

Laser Engraving & Cutting Machine



Operation Manual

GOLDENSIGN INTERNATIONAL TECHNOLOGY CO., LTD.

www.gslaser.com

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Unpacking

Provides important information about unpacking your Laser engraving & cutting machine

Describes all components shipped with your Laser engraving & cutting machine

Explains how to connect cables and install the water-cooling system

Use information in this chapter to prepare your laser engraving & cutting machine for operate information presented

In this section is the same as the order of tasks that you need to perform. The order of information presented. The best way to get ready for operation is to start at Unpacking and work

Getting started

The Unpacking section includes subsections:

- Incoming inspection

- Packaging guidelines

Incoming inspection

Upon arrival, inspect all shipping containers for signs of damage. If you discover shipping damage, physical damage (if possible), and then immediately notify the shipping carrier and our company.

Packaging guidelines

- To prevent equipment damage or loss of small components, use care when removing packaging materials.

- Save all shipping containers and packaging materials, including covers and plugs. Use these specialized packing materials when shipping the marking head to another facility.

- after unpacking, review the *Inventory* section and verify that all components are on hand.

- when repackaging a marking head for shipment, be sure to remove all accessory items not originally attached to the head.

- When shipping the head without a focusing lens attached, remove you can find out from the toolkit, This avoid the mirrors being damaged during shipment.

Safety

This section describes hazards that may occur if the laser is installed or used improperly.

Description of Appropriate Use

This device is designed for laser cutting and engraving of the materials listed in this manual, in laboratory, workshop or light duty manufacturing environments. This equipment must be properly installed and connected to an appropriate exhaust system meeting the specifications outlined in this manual. Materials to be processed must fit completely inside the system for proper operation.

General Safety

Failure to follow these guidelines can result in injury to yourself, others, or may severely damage the equipment and your facility. Using the system in a manner other than what is described in this manual may increase this risk. System care and operation must be followed in strict accordance to this manual.

- **Exposure to the laser beam may cause physical burns and can cause severe eye damage.** Proper use and care of this system are essential to safe operation.
- **Never operate the laser system without constant supervision of the cutting and engraving process.** Exposure to the laser beam may cause ignition of combustible materials and start a fire. A properly maintained fire extinguisher should be kept on hand at all times.
- **A properly configured, installed, maintained, and operating fume/smoke exhaust system is mandatory when operating the laser system.** Fumes and smoke from the engraving process must be extracted from the laser system and exhausted outside.
- **Some materials, when engraved or cut with a laser, can produce toxic and caustic fumes.** We suggest that you obtain the Material Safety Data Sheet (MSDS) from the materials manufacturer. The MSDS discloses all of the hazards when handling or processing that material. **DISCONTINUE** processing any material that shows signs of chemical deterioration of the laser system such as rust, metal etching or pitting, peeling paint, etc.
- **Care should be taken when moving or lifting this device.** Obtain assistance from 1 or 2 additional people when lifting or carrying (secure motion system and doors). Severe bodily injury may occur if improper lifting techniques are applied or the system is dropped.
- **Dangerous voltages are present within the electronics and laser enclosures of this system.** Although access to these areas is not necessary during normal use, if it becomes necessary to open one of these enclosures for service reasons please remember to disconnect the power cord from your electrical supply.

- Be aware of scattered radiation (diffuse and specular) from optical surfaces and other equipment. **Note:** For certain wavelengths, a surface that is non-reflective to visible light may reflect an invisible laser beam.

- **Avoid placing any part of your body in the beam path.**
- **Use the lowest power possible to align the laser beam.**
- At all times work with high levels of background illumination.
- Check all guards and interlocks where necessary are in place before work commences.
- Do not leave the laser unattended while switched on.

Laser Safety

The intense light that appears during the engraving or cutting process is the product of material combustion or vaporization.

DO NOT STARE AT THE BRIGHT LIGHT OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS.

This device may contain a visible Red Dot Pointer (Class IIIa)

RED LIGHT OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS.

During the working period, when you opened the door, the laser engraving & cutting machine will make a pause and the CO2 laser power will be off, when you press the start button again, it will be continue.

Do not operate any system that has had its safety features modified, disabled, or removed as this can expose your eyes and skin to invisible and visible CO2 laser radiation which can cause permanent blindness and/or severe burns to your skin.

Working environment

1. To avoid strong electric, magnetic and other severely affected by engraving machine signal transmission equipment. Such as: welding machine, transmission towers, etc...
2. The use of three-core power, please ensure good grounding to reducing the interference.
3. To avoid voltage fluctuations, it is best to use transformer.
4. Machines can not be in strong acid, alkali environment of long-term job.
- 5, the ideal working temperature is: 0C ° ~ 45C °
- 6, our laser engraving & cutting machine must be well grounded, otherwise the laser engraving & cutting machine will working abnormally.



Safety Labels

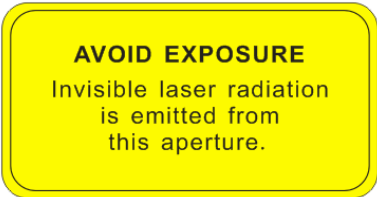
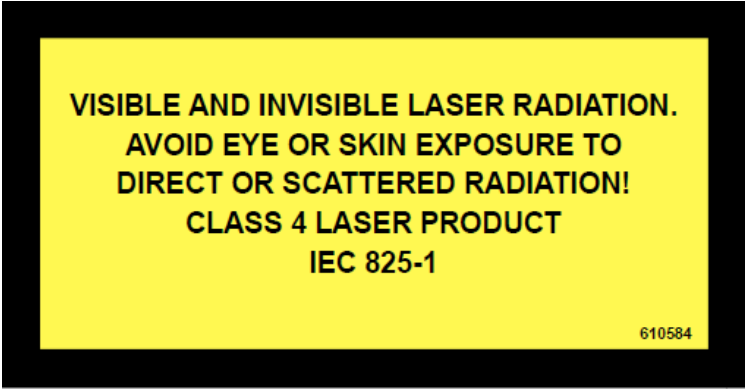
The following warning labels are placed on the laser system for your safety. **DO NOT** removes them for any reason.



INVISIBLE LASER RADIATION-AVOID EYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION

Max power: ≤60 W

CLASS IV LASER PRODUCT



Laser Safety Classification

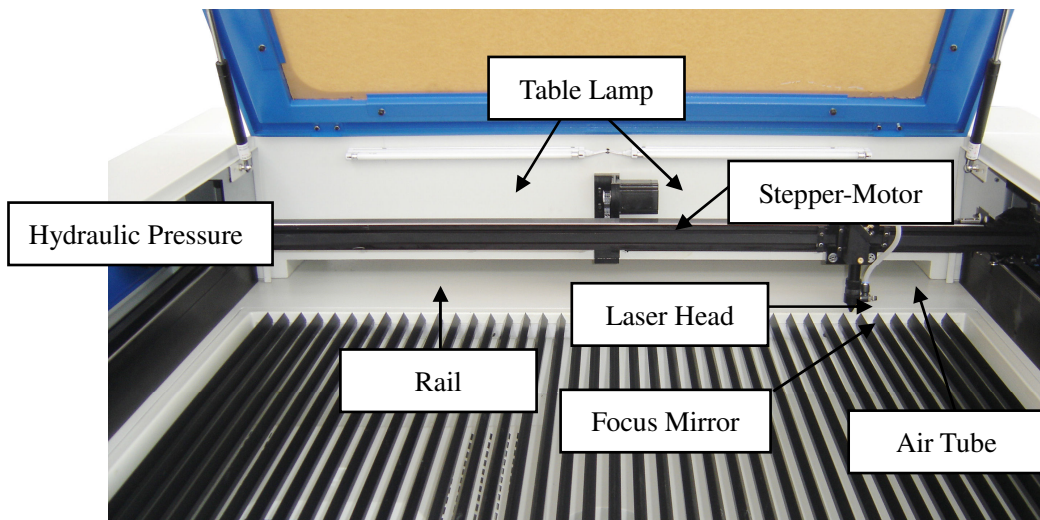
Goldensign current laser engraving & cutting machine is invisible laser products Class 4. It is important to strictly operate the lasers under the safety warning label instructions to avoid any eye or skin hazard from beam radiation.

| Class | Basis for classification | Signage |
|---|--|--|
| Class 1 SAFE Visible/non visible | Lasers which are safe under reasonably foreseeable conditions of operation. Generally a product that contains a higher laser class system but access to the beam is controlled by engineering means. | CLASS 1 LASER PRODUCT |
| Class 1M SAFE WITHOUT VIEWING AIDS 302.5 to 4000nm | Protection for the eyes is normally provided by the natural aversion response, including the blink reflex, which takes approximately 0.25 seconds. Beams are either highly divergent or collimated but with a large diameter. May be hazardous if optics are used within the beam. | CLASS 1 LASER PRODUCT |
| Class 2 LOW POWER Visible only | For CW lasers, protection of the eyes is normally afforded by the natural aversion response, including the blink reflex, which takes approximately 0.25 seconds. (These lasers are not intrinsically safe) AEL = 1mW for a CW laser. | LASER RADIATION DO NOT STARE INTO BEAM CLASS 2 LASER PRODUCT |
| Class 2M SAFE WITHOUT VIEWING AIDS Visible only | Safe under reasonably foreseeable conditions of operation. Beams are either highly divergent or collimated but with a large diameter. May be hazardous if optics are used within the beam. | LASER RADIATION DO NOT STARE INTO BEAM CLASS 2 LASER PRODUCT |
| Class 3R LOW/MEDIUM POWER 302.5nm to 1mm | Risk of injury is greater than for the lower classes but not as high as for class 3B. Up to 5 times the AEL for Class 1 or Class 2. | LASER RADIATION AVOID DIRECT EYE EXPOSURE CLASS 3R LASER PRODUCT |
| Class 3B MEDIUM/HIGH POWER Visible/non visible | Direct intrabeam viewing of these devices is always hazardous. Viewing diffuse reflections is normally safe provided the eye is no closer than 13cm from the diffusing surface and the exposure duration is less than 10 seconds AEL = 500mW for CW lasers | LASER RADIATION AVOID EXPOSURE TO BEAM CLASS 3B LASER PRODUCT |
| Class 4 HIGH POWER Visible/non visible | Direct intrabeam viewing is hazardous. Specular and diffuse reflections are hazardous. Eye, skin and fire hazard. | LASER RADIATION AVOID EYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION CLASS 4 LASER PRODUCT |

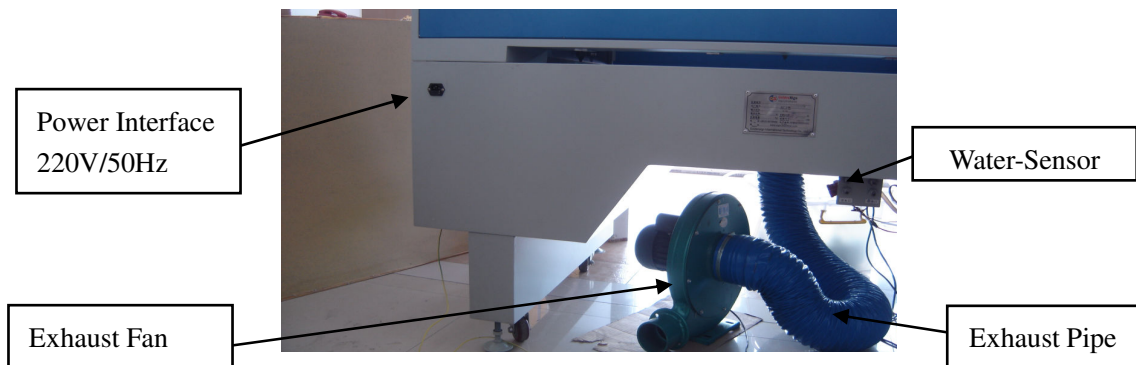
Hardware's Operation



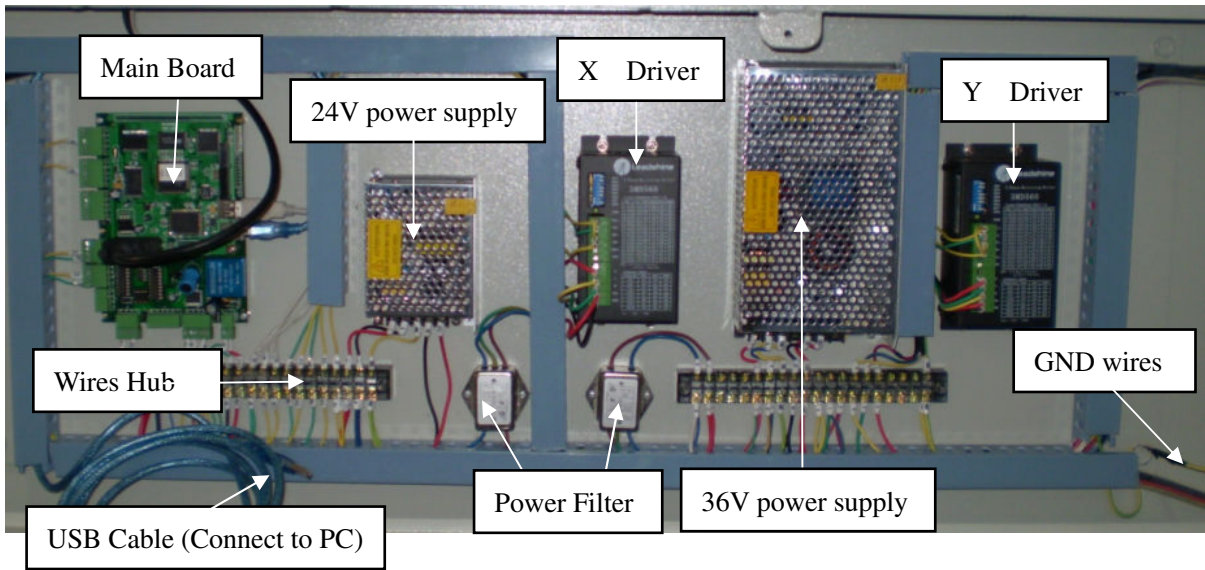
Front



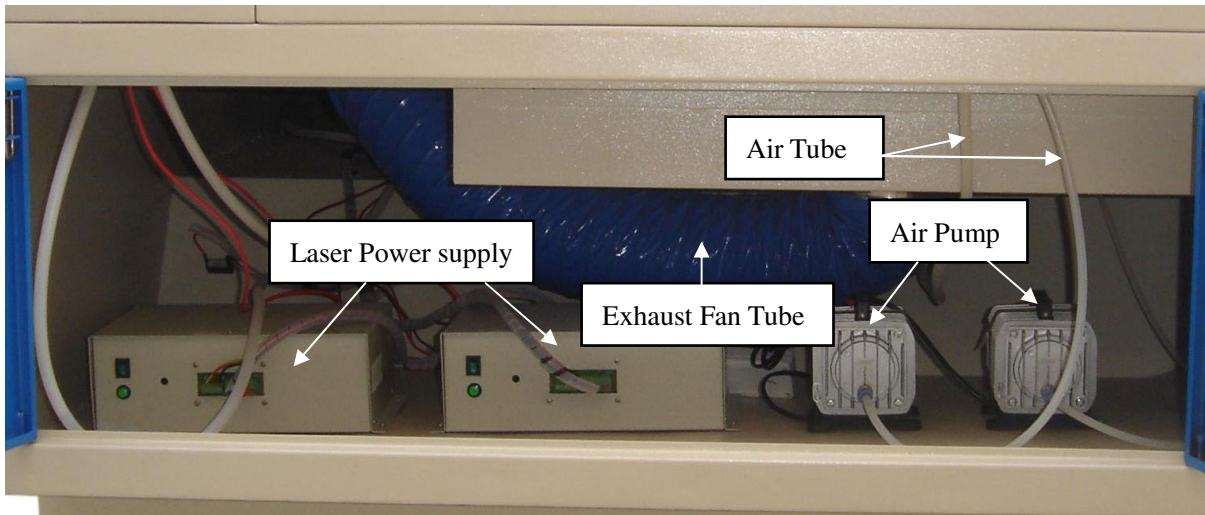
Backward



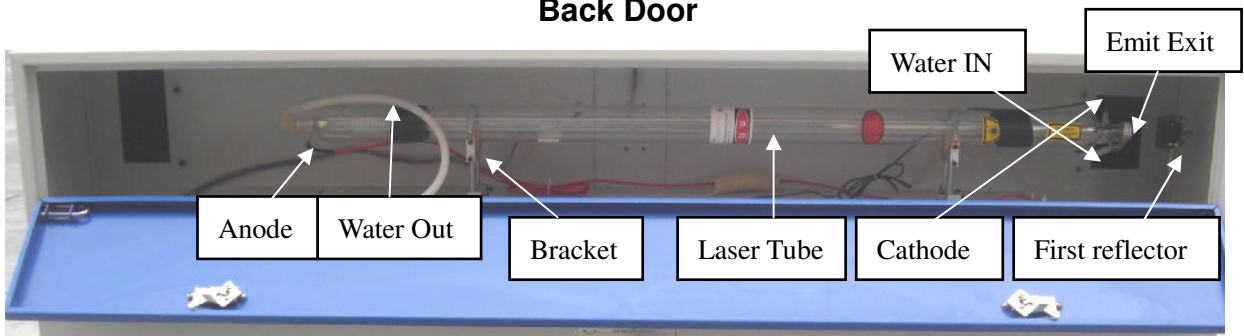
Right Door

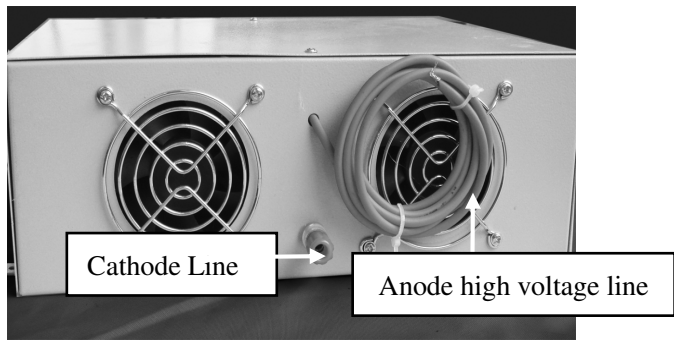
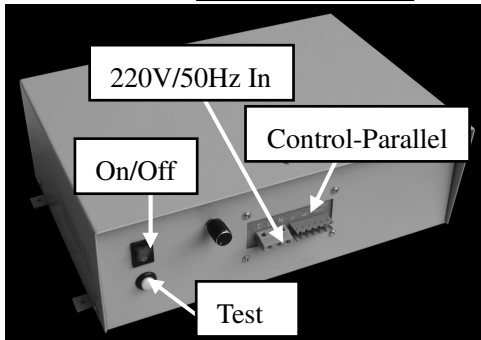
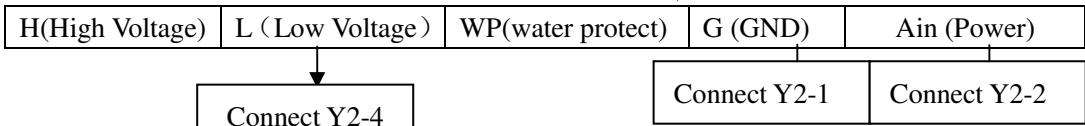
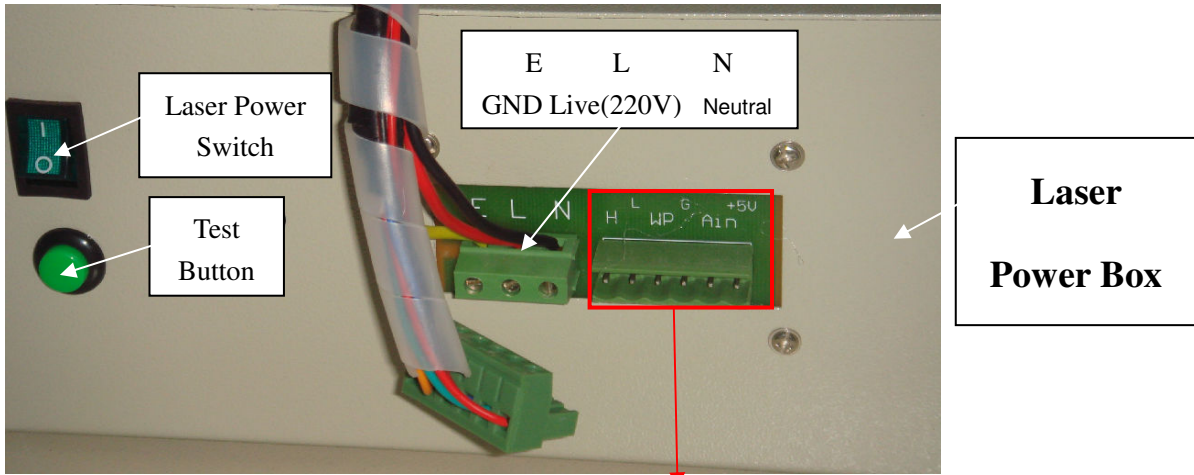


Left Door

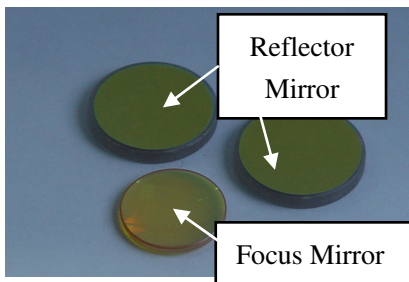


Back Door





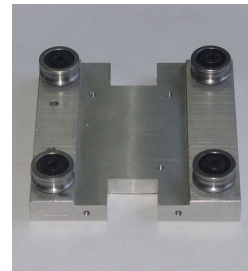
Reflector Mirror and Focus Mirror



Synchronic-Belt & wheel



Slip-Rail



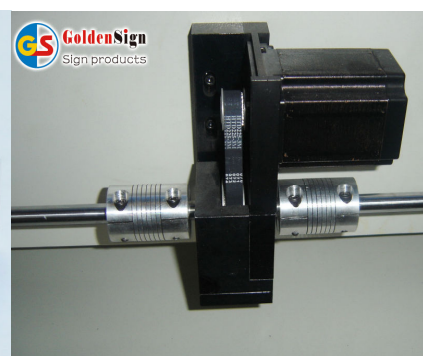
Micro Stepper Driver

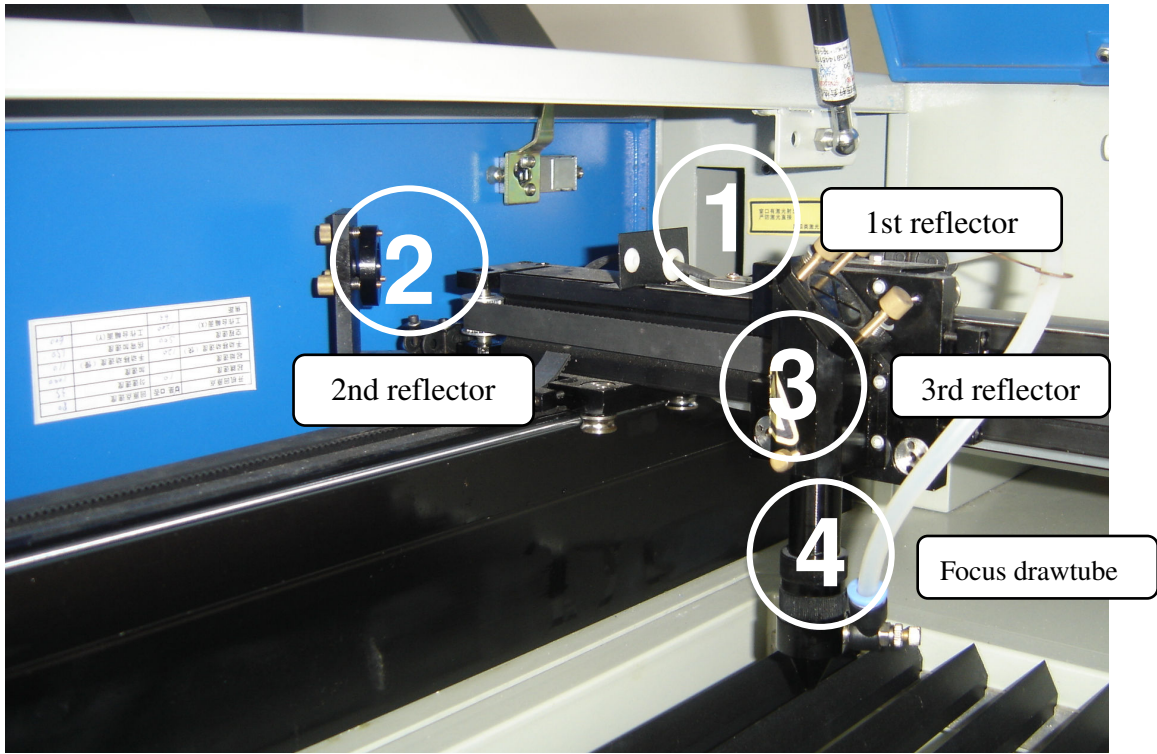


DC Motor



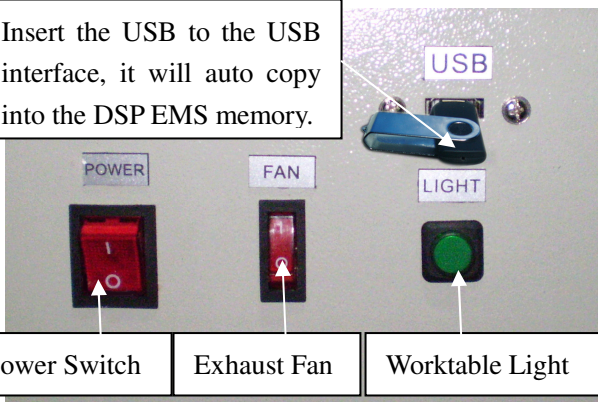
Synchronic-Rail



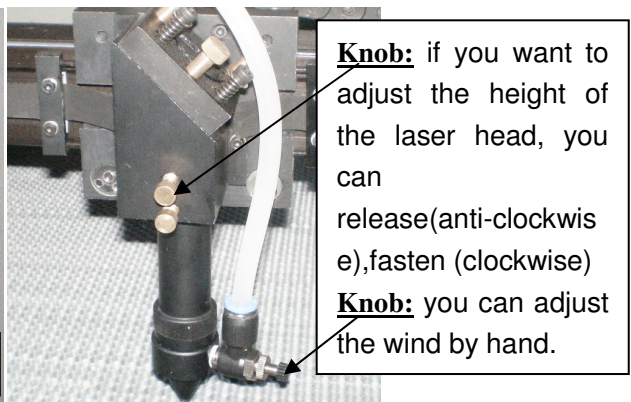


USB interface

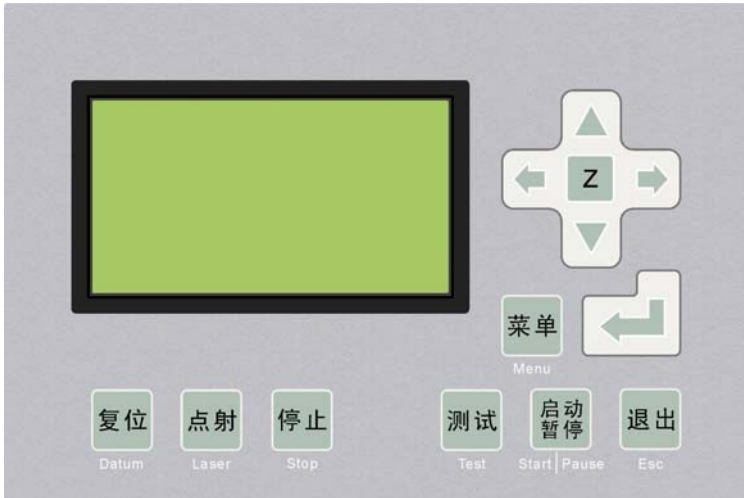
Insert the USB to the USB interface, it will auto copy into the DSP EMS memory.



Laser Head



Control Panel



Datum: Laser head will move to the original point of the machine.

Laser: Laser on/off.

Stop: Stop the processing operation.

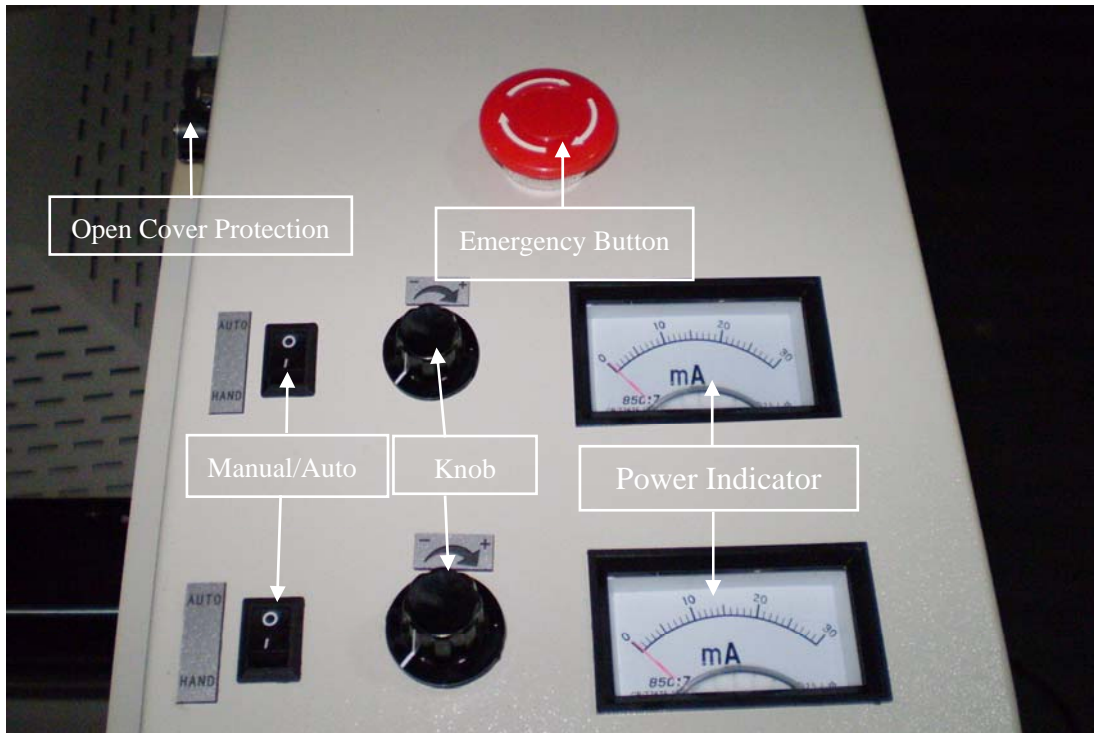
Test: The laser head will run along the outline border of the processing data.

Start/Pause: Start/pause the processing operation.

Esc: Escape the current status window.

Menu: Enter accessory interface.

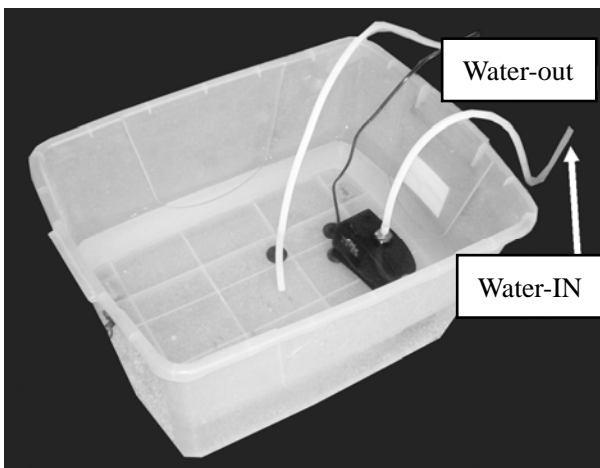
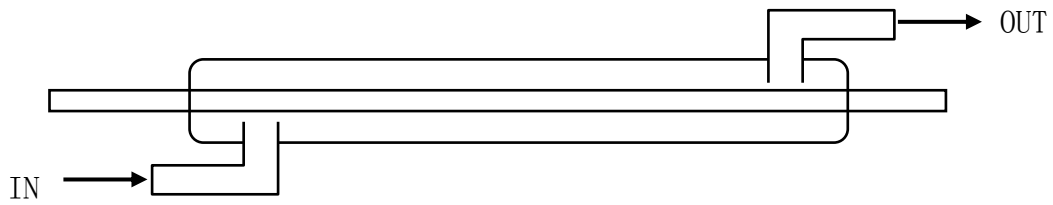
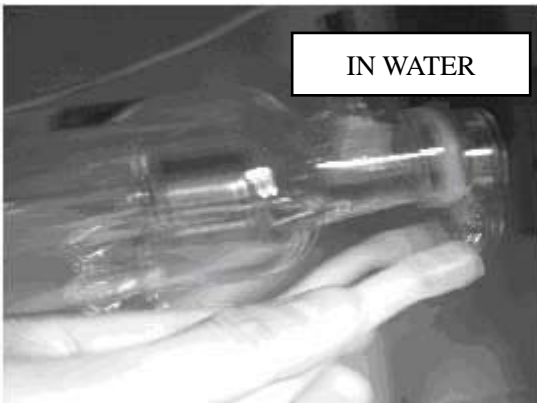
Switch button & Power Indicator



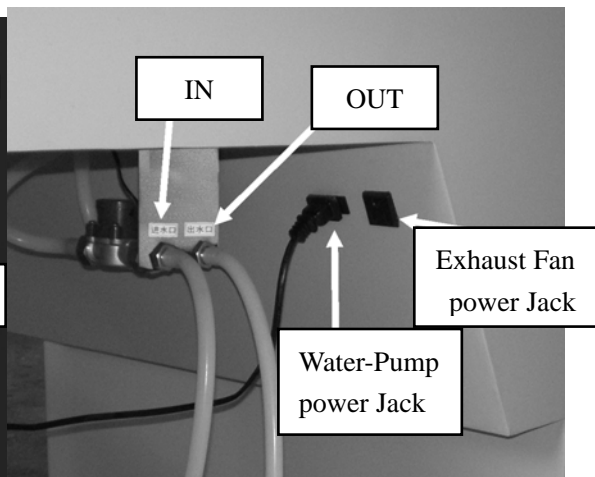
“O” means auto, the power settings by software.

“|” means by manual, you can adjust the power by hand.

Water Cycle System



Water Pump

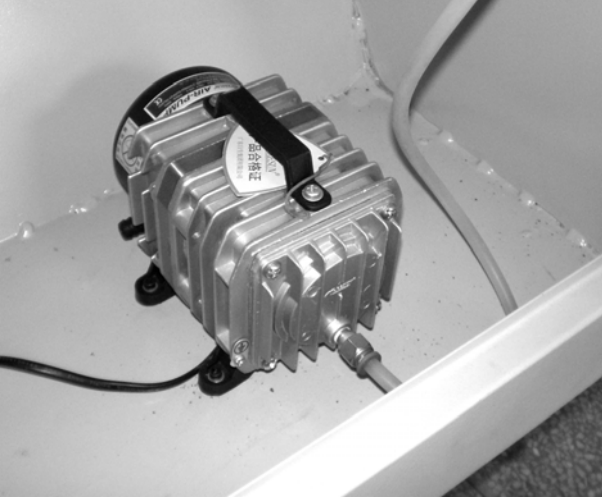


Water Box

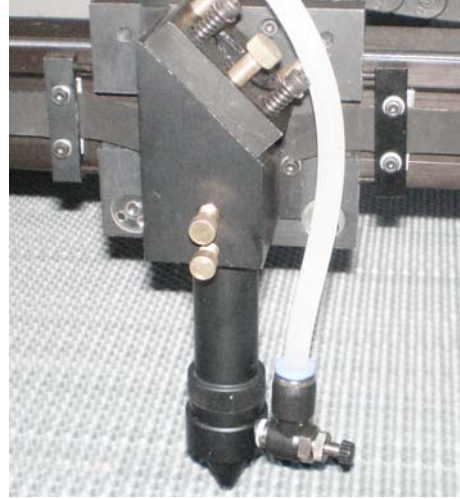


Air Ejection System

Air Pump



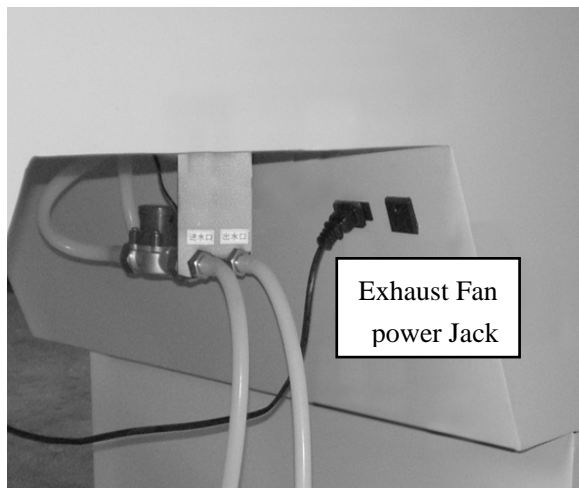
Air Pipe

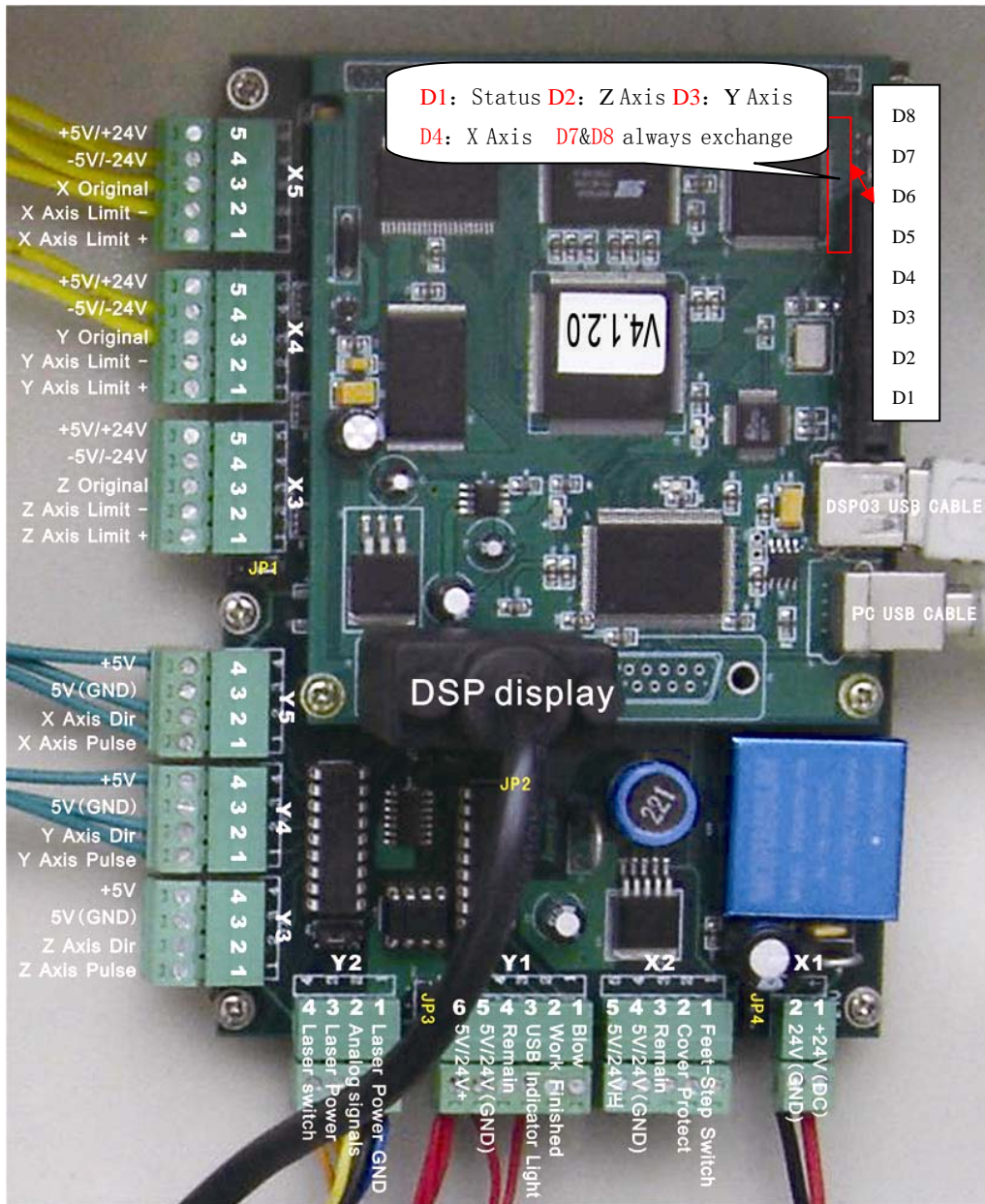


Exhaust Fan and exhaust tube



Exhaust Fan Power Jack

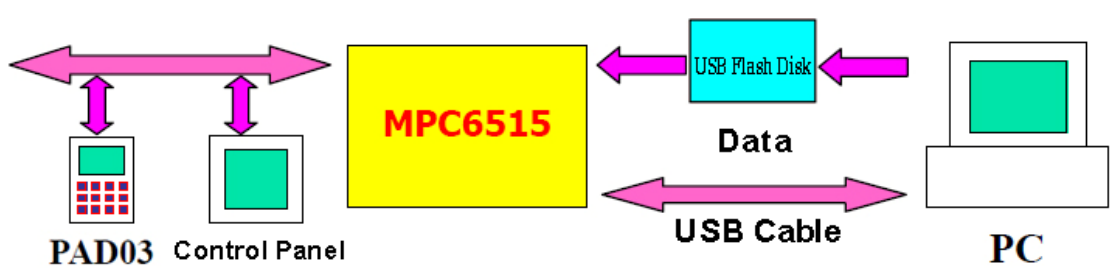




D1: Status D2: Z Axis D3: Y Axis
 D4: X Axis D7&D8 always exchange

- D8
- D7
- D6
- D5
- D4
- D3
- D2
- D1

M
P
C
6
5
1
5
C
P
U

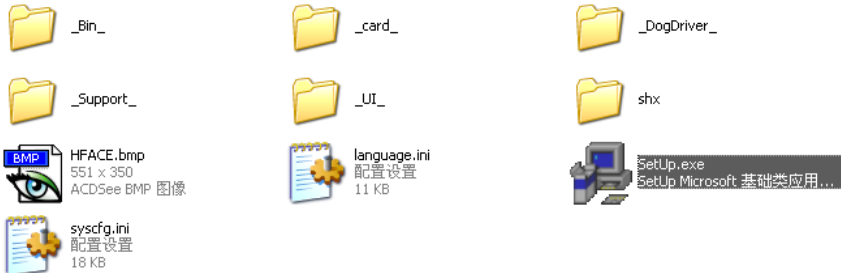


Software Operation

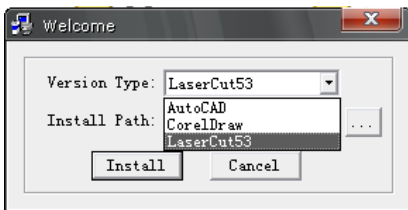
Part1

Installing the software

1、 please insert the CD to the CD-ROM, and find out “Setup” icon and open it. Please also insert the software softdog into the computer at the same time.



There are three software are optional. Please choose LaserCut53, if you want to directly output from CorelDraw or AutoCAD software, please make sure that your computer had installed the AutoCAD or CorelDraw software already. And the CorelDraw software version must be correct(CDR11、 CDR12、 CDR13), the CAD software version must be(CAD05、 CAD06、 CAD07)

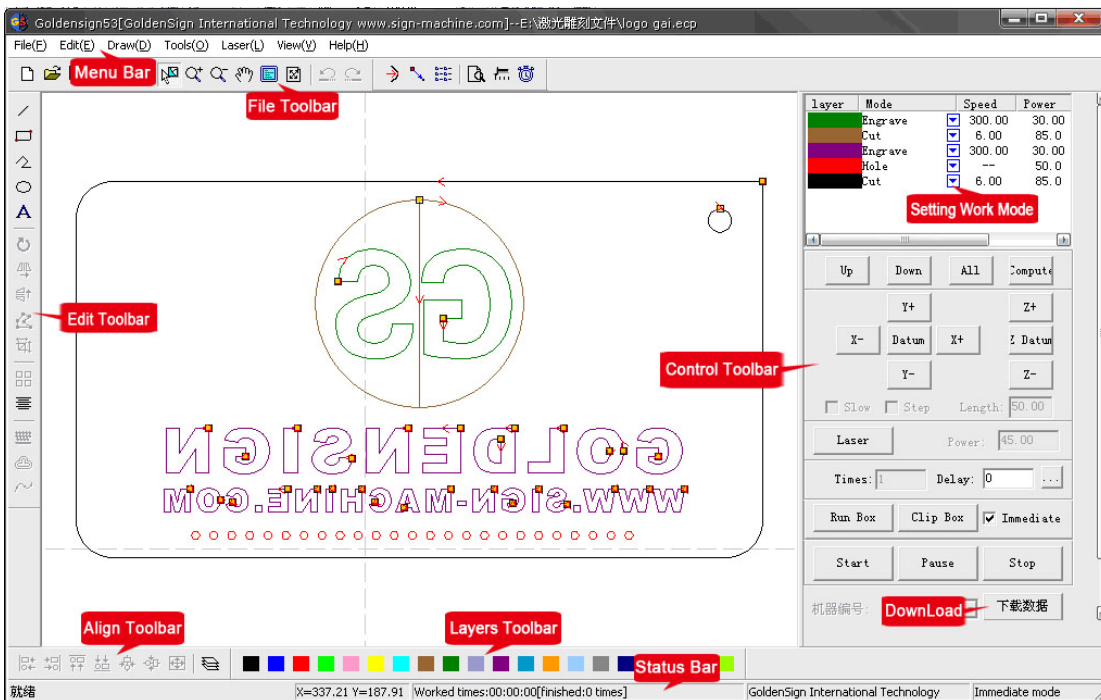


Click “Install” button, the software and the softdog driver will be installed at the same time.

And then open the LaserCut5.3 software.



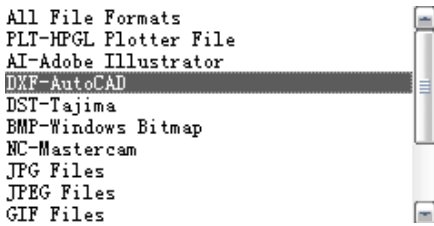
LaserCut 5.3.Ink



Stand-alone operation

1、 Firstly please import a file, LaserCut software support many kinds of formats.

The most popular formats is *.PLT、*.DXF、*.AI、*.BMP、*.DST



*.PLT format is very common, but if you want to engraving or cutting a very big or small pieces of job, the path is not very smooth. (Fair)

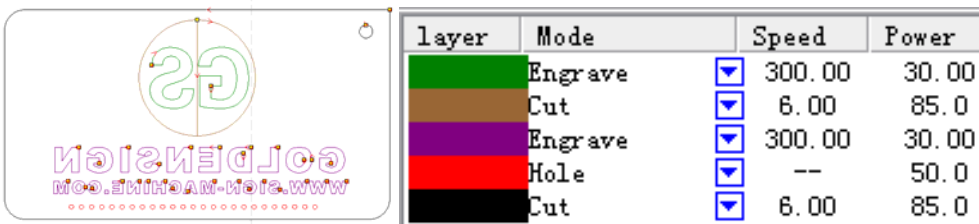
*.DXF format is AutoCAD format, the files is a little big .but when output needs time.(Good)

*.AI format is Illustrator format, the files is small, and even when you want to cutting or engraving a very big or small pieces of job, the path is very smooth.(Best)

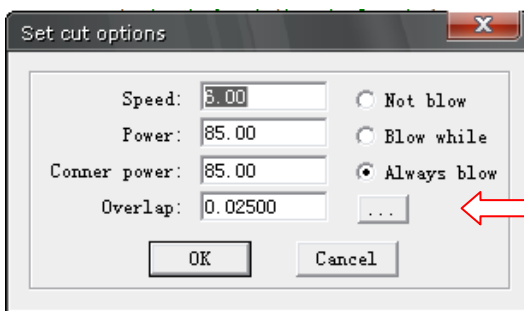
*.BMP format is Windows Bitmap, the files is big. You can engrave pictures. But you need to process at Photoshop software. For more information please refer Operation manual.

Tips: before output from the graphic design software, please make the graphic design only frame (Line).

Work Modes settings and Parameters settings: One graphic design can be setting 20 colors; different color can be setting the different work mode and different work parameters.



Cut Options



Speed: from 1~300 (1 is slowest, 300 is fastest speed)

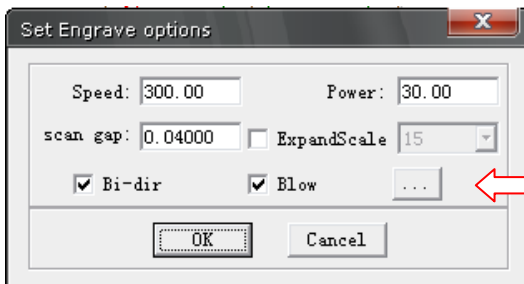
Power: from 1~100(1 means 1%, 100% is maximum power, this parameter determines the depth of cutting)

Corner Power: from 1~100(should be lower than Power -5%)

Overlap: if cutting not close, setting this parameters can be avoid, it can be +0.2~-0.2.

Blow: please choose always blow, Not blow or Blow while it depend hardware supports.

Engraving Options



Speed: from 1~400 (1 is slowest, 400 is fastest speed)

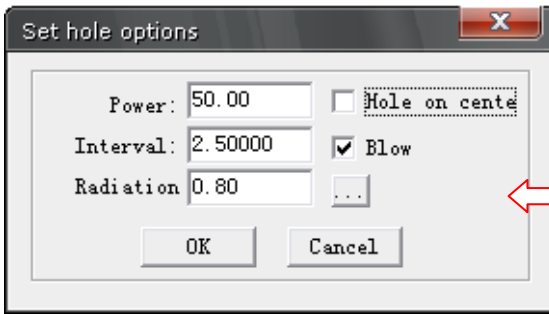
Power: from 1~100(1 means 1%, 100% is maximum power this parameter determines the depth of engraving)

Scan gap: from 0.02~10(unit is mm, movement distance on Y-axis when engrave a row on X-axis)

ExpandScale: when engraving small letters, the width of transverse stroke may be smaller than the actual size. Adjusting this parameter can compensate it.

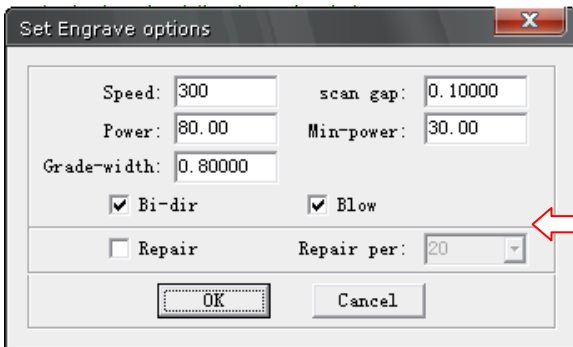
Bi-Dir: when engraving, laser emit on both negative

Hole Options



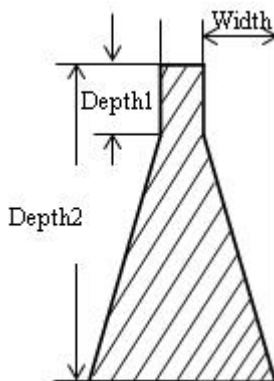
Power: from 1~100(1 means 1%, 100% is maximum power)
Interval: the space between two adjacent holes.(the unit is mm)
Radiation time: delay time for a hole. It determines the size of holes.
Hole on center: hole on all the center of the close graphs.
Blow: blow or not. This function needs hardware support.

Grade Engraving

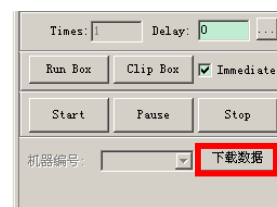
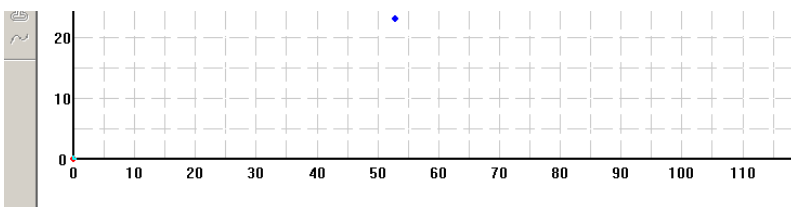


Speed: from 1~400 (1 is slowest, 400 is fastest speed, engraving speed on X-axis)
Power: from 1~100(1 means 1%, 100% is maximum power, this parameter determines the depth of the slope)
Grade-width: the width of grade.
Bi-Dir: when engraving, laser emit on both negative X-axis and positive X-axis. When cancel this function, laser emit on only one direction.
Repair: select this option and the engraved letters will be clearer.
Scan gap: from 0.02~10(unit is mm, movement distance on Y-axis when engrave a row on X-axis)
Min-power: the lowest laser power when grade engraving.
Repair: select this option and the engraved letters will be clearer.
Repair per: change the parameter will adjust the definition of the engraved letters.

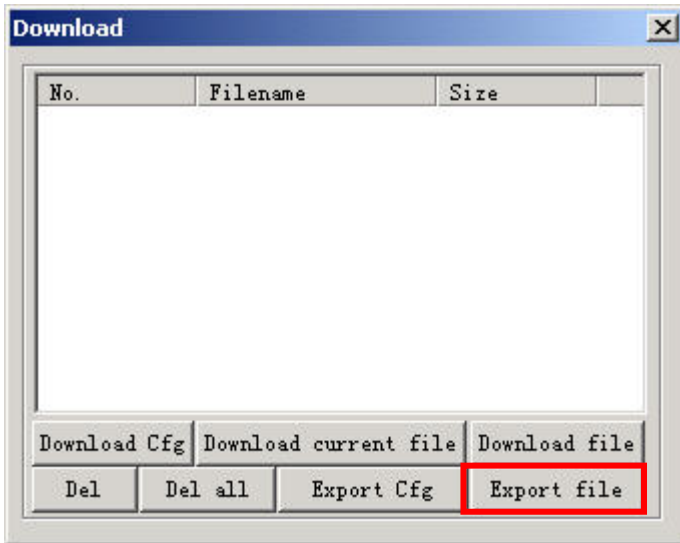
Sketch map of grade engrave as following.



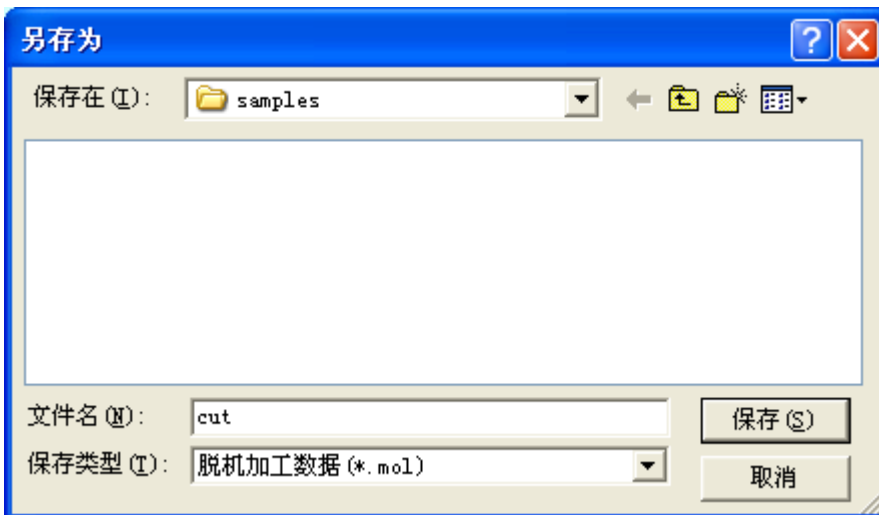
After finished setting the work mode and working parameters
 And click "Download" button.



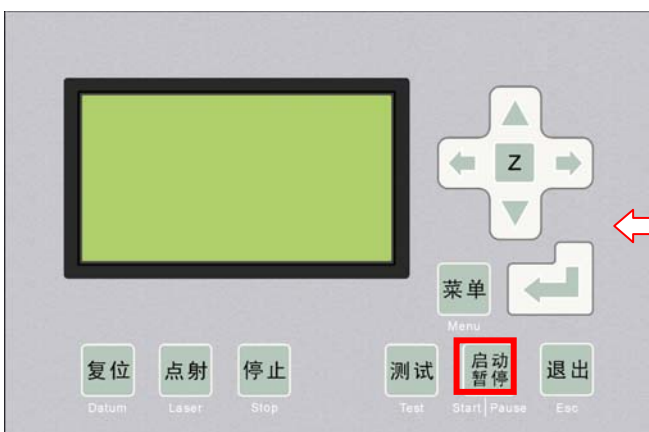
And then choose "Export File"



And then insert your USB flash disk to your computer, make sure the disk format is FAT16 and empty. Save the name as "cut".



And then remove the USB flash disk from your computer, and insert the USB flash disk to the laser engraving & cutting machine, it will auto copy the file into the memory, and then remove the disk from the machine.



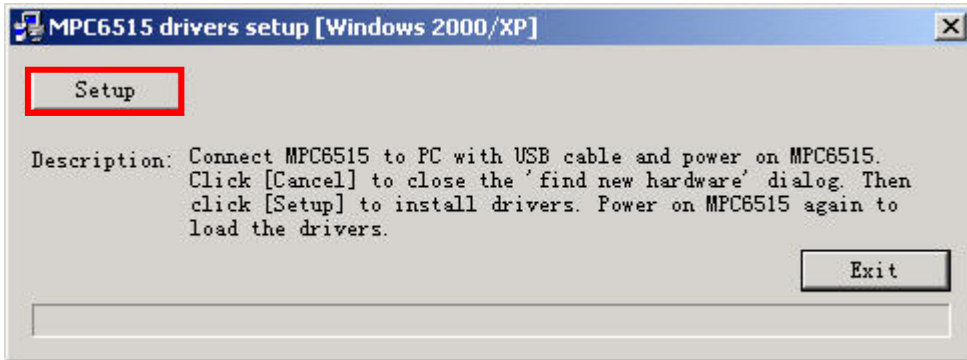
Before press the "Start" button, please make a test, and then you will know the exactly position of you are going to process, and then adjust the laser head height between the materials is 6~8mm. And then press "Start" button to starting a job.

Computer-controlled operation

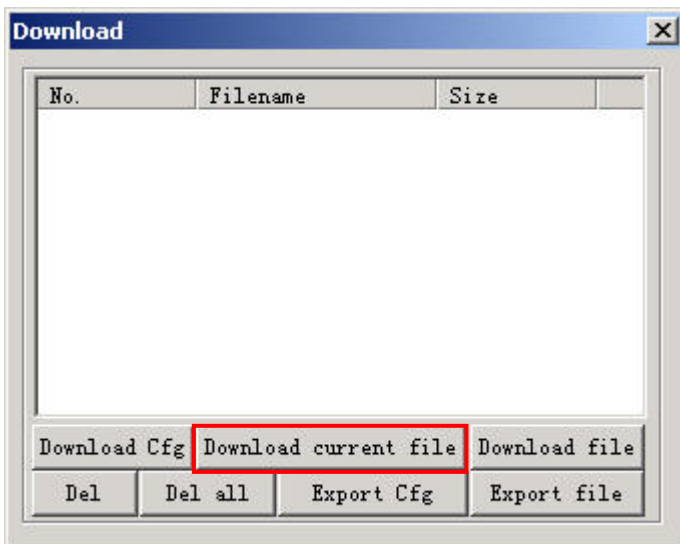
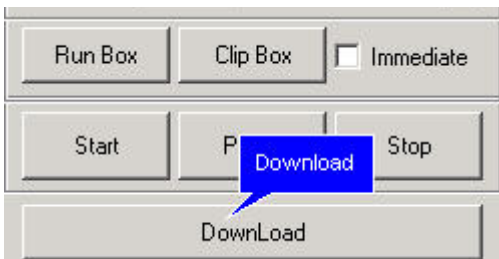
Firstly please insert the USB cable into your computer, and then the computer will find out the hardware.

Installation of MPC6515 card

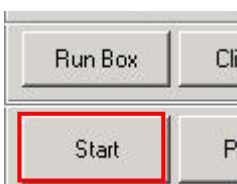
Run the file Drivers\SetupMpc6515Drv.exe.



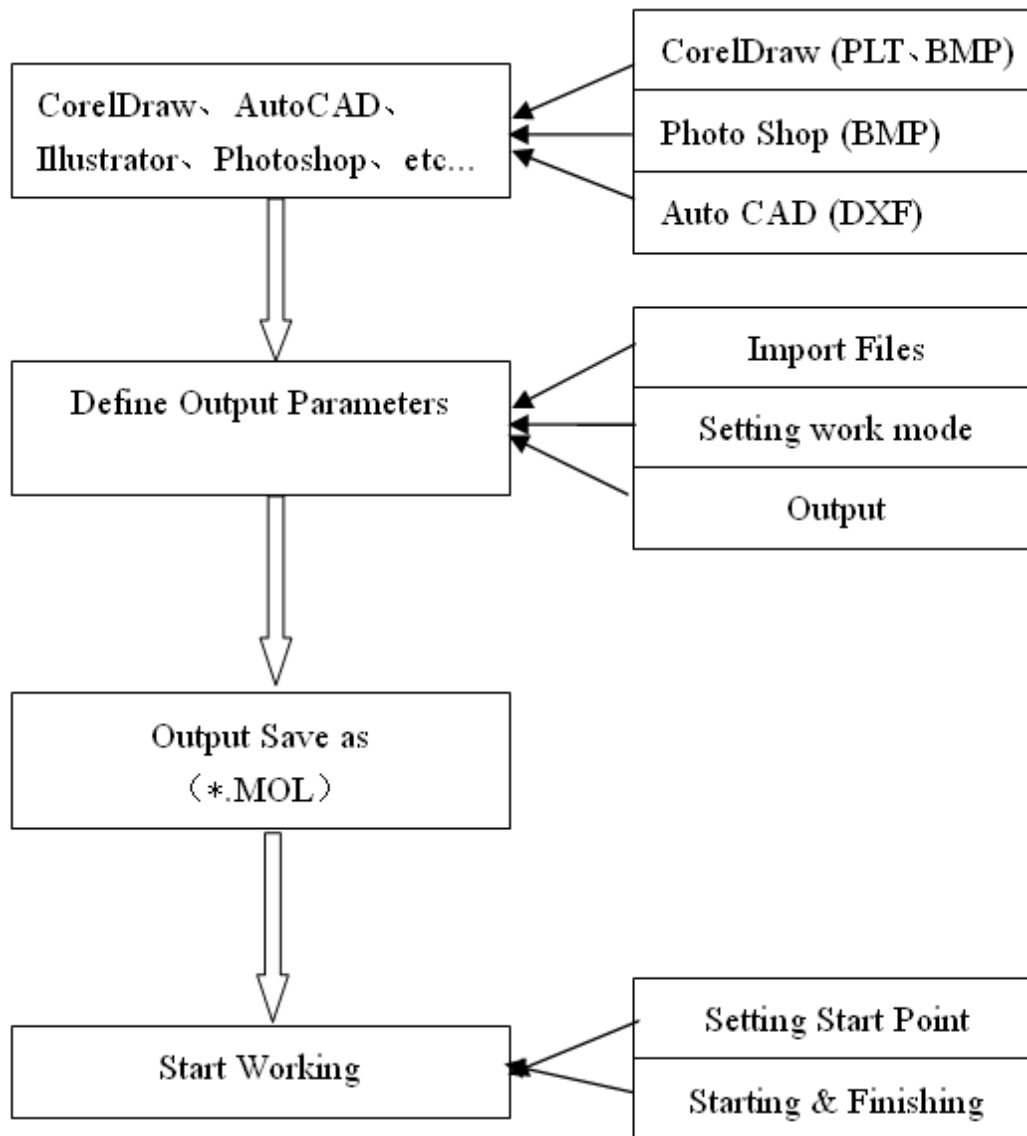
If this program is not installed, PC can't communicate with laser engraving & cutting machine of MPC6515. After setting the working mode and working parameters finished, please click "DOWNLOAD" button at the software, and then choose "Download current file" at the software.



After downloaded the files into the MPC6515 EMS memory, and then you will hear the bee sounds, and then you can click "Start" button to starting a job.



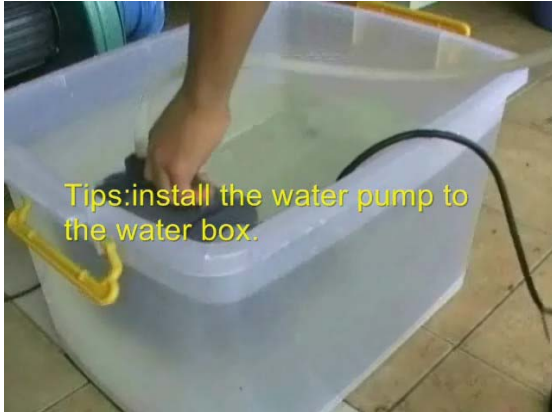
Output Flowchart



Part2

Installing the water cooling system and Vacuum Fan

Firstly、 please put the water into the water tank, about 70%~80%, must be pure water.



Insert the water tube to the water pump and laser engraving & cutting machine

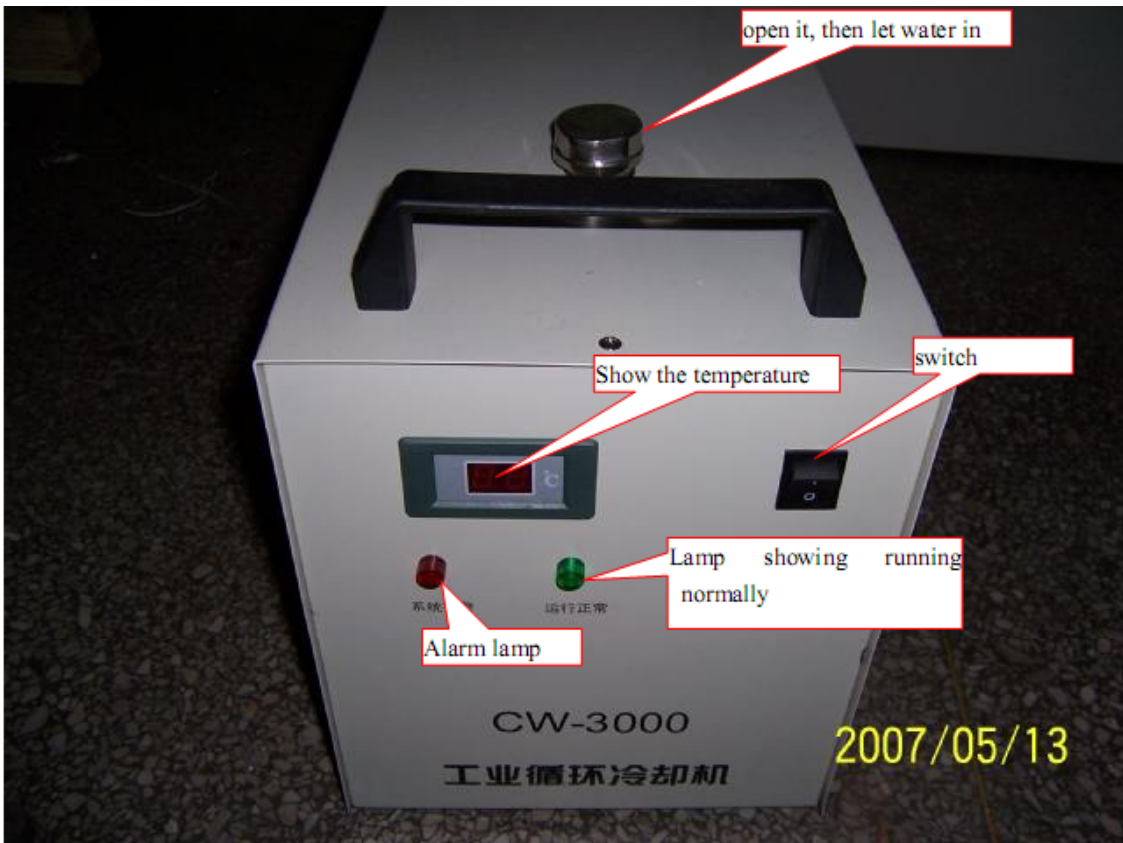
Secondary 、 connect the power cable to the jacket.



Third、 installing the vacuum fan.



Industrial Chiller



Put purity water into the water tank until it is full; connect the water outlet of the chiller with the water inlet of the machine, and the water inlet of it with the water outlet of the machine

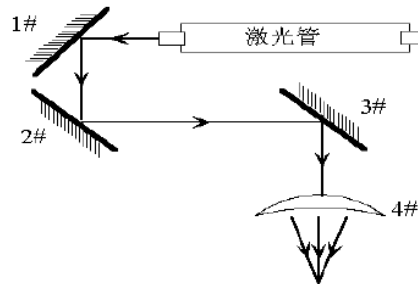


Standard of Laser Path Adjustment

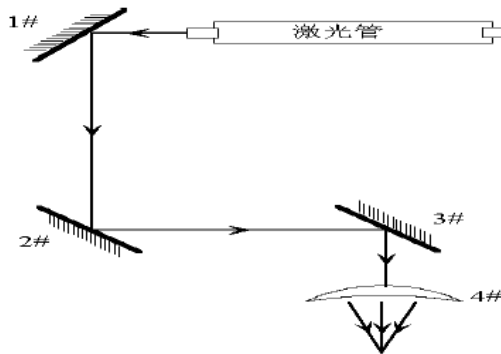
During operation, in case of no laser or the laser out of its path, please refer to below methods to adjust laser path:

1st Step: make sure laser from laser tube reach the center of 1# reflector;

2nd Step: stick double glue paper on reflector 2# (or some other materials which can be marked by laser), move the rail to the place nearest to laser tube. Press “Laser” (with proper laser power) and mark a hole (Special Notice: Before adjust the laser, please first test the general position of the laser with a paper board to avoid personal injuries).



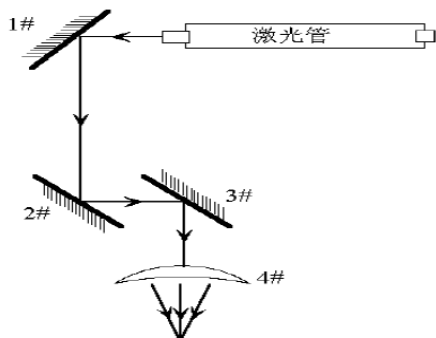
3rd Second: move the rail gradually to the place furthest from laser tube, press “Laser” and mark a hole;



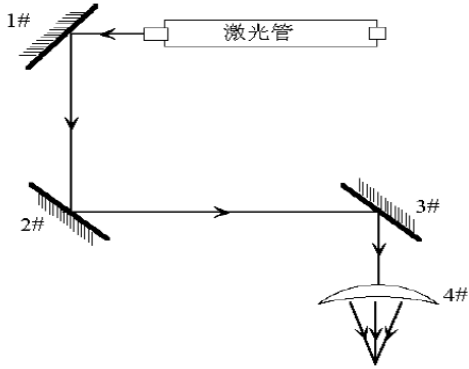
4th Step: if the two mark holes don't superpose, adjust 1# and make these two holes overlap;

5th Step: repeat operation from 2nd Step to 4th Step, until the two holes completely superpose.

6th Step: stick double glue paper on reflector 3# (or some other materials which can be marked by laser), move the trolley to the position nearest to 2#, press “Laser” (with proper laser power) and mark a hole.



7th Step: move the rail gradually to the place furthest from 2#, press “Laser” and mark a hole (Notice: Before adjust the laser, please first test the general position of the laser with a paper board to avoid personal injuries).

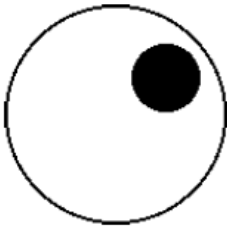


8th Step: if the two mark holes don't superpose, adjust 2# and make these two holes overlap;

9th Step: repeat operation from 6th Step to 8th Step, until the two holes completely superpose.

10th Step: stick double glue paper on light entrance hole in front of 3#, press "Laser" and mark a hole.

11th Step: if the laser doesn't reach the center of the light entrance hole, as shown in below Fig:



In this case, the laser hole is in upper right.

Rising or descending laser tube.

Forth or back laser tube.

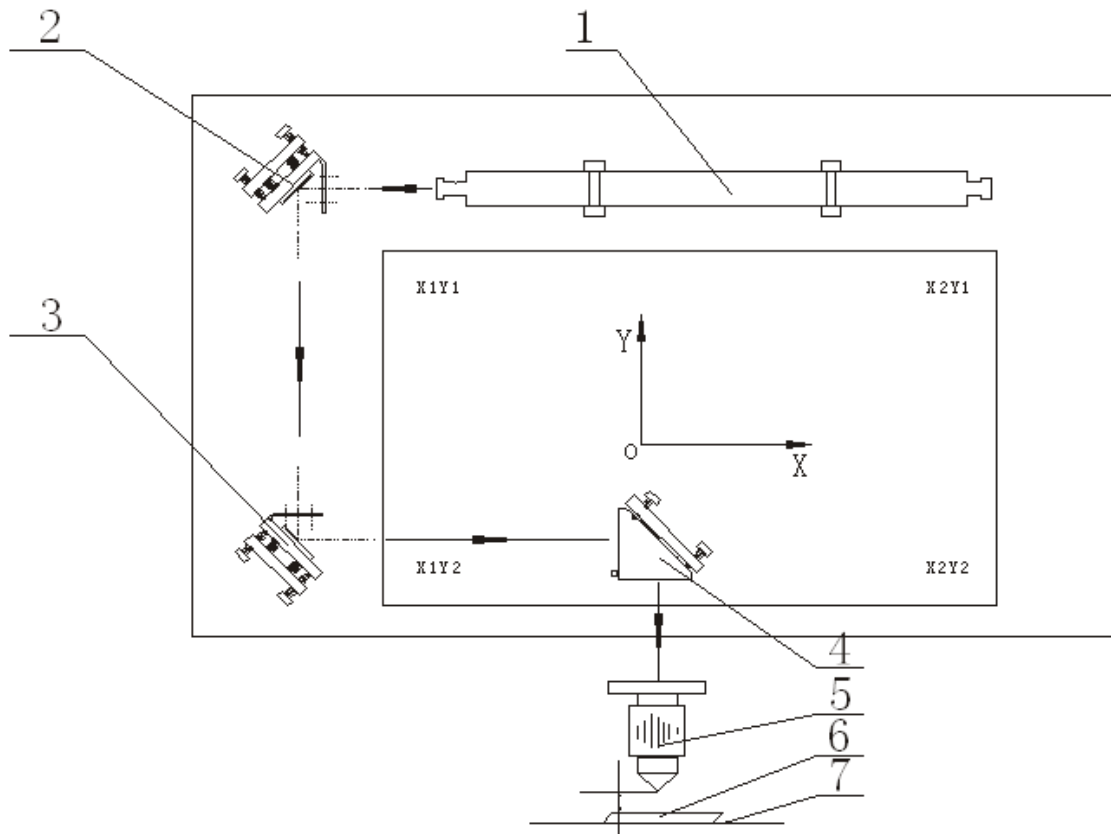
In this case, you must lower laser tube, then adjust from the 1st step.

Notice: the operator should be professionally trained, or should ask help from professional persons.

Make sure the safety during operation and avoid personal injuries caused by laser emission.

Laser Power System

Laser output diagram



- 1、 Laser Tube
- 2、 First Reflector
- 3、 Second Reflector
- 4、 Third Reflector
- 5、 Focus Mirror (Foci 63.5mm)
- 6、 Materials
- 7、 Platform

Spare Parts (Introduction)

Water tank & Water Pump



Power Cable、 Lens wiping paper、 Focus mirror、 Reflector mirror、 Soft dog、 Ruler、 Hexagon Bolt



Exhaust Fan and Exhaust pipe



Laser engraving machine standard configuration:

Inventory:

Shipping box contents

| Type | Spare parts | Quantity | Remark |
|----------|---|----------|--|
| Machine | Laser Engraving machine | 1 Set | |
| Equipped | Water Tank | 1pc/s | |
| | Water Pump | 1pc/s | Single head 1pcs, double-head 2pcs |
| | Water Tube | 2pc/s | Singles head 2pcs, double-head 4pcs |
| | Exhaust Fan | 1 Set | |
| | Exhaust Pipe | 2pc/s | 2pcs(1big & 1small) |
| | Collets for Exhaust fan | 3pc/s | 3pcs(2big & 1small) |
| | Power Cable | 1pc/s | |
| | Soft dog | 1pc/s | |
| | Lens Wiping Paper | 1pc/s | |
| | Software and E-Book operation manual | 1pc/s | |
| | Operation Manual | 1pc/s | |
| | Tools | 1sets | |
| | Ruler | 1pc/s | |
| Free | Reflector Mirror | 2pc/s | Except 6040 model. |
| | Focus Mirror | 1pc/s | |

Customer Required:

- 1、 Computer
- 2、 Ground
- 3、 USB Flash Disk (FAT16)

The daily maintenance and inspection

1. The water cooling system must be good. The water must be no less than 3/4 of the water tank, and the water pump must be immersed by the water. It is prohibited to use the low quality cycling water, because this low quality cycling water has very bad influence on the output of the laser power, and it can also greatly shorten the life span of the laser tube. The water tank must be sealed. Take care that the dust and the impurities is not allowed to go inside the water.
2. Change the cycling water frequently, one time per week. Each month, the water tank, water pump, and the water pipes must be cleaned. And the other auxiliary equipments, like the fans, air pumps must be also cleaned frequently.
3. When the machine is in working, the water temperature must be kept under 5°C ~ 20°C. In case you find something abnormal, change the water at once. When the machine is working, the cooler water can have some effect on prolonging the life span of the laser tube. If the machine is working in the tropical area in summer, you can add some cool water into the water tank, which can lower the water temperature to reach the cooling effects. Or you can use our industrial cooler.
4. The focal distance must be adjusted before the machine starts to work, as the processing effects will be not good if the focal distance is not accurate. Generally, the focal distance for engraving is 8mm, and it is 6mm for cutting. You can put the materials near the exit of the laser tube; this can reduce the weakness of the laser power.
5. Generally, the adjustment of the laser power is no more than 80%, which can avoid the fast aging of the laser tube. You can also set the parameter of the percentage of the laser tube. For example, you can set on the machine the laser power to be 80%, then even if you set 100% laser power in the software, but the real laser power is only 80%.
6. Before the machine starts working, remove the nozzle to check if the focusing lens clear or not. If the focusing lens is dirty, then use the cleaning paper and alcohol to clean it.
7. The A and B reflector mirror must be cleaned smoothly; otherwise, the laser path will be deviate. However, the C reflector mirror must be first disassembled, and then cleaned. So, all focusing lens and the reflector mirrors must be cleaned timely by using the special cleaning solution.
8. Everyday, when the machine finishes working, you have to clean the working area also, but the electricity of the machine must be cut off first. You can first clean the working platform, then remove the focusing lenses and the guide seat, but you are forbidden to push these parts heavily. The whole machine bed must be very clean, specially, the 3 guide rails should be cleaned frequently. Before the machine starts working, the guide rails must be cleaned with some lubricants.
9. Check the working temperature of the machine timely. When the working temperature is above the max value, the heatless of the machine can't be scattered completely, which will influence the performance and the stableness of the machine. Therefore, if the machines works long time and

continuously, then try to disperse the temperature and cool the machine parts, especially the controlling parts of the machine.

10. All the laser parts & equipments and the computer must be grounded well.

Regular examination for facility troubles

After working for a long time, the transmission part of the facility may be abrasion, laser power and laser tube may be aging, light transmission of the parts may be declined, the light path may be excursion, air pump and water pump may decline their exhaust. These all needs our instructions and adjustments. The details are following:

Power should be stable, and in the range of $220\pm 5\%V$. Also check the connection of ground connection, enlased? Bundle? Screw fixed? Jointing? The best is to connect by jointing, fixed by screw is the second choice. Other ways are not good.

Please measure the voltage of ground .connection. It must meet the standard ($U\leq 3.0V$). Then check the ground connection source, do a judgment of whether the ground should be reconnected again.

Check the water quality of cooling water. If there is no deposition inside water box and laser tube, the water quality is good.

Cleaning the water pump frequently and check the flux to make sure it is in normal range.

Check the water protection switch. Test method: First disconnect the water pump, and operate the machine manually, if there is no laser from source and the movements of the heads are not working, but they all works normally when you connect the water pump again, this proves the water protection switch is good.

Daily maintenance for rails. Before every day's working, please wipe the dirt by cloth and then add lubricating oil in block mouth.

Check the machine's transmission part to avoid loose or abrasion. Please check every synchronous belt, wheels, bearing for their loose and abrasion. Wipe the dirt in transmission axis and spaces between gears, and then make sure they are all not loosen. Pay attention that these all must be done carefully and well examined.

Machine vertical Adjustment. Make a rectangle which holds 70% of the machine working space. Check the diagonal length, if it is same, it shows X axis and Y axis are vertical. Otherwise please adjust it

according to its oblique degree.

Cleanness of Reflective Mirror and related complete processes: Once the oxide film on the surface of reflective mirror becoming a little bit thick and it doesn't work with cleaning by cotton sticks, you can rub its surface with your little sweated fingers until the oxide film been removed off completely. Finally, please purify mirrors with using cleaning lotion specially applied for mirrors. Sweat on fingers be of some acidic which is helpful to dissolve the oxide film completely; after removed the oxide film off, it is necessary to clean it with cleaning lotion which is specially applied for mirrors as there are acidic dirt existed on the surface of mirrors.

Laser Adjustments. It is necessary to make sure that lights come from the hole center of laser head.

Inspect flexibility level of buttons.

Clear up exhausted fan. Users should know the correct way of installing & disassembling exhausted fans. There must be lot of dusts inside the exhausted fan because of long works. So, users have to periodically clear up the fan itself, dusts & also other kind of waste particles that may stay in it.

Inspect air volume given. Once users found that those air volumes around air nozzles were at lower level than normal, please firstly check the working status of original air supplier (namely the air compressor): If the compressor offering air at lower volume, please get air intake through as it maybe get blocked; If the compressor giving air under normal conditions, please check to see the air volume been offered by the compressor well-balanced or not after got through an air filter---unusual, then notes that air filter maybe get blocked, disassemble the filter and clean it would be ok then. If air volume been offered by the compressor still seems under normal conditions after got through an air filter, please check to see where happens to be some folds to air tubes.

Clean up the controlling board.

Tidy the controlling circuitry up.

FAQ & Troubleshooting

The common trouble & solutions

The Laser head can't light

1、 Push the "Laser" button on the operate panel, check the condition of ampere meter

No electricity: check whether the electricity is connect or not, high voltage cable (Anode) is ok or not?

With electricity: check whether the mirror is broken or the laser path of is change or excursion

Check the water circulation system is normal or not

No water: check the pump is broken or without power supply

2、 With water : Check the input & output of water is good connected or tube broken

3、 Can test and transfer data but can't lighting (check whether the computer setting is right)

The thickness of engraving not same or can't engrave deep

1、 Check the circulation system is fluent (water tube bended or water tube broken)

2、 Check whether the focus is normal or not

3、 Check the way of lighting is normal or not (readjust)

4、 Check whether the paper on the material is thick or not , whether the water is overfull (readjust)

5、 Check whether the beam is parallel or not (adjust the two sides belt)

6、 Check whether the mirror is broken or not (change)

7、 Check whether the mirror or laser tube polluted or not (clear)

8、 Check whether the temperature is higher than 30°C (change the water)

9、 Check whether the laser head or focus mirror is flexible (press)

10、 The power of laser must arrive at 8mA

11、 The laser tube aging (change)

The resetting is abnormal.

1. Check if the flexible conduct data line loses contact or damaged. (Pruning the data line, re-swap the data line or replace it.);

2. Check if the ground line is reliable or damaged. (Re-connect the ground line or replace the high tension line)

3 The motor wire loses contact.

Losing data

1.. The initialization is not correct. Re- sending data.

2. The operation program is out of order. (Re-output)

3. Electrostatic interference (check if the ground line is off or not.)

Clean dislocation、 unclosed.

1. Check if the file edited is correct or not.(re-edit)

2. Check if the point choosed is beyond the published noodles. (Re-choose)

3. Check if the setting of software parameter is correct.(reset)

4. There is something about the system of the computer.(re-install the computer system and software.)
5. Check if the left and right belt elastic is consistent or the ending belt is too loose. (Intensify the belt)
6. Check if the belt and synchronous wheels is skid 、 jump teeth.(Intensify the synchronous wheel or the belt)
7. Check if the beam is parallel. (Re-regulate the left and right belt.)

Computer cannot output

1. check whether software parameter setting is normal or not(Re-setting)
2. whether the engraving machine is re-output to their starting location(Re-output)
3. Check whether the machine did not reset at first(Re-correction)
4. Check whether the output serial port settings is consistent with the software setting serial port(Re-setting)
5. Check the reliability of ground wire and whether the data lines are interfered by static electricity(Re-grounding)
6. Replacement of computer serial output test
7. Re-install the software and re-set test
8. Formatted computer disk to reinstall the system software testing
9. Main board serial need repair or replacement of damaged

Cannot calculate the path

1. check whether the calculation method is right or not
2. Check whether the graphics file format is correct or not(Re-correction)
3. Remove software, re-install and set up

The computer's common problem

1. Font gradually reduced (re-install the operating system)
2. Can not calculate the laser path for too large amount of data (Wait for a period of time or increase computer memory)
3. The path of calculation did not respond for a long time, restart the computer test

Laser Engraving & Cutting Machine Diagram

