User Operating Manual Of Lingerie Lace Laser Cutter – NS-9015-SY2

(Hardware Part)

Prefácio

- Thank you for buying the lingerie lace laser cutting machine. This equipment is a high-tech product integrating light, machine, electricity, high professionalism, high scientific and technological content.
- This manual can be prepared for the user to better use and maintain the equipment.
- In this manual, a large number of practical illustrations are used, and strive to be illustrated, easy to understand. The content thoroughly introduces the equipment installation and debugging, equipment daily maintenance and safety precautions and other knowledge. The content of this book will help you to better grasp the operation and maintenance of the machine, so it is recommended that users must read this manual in detail before using the equipment.
- Due to the limited level of the editor, the mistakes and shortcomings in the book are inevitable. Please provide valuable opinions and suggestions. Thank you deeply here!

Statement

- The contents in this specification may be different from the actual product due to product upgrading and improvement. In addition, the contents of this specification may be subject to advance notice.
- As included in this instruction manual, the figure may differ from the product purchased due to product improvements, etc.

Safety Precautions

- Before operating the equipment, the user must carefully read this manual and the relevant operation manual, strictly observe the operating procedures, and the non-professional personnel shall not start the machine.
- The equipment uses Forth Laser (strong laser radiation), which may cause the following accidents: ignite the surrounding flammable materials; during laser processing, other radiation and toxic and harmful gases may occur due to different processing objects; and the direct irradiation of laser radiation may cause human body injury. Therefore, the equipment use site must be equipped with fire fighting equipment, it is strictly prohibited to pile up inflammable and explosive items around the work bench and equipment, and must maintain good ventilation, non-professional operating personnel are not allowed to approach the equipment.
- The processing objects and emissions shall comply with the local laws and regulations.
- Laser processing may have risks, and users should carefully consider whether the processed objects are suitable for laser operation.
- There is high pressure or other potential danger in laser equipment, not dismantled by non-manufacturer professionals.
- The equipment must be on duty and must not leave without authorization. All power must be cut off before leaving.
- Opening of any end cover is strictly prohibited when the equipment is working.
- The engraving / cutter and other associated equipment must be safely

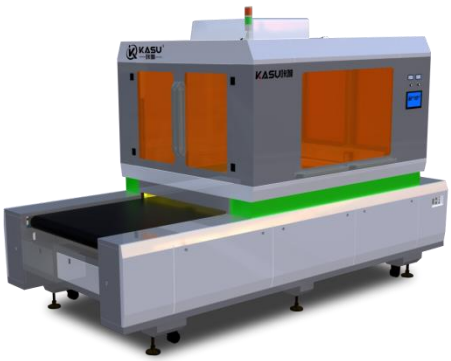
ground before startup.

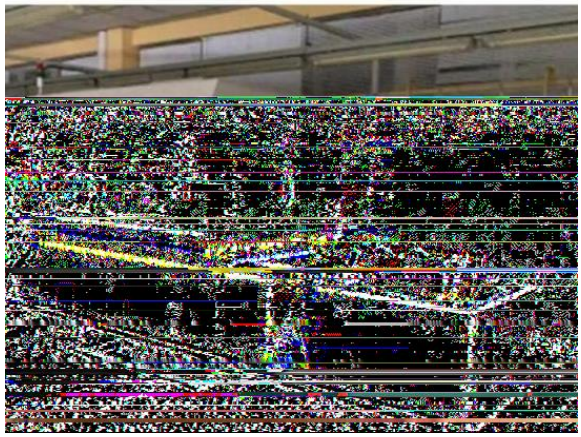
- It is strictly prohibited to place any irrelevant full reflection or diffuse objects in the equipment to prevent laser reflection onto the human body or flammable objects.
- During the operation of the equipment, the operator must observe the operation of the equipment anytime and immediately in case of abnormal condition
- Cut off all power supplies and take active measures.
- The equipment environment shall be dry, no pollution, no vibration, no strong electricity, strong magnetic and other interference and influence. Operating ambient temperature is 5-40℃ and working ambient humidity is 5-95% (no condensate).
- The equipment shall be kept away from the electrical equipment sensitive to electromagnetic interference and may cause electromagnetic interference.
- Equipment operating voltage: AC220V,50/60Hz, total power is <2,500 W. When the grid voltage is unstable or mismatch, it is forbidden to turn on.

The manufacturer shall not be responsible for any loss caused by improper use or non-compliance with the above rules.

Chapter I. Machine and Accessories

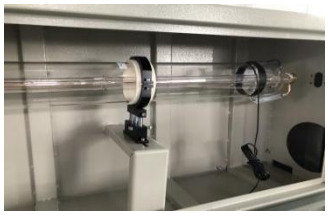
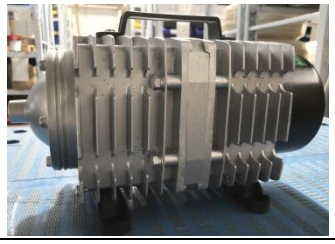
I. The appearance of the machine: as shown in Fig. F1-1:





F1-1

II. Accessorios:

Name	Picture	Name	Picture
Fonte de alimentação do laser		Condutor de ar	
Tubo laser		Resfriador de água - Chiller	
Bomba de ar		Kit de ferramentas	

Name	Picture
Fan	
Computador + Mainframe	
Lâmpada de segurança	
Motor servo e acionamentos	
Estrutura de alimentação especializada	
Lente de foco	

Chapter II: Machine Installation

The complete working system consists of laser cutting machine, laser power supply, fan, air compressor, water chiller, air duct, communication cables, etc. Users shall configure computers, waters, printers, scanners, etc. according to work needs.

I. Remove the packaging

After the packaging is opened, first check whether the laser tube is damaged, and then check the appearance of the whole machine for abrasions and whether the accessories are complete.

Note: For Top Vision Camera Lightning Structure, Canon Camera and Active Feeder Installation, please refer to the vidoes.

II. Place the position

The laser shall be placed in a ventilated and dry place, close to the ground line. Try not to move the machine after debugging the machine, otherwise, readjust the optical path.

III. Installation steps

1 Install the laser tube

Since the laser tube is a glass fragile product, we pack it independently for safe transport, the laser tube must be installed before installing and commissioning the machine. The laser tube is mounted on the back of the machine, opens the tube protection cover and sees two tube brackets. Figure F2-1:

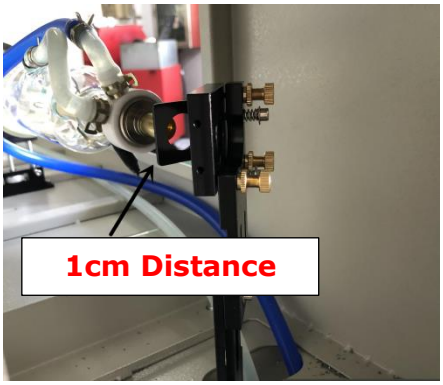
F2-1

Open the two supports first, carefully place the laser tube light outlet (negative extreme) on the support in the direction of the first mirror, and then buckle the belt on the laser tube support and tighten the screws to secure the laser tube.

Note: Make sure that the hoop screw does not twist too tight and you can rotate the laser tube slightly. Figure F2-2:

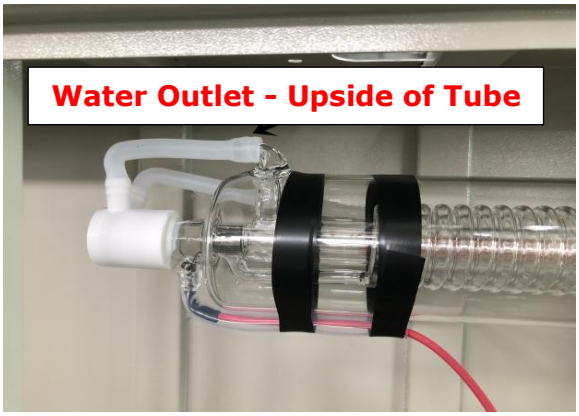
F2-2

Note: The distance between the laser tube port and the No.1 mirror should be about 1 cm, as shown in Figure F2-3:

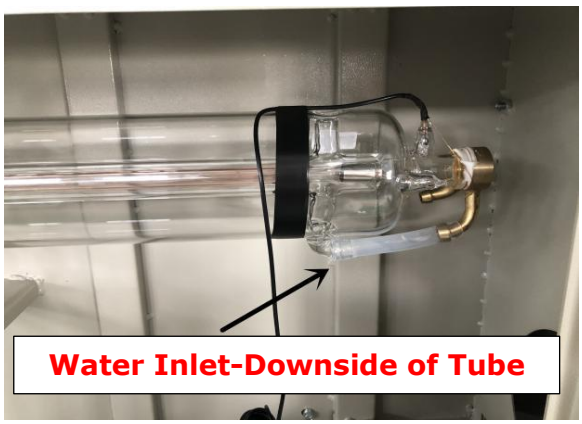


F2-3

After the laser pipe is fixed, the outlet pipe connecting water chiller is connected to the negative extreme inlet of the laser pipe; the other inlet pipe is connected to the outlet of the laser pipe, as shown in Figure F2-4,F2-5: (detailed steps can be checked by videos)



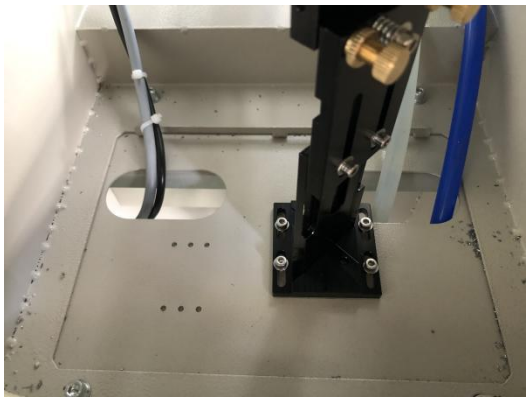
F2-4



F2-5

The water pipe joints should be firmly connected to prevent water leakage; the hose should be straightened out without discount to avoid poor water flow.

Finally, pull the laser tube power cable through the small hole to the laser power supply, see Figure F2-6:



F2-6

2 Install the laser power supply (detailed steps can be checked by videos)

Put the laser power supply into the box behind the workbench, connect the positive electrode line first, and loosen the white plastic of the positive electrode line of the laser tube Screw cover, Figure F2-7:

F2-7

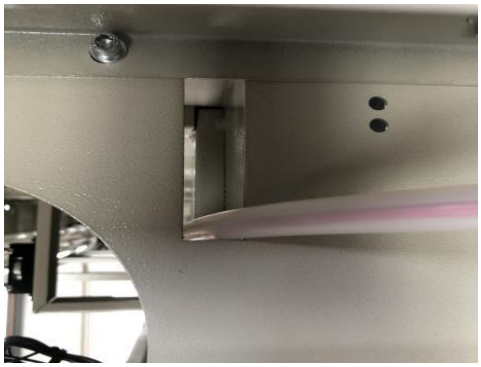
Position the copper hole against the positive copper column of the laser power supply and

slowly tighten the white plastic cap, Figure F2-8:


F2-8

Next connect the negative line to the laser power source and secure the positive high voltage connector to the insulation bracket.

Finally, open the cutting machine side door and connect the control line through the bench hole to the laser power control port, and the installation of the laser power supply is completed, Figure F2-9, F2-10:




F2-9 F2-10

3 Install the water chiller (detailed steps can be checked by videos)

Fill the water chiller with pure water, connect the water pump and the outlet joint and plug in the water pipe, put into the inside of the water chiller, connect the water pipe connected to the water pump through the hole on the tank cover to the cutting machine inlet, and then use another water pipe, connect the outlet of the cut machine and put into the water chiller, to complete the connection of the water circulation pipe. Figure F2-11:

Single-head

Double-head

Four-head

F2-11

Connect to the power supply of the pump, you can see that the water is gradually filled with the laser pipe, the outlet water flow smoothly, indicating that the pump works normally.

To ensure the normal cooling flow of the laser tube, water protection sensors are installed in the water circulation system or the water pumpWorkerWhen abnormal, the cutting opportunity automatically enters the protection state, and the laser tube will have no laser emitting. Therefore, during the daily maintenance process, attention should be paid to the water pump and water pipe.

4 Install the air compressor (detailed steps can be checked by videos)

Connect the air outlet of the air compressor to the air inlet of the cutter, and connect the power supply to ensure that the air outlet is normal. Figure F2-12:

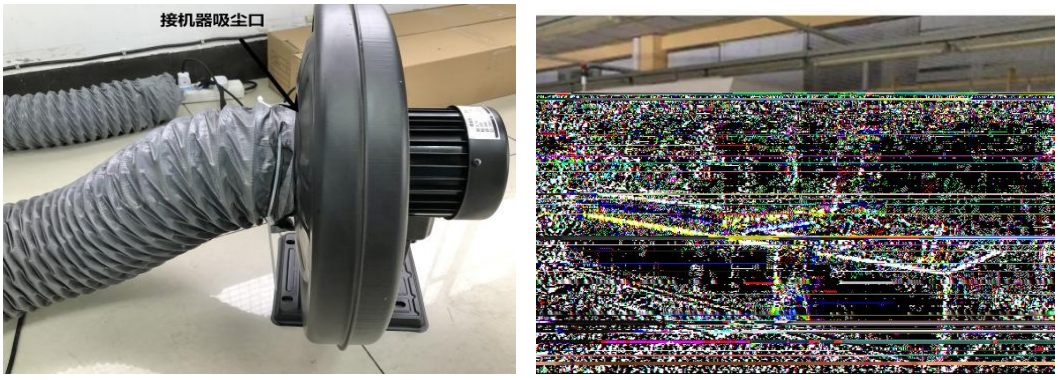
F2-12

The air compressor plays an important role in the system, the high pressure gas is ejected from the laser head through the trachea, on the one hand, can ensure the cleaning of the focus lens, but also plays the role of preventing the material from being ignited by the laser. Therefore, in daily maintenance, users should pay attention that the trachea can not be discounted or damaged, otherwise abnormal blowing may cause material combustion.

5 Adjust the optical path (Details refer to Chapter 3 and detailed steps can be checked by videos)

6 Install the fan

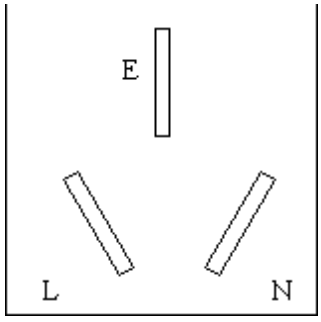
Connect the of the fan to the vacuum of the cutter, and secure with a lock. And air duct is connected to the air outlet of the fan and led to the outdoor to connect the power line of the fan. Figure F2-14：



F2-14

7 Safe grounding

The laser tube used by the laser cutting machine is forth type of laser, driven by high pressure incentive, so on the one hand, users should observe the safety precautions, on the other hand, put forward strict requirements for the safety grounding of the power supply system, the user's power supply system must meet the local safety standards:



L:220V municipal power system, which must be provided with safety electrical switch (switch must be installed on the phase line).

N: commonly known as the zero line, is paired with the phase line to complete the power supply to the electrical equipment.

E: safety wire, all electrical housing (ground end) are connected to for safety. Ground resistance shall be less than 5 Ω.

The user must consult the professional electrical installer and check that the ground wire is safely connected! Please note that poor grounding can cause a high failure rate of the equipment, and may cause other safety accidents! !!

The Company shall not assume any responsibility and obligations for the resulting faults and accidents! !!

If there is no safety wire in your power supply system, be sure to install the safety grounding network by a professional electrical installer as follows:

The ① grounding device must use 2-4 × 35 × 1500 m m 4 × anywhere around the house, each 1 m away, then 3 × 30m m flat iron leads each angle steel to form a good grounding mesh.

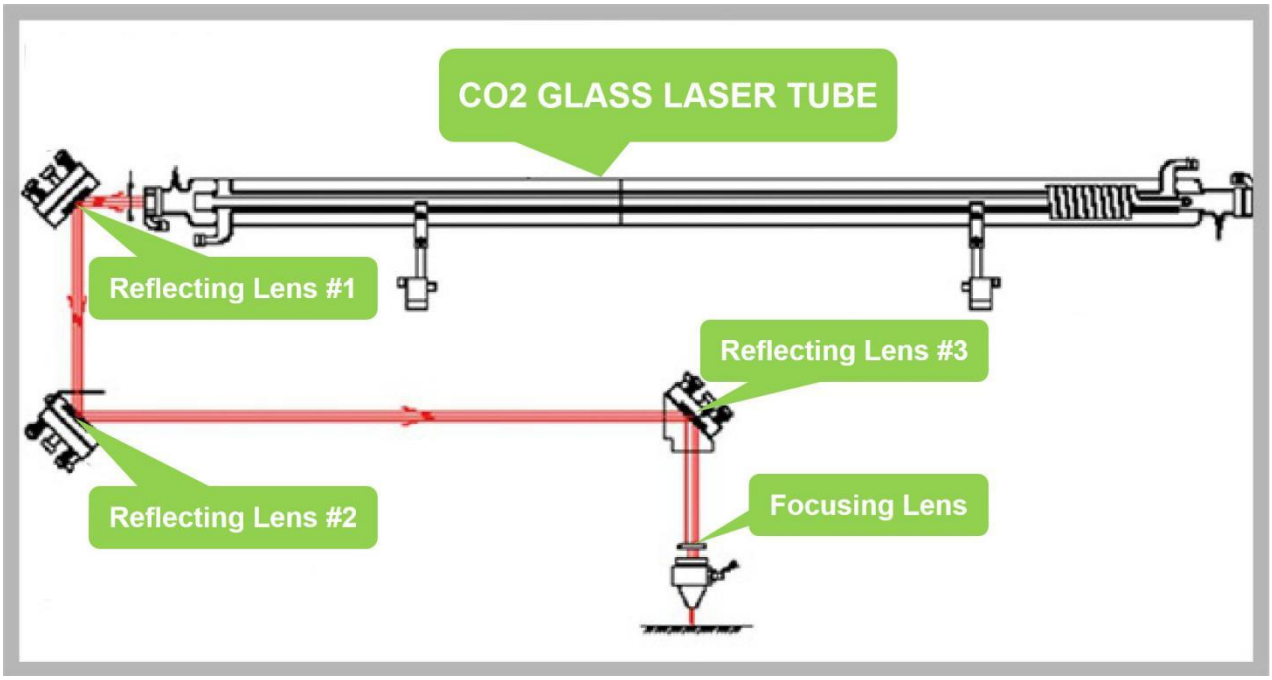
After ② strikes the ground network, measure the ground resistance with the instrument. The standard resistance value is 3-5 ohms.

After the ③ resistance value is measured, a copper core wire above RVV2.5mm2 is connected to the leading end of the grounding network and the grounding hole of the cutting machine safety cable and socket.

8 Fixed foot

After completing all of the above steps, the bottom four feet of the machine step down and tighten the fixation.

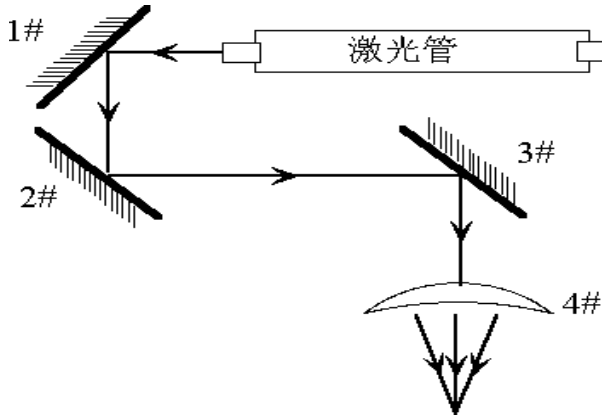
Chapter III: Optical Path Adjustment



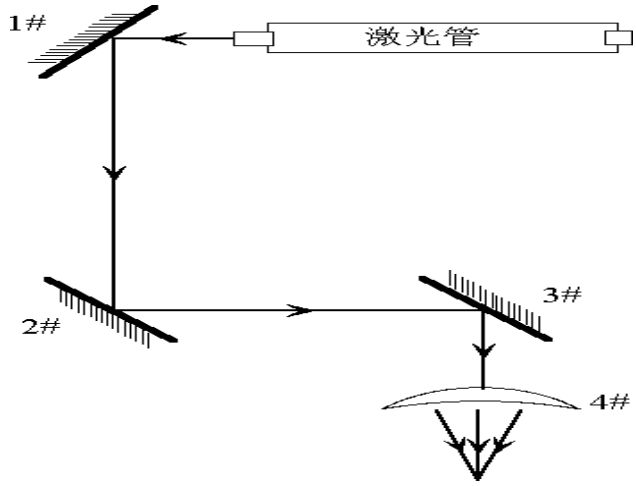
In the use of our engraving / cutter, the optical path offset may occur, resulting in no light or improper optical path phenomenon, then please refer to the following methods:

1. First ensures that the beam incident from the laser tube is at the center of the 1 # mirror.

2. Places double-sided tape (or other marked objects) in front of the 2 # mirror, moves the beam closest to the laser tube, hits the point (control the appropriate light intensity), makes a mark (special attention: to prevent laser radiation damage, test the approximate position of the spot with a cardboard first, and then adjust it).



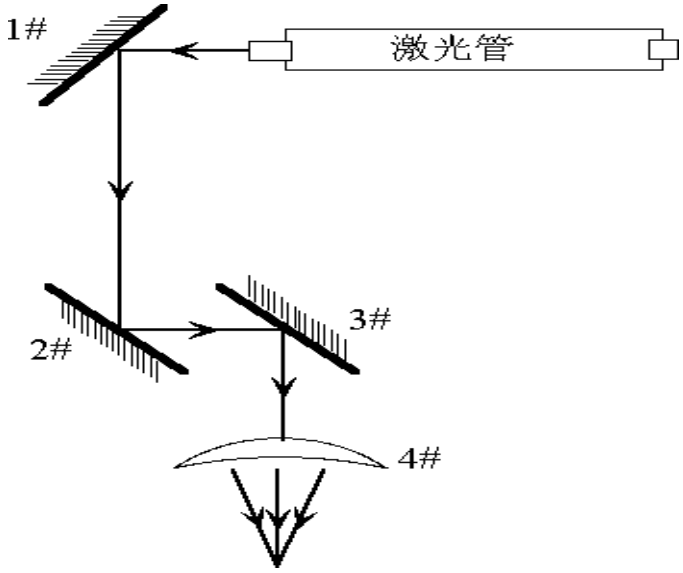
3. Gradually moved the beam to the farthest position from the laser tube, hit the point, and put a mark.



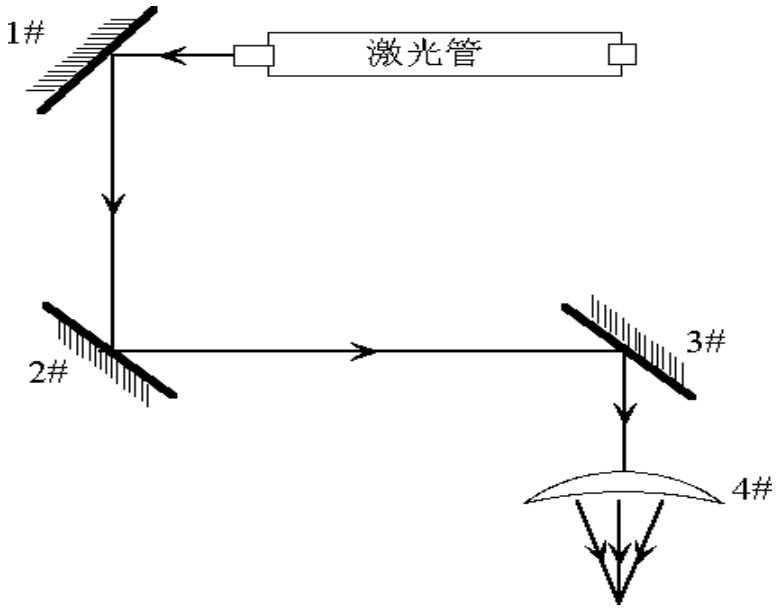
4. If the two tags do not coincide, adjust the 1 # mirror so that the two tag centers overlap.

5. Repeat steps second through four until the two marking centers completely coincide.

6. Place double-sided tape (or other marked objects) in front of the 3 # mirror, moves the trolley (laser head) closest to the 2 # mirror, shoots at the point (controlling the appropriate light intensity) and places a mark.



7. Gradually moves the laser head (trolley) to the farthest position from the 2 # mirror, shoots by point (preferably with a cardboard first to measure the approximate position of the spot in case of injury) and makes a mark.



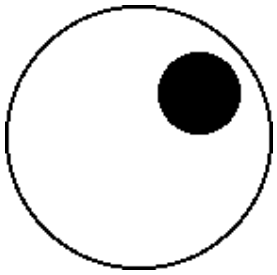
8. If the two markers do not coincide, adjust the 2 # mirror so that the two marker centers overlap.

9. Repeat steps 6 through 8 until the two marking centers completely overlap.

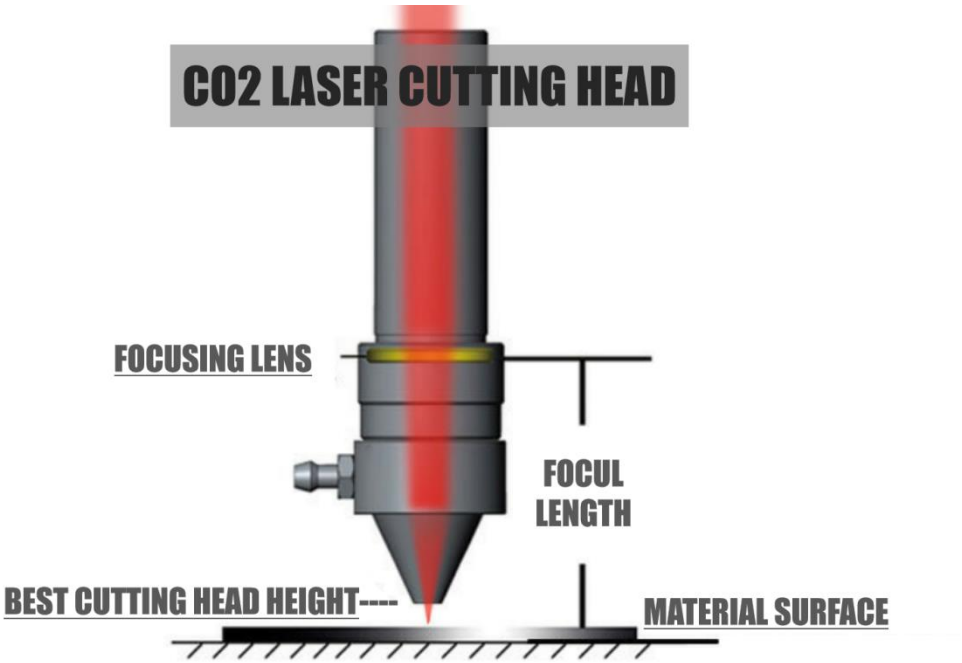
10. Place double-sided adhesive, dot and mark on the entry hole in front of the 3 # mirror. If the mark is in the middle, then qualified.

11. If the laser does not fall at the center of the light hole, figure below. In this case, the fall point is up and out. Up and down deviation: The laser tube can only be raised or lowered. Inside and outward deviation: only the laser tube can be adjusted inward or outward. In this case, the laser tube must be lowered and then readjusted all from the first step.

12.



13. Adjust the vertical light



Place a piece of acrylic on the bench and click to see if the penetrated acrylic is perpendicular left and right. Do vertically adjust the press cover on the third mirror. Adjusting the vertical is to adjust the position of the light in the focus mirror. Only when the light is in the center of the focus mirror can the light hit be the strongest and straight.

Note: The above work must be conducted after professional training. Otherwise, someone concerned must be asked to help you to operate. Safety must be paid to safety to prevent laser radiation.

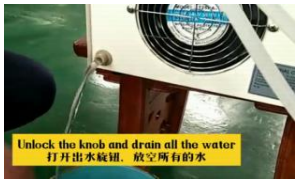
Chapter IV: Daily Maintenance

The stable and normal operation of the machine is inseparable from the normal correct operation and daily maintenance. The following describes the routine maintenance:

1 Cleaning of the water chiller (it is recommended to clean the water chiller and replace the circulating water once a month) (detailed steps can be checked by videos)

Note: The water quality and water temperature of the circulating water directly affect the service life of the laser pipe. It is recommended to use pure water, and the water temperature is controlled below 35℃. Over 35℃, or add ice to the water to reduce the water temperature.

Open the water injection outlet knob, prepare the water bucket, for the first water injection. The water chiller is turned on, fill the laser pipe and water pipe with water, and conduct the second water injection (note that the second water injection can not exceed the yellow line).



Clean the water chiller: first turn off the power supply, turn on the water outlet knob, and empty all the water.Open the water chiller, remove all dust covers, clean with water and brush, and reinstall the body after air drying.

2 Cleaning of fan (it is recommended to clean air outlet every two weeks and open fan shell depth every six months) (detailed steps can be checked by videos)

The long use of the fan will accumulate a lot of solid dust in the fan, let the fan produce a lot of noise, and is not conducive to exhaust and odor removal. When the fan is insufficient to exhaust smoke, first turn off the power supply, remove the plug, remove the inlet duct on the fan, remove the dust inside, and then put the fan back, and pull out the air blade in the inside until it is clean, and then reset the fan. (Customers with plush toys etc. please

clean deeply every 7 days)

3 Air pump cleaning (detailed steps can be checked by videos)

Open the air pump and remove the sponge. Clean the gas pump sponge once every six months. When reassembling the gas pump, please pay attention to the label facing up.

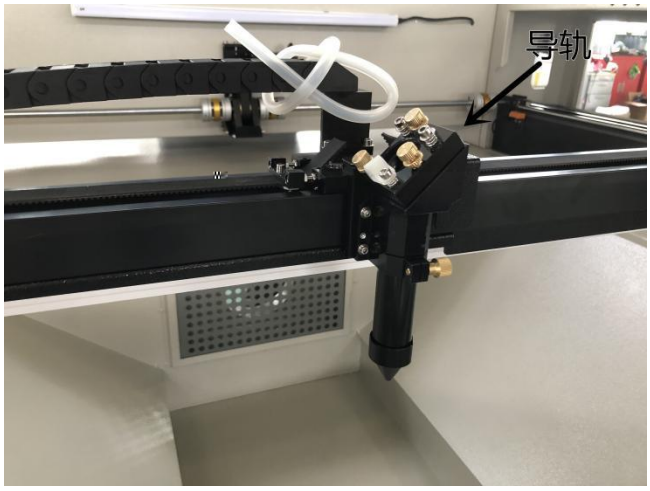
4 Cleaning of lenses (it is recommended to clean before working every day, and the equipment must be shut off) (detailed steps can be checked by videos)

In the previous machine introduction, it has been mentioned that there are 3 mirrors and 1 focus mirror on the cutter (mirror 1 is located at the emission outlet of the laser tube, the upper left corner of the machine, mirror 2 is located at the left end of the beam, mirror 3 is located at the top of the fixed part of the laser head, the focus mirror is located in the lower part of the laser head), the laser is reflected and focused from the laser head. The lens is easily stained with dust or other contaminants, causing loss of laser or lens damage. Do not remove the No.1 and No.2 lenses. Just wipe the mirror paper dipped with cleaning liquid carefully along the center of the lens to the edge of the lens. The No.3 lens and focus lens need to be removed from the mirror frame, wiped in the same way, and put it back as it is after wiping.

Note: the lens should be gently wiped and can not damage the surface coating; take the wiping process to prevent falling; keep the concave surface downward when installing the focus mirror.

5 Cleaning of guide rail and bearing (recommended once a day)

Clean the guide rails and bearings. Please prepare —— dry cotton cloth and lubricant



Cleaning of guide rail: move the cross beam to the inside, open the end cover on both sides of the machine, find the guide rail as shown above, wipe the contact with the roller with dry cotton cloth, and then move the cross beam, and clean the remaining places.

Pay attention to wipe with a clean cotton cloth dipped in the sewing machine oil.

Do not drop the oil directly on the guide rail.

6 Check laser optical path

The optical path system of the cutter is completed by the reflection and the focus of the focusing mirror. There is no offset problem in the optical path, but the three mirrors are fixed by mechanical parts, and the possibility of offset is greater. Although usually the offset will not occur, it is recommended that the user must check whether the optical path is normal before each work.
Refer to Chapter 3 for more details.

7 Cleaning of waste boxes (recommended 30 days)

Clean the waste bins with a vacuum cleaner every 30 days.

Chapter V FAQ s

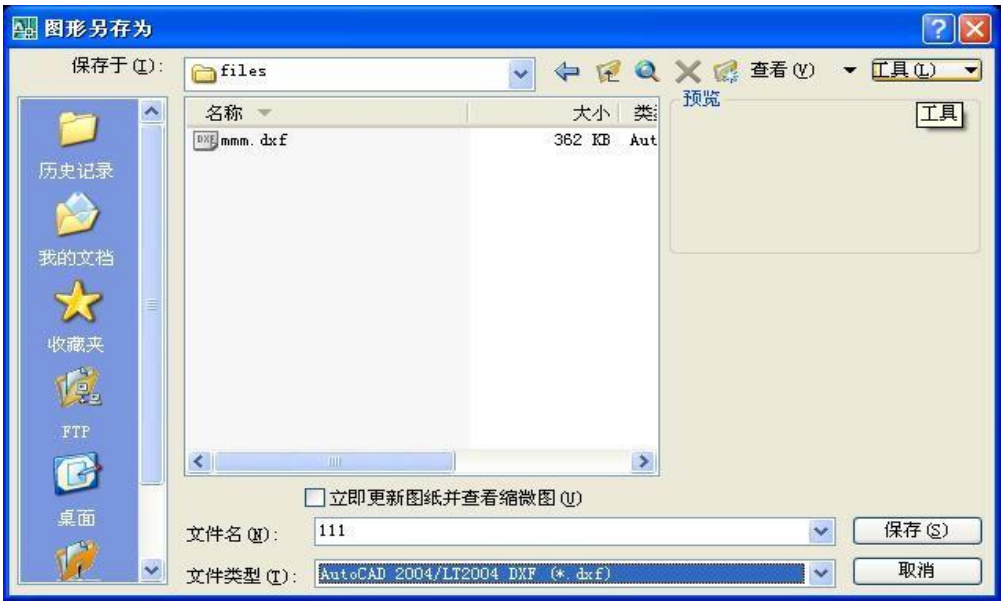
I. The machine is motionless or disorderly, or part of the drawing is not processed

◆ Check that the drawing data exceeds the amplitude. Data beyond the amplitude will not be cut.

◆ Check that the Drawing relative to Laser Head Position is set correctly.

II. The software closes automatically when importing the dxf files

Open the dxf file with the above AutoCAD2002 version of AutoCAD and decompose the drawing with AutoCAD's Breakdown tool. Then select again as " AutoCAD2004/LT2004 DXF (. The dxf) " format saves the file. The figure is shown below:



Then, try to import the saved file with the generic software.

III. Panel prompt [Insufficient buffer distance]

◆ Check whether the carving acceleration in the process parameters (see: 4.4 process parameters) is too small, and the carving acceleration is generally set not less than 8000.

◆ Ensure that the outer frame of the drawing is not very close to the boundary of the machine amplitude

IV. Reminder when loading the document [the current document data is empty]

◆ Check that the drawing to carve the output is closed.

◆ Check if all the layers have selected the No output

V. The processed graphics and actual drawings form mirror images

◆ Check that the Machine Zero Position is set correctly.

Warranty Regulations

Warranty period: The product is guaranteed for one year from the date of purchase, except the following consumables:

Laser tubes guarantee for six months; optical lenses and other consumables are not under warranty.

Warranty Conditions: This warranty is intended for the products sold by Shanghai KASU Intelligent Technology Co., Ltd. During the warranty period, failure in the normal use of the company's products, you can show the warranty card or invoice according to the contents of this warranty terms, and enjoy the free warranty service of the company.
Under the following circumstances, you do not enjoy free services and charge fees according to the specific circumstances:

- Maintenance services not caused to equipment quality. Over the warranty period.
- Unable to show or privately alter the warranty card.
- Failing to perform the agreed obligations in accordance with the contract.
- Disassemble, transform and repair the products without the consent of the Company.
- Equipment failure caused due to human factors or force majeure.

The Company assumes only its legal obligations to the products sold itself, but not other responsibilities arising from the use of the Company's products.

Postscript

The final interpretation of this manual belongs to Shanghai KASU Intelligent Technology Co., Ltd., and the manufacturer reserves the right to change the product without notifying the user in advance.