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## Bambu Lab 1-11 H2D Laser Module 40W



## Unboxing Guide

Scan the QR code to access our online guides for detailed on how to unbox, assemble, set up, and start your first task.

[bambulab.com/support/unboxing](https://bambulab.com/support/unboxing)



## Download Bambu Suite

Visit the link below to download Bambu Suite. You can remotely control your printer and monitor your tasks in real time on your computer.

[bambulab.com/download](https://bambulab.com/download)



## Download free and cool models

Scan the QR code to visit MakerWorld, our models community, where you can download a variety of free and cool models, and engage with creators to exchange ideas and tips on model creation.



## Get help

Scan the QR code to visit our support center, contact technical support, and access more useful tutorials.

[bambulab.com/support](https://bambulab.com/support)



## Laser safety information

Before using the laser module, please read and follow these safety guidelines to ensure safe and proper operation.

### General safety:

- Keep your workspace clean and organized, ensuring that tables, shelves, and any structures holding the device are stable and secure.
- Inspect the device thoroughly for any signs of damage before use. If damage is detected, stop using the device immediately.
- Always ensure a person is present to supervise the laser module in operation to promptly address any fire hazard.
- This device is not recommended for operation by minors. Please place the device in a location inaccessible to them to prevent accidents.
- Do not operate the laser module without proper guidance.
- When the laser module is working, ensure the area near the device is free from bystanders, children, and pets.
- After each task completes, remove all debris from the laser platform to prevent the risk of fire hazards.

- Do not disassemble or alter the device's structure, parts, and operating methods unless directed by Bambu Lab support.
- Operate the laser module within a temperature range of 0°C to 35°C and store it between
  - 10°C and 40°C. Avoid operating or storing the laser module outside these specified temperatures to prevent damage.

### **Laser safety:**

The laser module operates within a closed casing equipped with safety interlocks, which prevent direct contact with the laser. The laser module stops working if the front door, top glass cover, or safety window is opened. For safe use, please read and follow these safety precautions.

- Never operate the device with any part removed to avoid harming your health and damaging the device.
- Please make sure that the smoke exhaust system is correctly installed and secured, including the ventilation pipe adapter, ventilation pipe, and other related parts. If smoke or unusual odor occurs, please immediately check and adjust the smoke exhaust system.
- Do not engrave or cut materials that could release harmful gases. Please note that if you engrave or cut materials that you do not know about the properties, or that could release harmful gases, such as PVC, it may damage your health or the device.
- Please ensure the exhaust system is correctly installed and operate the device in a well-ventilated environment to avoid the risk of smoke causing respiratory issues. If any symptom occurs, stop using the device immediately and seek medical attention.
- Do not operate the laser module unless it is correctly installed with all safety locking and detection mechanisms active.
- Always fully close the front door and top glass cover while the laser is in use, and do not change any part related to safety.
- For your safety, avoid looking directly at the laser emission point if any protective plate is open and the module is powered on.
- Under any circumstances, do not look at the laser spot or reflected light through the front door, laser safety windows, or other openings for prolonged periods to eye

discomfort. If any symptom occurs, stop looking immediately, and close your eyes, or look into the distance to rest. If symptoms persist, please seek medical attention immediately.

- Read and follow our safety guidelines, including notes on the printer and the safety document. Also, refer to these laser safety standards for additional guidance: EN 60825-1 :2014 + A 11 :2021 (Europe), IEC60825-1:2014 (International), ANSI 2136.1-2022 (US), and GB 7247.1-2012 (China).

## Fire safety:

- Familiarize yourself with fire safety protocols and have fire extinguishing equipment on hand, including sprinklers and CO2 fire extinguishers, that are properly and regularly maintained.
- Keep flammable, explosive or volatile substances like paper, alcohol and gasoline away from the device to prevent accidental ignition.
- Organic materials, such as basswood and acrylic, have a high likelihood of producing open flames. Always monitor the interior of the printer closely when working with these materials, and use a CO2 fire extinguisher or other measures immediately if flames occur.
- Ensure the smoke exhaust system is working properly during operation to dissipate smoke.

At the same time, we recommend ensure proper ventilation in your work area.

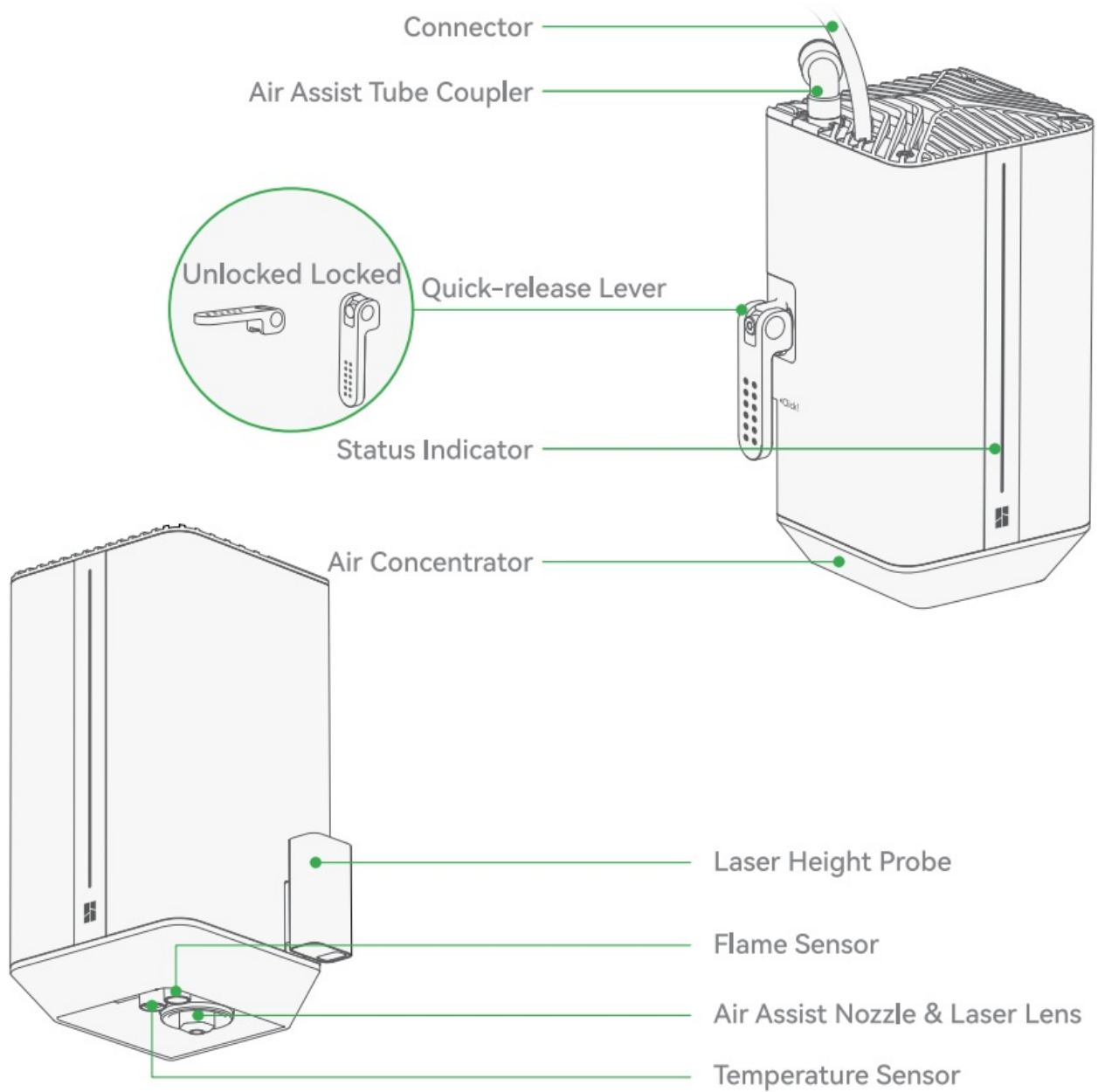
- Regularly clean the device and workspace to remove any debris to prevent fire risks.

## Warning sign:

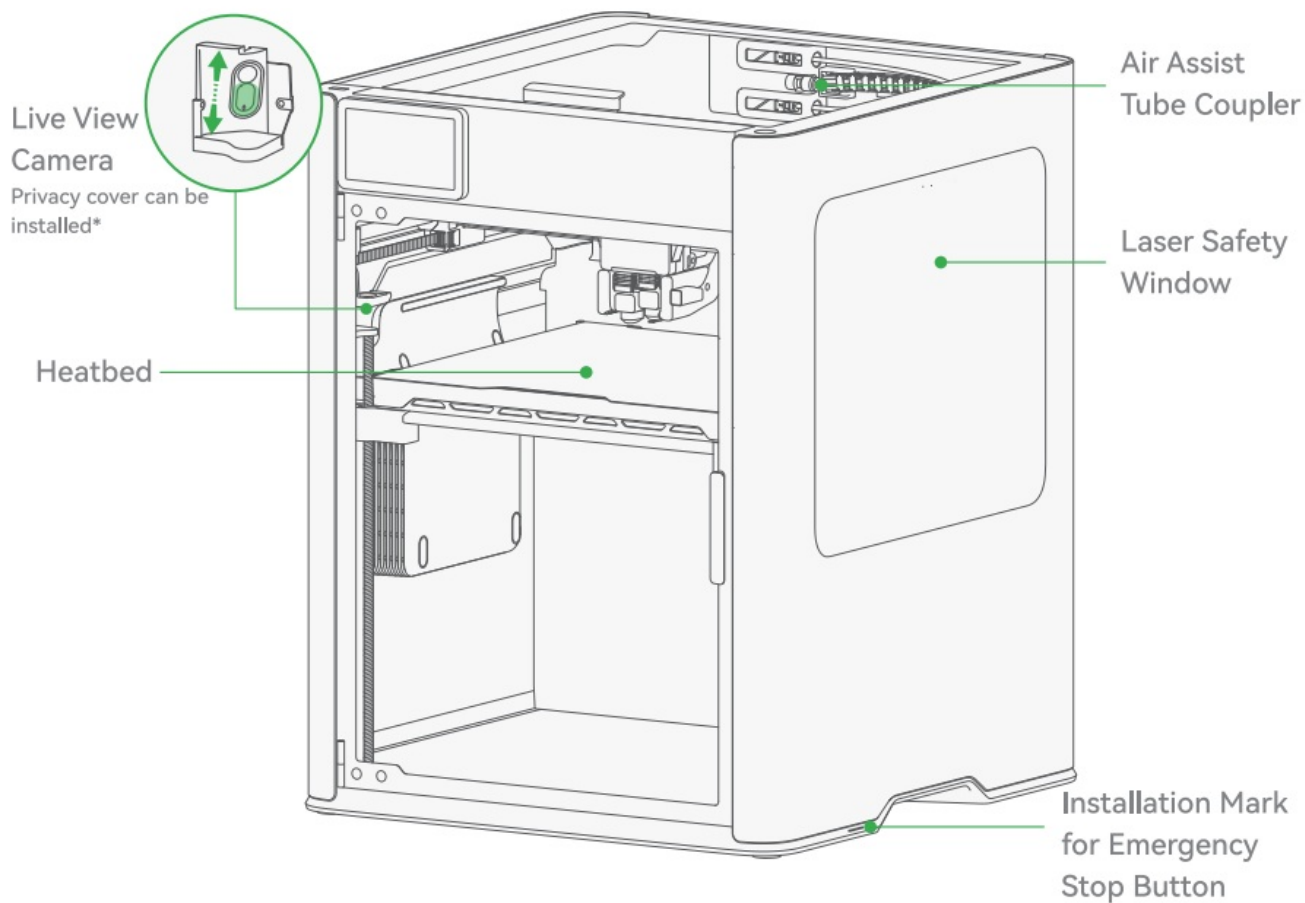


The laser safety information will be continuously updated. Please access the laser safety document for the latest information.

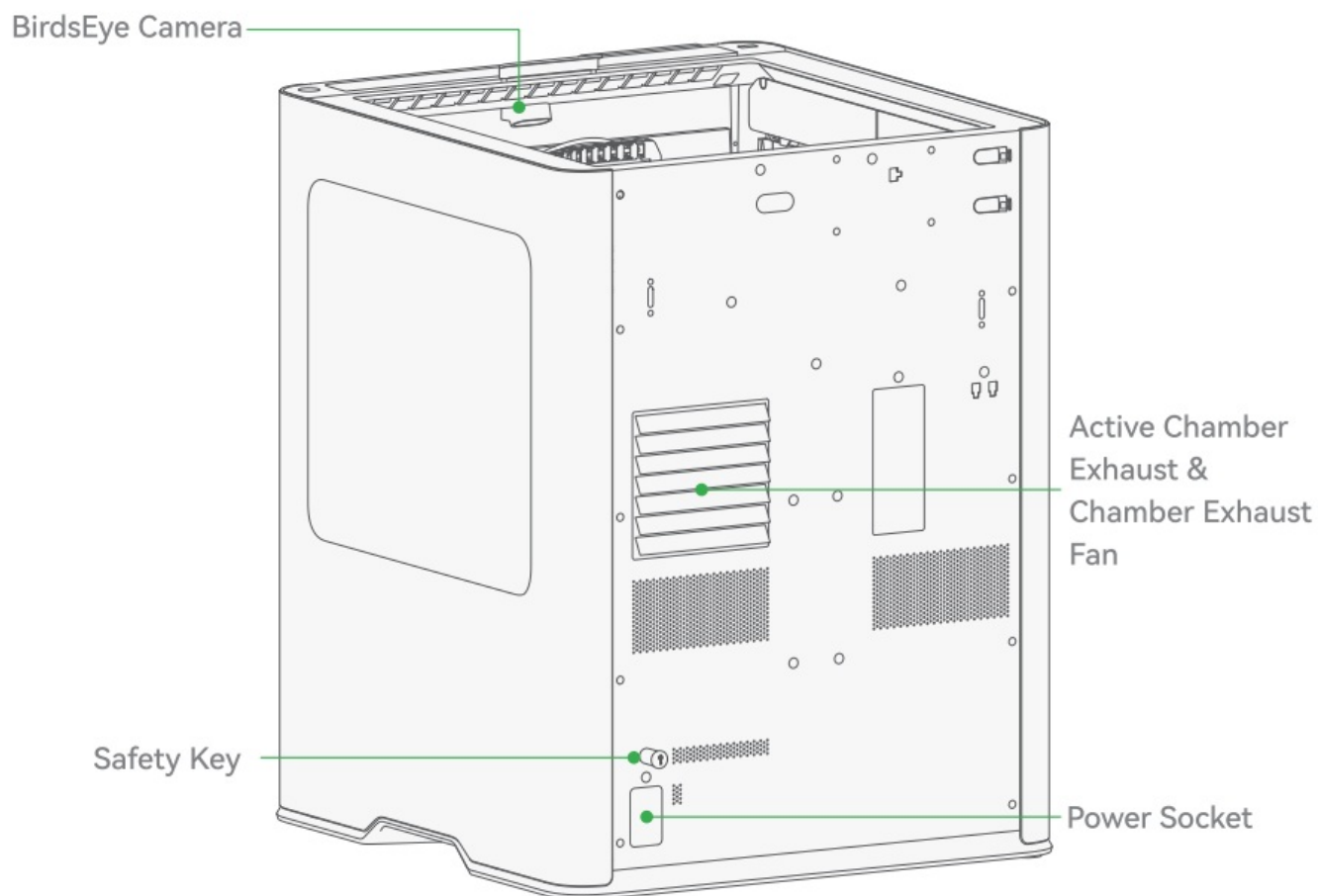
## Laser module component introduction



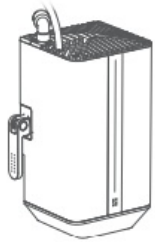
## Printer component introduction



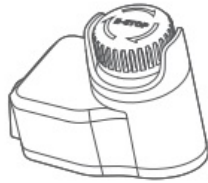
\* The privacy cover is in the accessory box. You can install it magnetically on the live view camera.



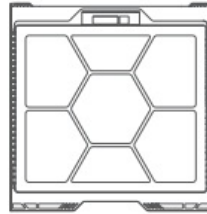
## Included accessories



Laser Module



Emergency Stop Button  
(Pre-installed with  
Safety Key)



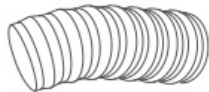
Laser Platform



Smoke Ventilation  
Pipe Adapter



Pipe Clamp



Smoke Ventilation Pipe  
2 m



Slat



Material Pin (Big)  
(For securing materials)



Air Assist Tube



Laser Lens



Brush



Laser Test Material  
(350 g Paperboard)  
120 \* 120 mm



Cork Sheet  
300 \* 300 mm  
(Material)



Basswood Plywood  
300 \* 300 mm  
(Material)



PU Leatherette Fabric  
76 \* 50 mm  
(Material)



Stainless Steel Tag  
Φ 20 mm  
(Material)



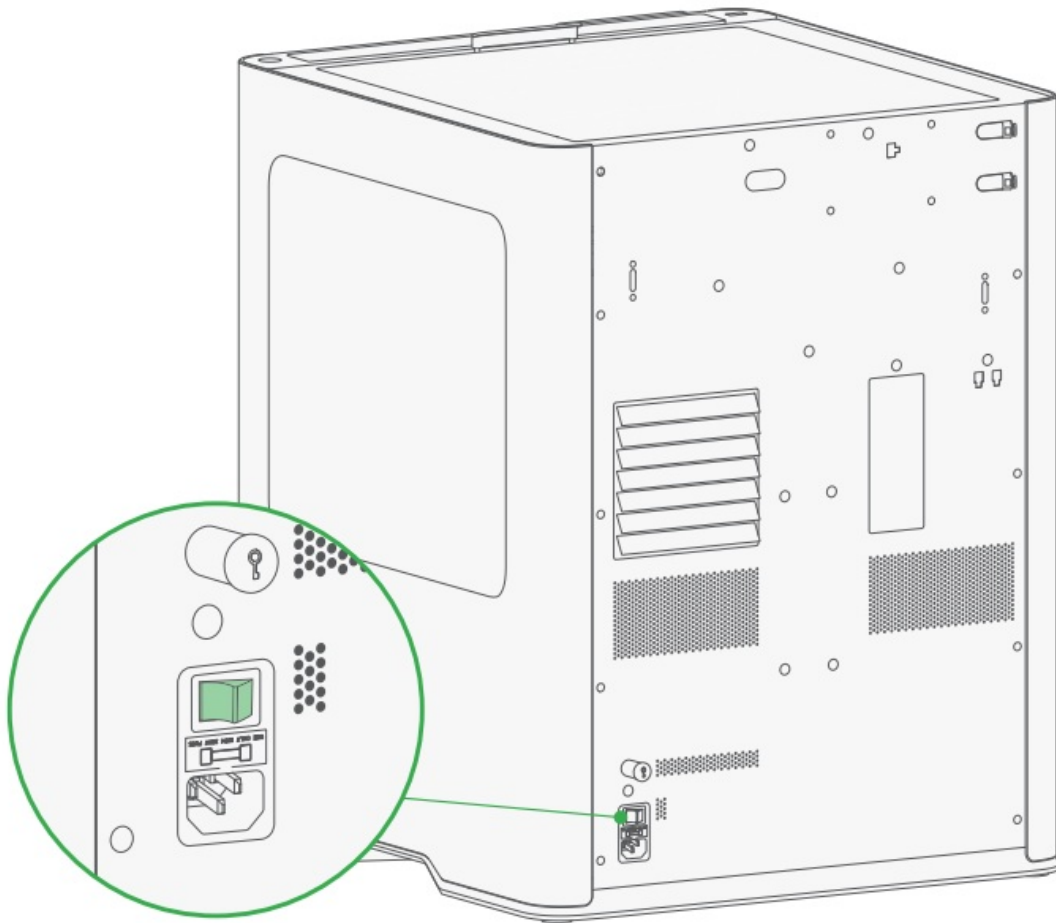
Stainless Steel Tag  
Φ 30 mm  
(Material)



Heat Transfer Protection  
Sheet (Material)  
300 \* 300 mm

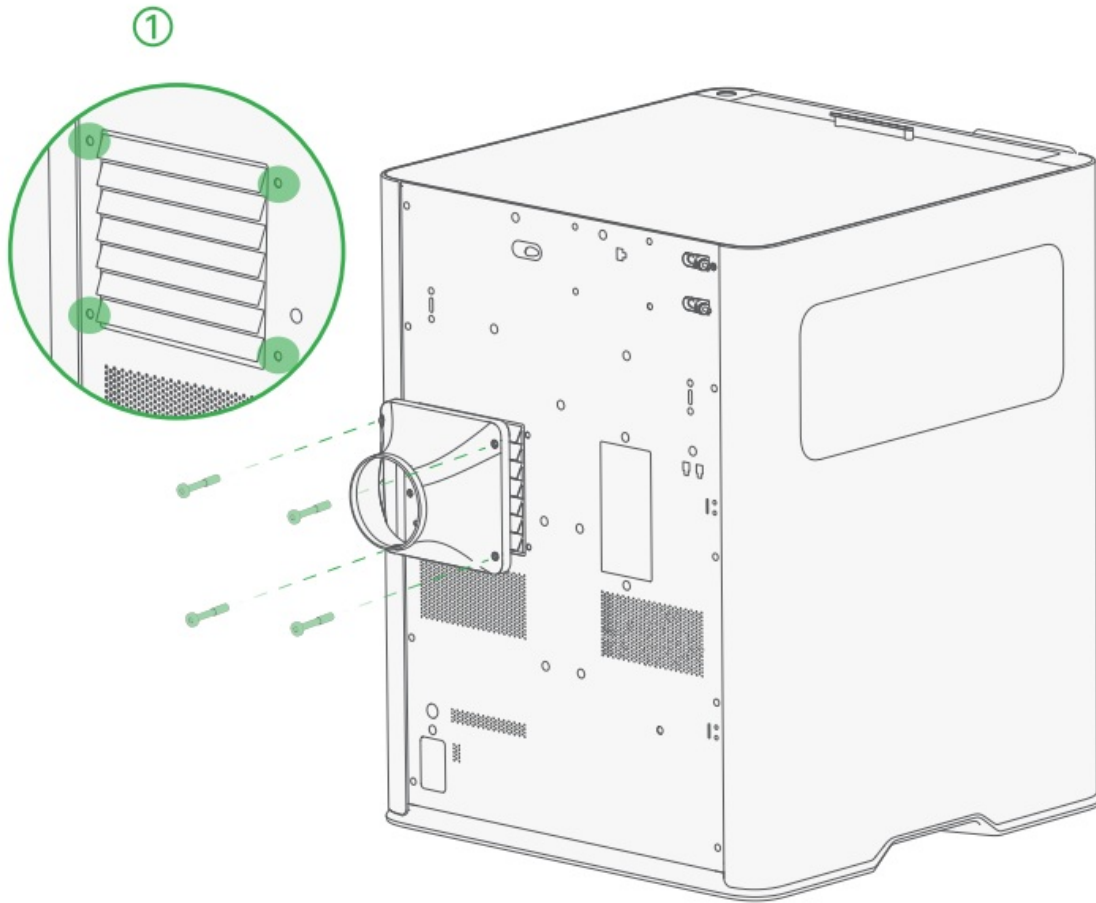
## Turn off the power



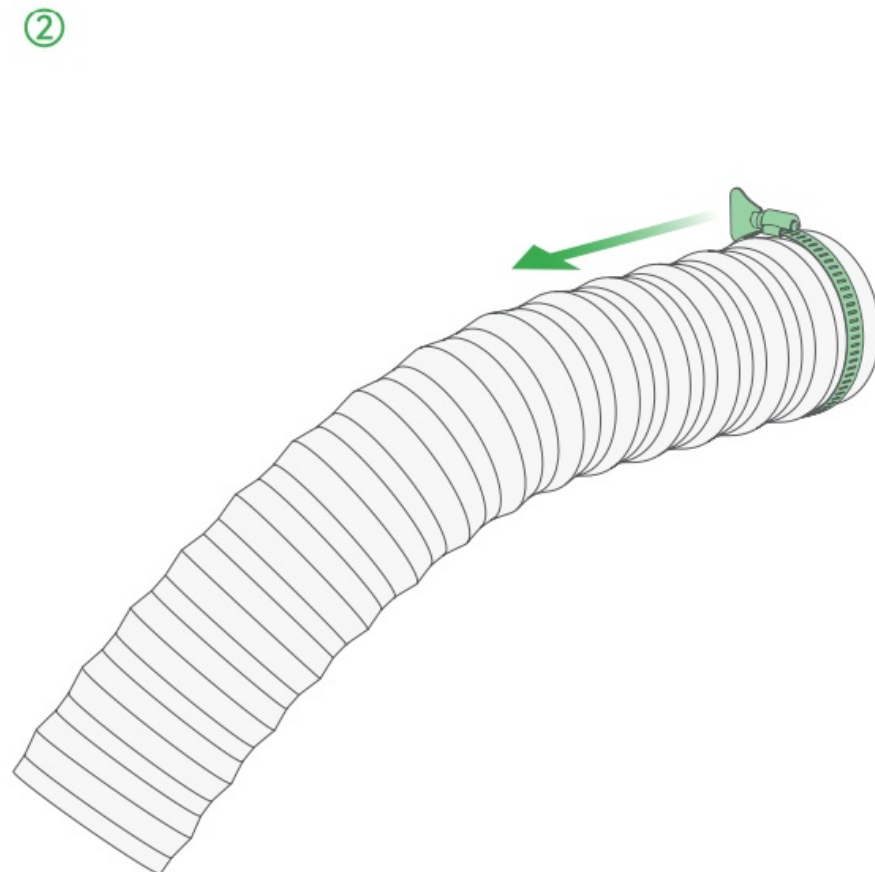


Please turn off the power of the printer before proceeding.

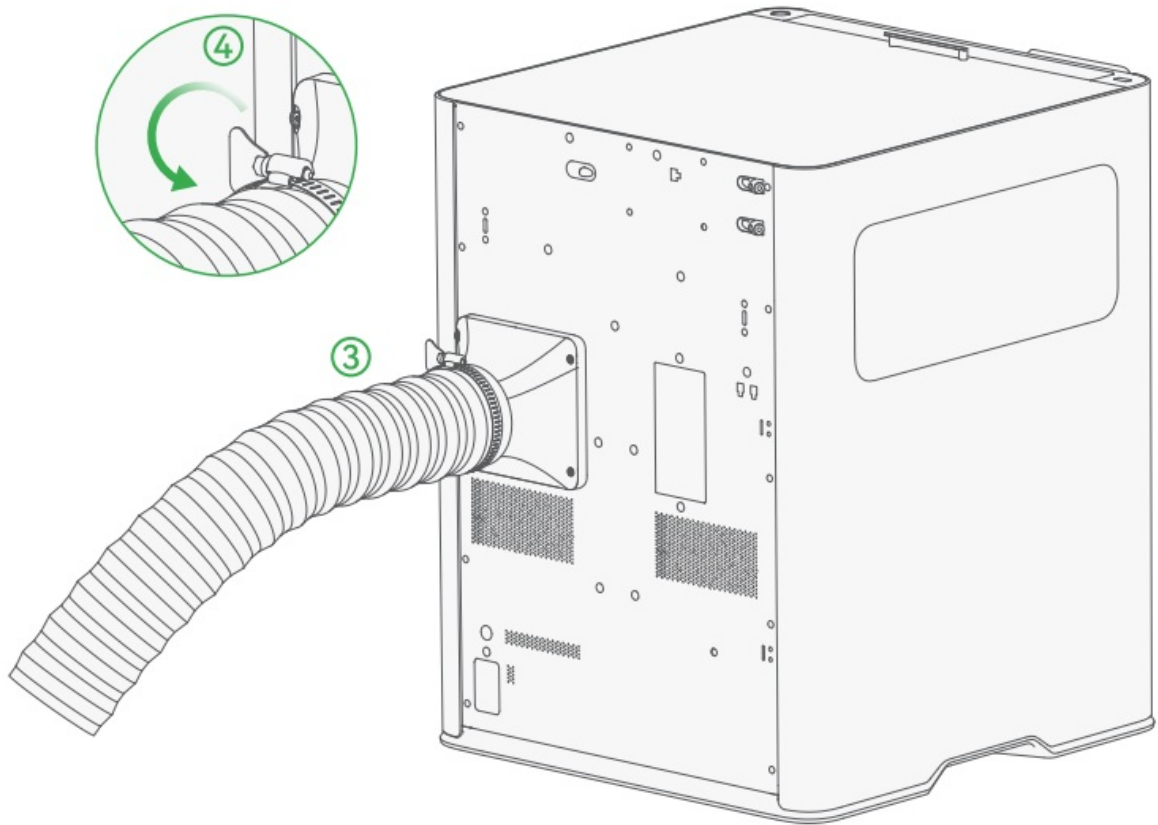
## Install the smoke ventilation pipe



Use an H2.0 alien key and 4\*BT3-20 screws to fix the adapter on the active chamber exhaust

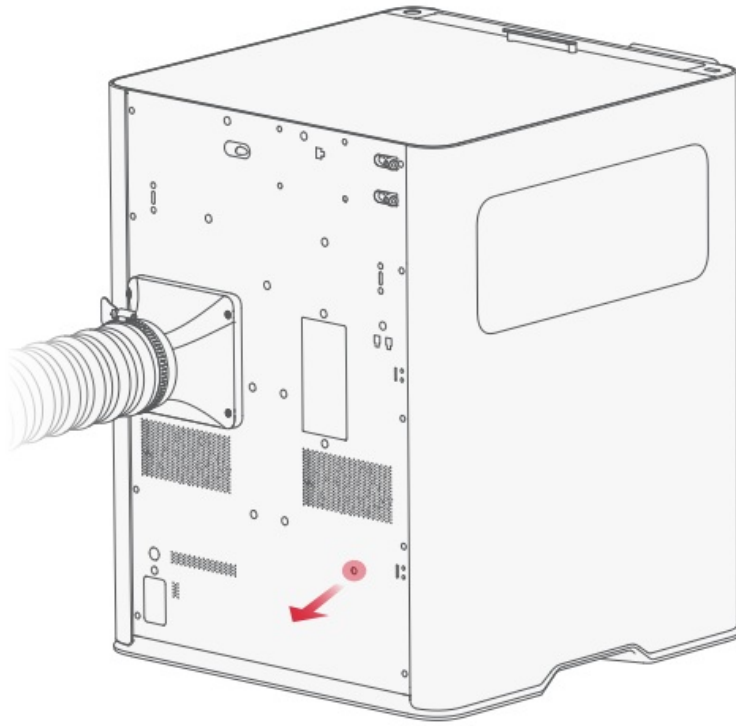


Install the pipe clamp to one end of the pipe.



- 3 Completely wrap the end of the pipe with the clamp on the adapter.
- 4 Secure the clamp by turning the key clockwise, and then route the other end outdoors. Please make sure to secure the clamp to prevent the pipe from detaching.
- You can also connect it to a smoke purifier (purchased separately). For details, please see the user manual of the smoke purifier.

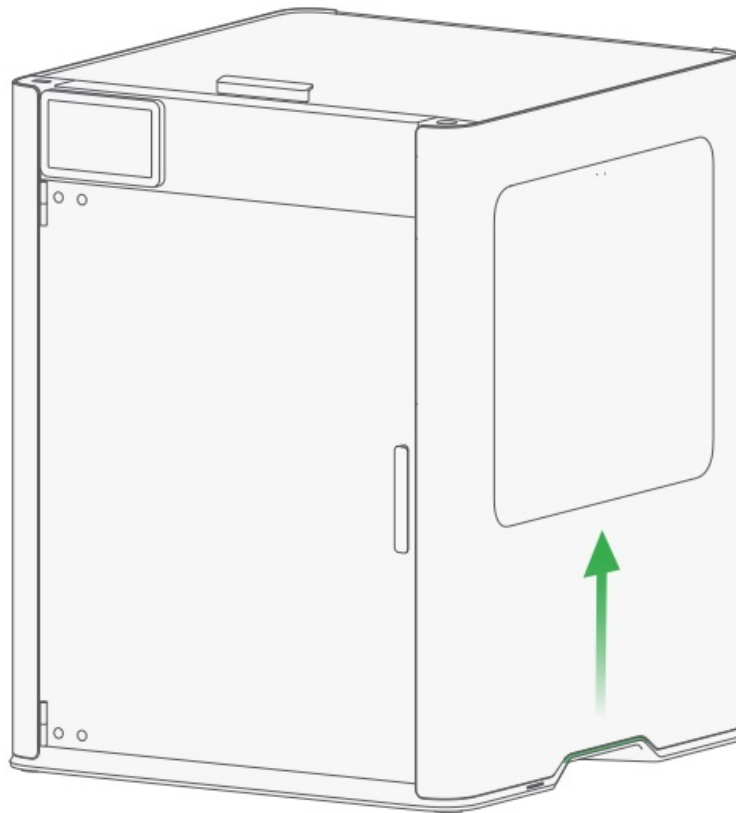
### **Remove the screw fixing the air pump**



Use the H2.0 alien key to loosen the air pump fixing screw marked in red, and then take it out slowly to prevent it from falling into the inside of the printer.

### **Install the emergency stop button**

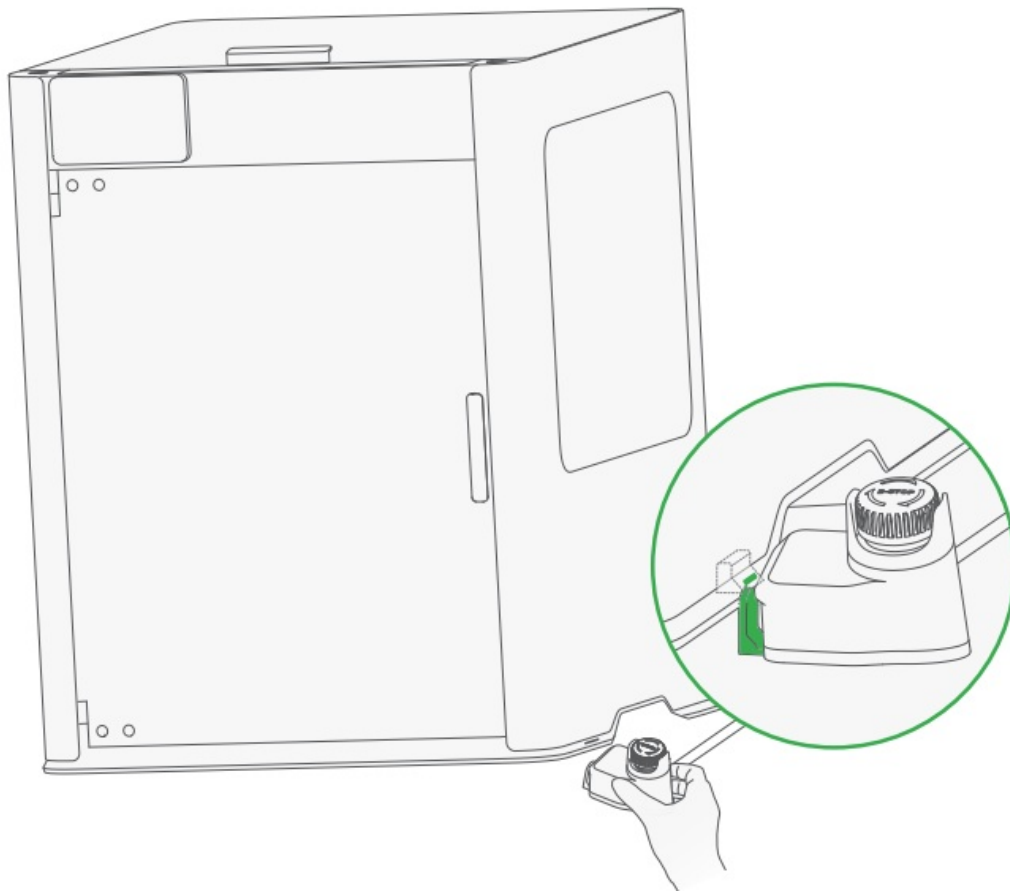
①



Gently lift up the printer using the handle.

Gently lift up the printer using the handle.

### **Install the emergency stop button**

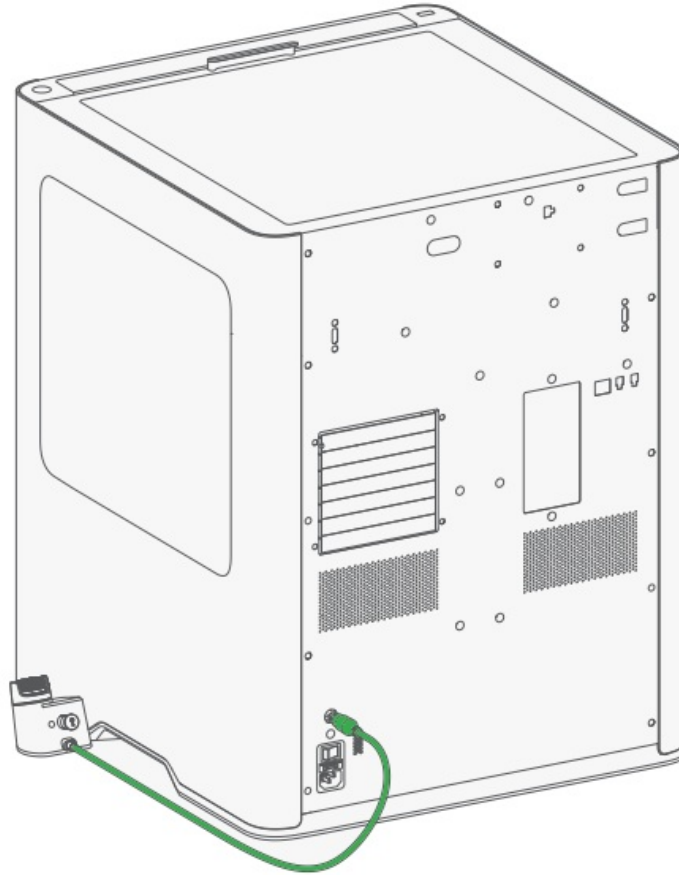


2 Align the clip of the emergency stop button and the installation slot behind the icon on the printer. Then, insert the bracket into the slot.

3 Slowly lower the printer so that the clip is completely in the slot.

### **Install the emergency stop button**

④

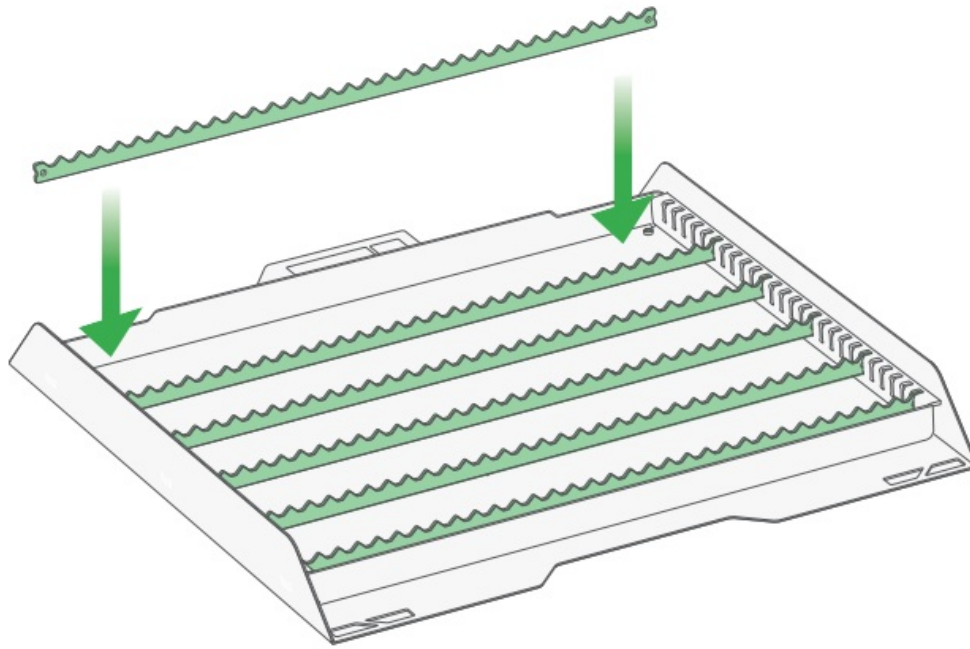


Remove the safety key above power socket, and insert the power cable of the emergency stop button.

Please keep the safety key in a secure place for enabling power for the printer when the emergency stop button (that is, the laser function} is not in use.

### **Install the laser platform**

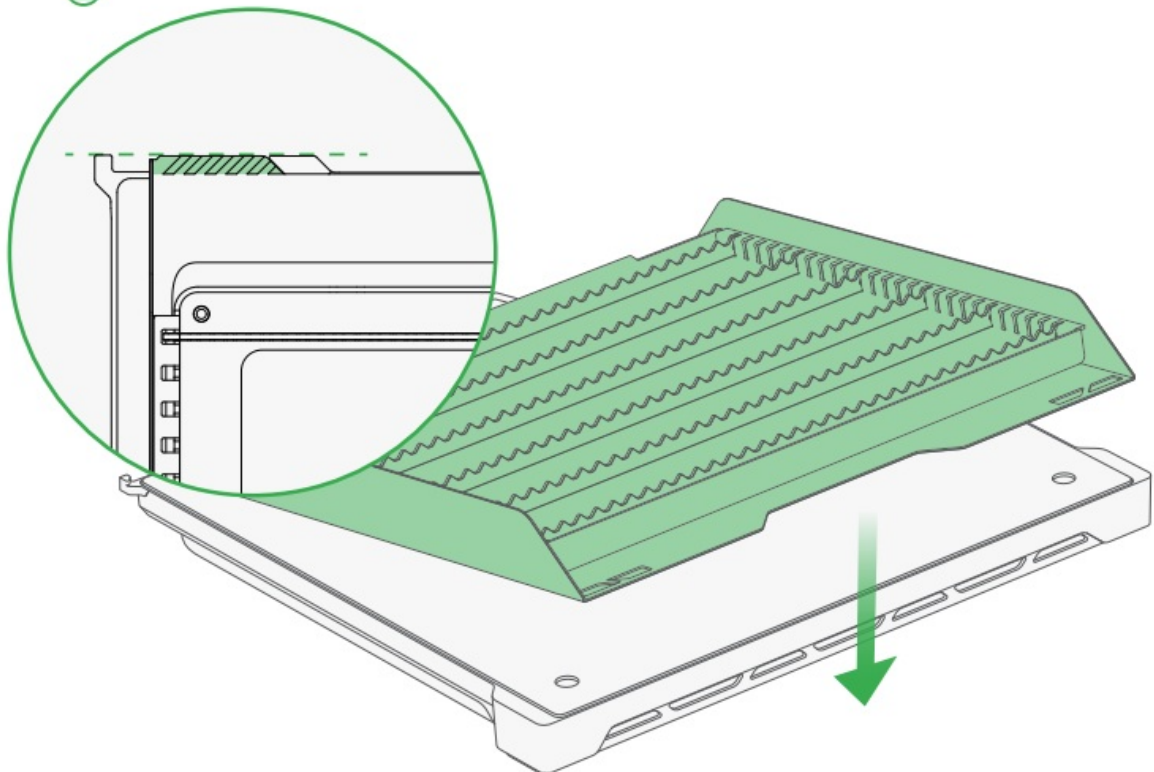
①



Install the slats on the laser platform by pressing them into the slots on both sides. A “click” sound suggests that it is in place.

- As shown in the picture, please install the slats horizontally. You can decide the number and position of the slats, and whether to face the serrated side upward, based on the material you use.

②

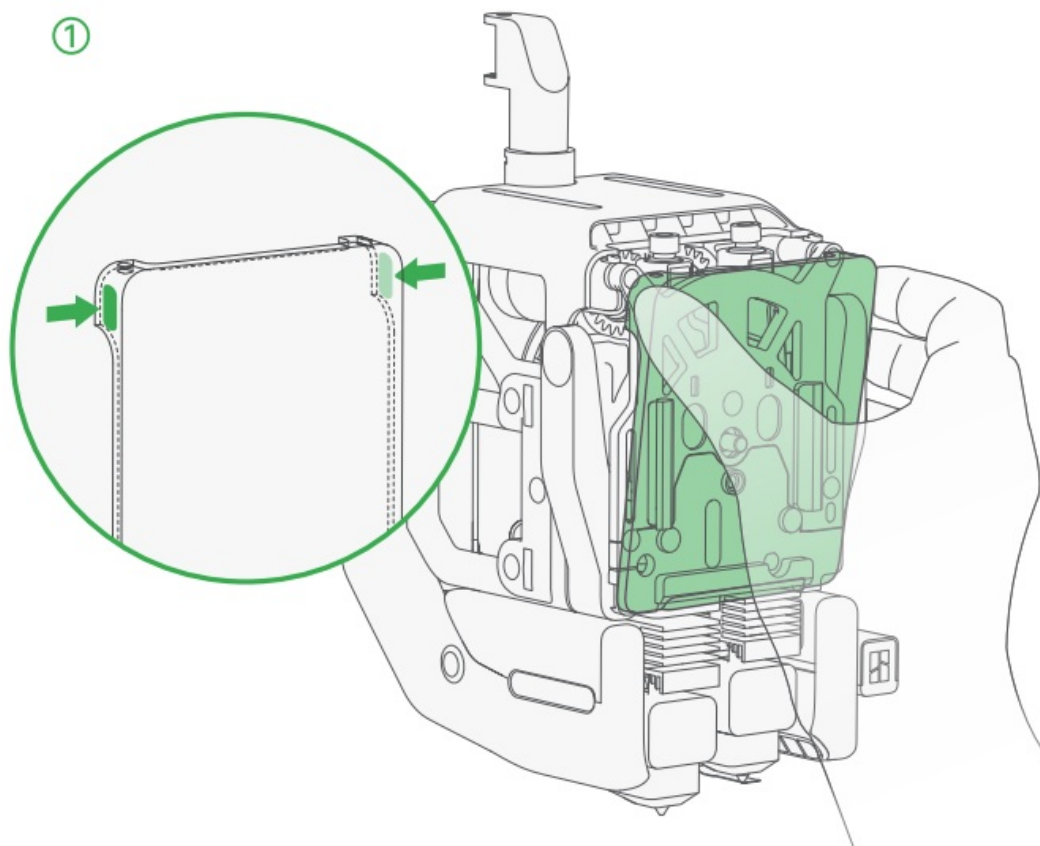


- Remove the build plate on the heatbed. Then, place the laser platform on the

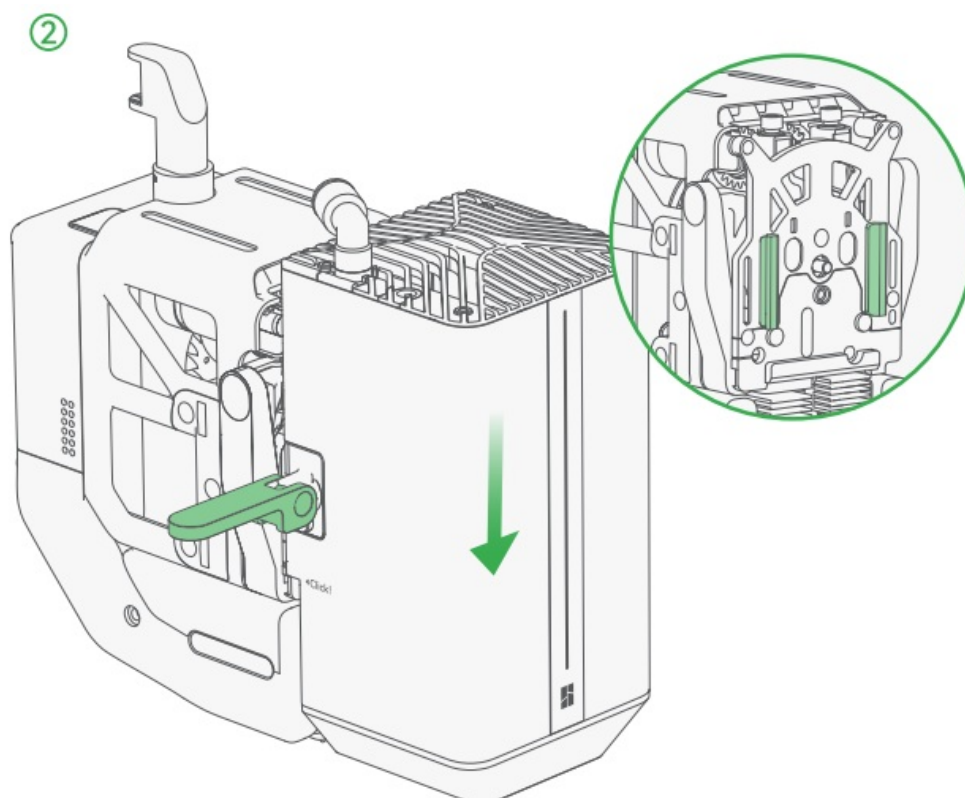


heatbed, and make sure to align the two markers of the laser platform and the stoppers of the heatbed.

## Install the laser module

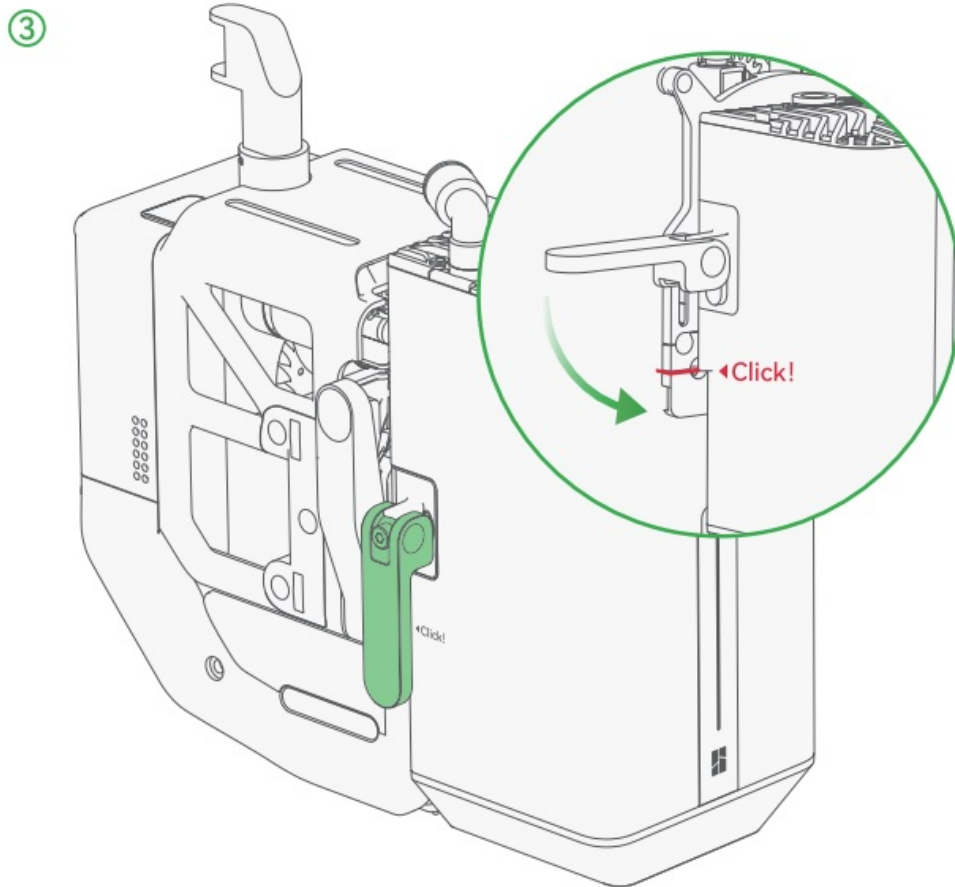


Press the two top corners of the front cover and remove it.



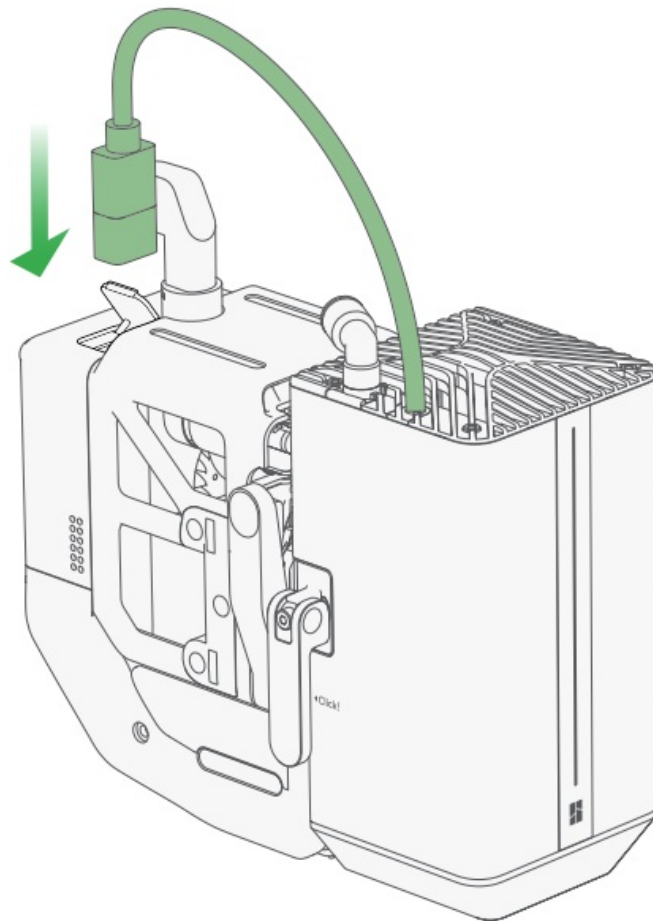


As shown in the picture, unlock the quick-release lever. Then, align the slots of the laser module and the toolhead, and slide the module all the way down.



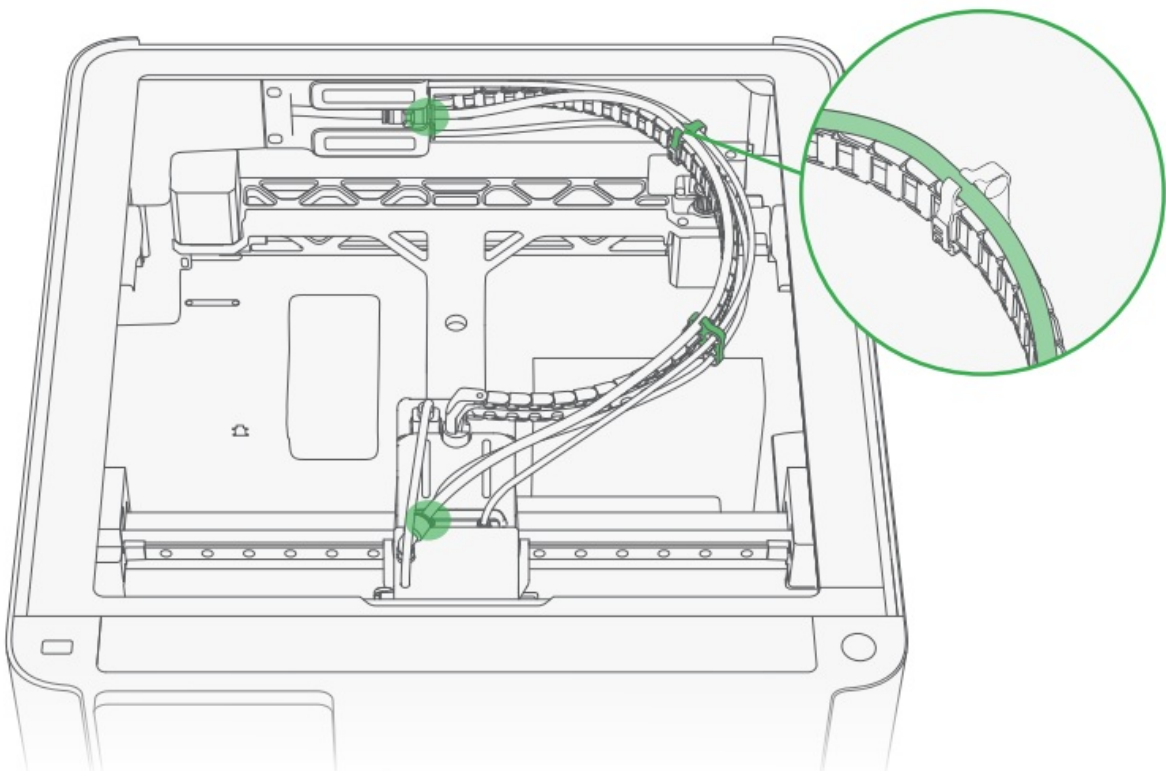
As shown in the picture, make sure the “Click” mark on the module is aligned with the dented slot on the tool head. Then, push the quick-release lever down to lock it.

④



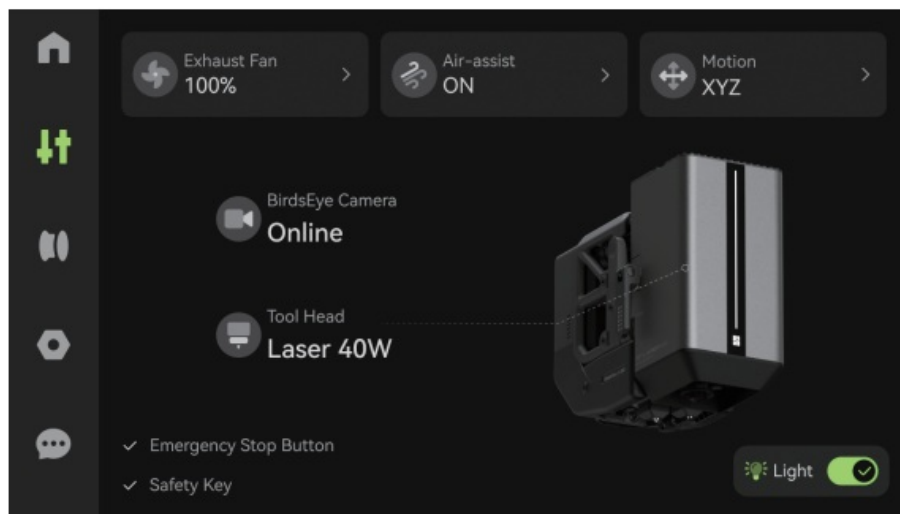
Open the dust-proof cover; insert the connector into the toolhead interface, and remove the protective film on the status Indicator!


### Install the air assist tube



Remove the top cover. Take out the black air assist tube from the accessory box. Insert it into the air assist tube coupler in the middle of the filament buffer; and the one on the laser module. The tube is correctly connected if it cannot be gently pulled out. Then, tuck the tube into the clips on top of the cable chain, and even it out so that it is not excessively bent on any location. At last, put the top cover back. If you do not use the laser module, remove the air assist tube to allow the cable chain to move freely and ensure printing quality.

## Check the status of the emergency stop button



Power on the printer. On the touchscreen, select  – Control. If the status of the emergency stop button is “✓”, it means it is correctly installed. If not, please check the steps and reinstall the button. You can also check if the button can work properly by pressing the button to cut off power and rotate it clockwise to restore power. If the printer cannot be powered on, please check the emergency button and make sure it is not pressed down and the safety key is installed.

## First calibration and use

After you install the laser module for the first time, you must complete the calibration process before using it. Please follow the instructions on the screen to complete the process. For more details on calibration and use of the function, please see the Wiki page below.



- [wiki.bambulab.com/h2/manual/laser-setup](http://wiki.bambulab.com/h2/manual/laser-setup)

## **Regular maintenance**

Laser cutting will produce a large amount of dust and debris, which gradually accumulate on various parts inside the printer. Without regular maintenance, this can severely affect printing and laser cutting performance and may even prevent the device from working properly. This page introduces the components of the printer and laser module that require regular maintenance, along with related precautions, to extend device lifespan and ensure optimal performance.

- **Cameras and markers for visual recognition:**

The following parts are easily tainted by dirt that could result in recognition errors. Regularly use alcohol and a non-woven cloth to clean them, including the lenses of the nozzle camera, tool head camera, live view camera, and birdseye camera, markers on the quick-release lever; hotends, build plate and laser platform, and stoppers on top of the heatbed.

- **Inner walls and surfaces of metal and plastic parts:**

Dirt tends to accumulate on the inner walls of the printer. If left uncleaned for prolonged periods, it can obstruct visibility from the front door and safety windows. Regularly use alcohol and a non-woven cloth to clean these parts. You also need to clean parts such as the part cooling fan air duct, flow blocker and its magnetic bracket on the toolhead, X-axis linear guides, and the rods and lead screws of the Y and Z axes. Please note that after cleaning metal bearing with alcohol, promptly apply lubricating oil (for linear guides and rods) or grease (for lead screws).

- **Air filter cover, automatic top vent, chamber exhaust fan, and active chamber exhaust:**

These components are primary mediums for air exchange between the inside of the

printer and the outside and are prone to dust accumulation. Regularly use a brush to remove the dust. For the air filter cover and active chamber exhaust, you can disassemble them for thorough cleaning.

- **Laser module surface, heat sink on top, and internal fan:**

Regularly use alcohol and a non-woven cloth to clean the flame sensor and laser lens, and use a brush to remove the soot from the heat sink and fan. Detergent is recommended for severe contamination.



[bambulab.com/support/maintenance](https://bambulab.com/support/maintenance)

Please refer to the “Regular Maintenance Recommendations” section on our wiki for more information.

## **Specifications**

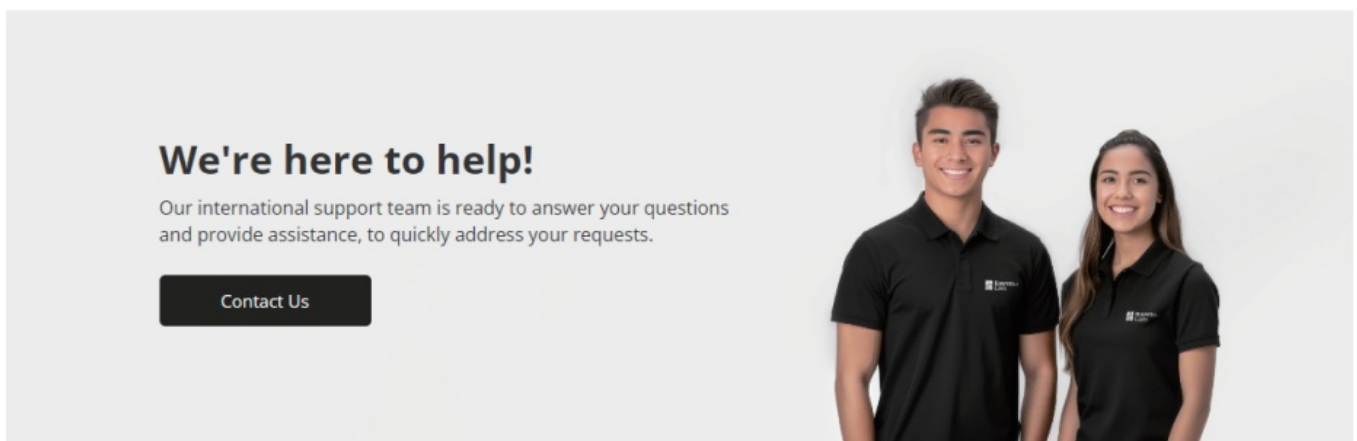
Item	Specification
Laser Type	Semiconductor Laser
Laser Wavelength	Engraving Laser: 455 nm $\pm$ 5 nm Blue Light Height Measuring Laser: 850 nm $\pm$ 5 nm Infrared Light
Laser Power	40 W $\pm$ 2 W
Laser Spot Dimension	0.14 * 0.2 mm <sup>2</sup>
Working Temperature	0 °C –35 °C
Max Engraving Speed	1000 mm/s
Max Cutting Thickness	15 mm (Basswood Plywood)
Laser Safety Class for Laser Module	Class 4
Overall Laser Safety Class*	Class 1
Engraving Area	310 * 250 mm <sup>2</sup>
Processing Height Range	0 mm–265 mm
XY Positioning Method	Visual Positioning
XY Positioning Accuracy	< 0.3 mm
Z Height Measuring Method	Micro Lidar
Z Height Measuring Accuracy	$\pm$ 0.1 mm
Flame Detection	Supported
Temperature Detection	Supported
Door Sensor	Supported
Laser Module Installation Detection	Supported
Engraving Timelapse	Supported
Safety Key	Included
Air Pump	Built-in; 30 kPa, 30 L/min
Ventilation Pipe Adapter Outer Diameter	100 mm
Supported Material Type	Wood, rubber, metal sheet, leather, dark acrylic, stone, and more

When the printer's protection is complete and properly working, the printer and laser module work as a class 1 laser product.

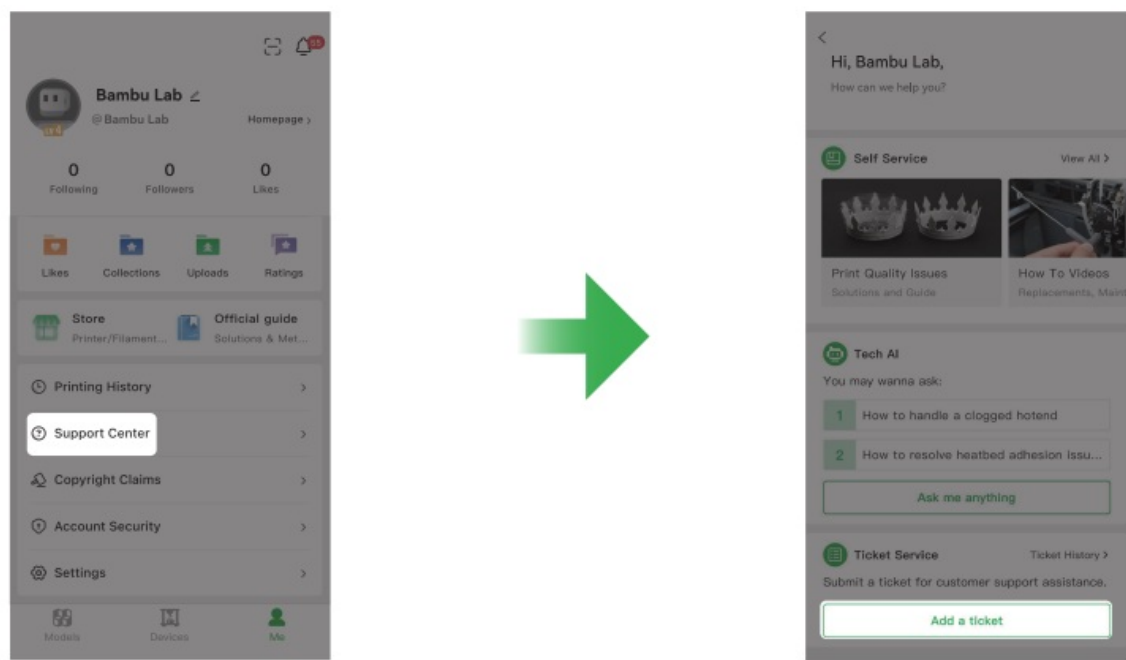
## Technical Support

If you need technical support, please follow either of the following methods: Method 1: Get in touch by using the Contact Us button in our Support Center.

[bambulab.com/support](https://bambulab.com/support)



Method 2: Create a support ticket on Bambu Handy, from the Support Center section.



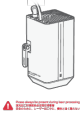
You can also visit the Bambu Lab Wiki for more tutorials and maintenance guidance.

[wiki.bambulab.com/home](https://wiki.bambulab.com/home)



- [www.bambulab.com](https://www.bambulab.com)

## Documents / Resources

	<a href="#">Bambu Lab 1-11 H2D Laser Module 40W [pdf]</a> User Guide 1-11 H2D, 1-11 H2D Laser Module 40W, 1-11 H2D, Laser Module 40W, Module 40W, 40W
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## References

- [User Manual](#)

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