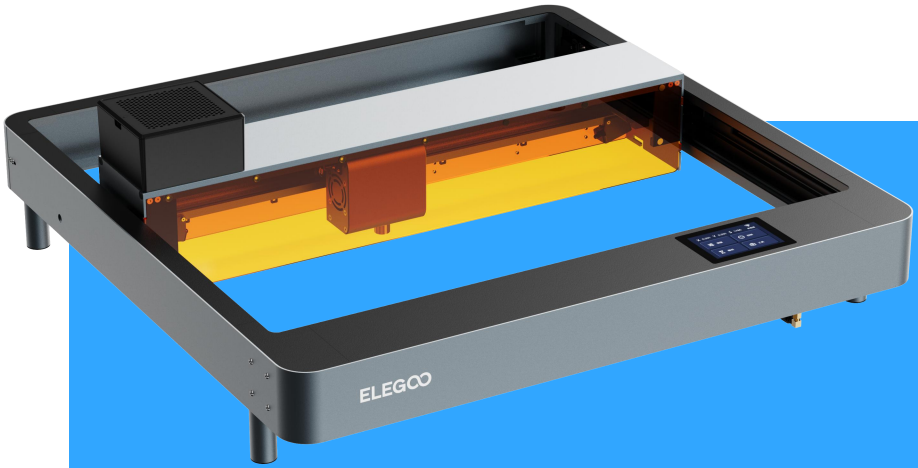
ELEGOO

PHECDA

User Manual



Cautions

1.When the laser engraver starts working, please wear laser goggles to protect your eyes.

2. Please keep the working area of the machine flat and clean. Residues accumulated from cutting and engraving should be cleaned up regularly to prevent fire hazards.

3. Do not engrave or cut any unknown materials, as the vaporization or melting of many materials will release harmful fumes and cause personal injury.

4. Do not operate the machine unattended. If the machine is incorrectly set up to start working and left unattended for a long time, or has a mechanical or electrical failure during operation, it may cause a fire.

5. Please operate the machine in a well-ventilated area so that the machine can exhaust fumes properly.

6. The machine contains high-speed moving parts, so be careful not to pinch your hands.

7. Please do product maintenance frequently, and periodically clean the machine body with a dry cloth to wipe away dust and debris under the situation of power off.

8. Children must be supervised by adults when using the machine to avoid personal injury.

9. In case of an emergency, please turn off the power directly.

Machine Parameters

Machine Model: PHECDA			
PHECDA (10W)		PHECDA (20W)	
Laser head power	10W	**Laser head power**	20W
Maximum cutting depth	≤8mm (Basswood board)	**Maximum cutting depth**	≤14mm (Basswood board)
Machine power	55W	**Machine power**	85W
Rated voltage	100V-240V 50/60Hz	**Rated voltage**	100V-240V 50/60Hz
Output voltage	24V	**Output voltage**	24V
Spot size	0.06mm×0.06mm	**Spot size**	0.07mm×0.13mm
Net weight	6.5kg	**Net weight**	6.7kg
Printing principle	Laser engraving and cutting	**Laser head height adjustment**	0-75mm
Engraving area	400mm×400mm	**Machine size**	673mm×660mm×190mm
Maximum engraving speed	X-axis : 25000mm/min Y-axis : 18000mm/min	**Whether to support APP control**	Support
Laser wavelength	455±5nm	**Expandable functions**	rotary attachment, air assist
Auxiliary functions	Smoke filtration, flame detector, tilt detection alarm	**Support language**	Chinese, English, German, Portuguese, Spanish
Support system	windows/mac/ios/android	**Supported file formats**	SVG/DXF/JPG/JPEG/PNG/BMP/TIF, etc
Product material	Aluminum alloy	**Connection method**	TF card, USB cable, APP

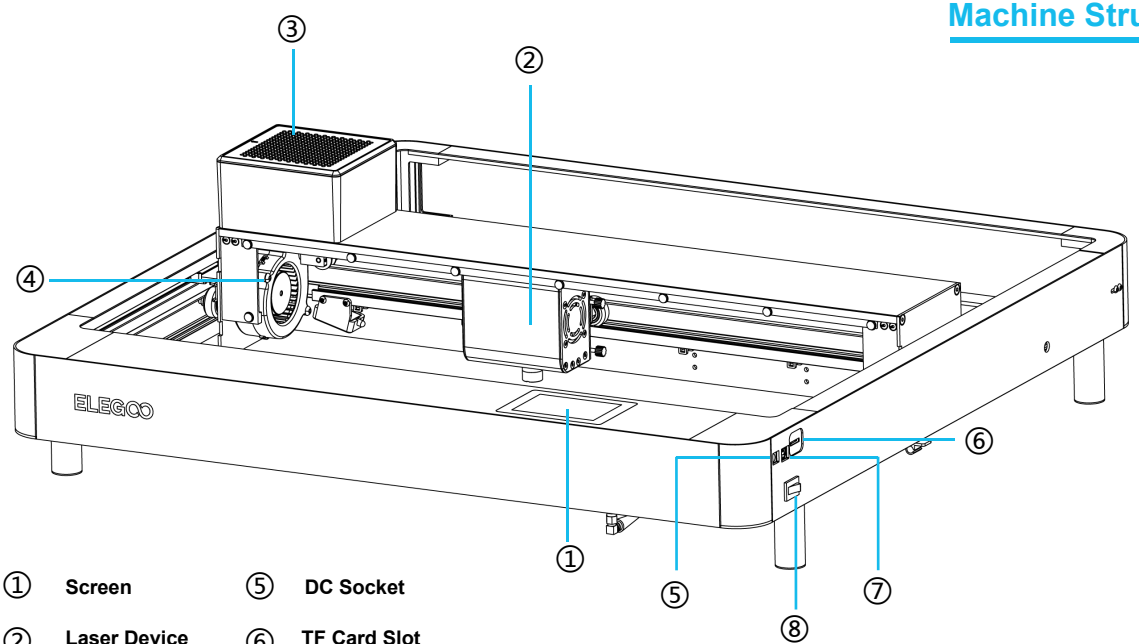
Material Settings

- The slower the speed, the greater the engraving power ratio setting, and the deeper the engraving depth. On the contrary, the faster the speed, the more consistent the engraving power, and the shallower the engraving depth.

Engraving materialO	Operation	10W			20W		
		Speed	Times	Power	Speed	Times	Power
Basswood Board(3mm)	cutting	180mm/min	1	55%	300mm/min	1	55%
	engraving	12000mm/min	1	95%	12000mm/min	1	65%
MDF (3mm)	cutting	180mm/min	3	60%	300mm/min	1	100%
	engraving	12000mm/min	1	80%	12000mm/min	1	55%
Bamboo Board(5mm)	cutting	300mm/min	5	100%	180mm/min	1	90%
	engraving	6000mm/min	1	65%	12000mm/min	1	70%
Kraft Paper(150g)	cutting	1800mm/min	1	50%	1800mm/min	1	30%
	engraving	12000mm/min	1	40%	18000mm/min	1	40%
Stainless Steel	cutting	/	/	/	/	/	/
	engraving	2000mm/min	1	100%	2000mm/min	1	50%
Metal business card	cutting	/	/	/	/	/	/
	engraving	6000mm/min	1	40%	6000mm/min	1	25%

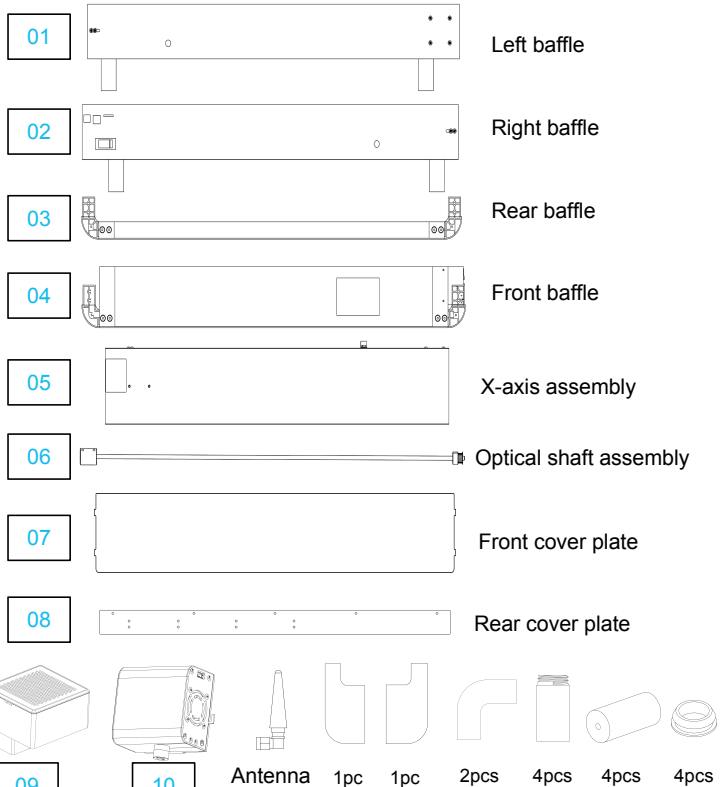
The above data are official laboratory tests, and the actual processing process may vary due to differences in materials and environments. The settings based on the test are for reference only and can be adjusted according to the actual situation.

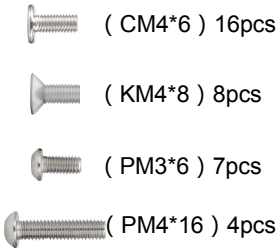
Machine Structure Diagram



①	Screen	⑤	DC Socket
②	Laser Device	⑥	TF Card Slot
③	Air Filter	⑦	Type-B Interface
④	Turbo Fan	⑧	Power Switch

Packing List






Safety Goggles


Engraving Material


Adapter


USB Cable

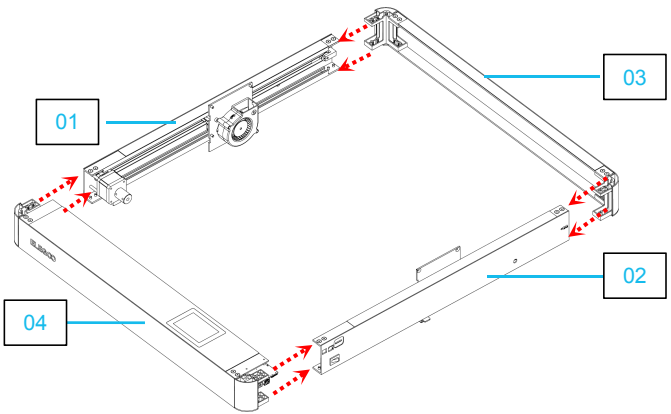
The above accessories shall be subject to actual products, and the pictures are for reference only.

Machine Installation

①

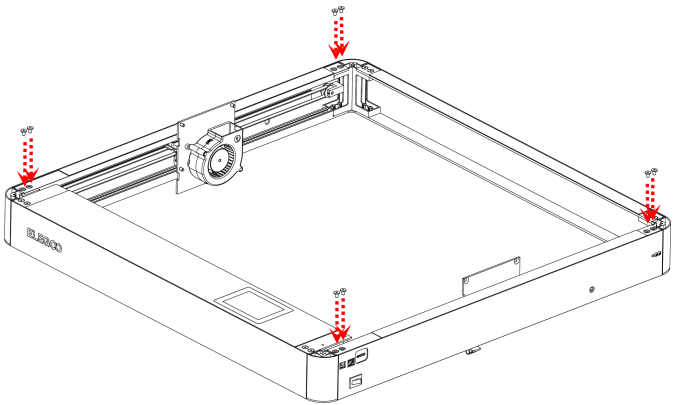
The TF card of the machine comes with an installation instruction video.

- Pre-joined the four parts together on a horizontal plane.
- Please pay attention to the installation direction of the baffle.



②

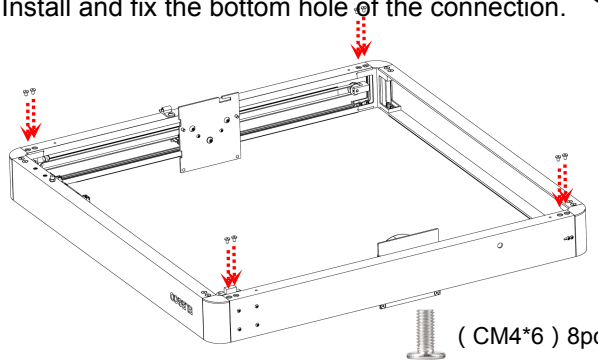
- Mount screws at the joint.
- Align the screws with the holes first, then tighten the screws.



(CM4*6) 8pcs

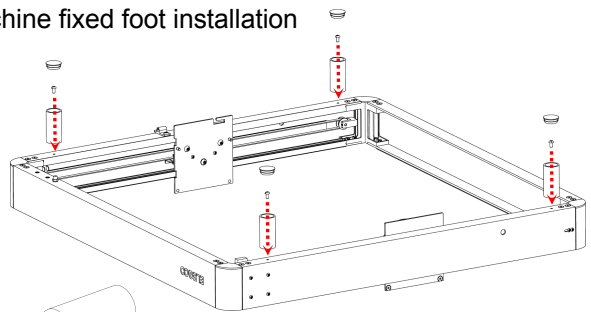
③

➢ Install and fix the bottom hole of the connection.



(CM4*6) 8pcs

➢ Machine fixed foot installation



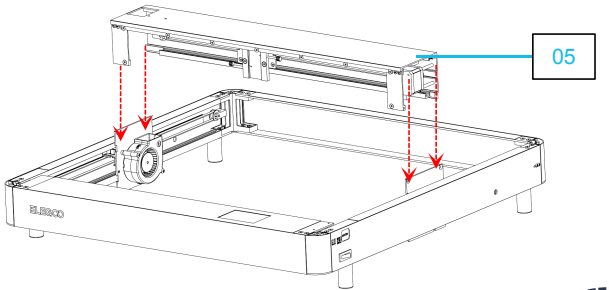
4pcs

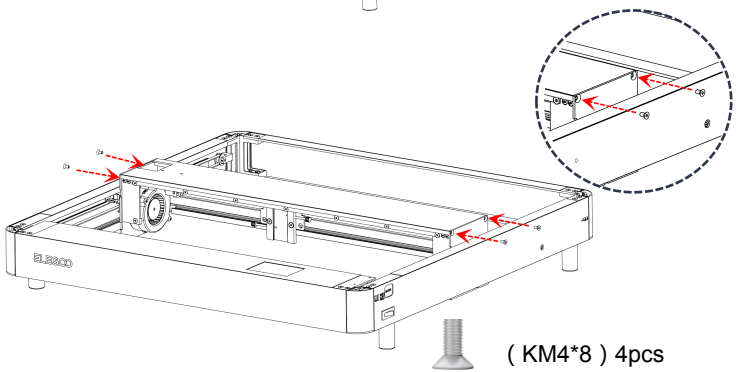
4pcs

(PM4*16) 4pcs

④

➢ Install and fix the X-axis assembly.

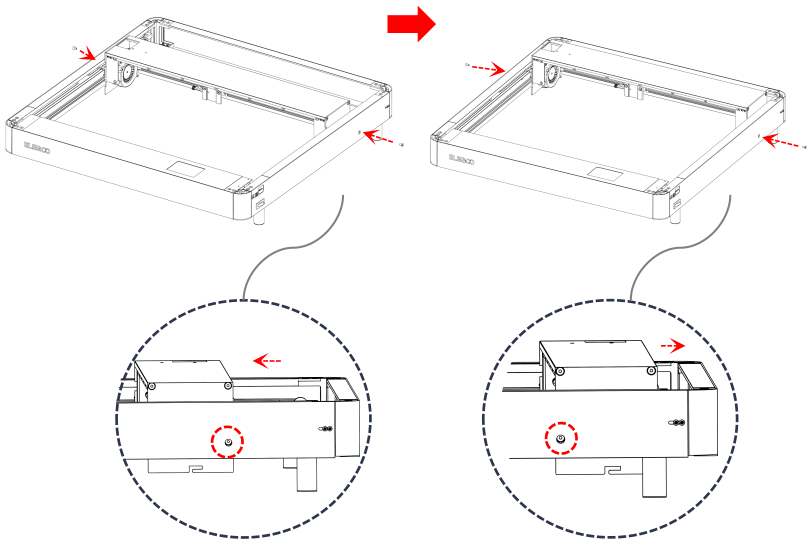




(KM4*8) 4pcs

⑤

➢ Through the baffle holes reserved on both sides of the machine, move the middle parts to the corresponding holes and install and fix the screws respectively.

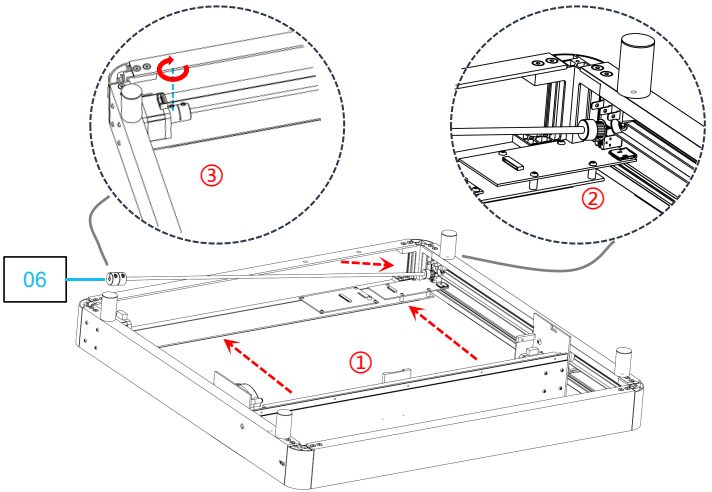


(KM4*8) 4pcs

⑥

➢ Install the axis assembly:

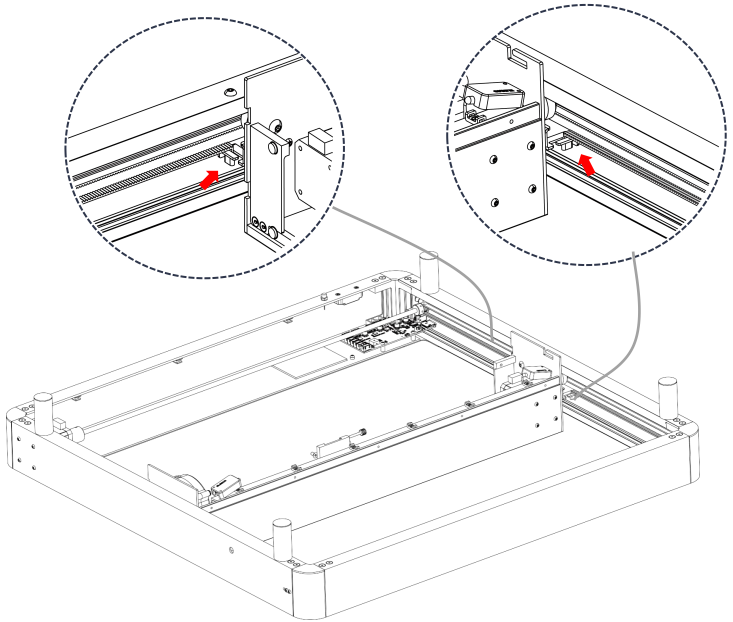
① When installing, drag the X-axis assembly against the front baffle. (keep the X-axis horizontal)
② Pass the synchronous wheel through the synchronous belt and fix it on the bearing.
③ Connect the coupling with the motor shaft and tighten the screws to fix it. (loosen the screws on the coupling during installation)



⑦

➢ Timing Belt Installation:

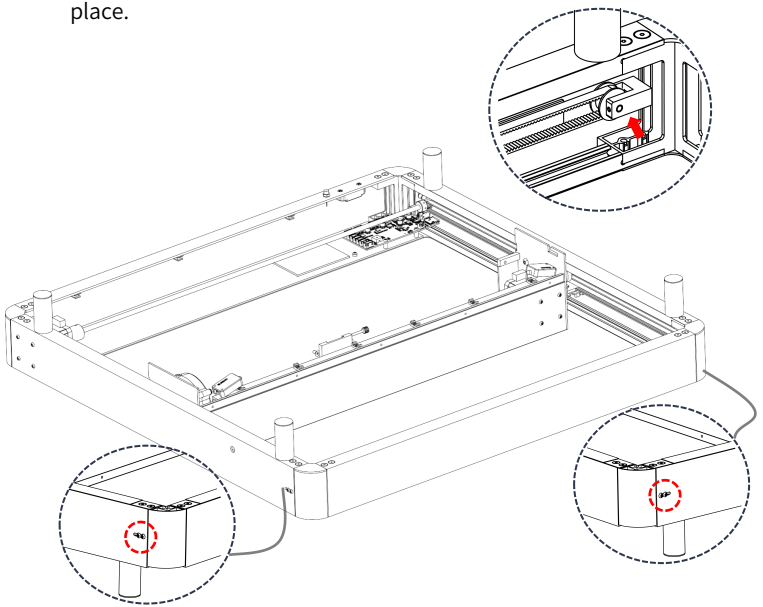
Install the timing belt with the tooth surface facing up into the slot.



⑧

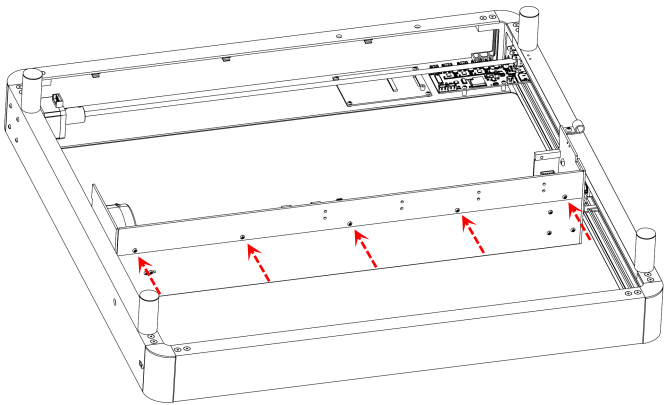
➢ Timing Belt Adjustment:

Loosen the side screws and tighten the adjustment slider of the timing belt towards one end. Then resecure the screws to lock it in place.



⑨

➢ Fixed rear cover plate



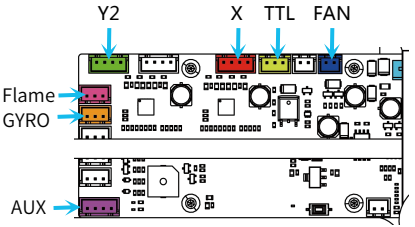
08

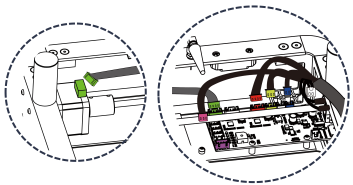
(PM3*6) 5pcs

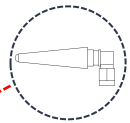
⑩

➢ Connect the motherboard / Install antenna

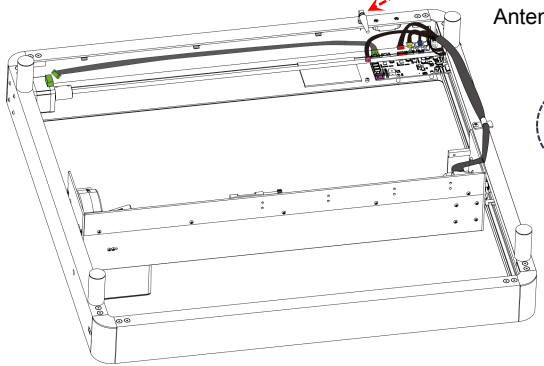
➢ Connect to the corresponding location according to the identification code.





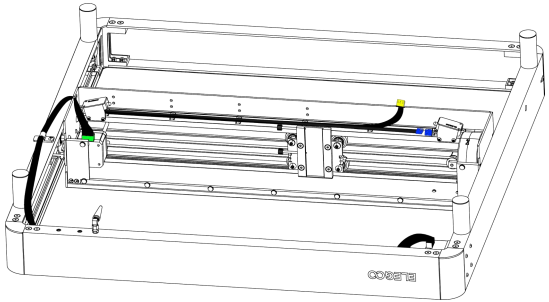


Antenna

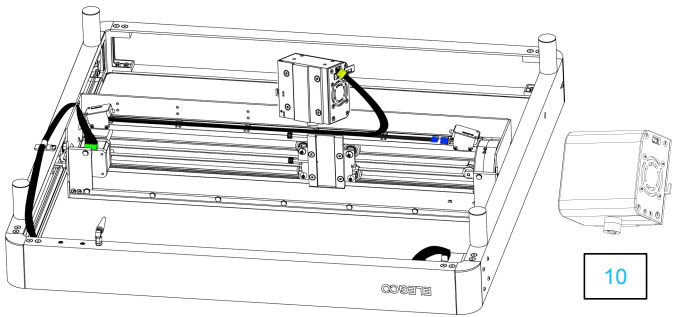


➢ Installation of X-axis assembly wiring:

⑪

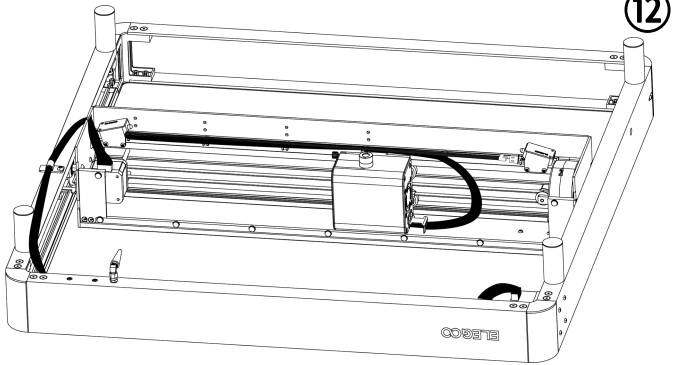


➢ Plug in the cable plug



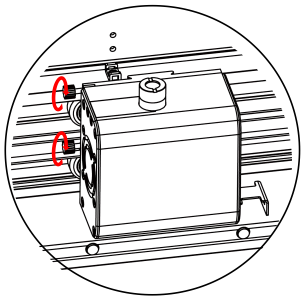
10

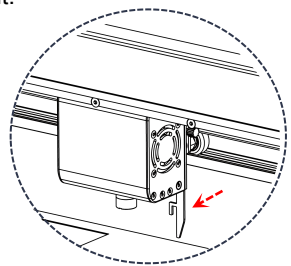
⑫



➢ Laser device installation:

Insert the laser device along the groove, and use the side screws to tighten it at the desired height.

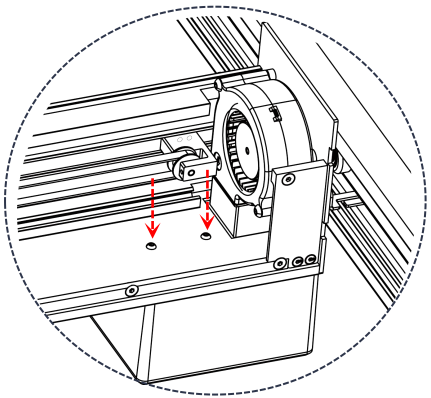




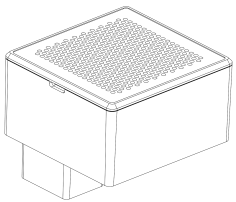
Pull out the focal length positioning bar, and tighten the screws on the side by the height where the protruding positioning bar contacts the engraving material.

⑬

➢ Air filter installation



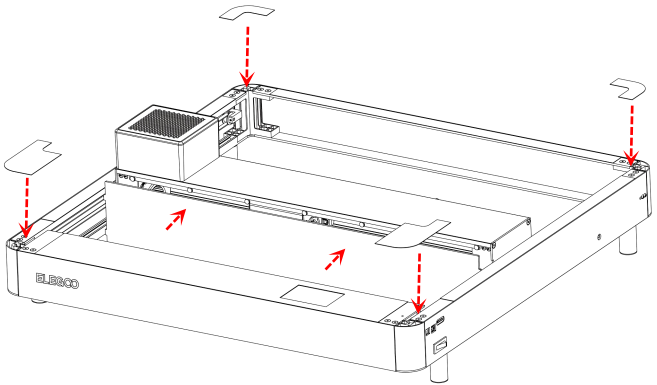
(PM3*6) 2pcs

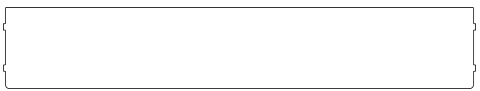


09

⑭

➢ Installation of front cover plate and rounded corner baffle

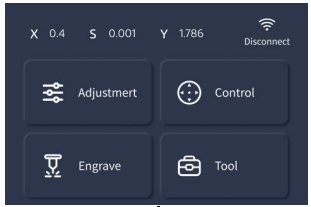


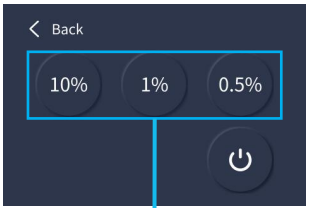


07

1pcs 1pcs 2pcs

Operation Screen Introduction

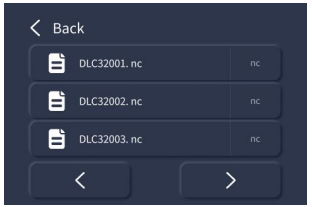


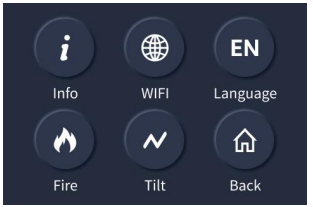


Laser power adjustment ratio
(This power value is used in positioning)

Unlock motor status

Move the laser head to the specified position to locate the origin





Select the file to be engraved, determine the file position by stroke, and then set the origin to engrave.

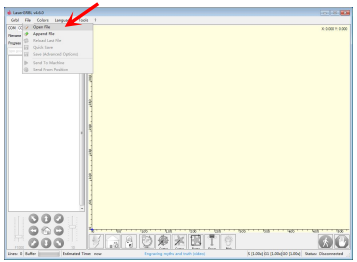
How to Use the Machine

This machine is compatible with a variety of slicing software on the market such as: LaserGRBL,LightBurn ,and PHECDA APP. This operating instruction is based on the open-source software LaserGRBL.

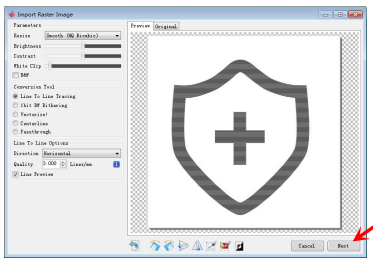
1. TF card engraving: Save the file to the TF card by slicing through the LaserGRBL software, and select the required file through the control screen for engraving.
2. USB connection engraving: Connect computer and laser engraver through USB data cable, and control slice engraving through LaserGRBL software.
3. APP engraving: Install the PHECDA APP on your mobile phone, connect your mobile phone to the wifi of the machine, enter the machine's IP in the app, and you can operate the machine after a successful connection.

①

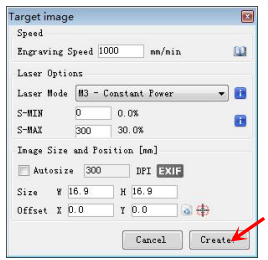
TF card engraving



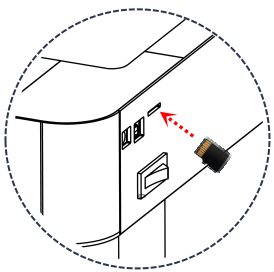
Import target image

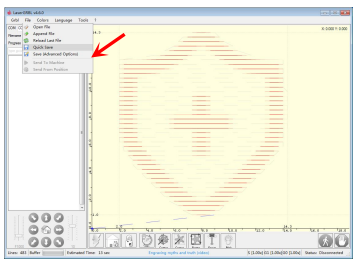


Select engraving type



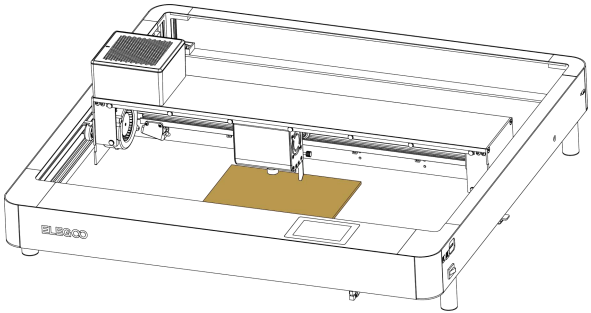
Adjust the image size and laser parameters

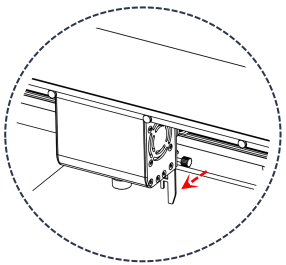




Save the slice file to the TF card

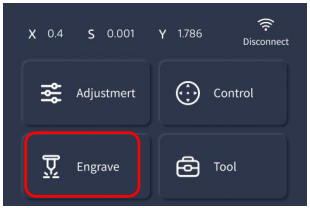
Place engraving material



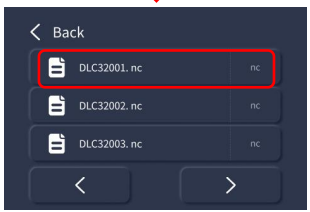


Pull out the focal length positioning bar, and tighten the screws on the side by the height where the protruding positioning bar contacts the engraving material.

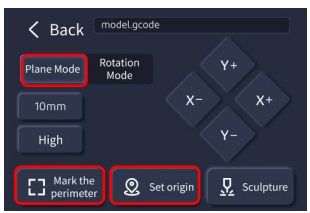
Click to engrave



Select engraving file



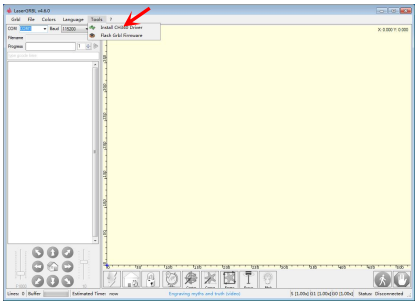
Select the plane mode → select the positioning origin → make a stroke → confirm the stroke position and then engrave



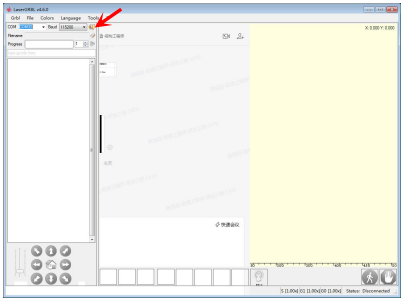
① ③ ②

Turn on the laser engraver, connect it to the computer via USB, double-click to open the engraving software, click the connect button, and the displayed data proves that the connection has been successful.
(Note: you cannot open more than one slicing software at the same time, as there may be conflicts, and the port cannot be connected if it is occupied.)

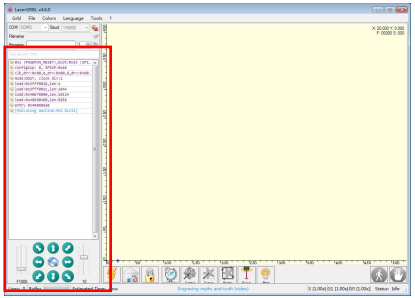
② USB connection engraving



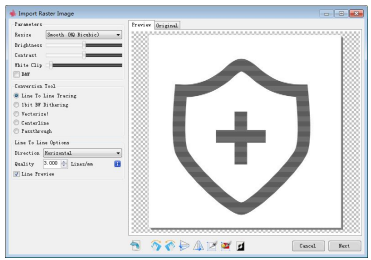
If the USB connection does not respond, install the CH340 driver through Tool



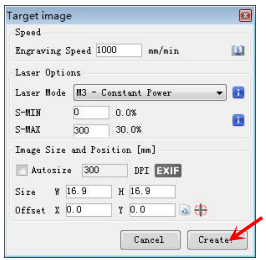
Click connect



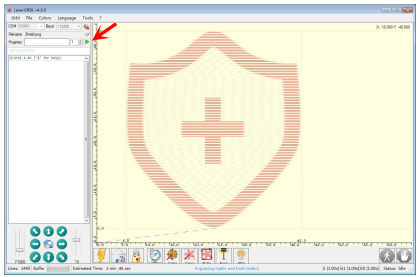
The connection is successful if the data displayed



Import target image

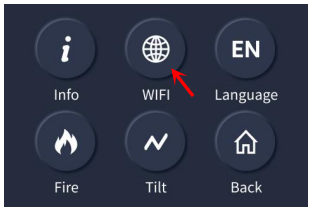


Adjust the image size and laser parameters

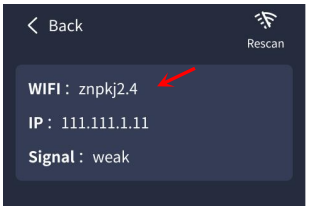


Just run the slicing program

Search "PHECDA APP" in your mobile app store to download



Click on the machine WiFi connection

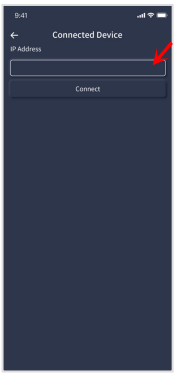


Select Connect

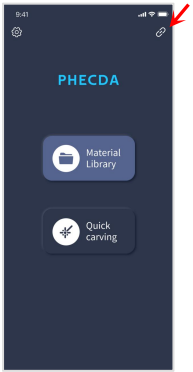
Connect to the WiFi signal on your device.
Default password: 12345678

③

APP engraving



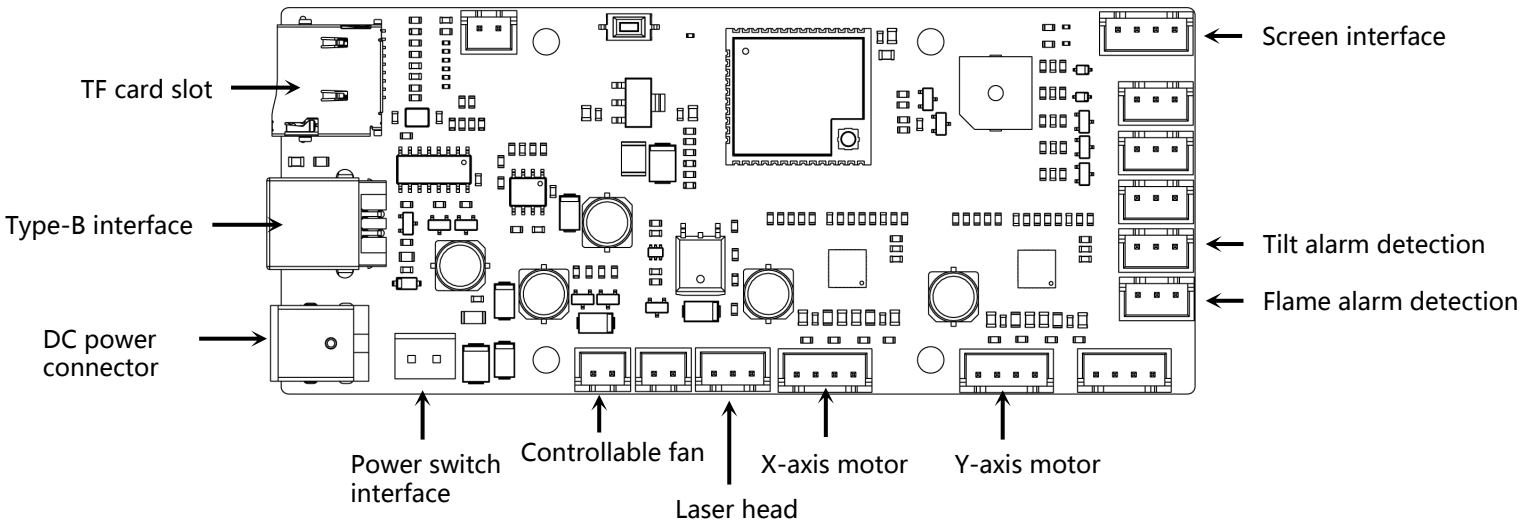
Enter the machine IP address to connect successfully



Open the PHECDA APP on your mobile phone and click the button indicated by the arrow

Note: When using the APP to engrave and cut, you need to insert the TF card, otherwise you cannot upload the engraving files.

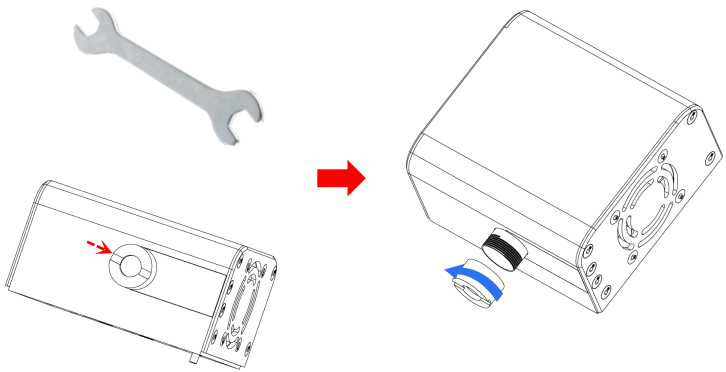
Motherboard Wiring



Maintenance Tips

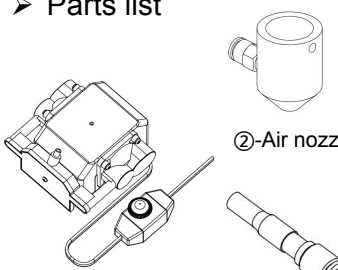
- The window mirror of the laser head needs to be cleaned regularly after long-term use, because after a long period of cutting and engraving, the window mirror can cause poor light output due to smoke corrosion.(Wipe the window mirror with ethanol(≥75%))

- How to remove the window mirror:
  The window mirror can be screwed out by putting the wrench handle into the groove.

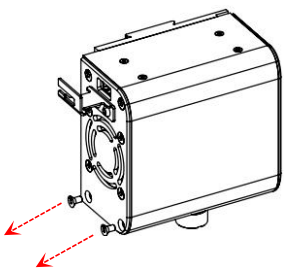


Air assist installation (optional)

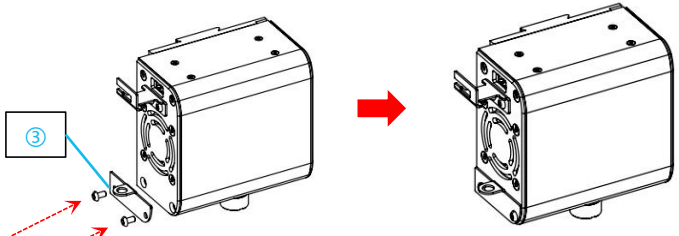
- Parts list



- Accessories installation
- Remove the two screws on the lower left side of the laser device.

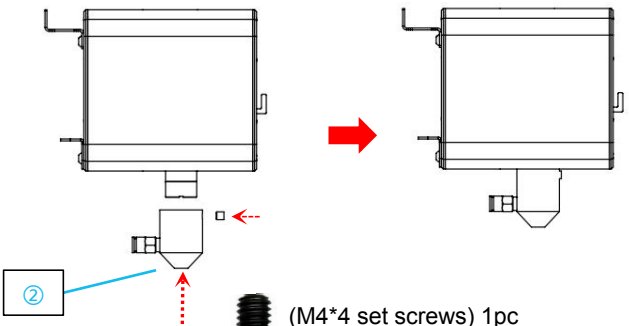


➢ Install the air tube holder



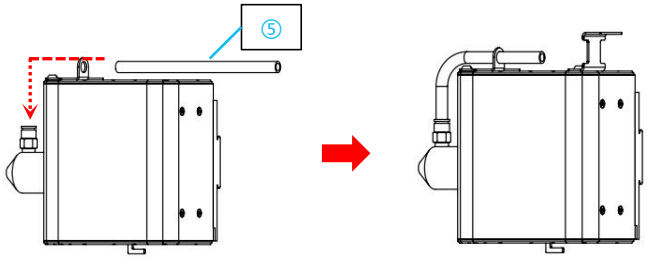
(PM3*8) 2pcs

➢ Install the air nozzle

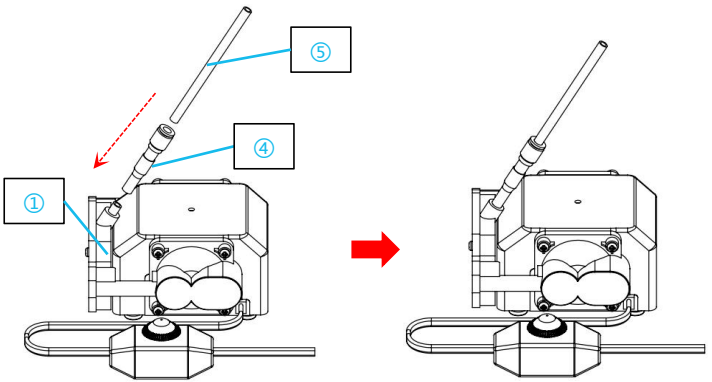


(M4*4 set screws) 1pc

➢ Insert the air tube at the air tube end



➢ Insert the air tube at the air pump end



Finally, use a cable tie to fix the air tube and the laser device wire together to prevent the air tube from being scratched during movement.

Distributor

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