



Good-Laser HH002

(Product Model:HH5030)

CO2 laser cutting & engraving machine

User Manual

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In case of any discrepancy between the actual operation and this manual caused by hardware upgrade,
the actual product shall prevail.

Thanks for using Good-Laser HH002 desktop laser cutting machine, please read the following content carefully before using the machine.

Machine model	Working area (Units: mm)	Machine Dimensions (Units: mm)	Laser power	Weight	Total power
Desktop cutting machine Good-Laser HH002	500×300	(L×W×H) 1145×545×295	60W	±50KG	350W

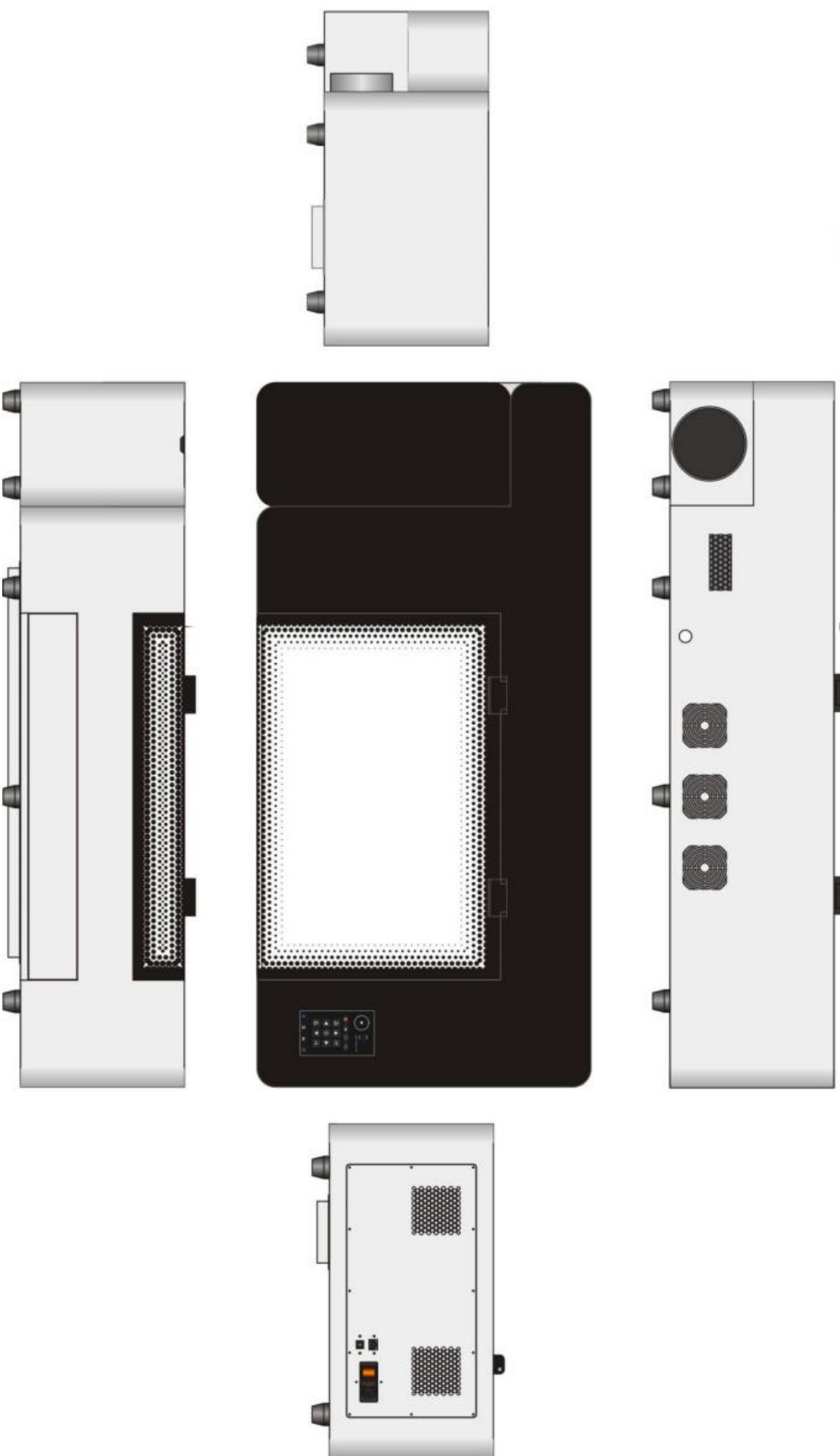
Specifications

1. Laser type: Sealed CO2 laser tube	2. Working area: 500mm * 300mm
3. Operating voltage: AC110-220V, 50-60HZ	4. Working platform: Snap drawer honeycomb workbench
5. Laser Power: 60W	6. Repeated positioning accuracy: ≤0.025mm
7. Engraving speed: 0-6000mm/min	8. Maximum cutting speed: 300mm
9. Cooling mode: Water cooling+air cooling	10. Support operating system: windows xp/win7/8/10
11. Minimum formed characters: English 1x1mm, Chinese 2X2mm	12. Compatible software: CorelDraw.AutoCAD
13. Control software: DSP control system	14. Drive motor: Stepper motor
15. Working temperature: 1-45℃	16. Working humidity: 5%-95% without doubt water
17. Communication interface: USB/Ethernet/WIFI	

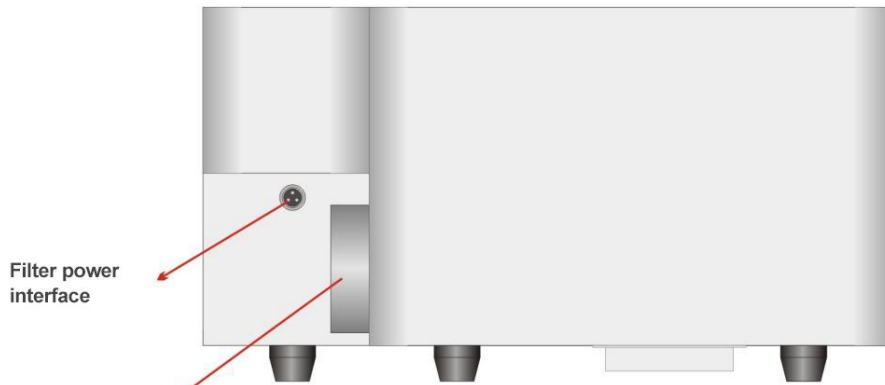
Warning

1. The equipment must be properly grounded according to the power grid, otherwise it will affect the normal operation of the machine and cause machine fault.
2. The equipment uses a Class IV CO2 laser. Do not directly project the laser onto the eyes or skin.
3. There are laser and high-voltage parts inside the machine, and non-professional operators are strictly prohibited from disassembling the machine.
4. When the machine is working, the operator must not leave, as a result of the laser being shot into some kind of flammable object or when there is no gas output from the mouth of the spray cup, it may cause a fire.

Machine appearance drawing



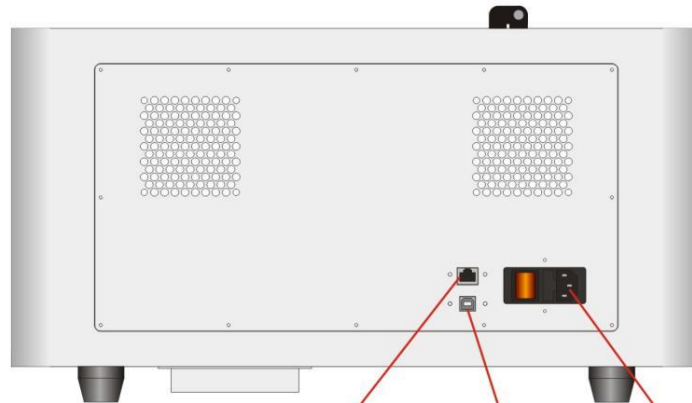
External connection port



Filter power interface

Exhaust duct interface

Please connect one end of the air duct to the exhaust air of the filter box with the throat buckle, and connect the other end of the air duct to the outdoor.



Network cable data input port

USB data cable port

220V input

(The power supply circuit must be larger than 1 square meter, and the bar must be grounded)

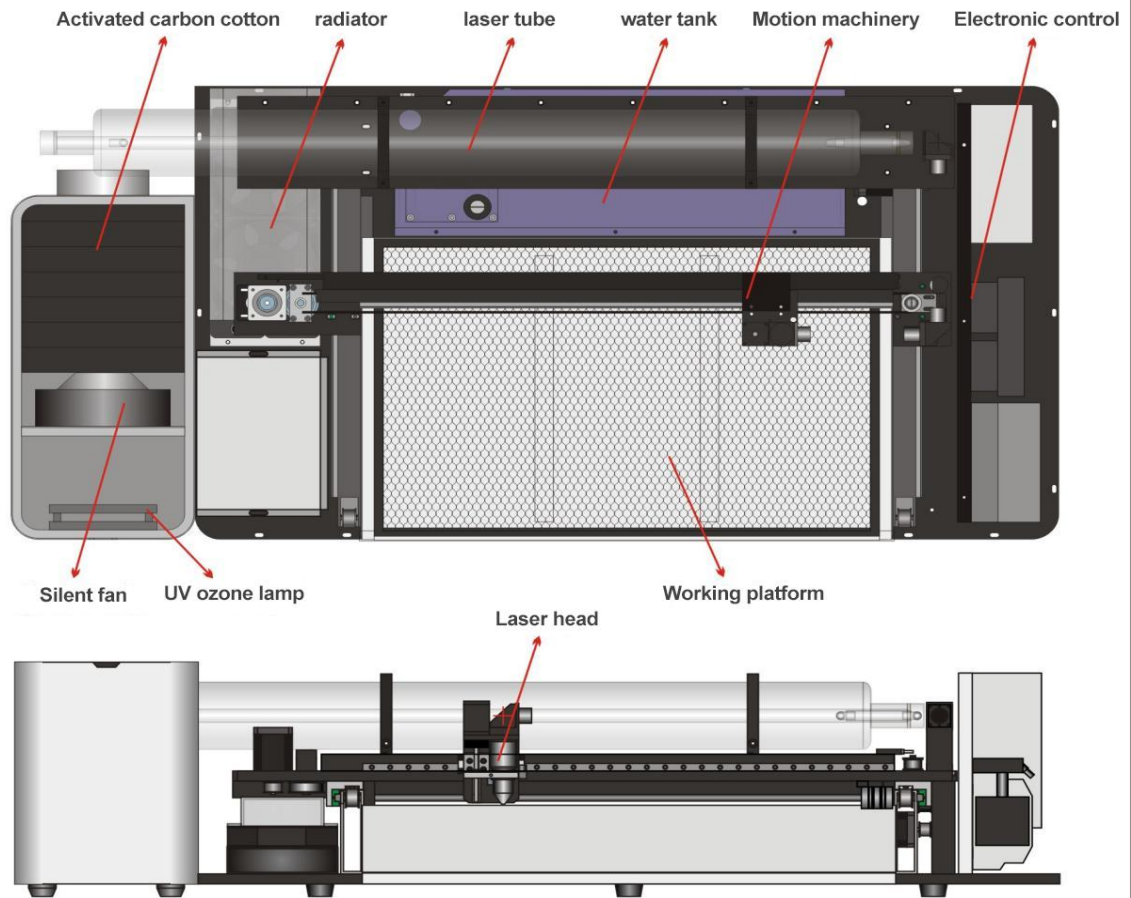
Tank filling port

Water tank must be filled with pure water. And remember to add antifreeze in cold areas in winter.



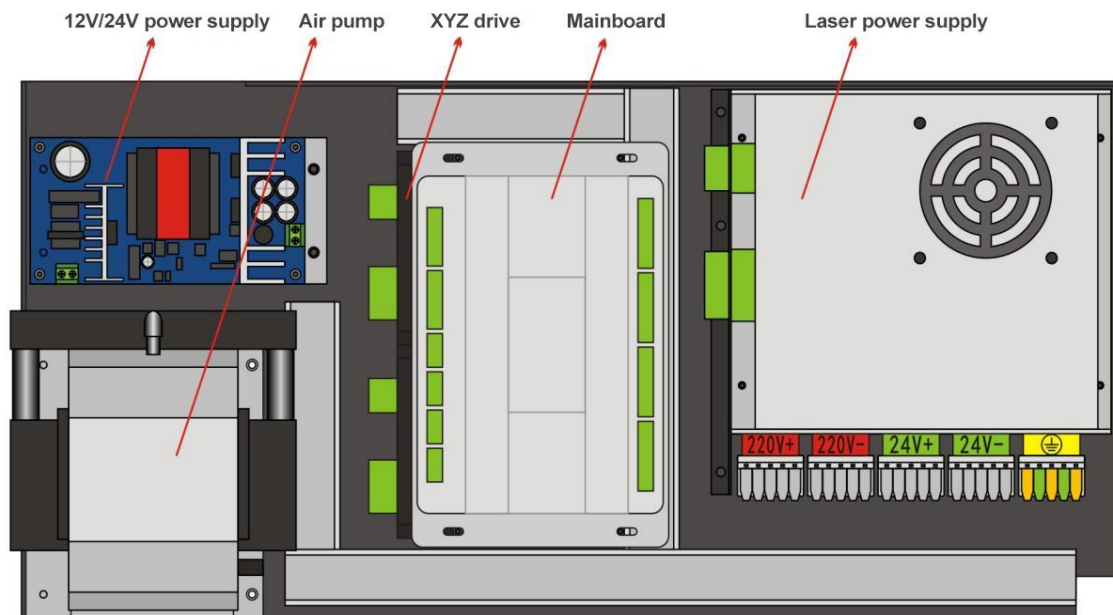
Machine structure drawing

Structure drawing is for reference only, non - professional personnel do not disassemble

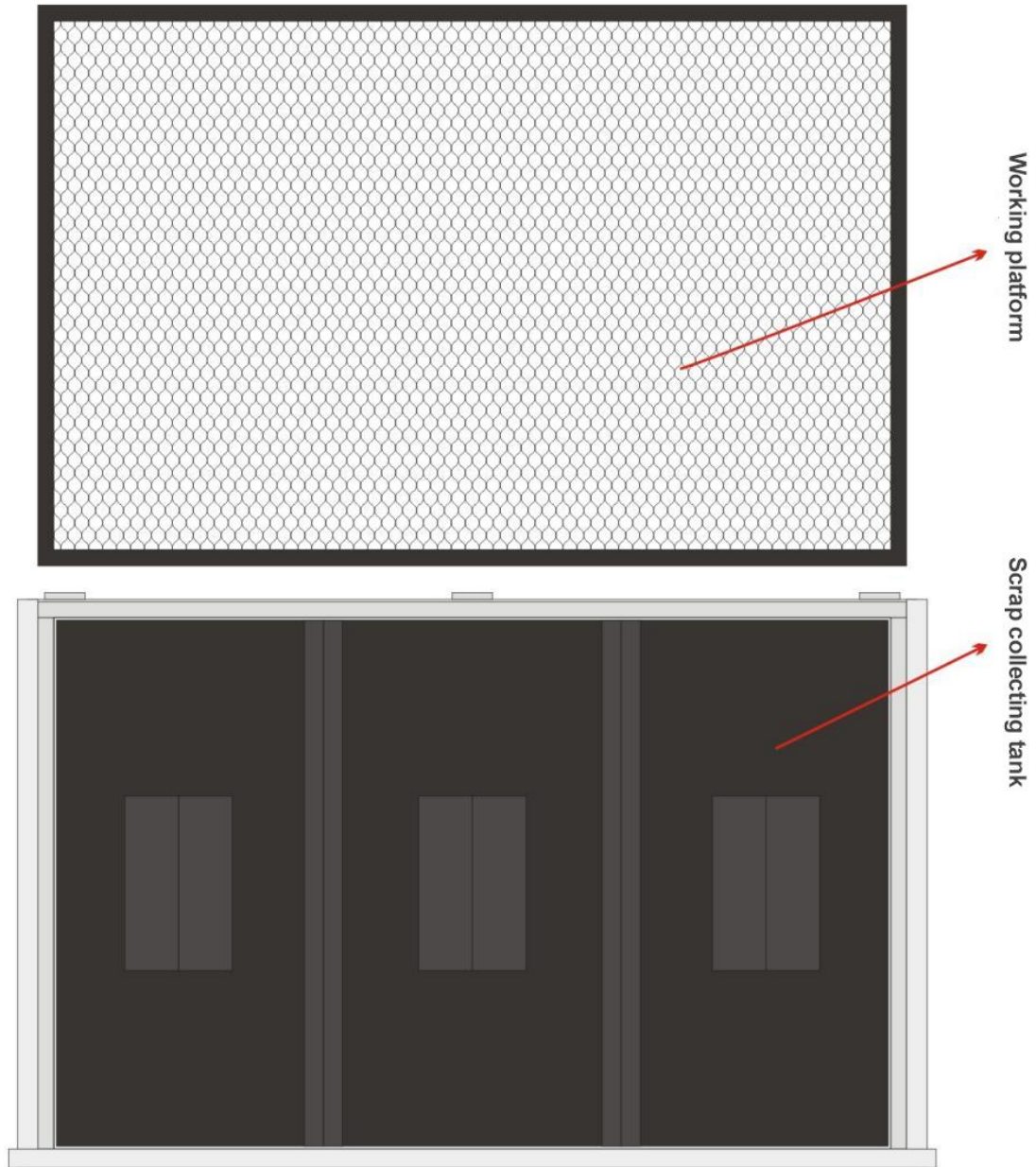


Electronic control board composition

Structure drawing is for reference only, non - professional personnel do not disassemble

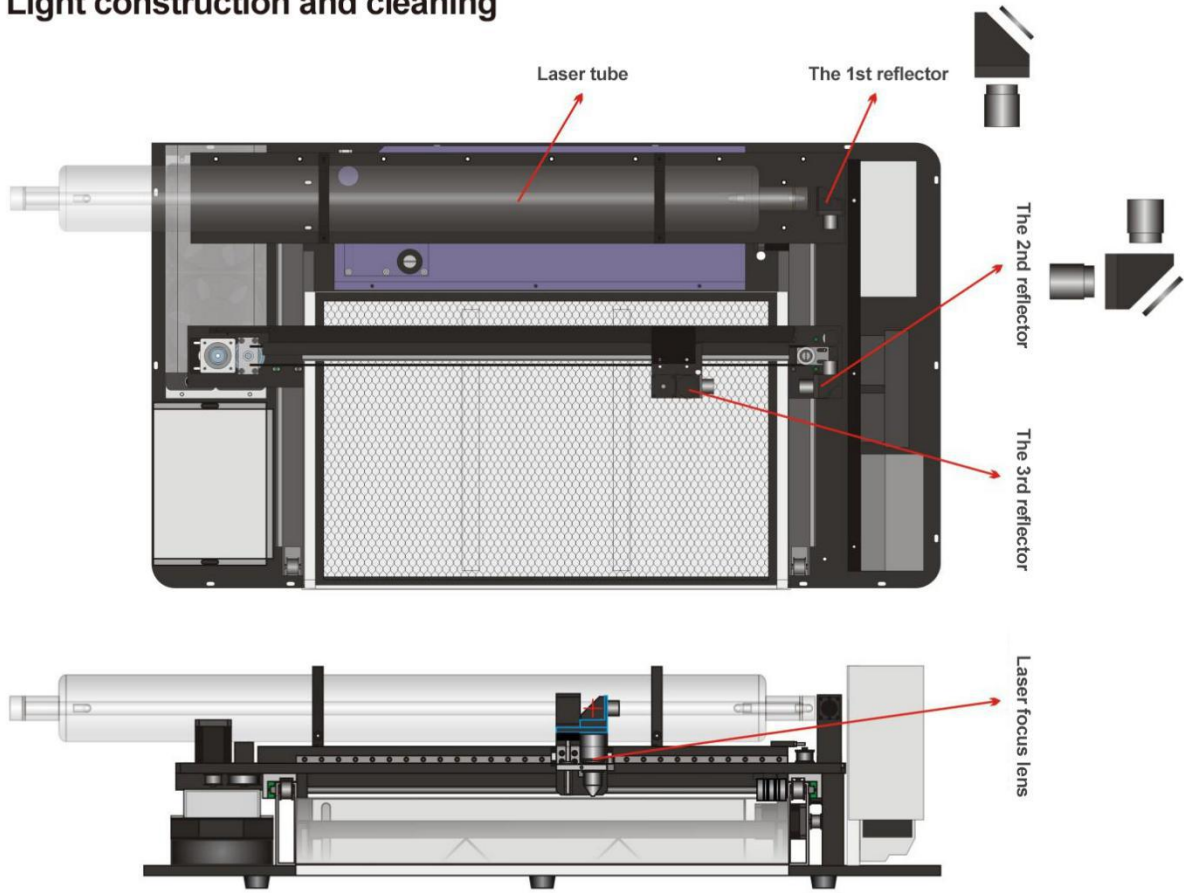


Waste collection box cleaning



Remove the cellular platform above to clean the waste tank, or take the waste tank out to clean it.

Light construction and cleaning

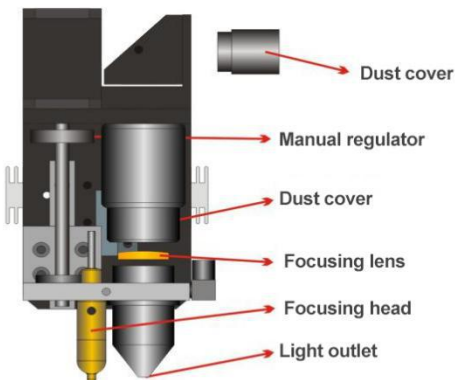


Dirty lenses will cause the laser less reflective or less focused.


The 1st, 2nd and 3rd laser lens reflector cleaning

1. Use cotton swabs to spray 75%/95% alcohol (ethanol) deep into the 1st, 2nd, and 3rd lens seat to clean, or remove the dust cover to clean the lens deeply;
2. Clean with alcohol (ethanol) and then dry with a dry cotton swab;
3. You can also loosen the fixed ejector wire of the launching lens and take out the cleaning;

Note that the lens must be placed flat to secure.

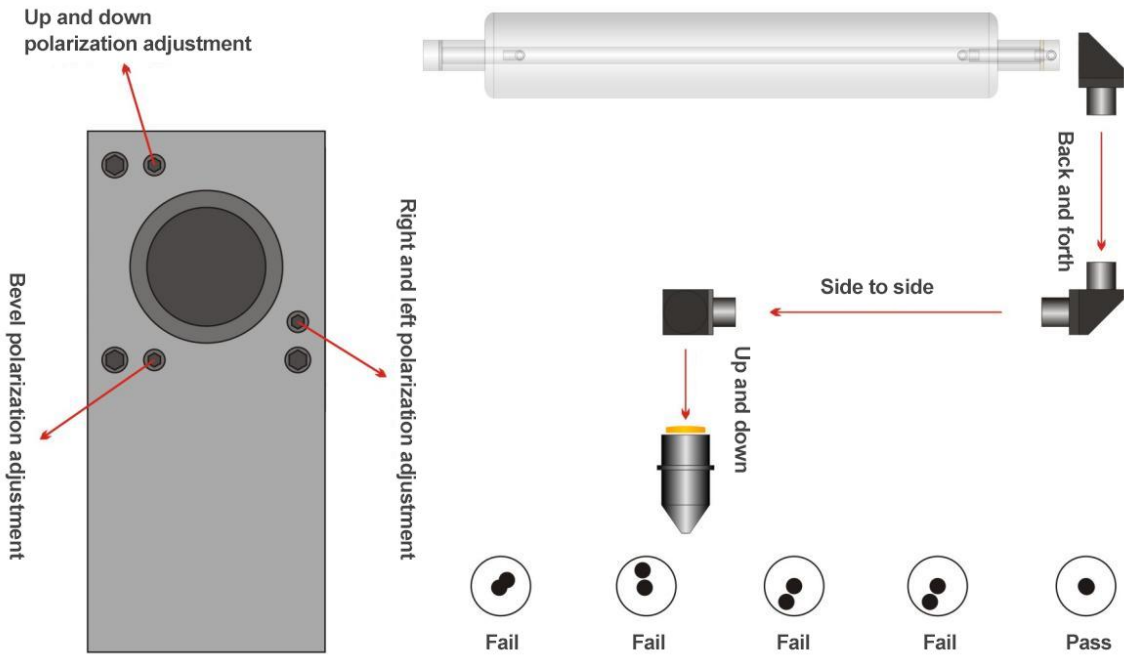


Focusing lens cleaning

1. Rotate the manual regulator to adjust the laser head to the bottom;
2. After loosening the dust cover, the focusing lens can be taken out;
3. Clean with cotton swabs and alcohol (ethanol), or clean with lint free tissue and alcohol (ethanol), and then dry the focusing lens;
4. When placed, the convex surface must placed flat upward. "  "

Note: This lens is fragile, please keep it carefully.

First, second and third reflector polarization adjustment



When laser cutting at the usual speed and power can not be cut through, the first check is whether the lens is too dirty, if the lens is normal then it is laser polarization; There is also a phenomenon, the right side can cut through but the left side can not cut through, inside can cut through the outside can not, that is also caused by polarization.

The 1st , 2nd and 3rd polarizing adjustment

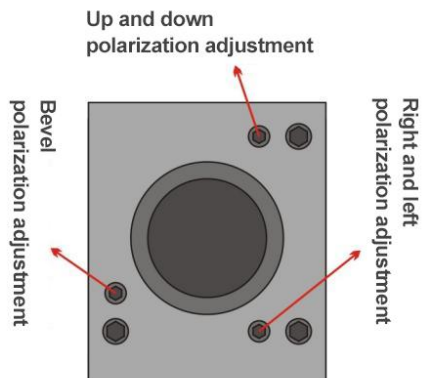
1. Firstly, set the lighting power at 15-25.

Paste a piece of double-sided tape on the input light door of the second reflector, press the upper direction key to move the 2nd reflector to the inside of the machine "point" to mark the position of the light point, and then move to the outside and then "point" to see whether there is a deviation between the first light point and the second light point, if there is a deviation, adjust the adjustment screw on the first reverse, and adjust the corresponding screw according to the direction of the polarizing light. Adjust the nearest spot to the farthest spot several times until the spot completely coincides.

2. Front and rear light source adjustment

Paste a piece of double-sided tape on the input light door of the second reflector, press the upper direction key to move the 2nd reflector to the inside of the machine "point" to mark the position of the light point, and then move to the outside and then "point" to see whether there is a deviation between the first light point and the second light point, if there is a deviation, adjust the adjustment screw on the first reverse, and adjust the corresponding screw according to the direction of the polarizing light. Adjust the nearest spot to the farthest spot several times until the spot completely coincides.

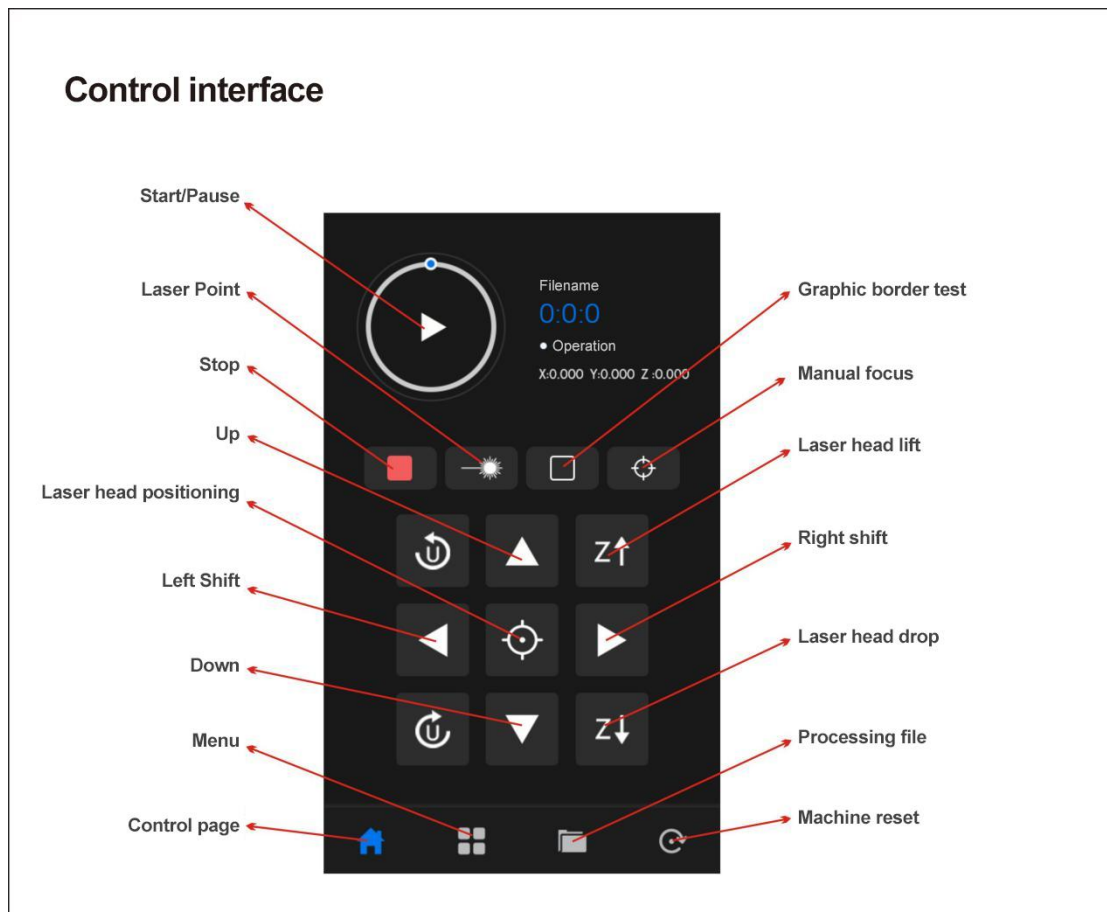
Focusing light source adjustment



Focusing light source adjustment is similar to 1st and 2nd reflector adjustments, first paste a piece of double-sided tape on the laser head outlet, press the "spot" down to see the position of the light spot, according to the direction of the polarized light to adjust the corresponding screw, repeatedly adjusted several times, until in the center of the outlet so far. "○"

Double-sided adhesive paste in the light outlet position will be printed with an inner circle and outer circle





Good-Laser HH002 Desktop laser cutting machine

(The following material test is for reference only)

Laser power: 60W

Laser tube length: 900mm

Wavelength: 10.6

Focusing mirror: Import 50.8

Cutting power: minimum power 60% maximum power 70%

The tests are as follows:

N O	Material	Thickne ss/mm	Fastest cutting speed	Suggested cutting speed	Remarks
1	Acrylic	3	30	20-25	
2	Acrylic	5	15	6-10	
3	Acrylic	6	12	5-8	
4	Acrylic	10	6	2-4	
5	MDF	3	35	20-25	
6	Light board	3	70	50-60	
7	Basswood laminate	3	40	25-30	
8	Basswood laminate	4	25	15-20	

Good-Laser HH002 desktop laser installation and parameter setting

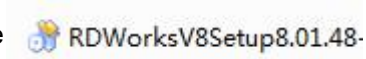
1. Machine installation

- A. Connect the power supply and exhaust pipe of the smoking machine
- B. Add water to the water tank (purified water or antifreeze)
- C. Connect the network cable (USB data cable) to the computer
- D. Connect 220V power supply and turn on the machine

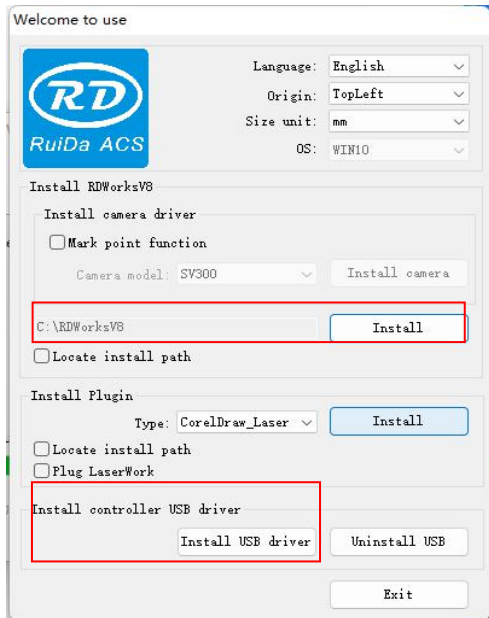
2. Machine software installation and setup

1. Software installation

- A. Open the laser software in the USB flash drive
- B. Click Next --- Install.

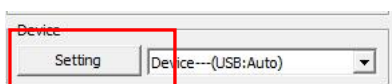


- C. Click RDWorksV8 to install laser software. the installation location is optional
- D. Click Install USB driver
- E. After the installation, Click to close the installation window

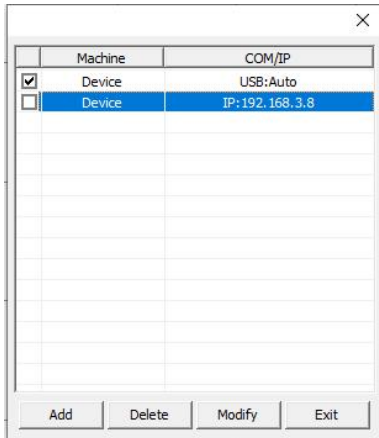


"USB" / " network " or laptop " WIFI " connection

- A. Open the device port in the lower right corner of the laser software --- Setting.

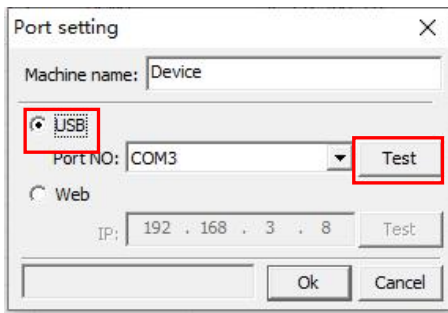


B. Click to add



C. Select USB/Network

If choose "USB" output, please connect the machine and computer with USB cable first, Click test, if communication test failure, then select COM number, Click test again.



If select "Network" port output

A. Single machine connection, first connect the machine and computer with network cable.

B. Open the Network and Sharing Center and Click Private network --- Click Properties --- Click Internet Protocol version 4 (TCP/IPv4) -- Click Properties to set the IP address and subnet (the last three digits of the IP address must be greater than the last three digits of the machine IP address). (Figure 1)

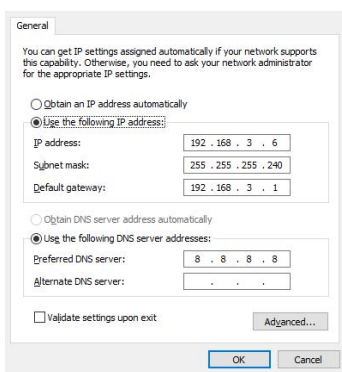


Figure 1



Figure 2

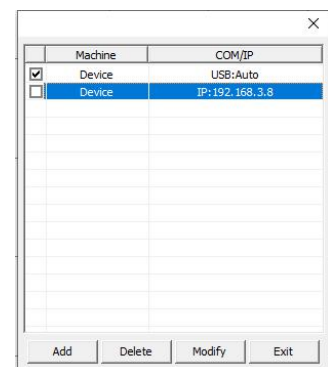


Figure 3

IP address Modify

The IP address of each laser is above the laser head and the network port of the machine. Set the corresponding IP address to the software port and Click Test.

Note that the IP address of the machine must be the same as the IP address of the software (Figure 2).

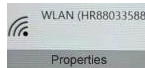
C. multiple machines share a computer "network" control

Connect the computer and laser machine to the network switch with network cable (TP-LINK 1 to 4/1 to 8/1 to 12 is preferable for the network switch).

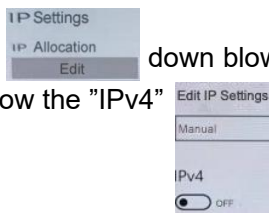
Device port (configuration) in the lower right corner of the laser software -- Click Add -- select network -- enter the IP address of the laser machine -- Click Test. The same method for other laser machines. Check the IP address of the selected machine in the software Settings port if you need to control the corresponding machine.(Figure 3)

3. Laptop "WIFI" connection

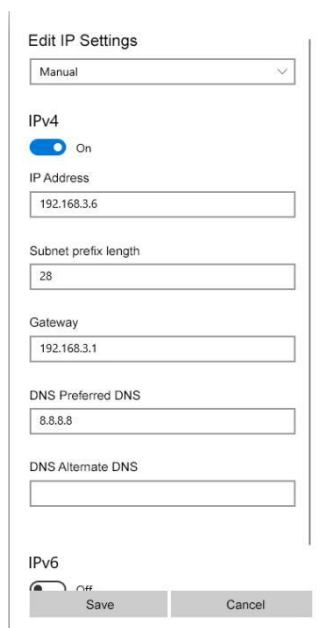
Right Click on the wireless network at the bottom right of your computer, then click "Open internet and Internet settings"-- Click the "Properties"



Click the "Edit" button below the "IP settings" --- Edit IP Settings Select Manual --- Click the bottom below the "IPv4"



After the Settings are saved, the laptop can control the machine



Edit IP Settings

Manual

IPv4

On

IP Address

192.168.3.6

Subnet prefix length

28

Gateway

192.168.3.1

DNS Preferred DNS

8.8.8.8

DNS Alternate DNS

IPv6

Off

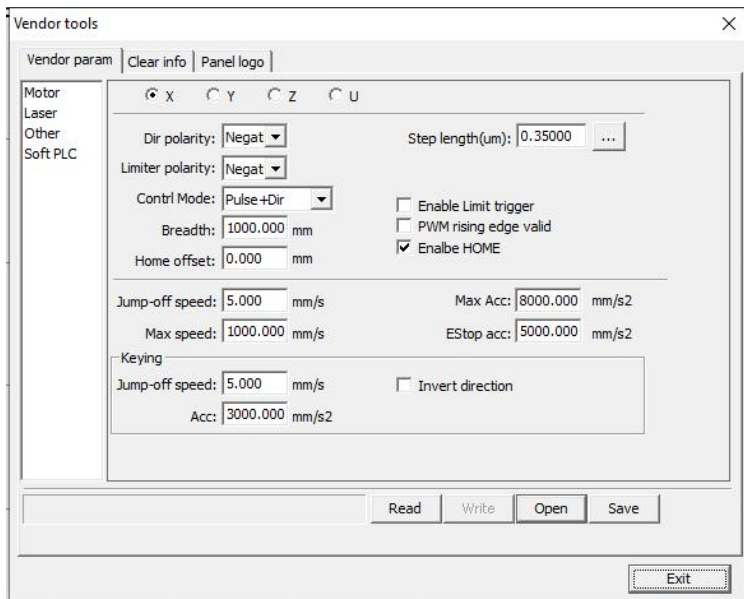
Save Cancel

4. Parameter setting

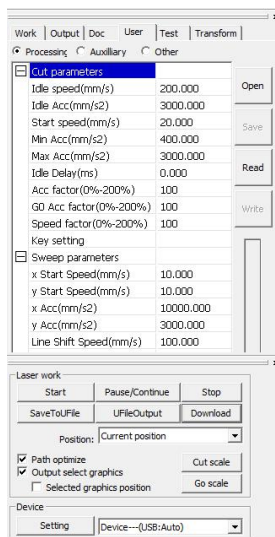
If the laser software need to install or re-install, please read the machine parameters again

Open the manufacturer Settings in the file menu. Password is rd8888 Read the parameters and exit

Note: Do not modify the background parameters.



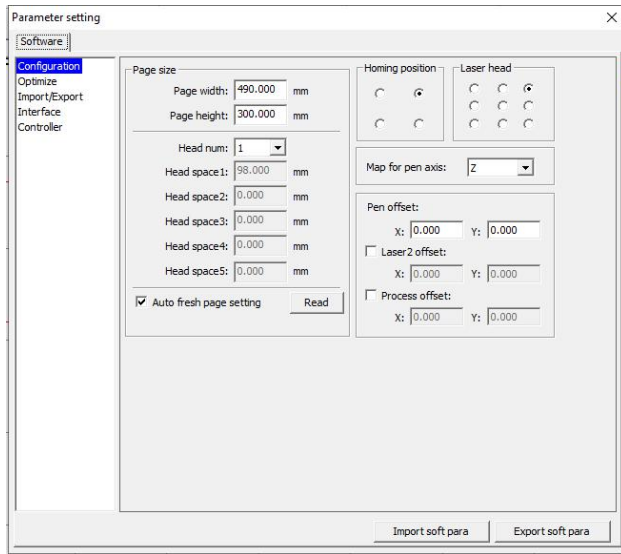
5. Read user parameters



6. Laser head lifting shaft setting

A. Select "Settings (S)" -- "System Settings" -- "Machine Configuration" in the menu

Change the mapping "U" to "Z", the machine origin "upper right", and the position of laser head "upper right".



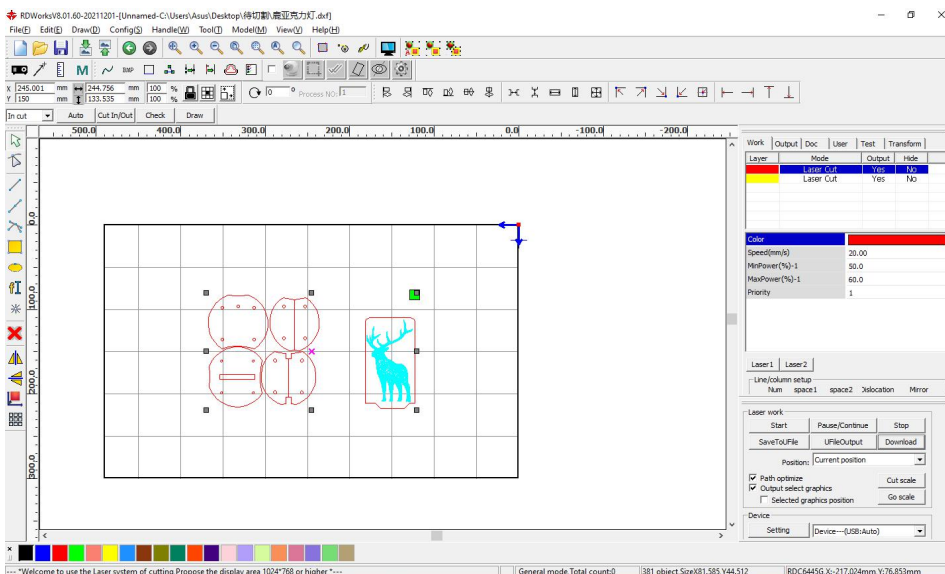
Laser head focusing settings

This machine is automatic focusing, graphics downloaded to the machine after the point, then the laser head will automatically fall. The laser head automatically raised to the laser focusing position when the sensor sense the surface of the material.

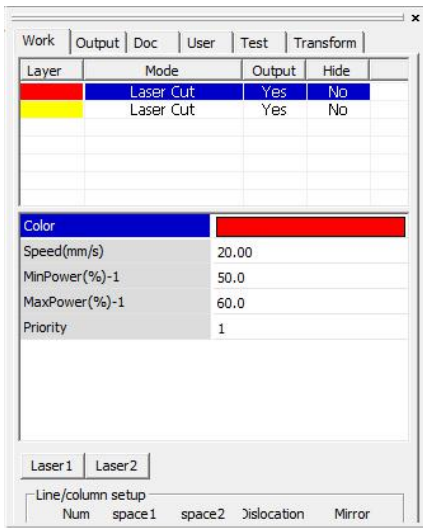
Note: When there is no material under the laser head, do not click to start or click autofocus.

7. Laser cutting

A. click "  to import graph



B. Select color - Set cutting speed - Minimum power - maximum power, pay attention to the cutting power 1-70, the minimum power (turning power) is 5-10 less than the maximum power.



C. Download the cutting file to the laser machine.

D. Put the material to be cut, move the laser head to the upper right of the material after the point positioning.

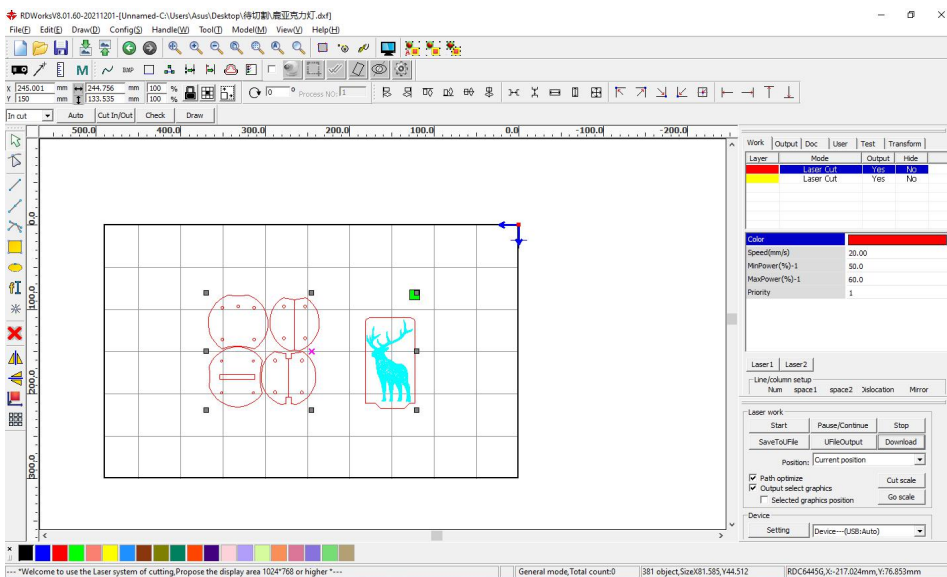
E. Then click "Start" to cut.

8. Laser engraving

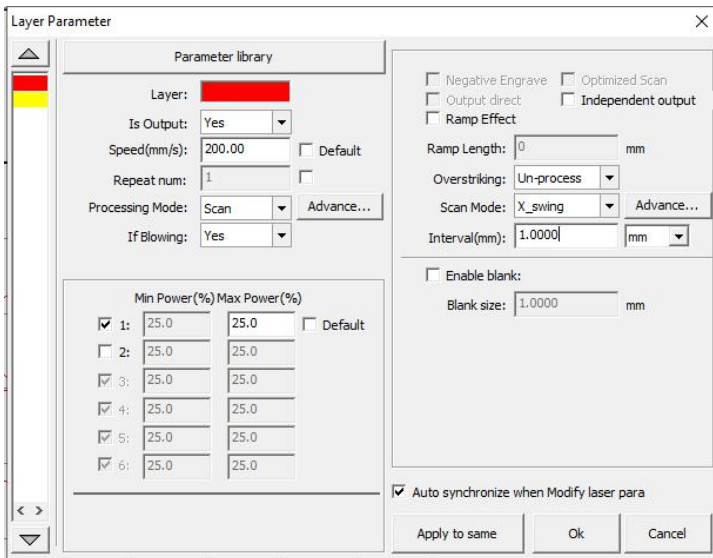
A. Click “” to import graph

B. Double clicking "Color" or "Laser Cutting" in the upper right mode of the software will pop up the layer parameters dialog box.

Layer	Mode	Output	Hide
Red	Laser Cut	Yes	No
Yellow	Laser Cut	Yes	No



C. Select processing mode "laser scanning" - speed "300" - normal scanning interval set to "0.08/0.1/0.12" - the maximum power is "10-70" according to the depth of engraving set power size, After processing mode - Advanced - lifting pen as a whole - lifting pen enable - lifting pen/setting pen - OK.



- D. After setting the processing parameters, download the engraving file to the machine.
- E. Put the material to be cut, move the laser head to the upper right of the material after the point positioning.
- F. Then click "Start" to carve.

Note, cutting and carving can be processing at the same time, for example, if you want to cut out the carved pattern, or paint a frame around the carved pattern.

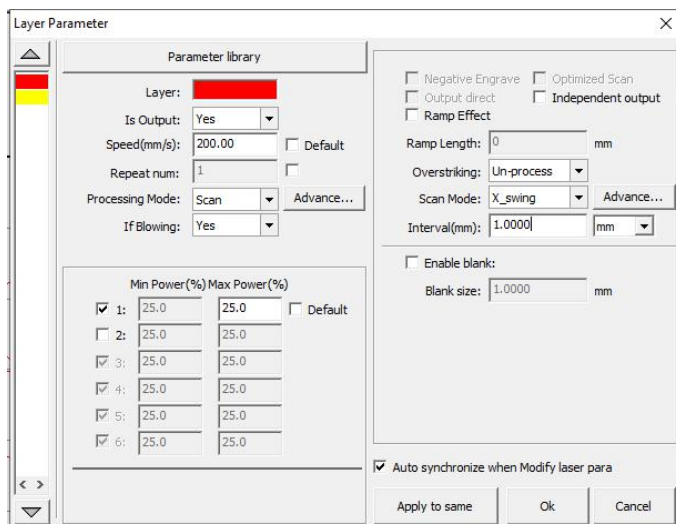
1. First, select all the shapes to be carved and set the color to black.
2. Select the outer frame to be cut again and set the color to red.

9. Engraving parameter setting

In the process of engraving, if the edge of the carved figure appears uneven phenomenon, it is necessary to do engraving compensation setting. Because of the matching between the laser power supply and the laser tube of each laser machine, the compensation parameters will be different accordingly.

First draw a 50mm*15mm rectangle in the laser software. Double clicking "Color" or "Laser Cutting" in the upper right mode of the software will pop up the layer parameter dialog box.

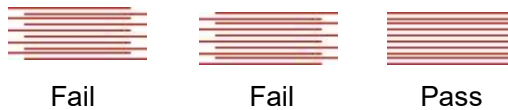
Layer	Mode	Output	Hide
Yellow	Laser Cut	Yes	No
Red	Laser Cut	Yes	No



Select processing mode "Laser scanning" and set the Speed as "300", the scanning interval as "1" and Maximum power as "15-25".

The after processing mode is: Advanced - Lifting pen as a whole - Lifting pen enable - Lifting pen/setting pen - OK.

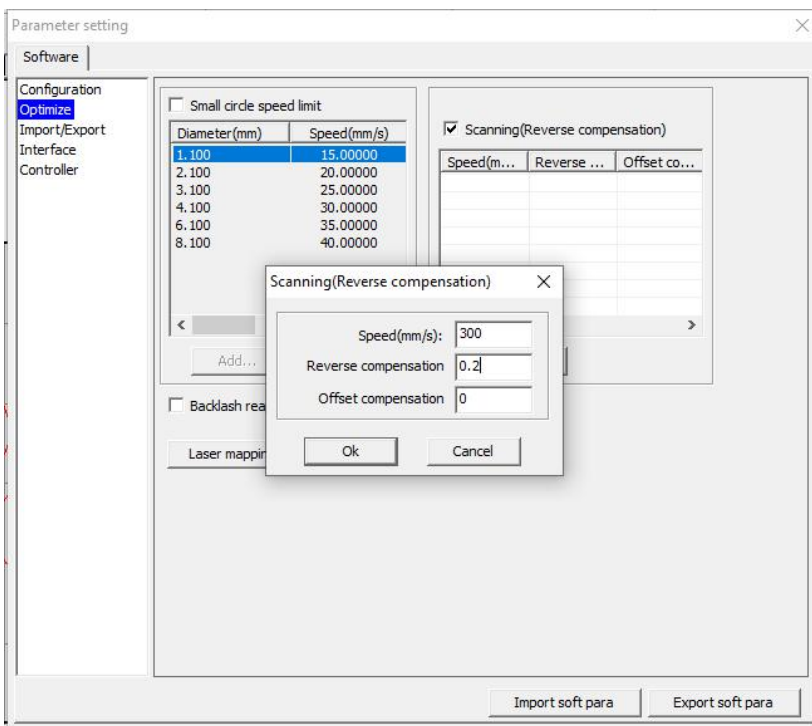
Download the file to the machine - Move the laser head to the middle point of the table - place a piece of white paper under the laser head - start from the point, check if the scanned image is as follows



Compensation setting

Click "Set (S)" in the menu bar - System Settings - Optimization parameters - Scan (reverse interval) hit ⚙ - increase, set the speed as 300 reverse interval "0.2" (Note: Test the reverse interval from 0.1-1 step by step, if the flatness is getting worse, change the set to -0.1 - -1, every change will be need download to the machine to test until it get flat result.

Speed is also set to 300 in engrave formal products.



Laser machine maintenance and safety precautions

Safety precautions

Before operating the machine, please read this manual and the related operation manual carefully.

Strictly abide by the operating procedures, non - professional personnel shall not boot the machine.

This machine uses the 4th category of laser kind (strong laser radiation), which may cause the following accidents:

- ① Igniting flammable materials around;
- ② In the process of laser processing, different processing objects may produce other radiation, toxic and harmful gases;
- ③ Direct irradiation of laser radiation will have certain damage to the eyes, therefore, please wear good anti-radiation glasses to watch.

Firefighting equipment must be equipped in the place where the laser machine is used. Flammable and explosive materials must not be piled around the workbench and machine. Ventilation must be kept in good condition.

If non-professional personnel operate the machine, please be sure to operate under the guidance of professional personnel, do not leave without permission, and cut off all power before leaving.

Processing objects and emissions shall comply with local laws and regulations.

Laser processing may have risks, users should carefully consider whether the processed object is suitable for laser operation.

Non-professional personnel is forbidden to disassemble laser equipment because of high pressure or other potential hazards inside.

Do not open any end cover when the device is working.

The engraving machine and its associated other equipment must be safely grounded before starting operation.

Do not place any irrelevant full reflection or diffuse reflection object in the device to prevent laser reflection on the human body or flammable objects.

During the operation of the equipment, the operator must observe the working condition of the equipment at all times.

In case of abnormal conditions, all power supplies should be cut off immediately and corresponding measures should be taken actively.

The environment of the device should be dry and free of pollution, vibration, strong electricity, and magnetic interference.

The recommended working environment temperature is 5-40°C, and the working environment humidity is 5-95%(no coagulated water).

Equipment should be kept away from electrical equipment sensitive to electromagnetic interference, which may cause electromagnetic interference.

The machine's working voltage is AC220V, 50Hz and the total power is < 400W.

When the power grid voltage is unstable or does not match, do not start the machine.

The Manufacturer shall not be responsible for any loss caused by improper use or failure to comply with the above rules.

Daily maintenance of equipment

1. The use of inferior circulating water is strictly prohibited. Inferior water can seriously affect the laser power and greatly shorten the service life of the laser tube. The damage caused by the use of inferior water by the user shall not be covered by the warranty.
Purified or distilled water or coolant is recommended.
2. Cooling water can not be less than 5 liters or so, and must be immersed in the submersible pump.
3. During the operation, the water temperature must be checked at any time. Once the water feels warm, the water should be changed immediately
(The method which does not affect the operation is that remove part of the hot water, then flush the cold water).
4. If not in special need, adjust the light intensity to no more than 80%, to prevent rapid aging of the laser tube.
5. Clean the lens once a day before starting the machine at work (note: not after work).
6. The 1st and 2nd reverse lenses should be carefully cleaned on the machine, or the dimming path should be re-dimmed!
7. The 3rd reflector and focusing mirror must be removed for cleaning. After cleaning, lens installation must be firm, but not too tight, to avoid lens breakage.
8. Before each operation, please pay attention to the focal length, It will seriously affect the engraving effect if the focal length is not aligned.
9. After each operation, the working table should be cleaned briefly. When cleaning, pay attention not to make the dust fly.

10. After the end of the operation every day, should do a good job of cleaning. When doing cleaning work, in the case of power failure, you can slowly push the beam and trolley, but it is strictly prohibited to push and pull too hard.

11. Every other week, clean the guide rail and add lubricating oil to the moving guide rail.

For any other questions, feel free to send us email via support@good-laser.com at anytime.