller, connect both the Laser Unit and the Versatile Electric Roller via the 0.6m USB-A to USB-C Cable, as shown below.

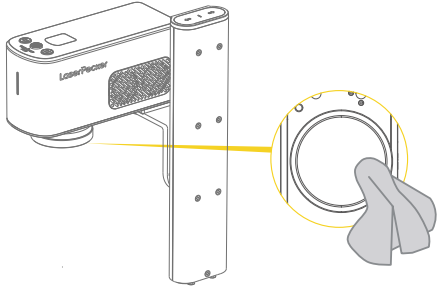




Maintenance

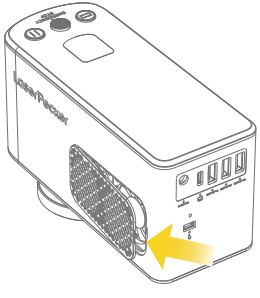
Field Lens Maintenance

During the engraving process, the Field Lens may get dirty. Clean it with the lint-free cloth moistened with alcohol for best performance.



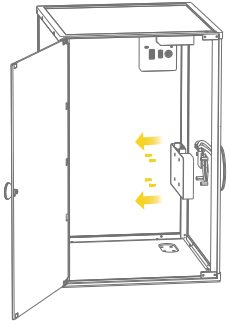
Dust Filter Cleaning

Remove the cover on the left side of the Laser Unit to clean the dust filter if there is dust buildup.



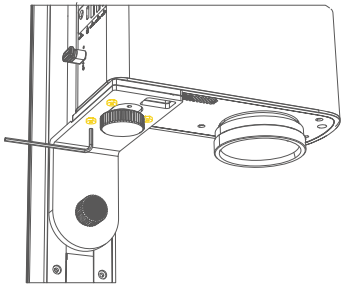
Standard Enclosure Exhaust Fan Cleaning

After extended use, the exhaust fan outlet may be blocked by dust buildup, which can affect proper ventilation. Use a screwdriver to remove the fan, then clean the fan to restore normal smoke exhaust performance.



Laser Unit Leveling

It is recommended to level the Laser Unit before use. If the Laser Unit is not level, use the H2.5 hex key to adjust all three leveling screws located beneath the bracket of the electric stand.



Technical Specifications

Size	208*233*432mm
Net Weight	Total Weight: 5.85 kg
Laser Source & Power	10W 450nm Blue Diode Laser
Working Area	100*100 mm (Square)
Exterior Material	ABS+PC, Aluminum Alloy
Preview Mode	Rectangle Preview/Outline Preview/Center Point Preview
Supported File Formats	PC Software: G-code/JPG/PNG/BMP/DXF/SVG Mobile App: G-code/JPG/PNG/SVG
Connection Method	USB, Wi-Fi
Supported OS	Support iOS 13.0+, Android 7.0+, MacOS 10+, Windows 10+; Compatible with LightBurn
Input Power	DC(24V,5A) AC(100-240V, 50-60Hz) 120W
Environmental Temperature	Temperature Range: 10°C~35°C (50°F~95°F) Humidity Range: 10%~95% RH (Non-condensing)
Cooling System	Air Cooling
Safety Certification	CE/RoHS/FCC/FDA/NCC/KC/UKCA/TELEC/GB4943.1

Statements

Disclaimer

Thank you for purchasing LaserPecker. This manual relates to your safety, legal responsibilities and rights. Please read carefully and understand the manual before use. Failure to follow the instructions in the manual may result in personal injury, poor engraving result, or damage to the device and surrounding objects. Please make sure the product operator understands and is familiar with the manual. Using this produce shall be deemed to have carefully read the full text of the product manual, and to understand, acknowledge and accept all the terms and conditions of Disclaimer. Personal injury, property or product damage caused by the user's improper operation or failure to operate according to this user manual shall be borne by the user, and Shenzhen Hingin Technology Co., Ltd. shall not be held responsible.

Given the conditions and methods of use of this product are beyond the control of LaserPecker, LaserPecker shall not be liable for any of the following consequences, which shall be borne by the user:

- Personal injury, property or product damage caused by improper operation, failure to follow instruction manual or other uncertainties.
- The work that user created by LaserPecker products infringes the intellectual property rights of the third party or violates the relevant laws and regulations.
- Personal injury, property or product damage arise during installation, carry, storage, usage, maintenance and disposal of this product.
- All official LaserPecker materials have undergone safety testing and are compatible with this product. LaserPecker shall not be liable for material safety or engraving quality if use with non LaserPecker official materials.

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