Laser cutting machine & Laser engraving machine opration manual

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Device of Laser engraving and cutting machine

Caution:laser is a high power and invisable light.It is harmful when you stand in front of it. Easy to cause the combustible matters. operator can't leave lWhen the machine working. Please read this manual carefully so as to avoid unnecessary mistakes and loss. some inconsistencies due to the potential and actual product update or improve. Please according to the actual need to purchase, In addition, if the content of the manual was improved, please forgive no notice.A statement in advance.

content

The first chapter summary

1. state
2. Laser engraving cutting machine is a new type of laser processing equipment.**Mainly used for** Arts and crafts, furniture, glass products, wood products, PVC, lighting, advertising, decoration, papermaking, mark, stamp or seal, acrylic, bamboo products, handbags and shoes, clothes and garments, fabrics, etc._Through adjustment of the laser parameters, can undertake various engraving and cutting machine.This machine has many advantages: incision is smooth, no contact with cutting, carving, carving accurately, the effect is good. Structure: laser engraving cutting machine is made up of optical system, work platform, control system, cooling system and auxiliary system.

   2, carving machine has five parts: the mechanical system, optical system, transmission system, control system and auxiliary system.

   Mechanical platform: the cover, guide rail, base, such as reflection frame of mechanical parts.

   Optical system: consists of laser tube, laser power supply, three mirrors and a focusing lens.

   Drive system: the three high precision imported linear guide, belts, four equilibrium of two stepper motor and a number of gear.

   Control system: high speed control card, switching power supply, stepper motor drives.Auxiliary system: is there a circular blowing cold water pump, compressor, smoke exhaust fa
3. The technical parameters

	0—60m/min
speed control	0—100％No period of control

laser tube cooling	**water-cooling**
Mechanical Resolution	0.025mm
Minimum shaping character	Chinese characters2.5mm，**Englishword** 1.5mm
repeated accuracy	±0.01mm
power supply	AC220V±15%　50Hz
total power	≤1000W
Pattern format	PLT　BMP　DXF　DST
drive	**the type of stepping**，subdivision driving
power of laser tube	60W　80W　100W
orking Temperature	0℃~45℃
Working Humidity	5%~95%
alternative	Red light positioning system、LCD display、USB port，elevated working platform • 、rotating platform

The second chapter safety manual

Laser engraving cutting machine used in four kinds of laser (laser injection), laser injection may cause the following an accident：

1） The combustible around

2） When the running machine may produce harmful gases

3） Laser direct illuminate the human body will be harmful to human body.Therefore, place of work must have a fire extinguisher, strictly prohibited tinder near the machine and keep ventilation.Please read and comply with the safety manual.

4） he shell should contact with the ground of the machine.

Non-professional high voltage power supply is prohibited.Don't break the shell. Need ventilation cooling.

4. When the laser tubes work need a circulating water to cool overheating of the laser tube.Machine before starting work, therefore, please make sure you add some water to the cooling water pump.When the power is opened, the water pump begin to run work equipment.Circulating water should be pure.Check whether the pipe is leaking, water and the temperature of the water is not enough to more than 35 ℃, we recommend regular change water and cleaning cooling equipment.Cooling equipment for a long time not use, or long-distance transportation need to rule out the water.
5. Open the water circulation system, before opening the equipment and ensure the normal use of water circulation system.In the laser tube is not able to have ice water in winter, so turn off the power supply to the water in the laser tube to prevent freezing
6. In the winter temperature is very low after turn off the power supply should be paid attention to when the water in the laser tube to prevent freezing.

If a laser beam directly reflect or the human body will cause great harm to human body, especially into the eyes.With laser engraving cutting machine so as to closely observe the following rules:

a) don't put any part of your body into the light path, to avoid being laser burns.

B) prohibited through binoculars, microscopes, magnifying glass observation of laser, etc.

C) in the laser reflector is allowed on the worktable.

7. D) when adjusting the laser line not far from the laser emission too close.
8. 7._If the machine will smoking is harmful to the machine at work pollution lens and lens.Users open the pump and fan, regular cleaning the dust in the air pump and fan.
9. . In the event of failure or a sudden fire, please immediately cut off the power and stop using machine lightning weather.
10. 9._The machine work or not to cut off the power source distribution box can't open the machine.The machine is working pressure.Non-professional personnel can not open machine.
11. Laser engraving cutting machine should be on the ground.Can't knock, shaking, pounding machine, especially the orbit.
12. . The sliding surface in the machine and contact shaft should be kept clean, make oil can at any time in the input hole.
13. 12If the machine has a dust pollution will affect the output efficiency of the machine.Users should keep the lens and lens clean.At the time of cleaning application special lens cleaning fluid.Use absorbent cotton or lens tissue from inside to outside to wipe down a direction.If the laser reflective mirror and focus lens is not clean will seriously affect the production efficiency.After a absorbent cotton in cleaning should be replaced.
14. 13._The machine should be running in a clean environment.The installation of air pump should be higher than the ground to prevent dust absorption
15. 14._Gas system, air blower, debris must be unobstructed cleaning system.Before open the power supply should be open the blower fan and pump.
16. 15._Screw connection: when the system is running after a period of time, will be some loose screw connection, the stability of the machine will be affected.

Note: when the machine is running must have a staff beside the guards

The third chapter installation and debugging

1) remove the packing must first check whether there is any damage on the laser tube, and then check whether there is any scratch on the machine appearance and accessories are complete.(2) select the installed location A, air humidity is not more than 50%, and well ventilated.U too much moisture will lead to high voltage discharge, damage to the machine.B, humidity should be controlled between 6 ~ 32 ℃, shall not exceed the scope.C, should be good grounding device.

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18. (3) MPC6515 software installation manual operation
19. Step 1: put the installation CD into the computer drives the second step: open the CD

The inside of the folder double-click to open the find

Double click to install

the card driver

The third step: find the folder 

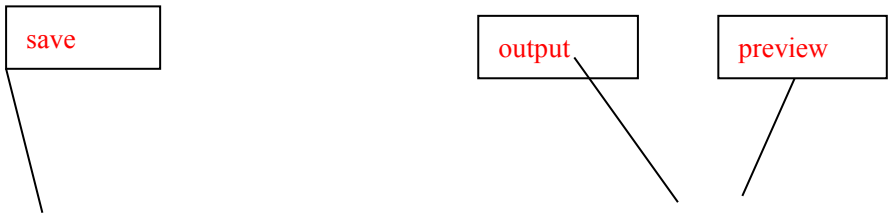
Open 

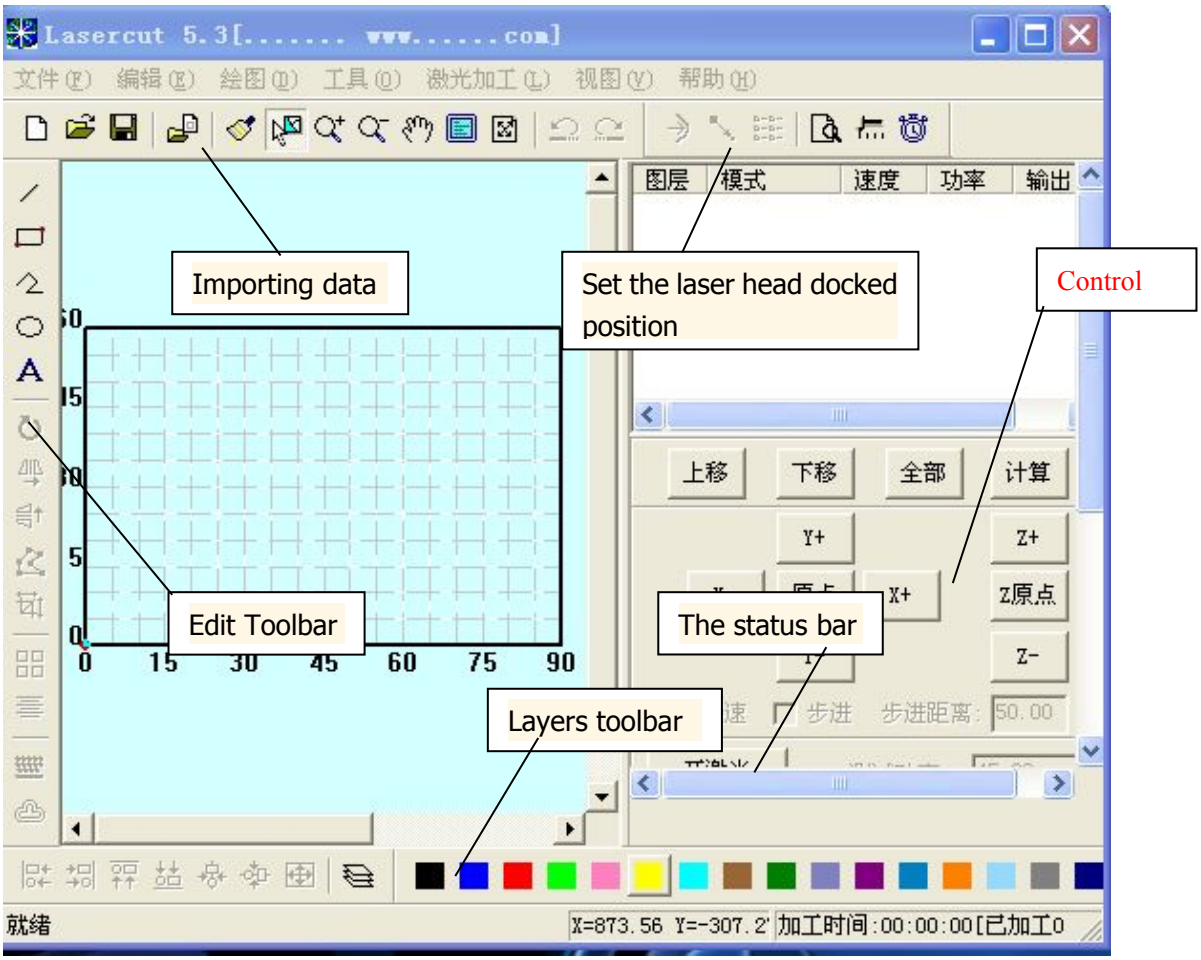
File, double-click to open the installation. There will be a prompt is as follows:

You can choose from the drop-down bar installed operating software for example :CorelDraw AuotCAD

备注:安装 CorelDraw 时要先安装 CorelDraw

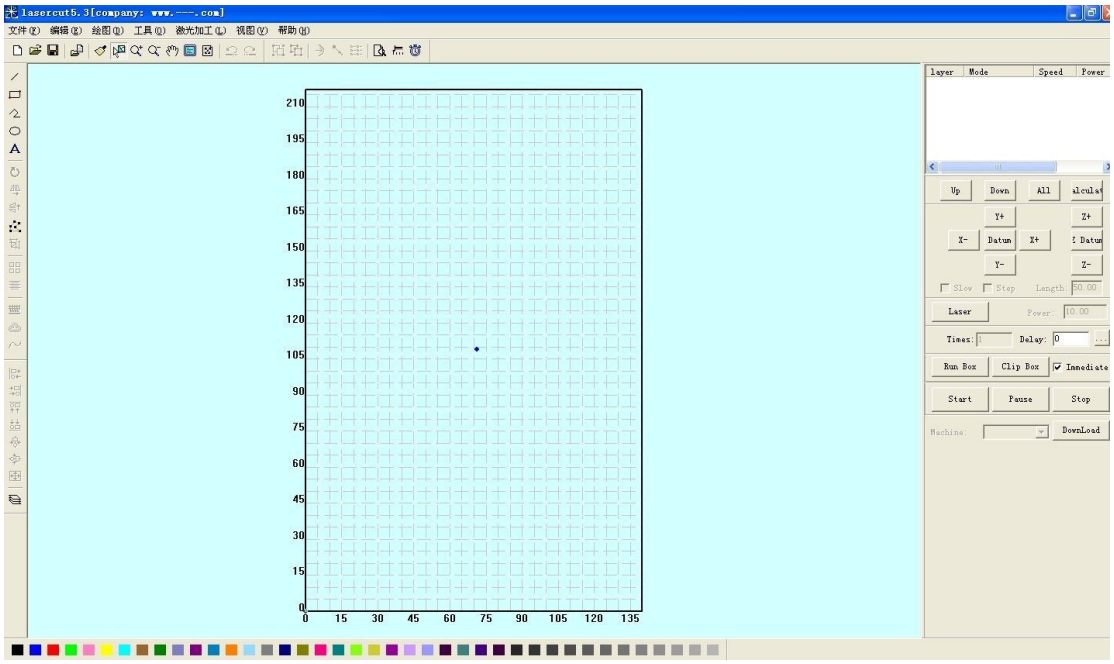
To install the operating software, installation is complete to run again CorelDraw first, then install CorelDraw software operation. If you choose LaserCut5.3 after the installation is complete there will be a desktop shortcut. The fourth step: software installation is complete. 1. Insert the dongle into the computer USB port, the computer will be prompted to find new hardware, click automatic installation, (2) the USB cable connected to the computer USB port and the card link step 5: open the machine double-click desktop LaserCut5.3 open software download configuration to run this software, general version main interface as shown in the figure below:





Puts the mouse button, stop for a minute, can display the function of the button.

5.1 File



5.1.1 New

For the corresponding toolbar icon.

Create a new processing documents.

5.1.2 Open

For the corresponding toolbar icon.

Import processing parameters configured project file (*. Ecp).

5.1.3 Save

For the corresponding toolbar icon.

Save the graphics and processing parameters for laser processing currently editing the project file (*. Ecp).

5.1.4 Save as

The laser processing has been saved project files (*. Ecp) saved as another laser processing project file (*. Ecp).

5.1.5 Import

For the corresponding toolbar icon.

Software supports to import data, including:..... * PLT, * AI, * DXF, * DST, * BMP, NC codes.

5.1.6 Export

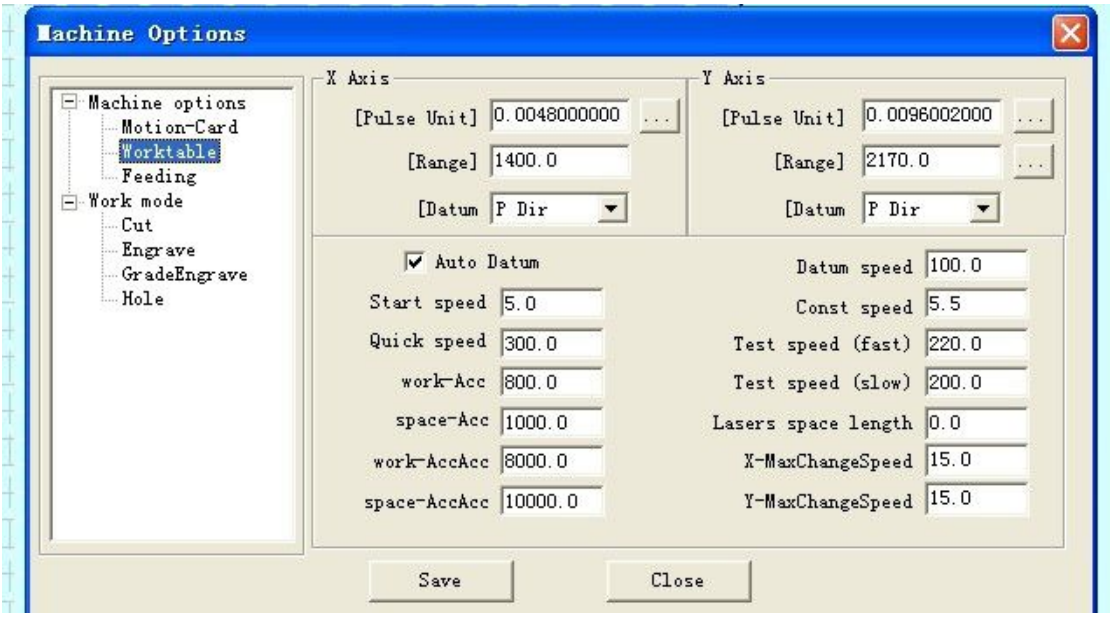
Save the current editable vector graphics files to *. PLT or *. DXF.

5.1.7 Reconnect laser machine

For MPC6515 offline card. When the computer communicate with the controller fails, click on this button to re-communicate.

5.1.8 machine settings

Click this button, the machine set the main interface as follows:



Parameters for advanced configuration parameters of the machine Settings, any changes could lead to laser machine not work properly.Typically, the user does not need to be modified.If due to special circumstances, please be sure to under the guidance of manufacturer's engineer.

See "Chapter VI"

5.1.9 Exit

Click this button to exit the system.

5.2 Editing

5.2.1 Revocation

For the corresponding toolbar icon.

Return to the previous state of edit.

5.2.2 Recovery

For the corresponding toolbar icon.

Restored to the state before the revocation.

5.2.3 Refresh

For the corresponding toolbar icon.

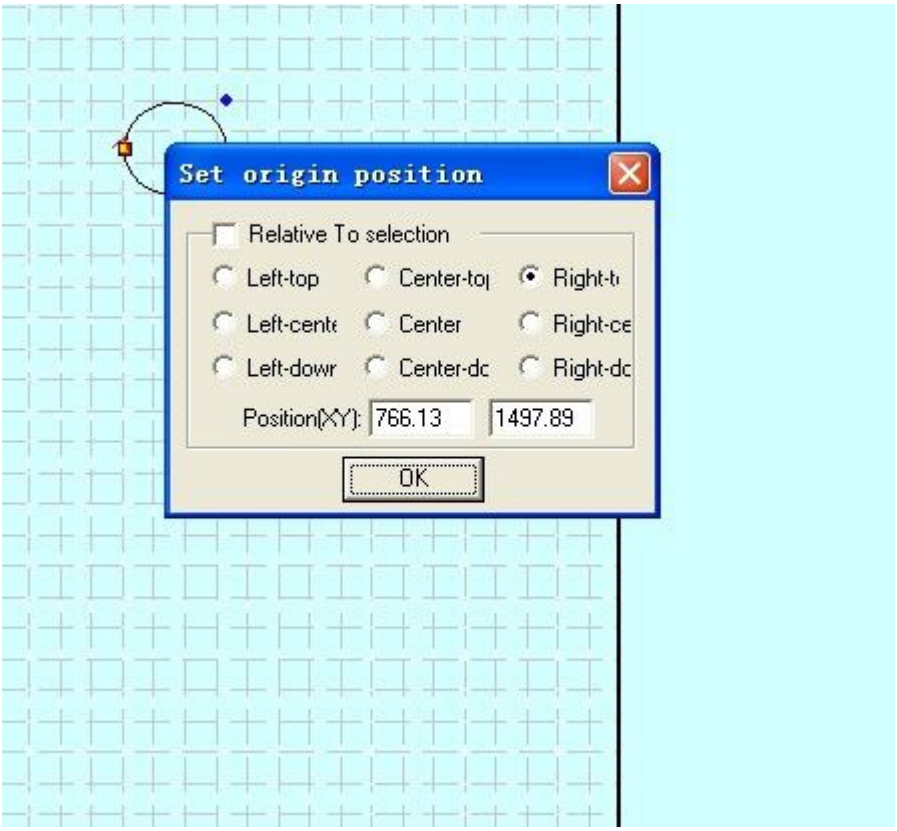
Refresh the display screen.

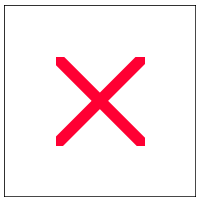
5.2.4 Select

For the corresponding toolbar icon.

Choose to edit graphics. Select a section of graphics or graphics, you can select the part of the move, delete, change layers and other editing operations.

After selecting the graphic, click on the "space" button, the following dialog:





Coordinate value corresponding to the input coordinate data is determined.

5.2.5 Enlarge

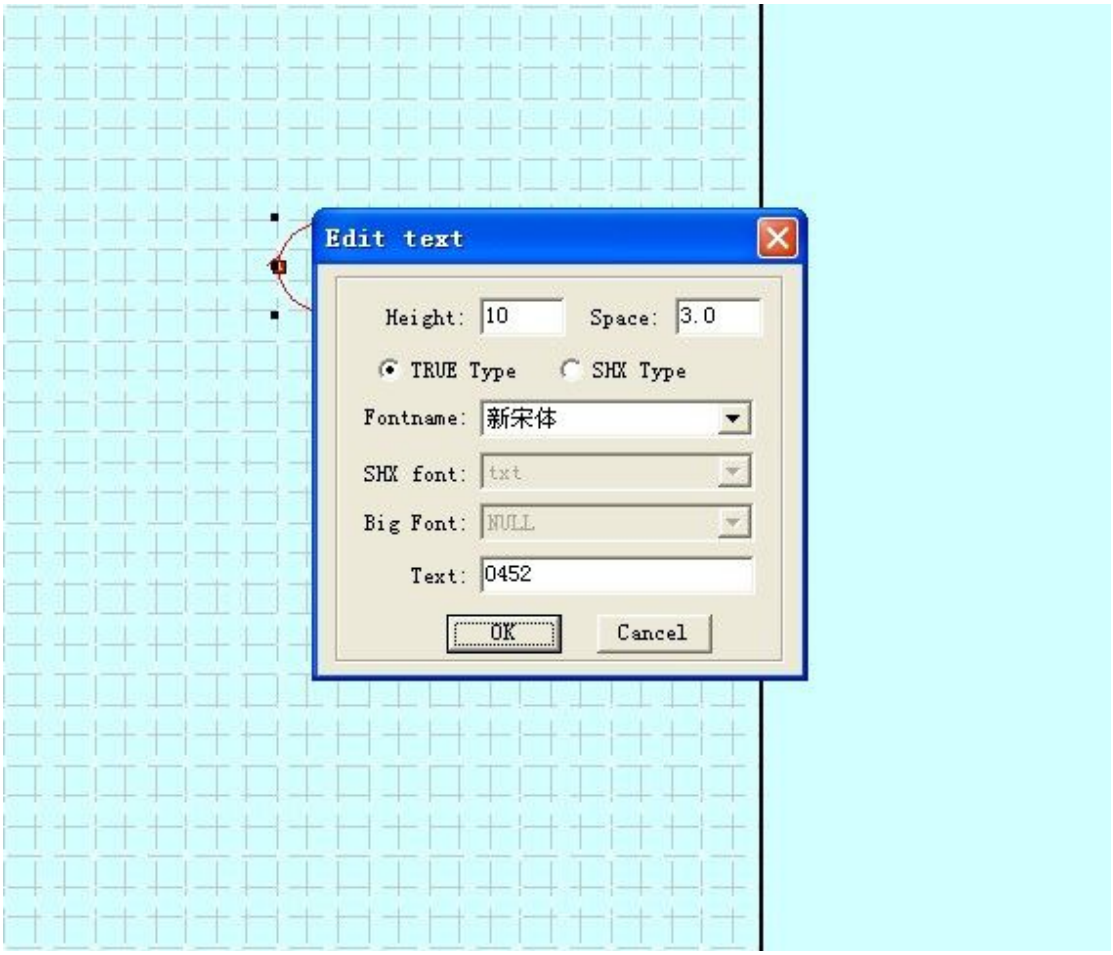
For the corresponding toolbar icon.

Zoom display graphics data. Click the button on the screen with a mouse click or drag the mouse to enlarge the graphic data (actual size does not change).

5.2.6 shrink
For the corresponding toolbar icon.
Narrow display graphics data. Click the button on the screen with a mouse click to zoom out graphical data (actual size does not change).
5.2.7 Pan
For the corresponding toolbar icon.

Mobile displays the current view.
Table 5.2.8 Range
For the corresponding toolbar icon .
Full display throughout the processing format / coordinate system.
5.2.9 Data Range
For the corresponding toolbar icon .
Full display processing data range.
5.2.10 data center
For the corresponding toolbar icon .
If you do not select any graphics , the whole center. If you select the graphic , then select the part of the center.

5.3 Graphics
5.3.1 straight
For the corresponding toolbar icon .
Draw a straight line . Click this button , and drag the mouse to draw an arbitrary line on the screen. Press "Ctrl" key while dragging the mouse to draw a horizontal line .
5.3.2 rectangle
For the corresponding toolbar icon .
Draw a rectangle . Click this button , and drag the mouse to draw a rectangle on the screen of any size . Press "Ctrl" key while dragging the mouse to draw a square .
5.3.3 Multi- line
For the corresponding toolbar icon .
Draw arbitrary lines. Drag the mouse on the screen and click the mouse to draw arbitrary lines. Click the "C" key graphics can be automatically closed.
5.3.4 Oval
For the corresponding toolbar icon .
Oval painting . Drag the mouse on the screen and click the mouse to draw an ellipse, hold down the Ctrl key while dragging the mouse to draw a perfect circle .
5.3.5Bezier curve
For the corresponding toolbar icon .
Draw Bezier curves. Drag the mouse on the screen and click the mouse to draw a Bezier curve.
5.3.6 Text
For the corresponding toolbar icon .
Click this button and drag the mouse on the screen to appear the following dialog box :



In the above dialog, you can set the size of the word (character height), word spacing and fonts, and so on.

If you want to edit the text, click on the button, then you need to edit the text above and drag the mouse, you can "Text Edit" dialog box, you can modify the text.

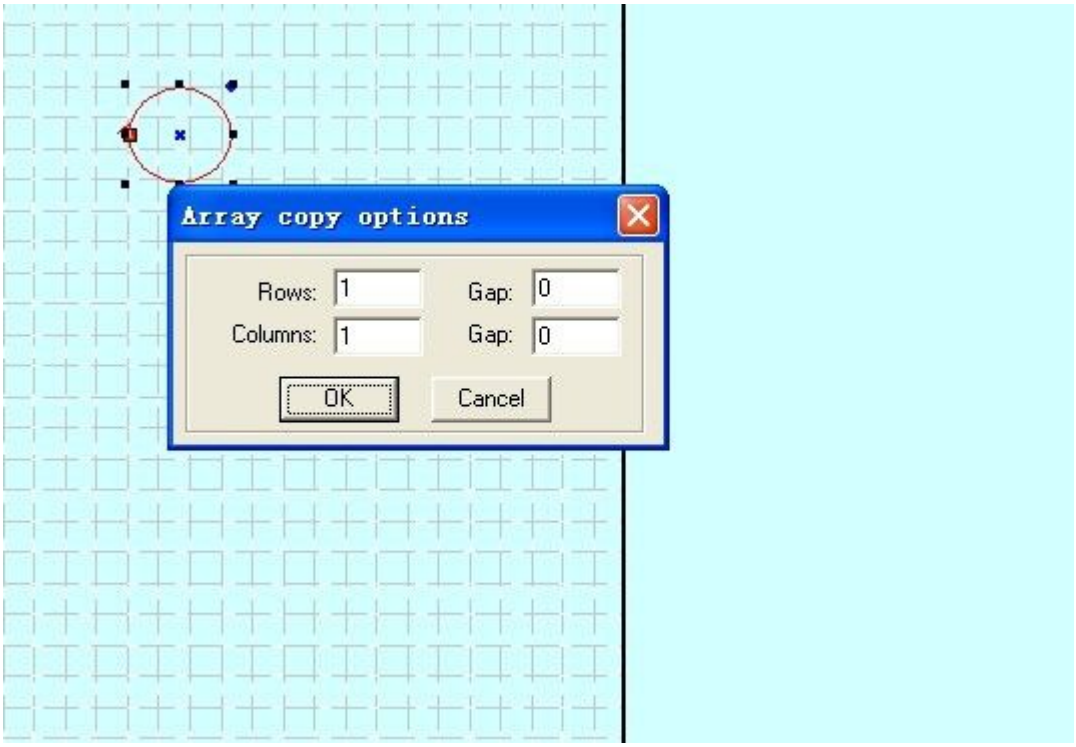
If you want to edit the text (such as changing the size, rotation, etc.), you must first convert the text to curves (using the tool bar of the "converted to curves"). Convert text to curves after its contents can not be edited.

5.3.7 Copy

For the corresponding toolbar icon.

Click the "Select" button, select the required on-screen graphics array copy, and then click the button

The following dialog box appears:

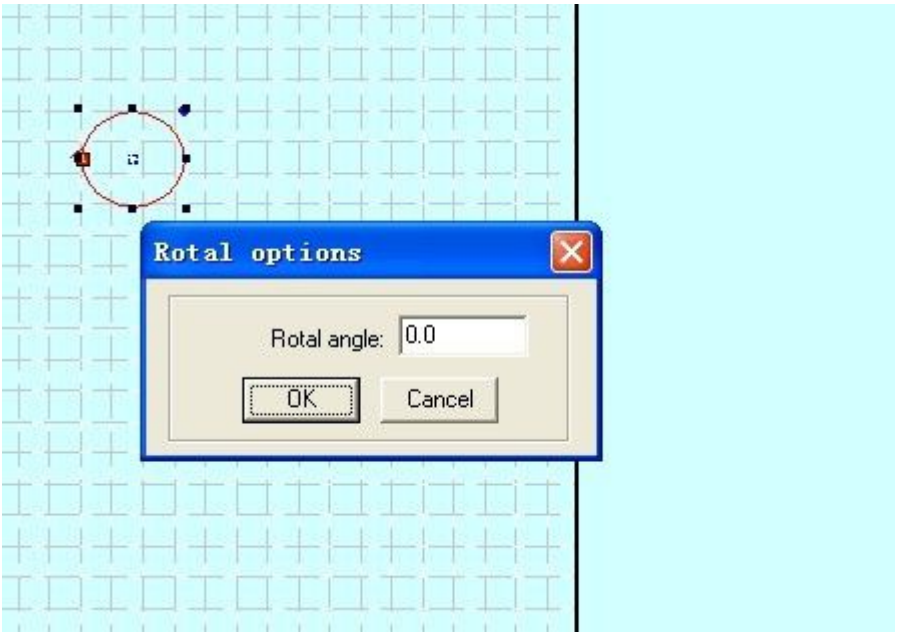


Enter the appropriate parameters, you can copy the "number of rows × columns" identical graphics on the screen. Spacing between each graphic is determined by the pitch.

5.3.8 rotation

For the corresponding toolbar icon.

Rotate graphics. Click the "Select" button on the screen of the need to rotate the selected graphic, then click the button to select an arbitrary rotation graphical drag the mouse.



Enter the appropriate value can be precisely defined angle of rotation. Click the "Cancel" button,

5.3.9 Vertical Mirror

For the corresponding toolbar icon.

Click the "Select" button, select the graphics on the screen is mirrored in need, then click the

button for the selected graphic vertical mirror.

5.3.10 horizontal mirror

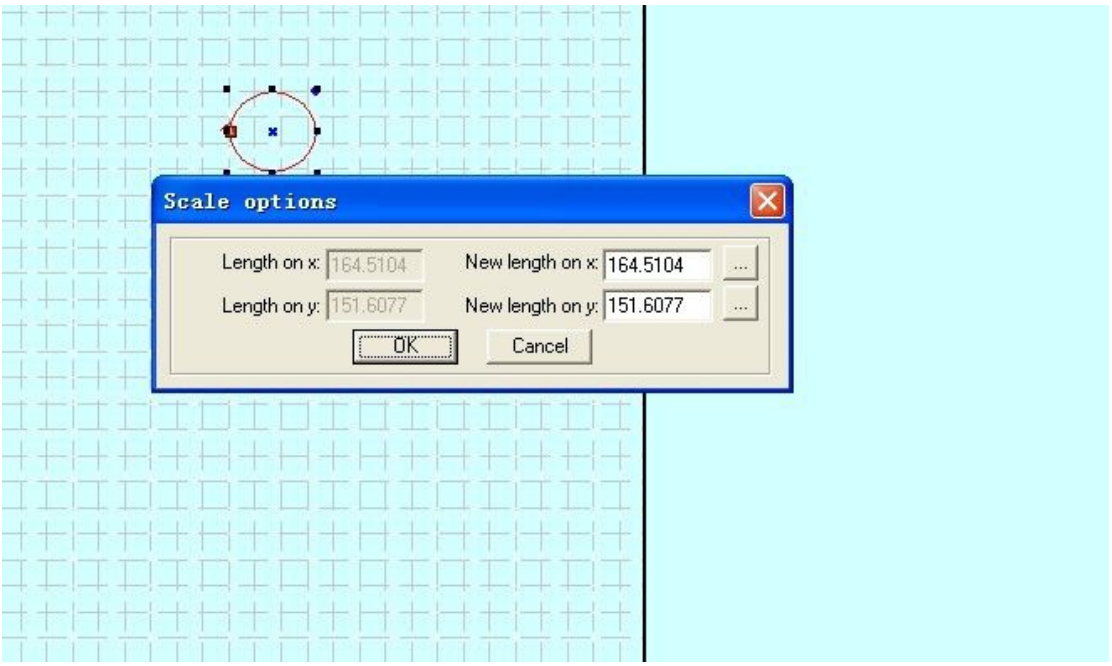
The corresponding icon is 

Click the "Select" button, select the graphics on the screen is mirrored in need, then click the button to select the level of mirror graphics.

5.3.11 Size

For the corresponding toolbar icon.

Scaling graphics. Click the "Select" button, select the required scaling of graphics on the screen, then click on the button, the following dialog box:



Enter the desired X, Y direction, length, and click OK to change the size of the graphic.

If you need graphics with scaling, then enter the length of the value X or Y direction, the direction, and then click the dialog box after the button.

5.3.12 Alignment

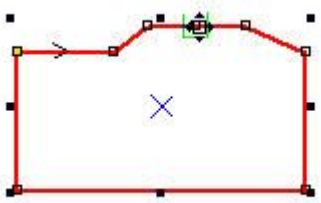
For the corresponding toolbar icon.

There are seven kinds of alignment.

5.3.13 node editing

For the corresponding toolbar icon.

Nodes of the selected graphics editing. Click this button to select the graphics that will be displayed in a small box out of the node. As shown below:



Move the mouse onto the node, and drag the mouse to change the shape of the graph.

The mouse on the graph, the mouse that becomes a cross, then double-click the mouse to add nodes. If you need to delete a node, simply move the mouse onto the node you want to delete, click the "Delete" button.

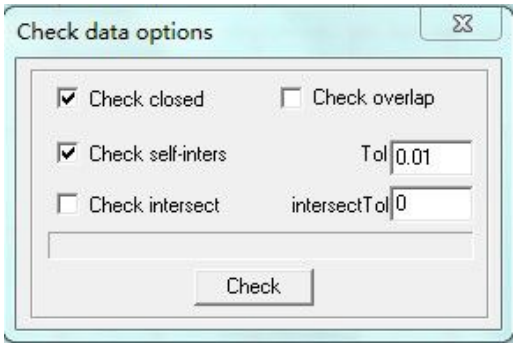
5.3.14 Cut

Cut the graphics processing. Click this button, move the mouse onto the graphical outline, and then click the mouse to cut the selected graphic. This function is mainly used to deal with DST files.

5.4 Tools

4.4.1 Data Check

Click on the tool, the following dialog appears:



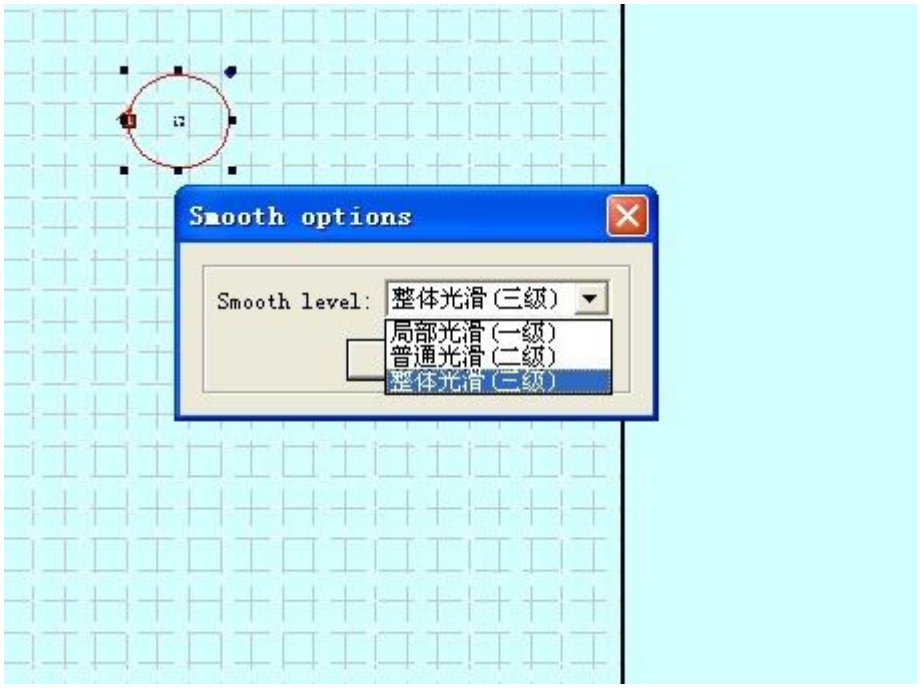
Overlap error: Set whether recognized as two adjacent overlapping error.

If you find anomalies (if not carving, cutting go twice, etc.) appear in the processing, use this tool to check whether the data properly. Check it out on non-normal data, will be in red. You can choose to delete, node editing operations.

5.4.2 Smooth polyline

For the corresponding toolbar icon.

Smoothed curve can improve the cutting speed and stability. Select the smooth processing of the data needed, click the button, the following dialog box appears:



Smooth and level of three: local smooth, smooth and overall general smooth. The higher the level (the highest overall smoothness), the curve more smooth, but the bigger graphic distortion.

5.4.3 Merge connected lines

Will be connected to multiple segments into one segment. Select the data to be processed, click the button.

5.4.4 generate parallel lines

For the corresponding toolbar icon.

Vector graphics data for the external expansion or contraction. Select the data to be processed, click the button the following dialog box:

Select the desired parameters to generate parallel lines, and parallel lines are automatically generated as a layer. As shown below:

Type the corner arc and line in two ways. Select the arc, the resulting lines more smooth, but the corner of a small amount of distortion.

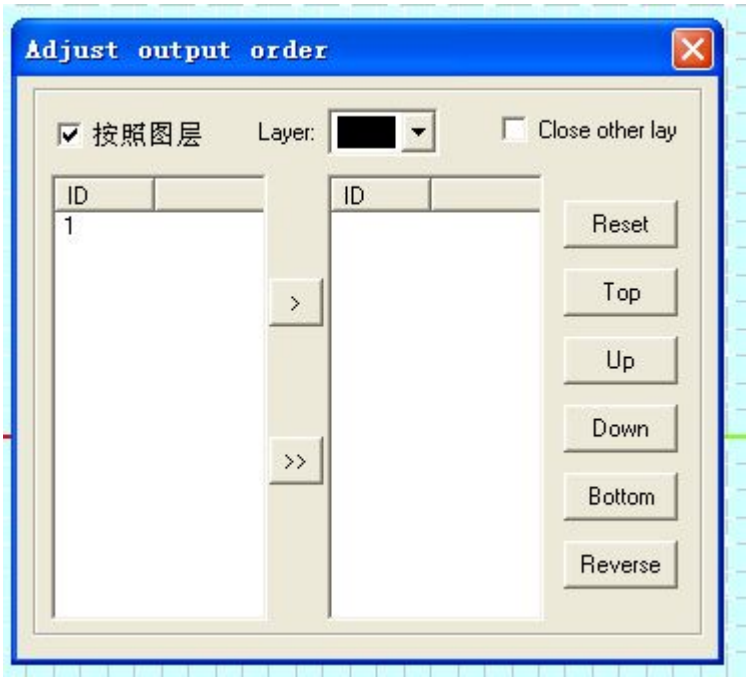
5.4.5 converted to curves

Convert text to curves. Enter the text in the software, the text can not be processed (such as changing the size, rotation, etc.), you must first convert the text to the curve to carry out these operations.

5.4.6 Set the output sequence

When cutting, the processing sequence according to the selected mode (such as the original path, the optimal path) for processing. Users can also use this tool to customize the processing sequence.

Click on this tool, the following dialog:

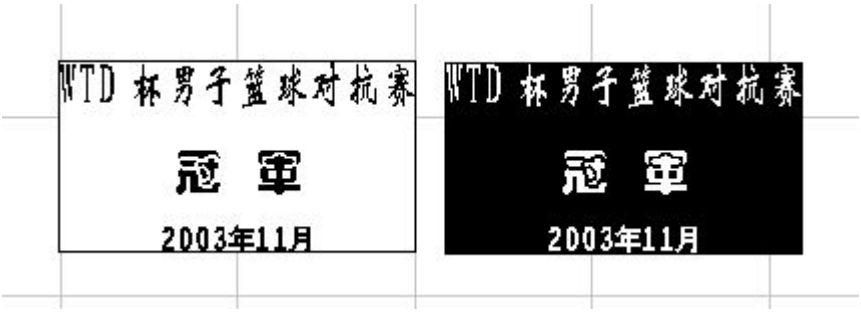


Click the "Reset" button, select a graphic, click on the "spacebar" or to represent numbers will move the graphic to the right list. When cutting, machining path on the right side of the list according to the order.

5.4.7 Anti-color bitmap

For the corresponding toolbar icon.

BMP image of the selected anti-color processing, get intaglio carving processing and yang effect. As shown in FIG.



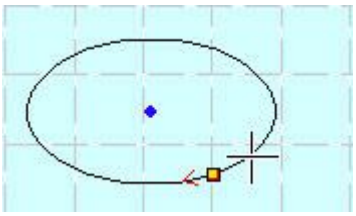
The effect of left and right, respectively before and after the color.

5.5 Laser Processing

5.5.1 Set the cutting pen position

For the corresponding toolbar icon.

The system will cut the pen position (usually at the intersection of two segments) and graphics automatically defined according to the cutting direction. If you need to modify the pen position and cutting direction, select the graphics you need to set pen position, click on this button, then move the mouse to the need to edit the graphic, then the mouse will turn into a cross. Click anywhere on the graph the mouse, you can set the point pen position. Click the "F" key to change the cutting direction. As shown below:



At this time click the blank space key, you can also set a introduction of lead wire, as shown in the figure below:

Computing: Choose this option to set the parameters of the introduction of lead.

The introduction of (a) Type: Lead the introduction of types, sub arc and line two.

Radius: radius lead in the introduction.

Length of line: When introducing a straight line drawn type, length lead in the introduction.

Cut (a) Angle: When introducing lead type is straight, the introduction of lead and graphical contour angle.

: The parameter is set to lead the introduction of the same parameter line.

Automatically determine the starting direction: The system automatically determines the location of the introduction of lead (in or outside the graphical outline).

Manually set the start direction: the introduction of lead set your own location (in or outside the graphical outline).

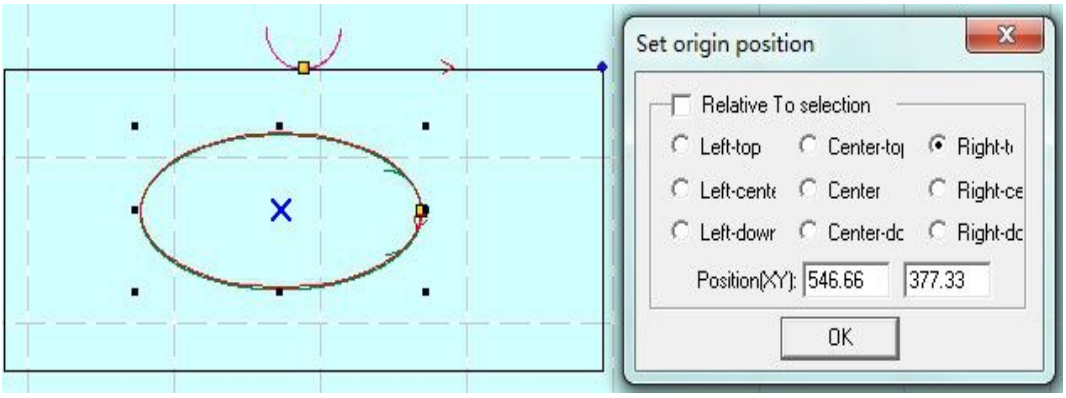
Sealing / left gap: This option determines whether the graphics processing sealing the overlapping length and the length of the gap left by the closure of the options on the right side of OK.

Below parameter setting examples:

5.5.2 Set the laser head docked position

For the corresponding toolbar icon.

Origin correction, after completion of the data back to the origin and processing of the laser head will stop at that point. Click on the button, the mouse arrow will turn in a circle while following dialog appears:

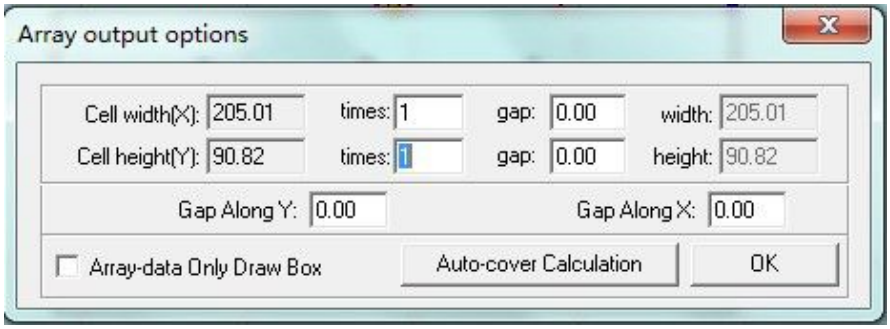


Can be set to a desired position of the lower left corner of the processed data, like the lower right corner; moving the mouse can be set datum position; can also enter coordinates of the origin position need precise setting the home position.

5.5.3 Array processing parameters

For the corresponding toolbar icon.

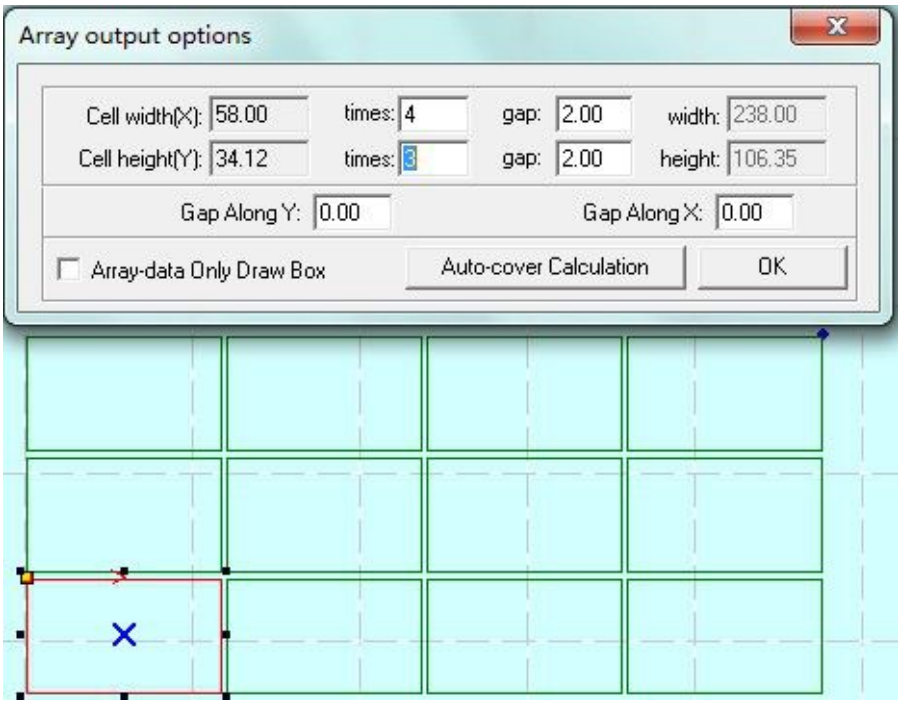
Click on the button, the following dialog box:



Single-width (X): the original size of the data processing.

Single height (Y): the original size and processing data.
Number: the number of rows or columns of data to be output.
Pitch: The distance or spacing between each row of each column.
Overall Width: The width of all data after the array.
Total height: length of all data after the array.
Dislocation line length: two adjacent displacement distance.
Dislocation line length: two adjacent rows dislocation distance.
Array data indicate only draw borders: When you select this option, only shows a graphical view of the rest of the graphics display will be in the form of the border.
Automatic full calculation: According to the dislocation spacing and length of the set number of rows and columns of the entire working area required is calculated automatically covered. Click the "full automatic calculation" button, the following dialog box appears

Length of raw materials: the material to be processed length (the default length of the value table).
Material Width: The width of the material to be processed (the default is the width of the table).
The system will be based on the entire set of raw materials, processing materials covered automatically calculate the size of the number needed.
Below is an example of the array parameter settings



5.5.3 Route calculation process

When the graphic changes or changes in process parameters , click this button, you can save the parameters to the processing file.

5. 5. 4 Clear processing log

Click on this button, you can log in the status bar will be processed cleared.

5. 5. 5 Analog processing output

The corresponding icon is  。

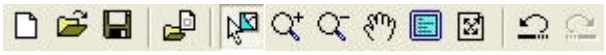
After setting processing parameters, click this button , you can simulate the output , check the output of the effect . Analog processing speed can be set arbitrarily. Click the "Esc" key to terminate analog display .

5. 6 View

5. 6. 1 Toolbar

5. 6. 2 File toolbar

Click this button , you can display or hide the file toolbar. File toolbar as shown below:



5. 6. 3 Output Toolbar

Click this button , you can display or hide the output toolbar. Output toolbar as shown below:

5. 6. 4 Edit Toolbar

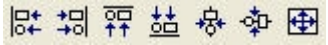
Click this button , you can display or hide the editing toolbar. Edit toolbar as shown below:

5. 6. 5 Layers toolbar

Click this button to show or hide layers toolbar. Layers toolbar as shown below:

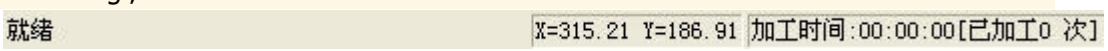
5. 6. 6 Align Toolbar

Click this button , you can display or hide the alignment tool bar . Align toolbar as shown below:



5. 6. 7 The status bar

Click this button , you can display or hide the status bar . The status bar displays the log processing , coordinate location and other information. The status bar as shown below:



5. 7 Help

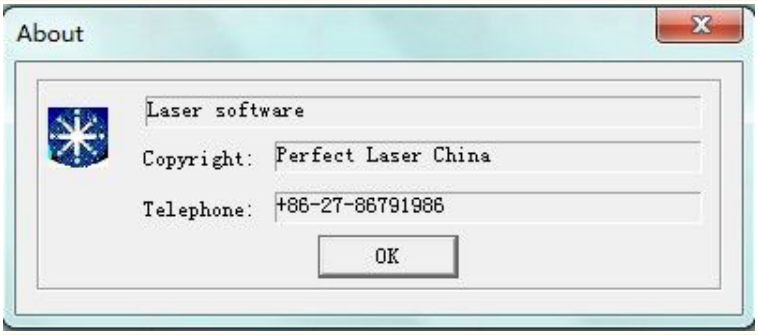
5. 7. 1 help

Click this button to enter the help file , you can easily find the instructions for use of

each function .

5.7.2 about

Click this button, the following dialog box appears :



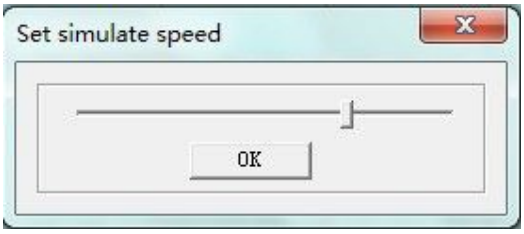
Display version information and vendor contact telephone number, if you use encounter any problems, please call .

5.8 Other buttons on the toolbar

5.8.1 Set the simulation speed

The corresponding icon is .

In order to facilitate the observation of processing path, you can adjust the speed analog display . Click this button



5.8.2 Simulation work time

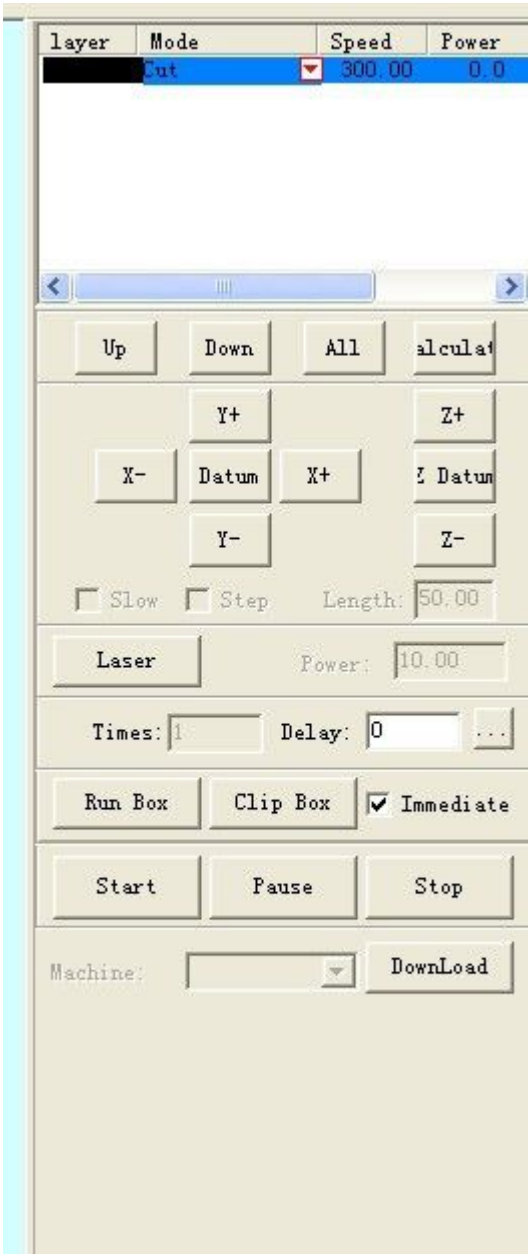
The corresponding icon is .

Click this button , it will display the expected processing time and other information .

The laser output

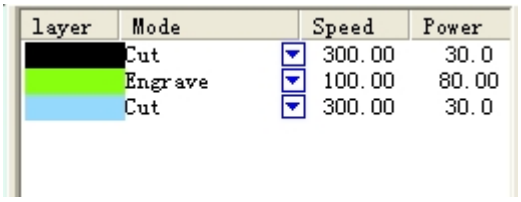
The laser output interface consists of three parts : layer management, control panel and offline files (download data) .

6. 1 Layer Management



6. 1. 1 Layer management interface

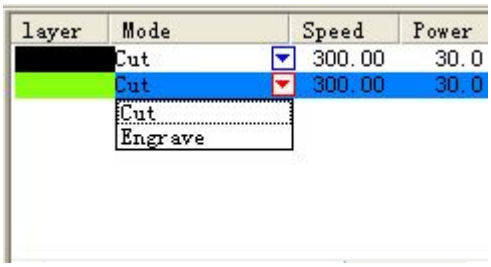
Layer management interface as shown below:



Processing order processing management from the top down in the Layers list inside, if you need to change the processing order , simply select the one line , click 上移 or 下移 button is ok 。

If there are several layers of data processing , the list of which is selected in the Layer Manager after one of the lines , click 全部 The other layers can be set to the same line of processing parameters . After changing graphics or processing parameters, please click 计算 button Preservation process parameters.

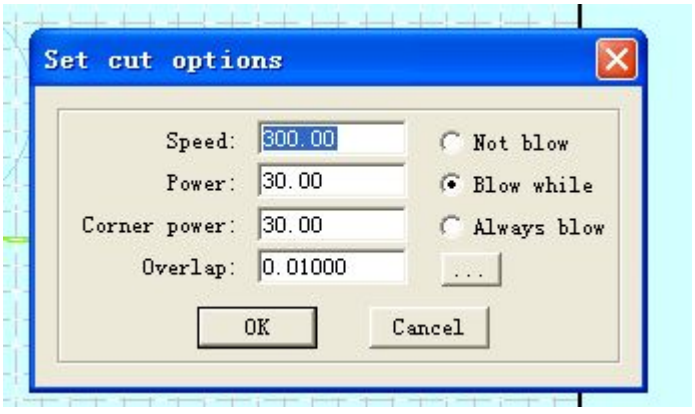
In the drop-down menu " Mode" column processing methods can be selected , as shown below :



In the "Output " field you can select whether to output the layer. Indicates that the layer output , which means that the layer is not output.

6.1.2 Cutting parameter setting interface

Double-click the color logo of the " Layers " column , the parameter dialog box pops up , as shown below:



Each parameter is defined as follows :

Processing speed : The speed of the laser head cutting work .

Processing Power : Adjust the maximum laser power when processing the layer (in percent) .

Turning power: variable motion , when the lowest rate of power values .

(By adjusting these two parameters can ensure the processing laser intensity constant.)

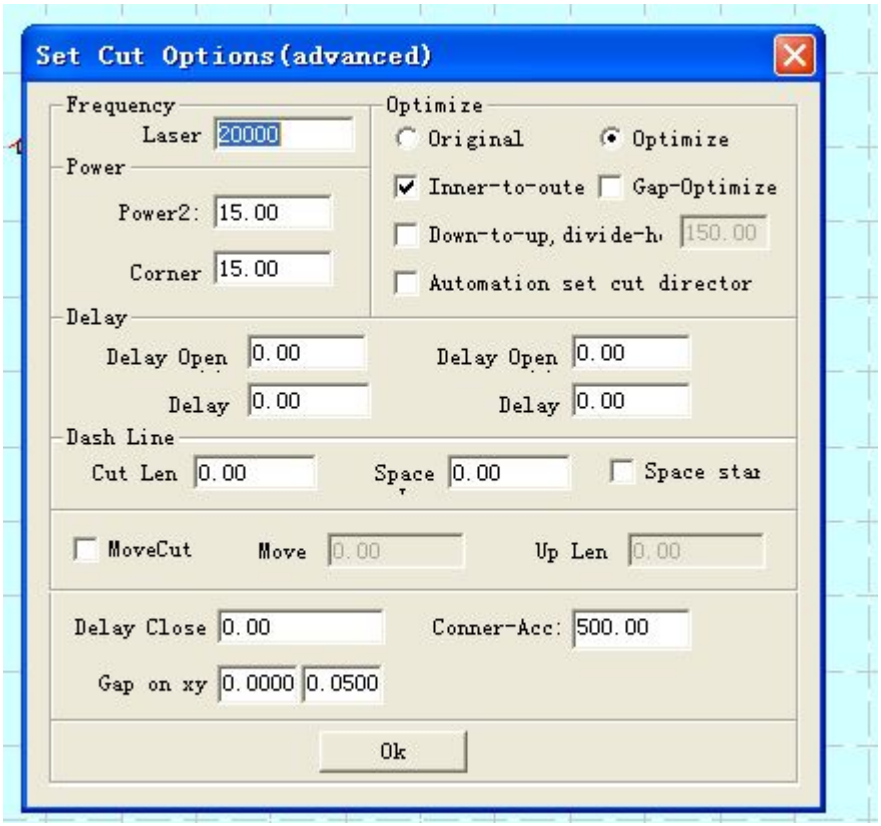
Sealing the overlap length : Because mechanical errors that may appear closed graph does not cut down the phenomenon , this parameter can help solve this problem. However, this argument should not be too large , it is recommended to adjust the precision mechanical assembly to resolve the problem.

Not blowing : not blow in the process .

Blowing out the light : laser on, blowing ; Laser Off, off gas. This feature requires hardware support.

Been blowing : laser head starts moving on blowing off gas at the end of processing . This feature requires hardware support.

...: Set advanced parameters. Click on the button , as shown below :



Laser frequency : frequency control of laser machining the layer of the PWM signal (mainly used to control RF tube) .

Processing power 2 : Adjust the second maximum of the laser head laser power when processing the layer (in percent) , this feature requires hardware support.

Turning power 2: variable motion , when the lowest rate of the second laser head power value , this feature requires hardware support.

Original Path: Select this , then draw a path based on graphics processing. If you need to use the "Tools - Set Output Sequence" function to change the output sequence , you must select the " original path ."

Optimal path : When selected, the system will calculate the route according to the requirements . Optimal path has two options: on the outside and inside the first post first .

After the first outer : first, the internal graphics processing graphics , processing frame .

Before you get on : the user can set the size of the actual situation [height] block , the system will output from the bottom up according to the set height branch block .

Automatically determines the cutting direction : select this option, the system automatically determines the cutting direction according to the cutting process . Recommended choice.

Gap optimization Compensation: Select this option when cutting complex graphics , the system automatically determines the cutting direction to compensate for the mechanical backlash , but it will greatly increase the length of the air-way operation, generally do not choose this .

Before opening delay: set the delay time before the opening .

After opening delay: set the delay time after opening .

Close the front light delay: delay time before setting off light .

Light off after delay: After setting off the light delay time.

Cutting Length : When the solid line graphics processing into effect dashed line segment (light part) in length.

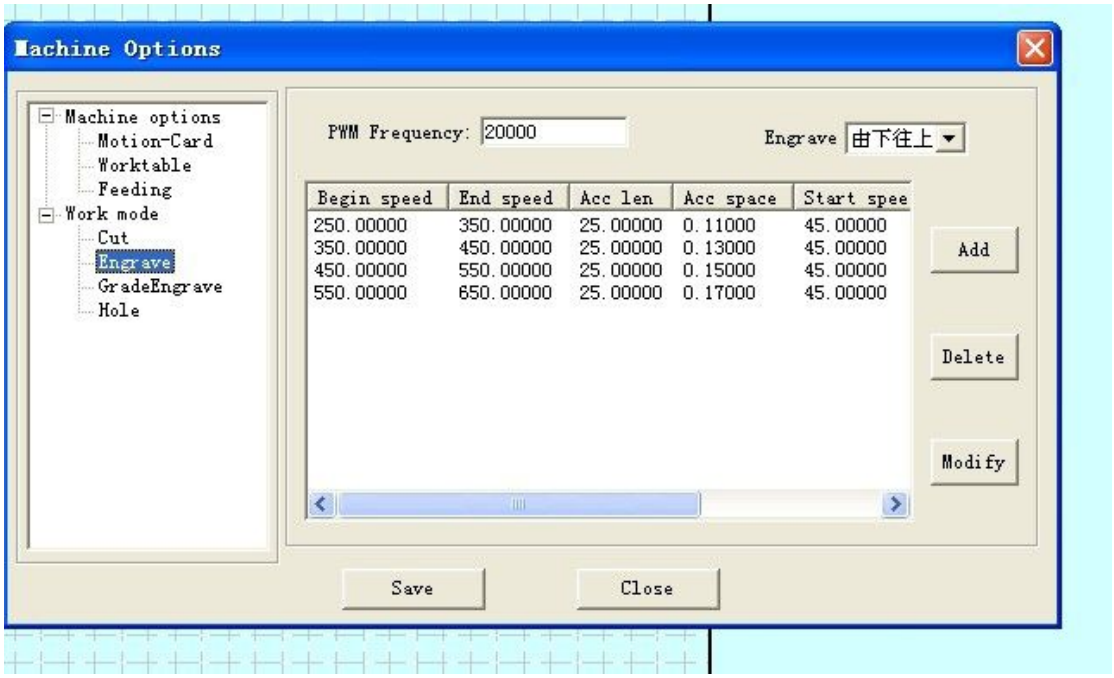
Blank Length: When the solid line graphics processing dashed effect (no light part) between the length of a line segment .

Blank front : When the graphics processing into solid lines dotted effect, determining the first pen is a solid line or blank.

Follower : Invalid .

6.1.3 Carving parameter setting interface

Double-click the color logo of the " Layers " column , the parameter dialog box pops up , as shown below:



Each parameter is defined as follows:

Engraving speed: When carving X-axis scanning speed.

Carving Power: Adjust the size of the processing of the layer of the laser power (in percent).

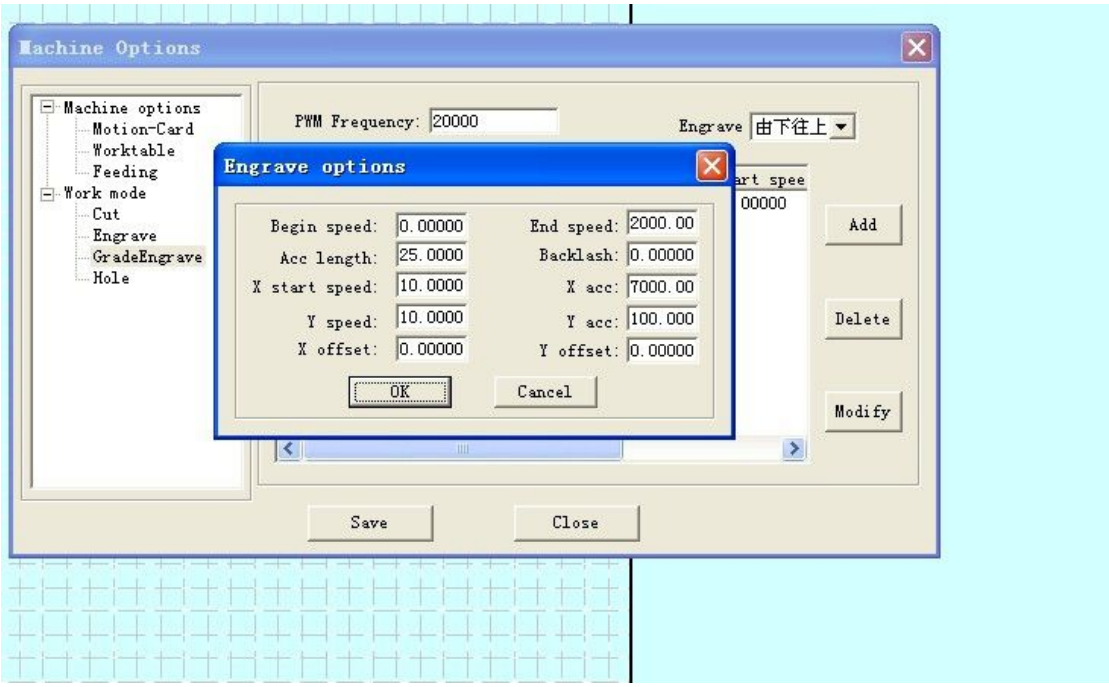
Carving step: X-axis for each scan line, Y-axis distance propelled carving.

Bold stroke ratio: mainly used to compensate the smaller horizontal width. This value can be positive or negative, adjust according to the actual situation.

Bidirectional sculpture: select this option, both the positive and negative movement of the laser head light, high processing efficiency. If you require a higher precision, do not choose this, but this will reduce the processing methods and processing efficiency doubled.

Blow: Select the item, then blow in the process. Do not choose, do not blow.


Set advanced parameters. Click this button



Hatch: Select this, then the circle to fill graphics.

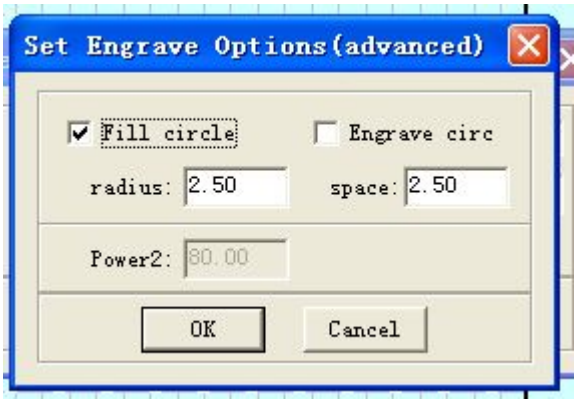
Rilievi: Select this layer carving way.

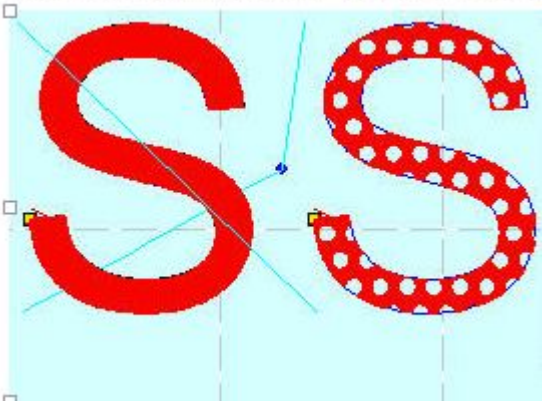
Circle radius: radius of the circle is filled.

Round pitch: filled circle spacing.

Carving Power 2: The second power laser head, this feature requires hardware support.

After selecting the "Hatch" graphics will fill the circle radius setting. As shown below:

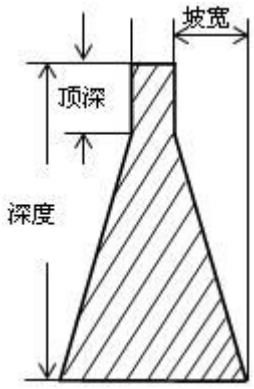




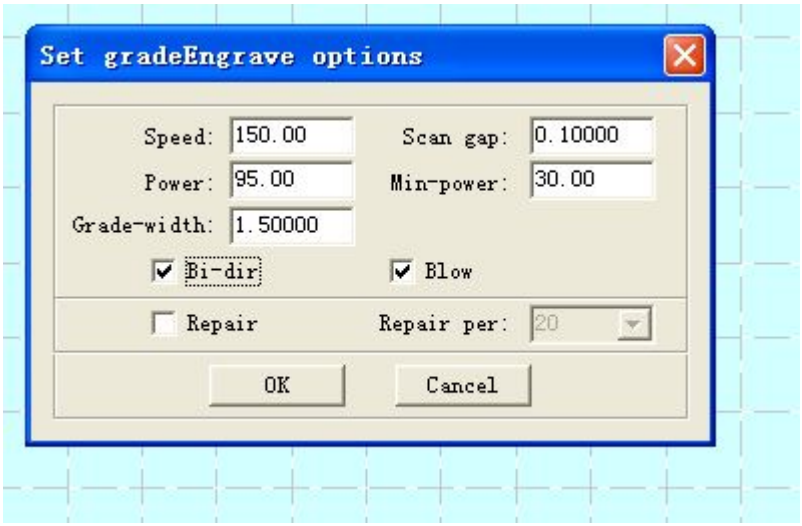
The figure above, the graphic on the right to choose "hatch" in.

6.1.4 carved slope parameter setting interface

Slope carving effect diagram:



Double-click the color logo of the "Layers" column, the parameter dialog box pops up, as shown below:



Each parameter is defined as follows:

Engraving speed: When carving X-axis scanning speed.

Carving step: X-axis for each scan line, Y-axis distance propelled carving.

Carving Power: Adjust the maximum slope engraving laser power (in percent), this value determines the depth of engraving.

Minimum power: When adjusting the minimum slope engraving laser power, this value determines the depth of the top of the slope.

Carving slope width: Set the width of the slope.

Bidirectional sculpture: select this option, both the positive and negative movement of the laser head light, high processing efficiency. If you require a higher precision, do not choose this, but this will reduce the processing methods and processing efficiency doubled.

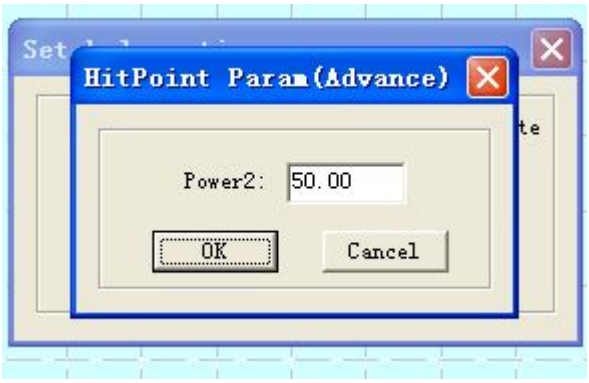
Blow: Select the item, then blow in the process. Do not choose, do not blow.

Small strokes Fix: The main effect for slope correction relatively small spacing between

lines, so print out the pattern more clearly. Please fix the ratio of adjusted according to the actual situation.

6.1.5 drilling parameter setting interface

Double-click the color logo of the "Layers" column, the parameter dialog box pops up, as shown below：



Each parameter is defined as follows:

Laser Power: Adjust the size of the processing of the layer of the laser power (in percent).

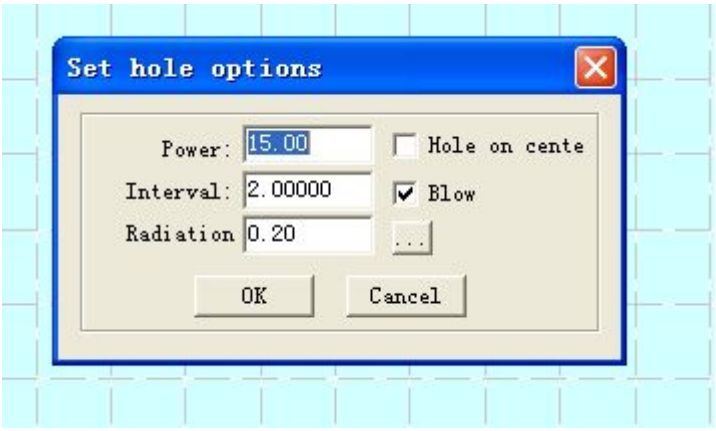
Hole distance: the distance between the two holes.

The laser time: punching, laser head residence time (in seconds).

Data center punch: In each closed graph data center punch.

Blow: Select the item, then blow in the process. Do not choose, do not blow.

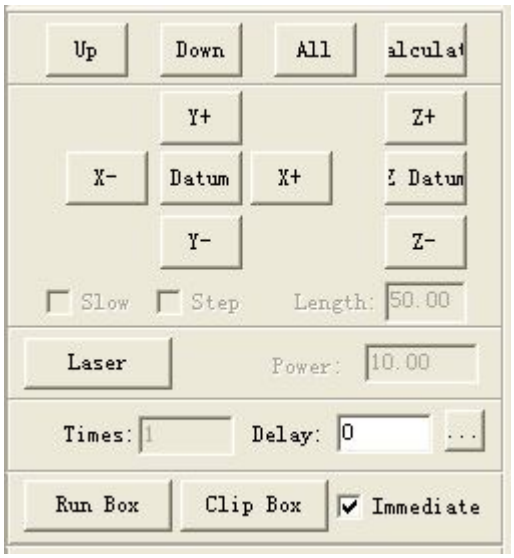
... Set advanced parameters. Click this button



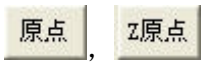
Laser power 2: The second power laser head, this feature requires hardware support.

6.2 Manual control

Manual control part of the machine can be fixed step movement, light control switch. In the middle you can see the control panel manual control section, as shown below:



Fixed-length moving the laser head. Click once, the laser head moves once.

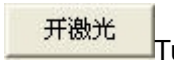


Click this button, the laser head (or Z-axis) will first slow (air speed (slow)) to move to the machine origin, then quickly (air speed (fast)) to move to the home position. This feature can eliminate the accumulated error and must be processed before the start of a general. Homing automatically when the software is started (you can choose not to automatically back to the origin).

Slow: Select this option, then the table to move slowly.

Step: Click the button, the table moves a "step away."

Step Distance: setting stepping movement, the distance of each mobile.

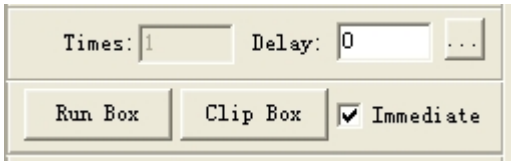


Turn on / off the laser.

Test Power: the laser power when the size of the test, the unit as a percentage. Minimum power is 0 and the maximum is 100.

6.3 Auxiliary processing parameters

Auxiliary processing parameter setting section as shown below:



Processing times, delay:

If the "processing times" enter the value "10", "time delay between the" input value is "3",

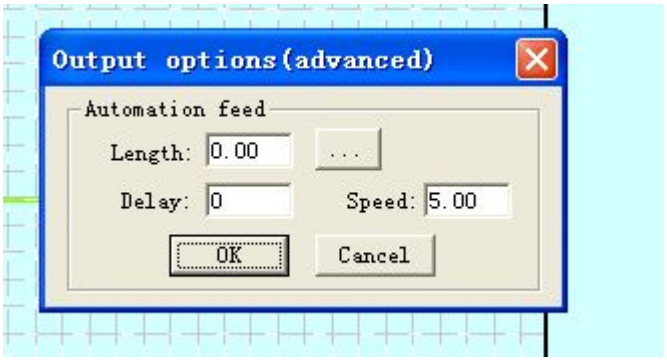
then click once on the "Start" can be processed 10 same graphics. After processing is completed for each stay three seconds. The main is the time interval required for loading and unloading operation can be set according to the actual situation of the workers, this feature can greatly improve the efficiency of the workers.

Immediately output:

Do not choose to immediately output: System processing according to the processing of data in the coordinate system of the position.

Select the output immediately: start processing from the current position of the laser head, the relative relationship between the origin and processing of the data unchanged.

 Set advanced parameters. Click this button



Feeding length: After each processing is completed, Z axis will feed the appropriate distance.

Feeding speed: Z-axis feed speed.

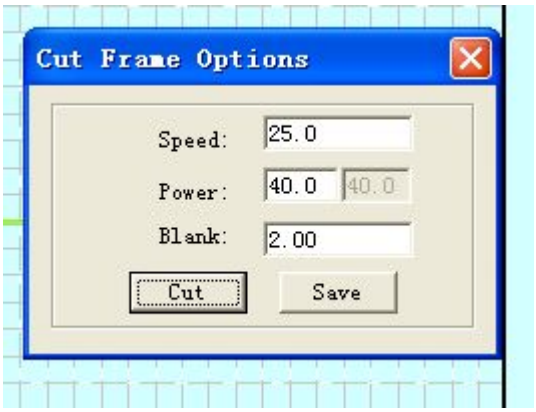
Feeding delay: After processing, the delay time sending material.

Laser head will go according to the size of a rectangle empty processed data.

This function is used to determine the placement of the workpiece to be machined.

The machined workpiece cut down from the processing of materials.

After processing is complete, click on the "cutting Borders" button, the following dialog:



cutting speed: working speed laser cutting head. Users should choose according to the different materials at different speeds, it is best to determine the appropriate speed through trial cut.

Cutting power: cutting the size of the laser power.

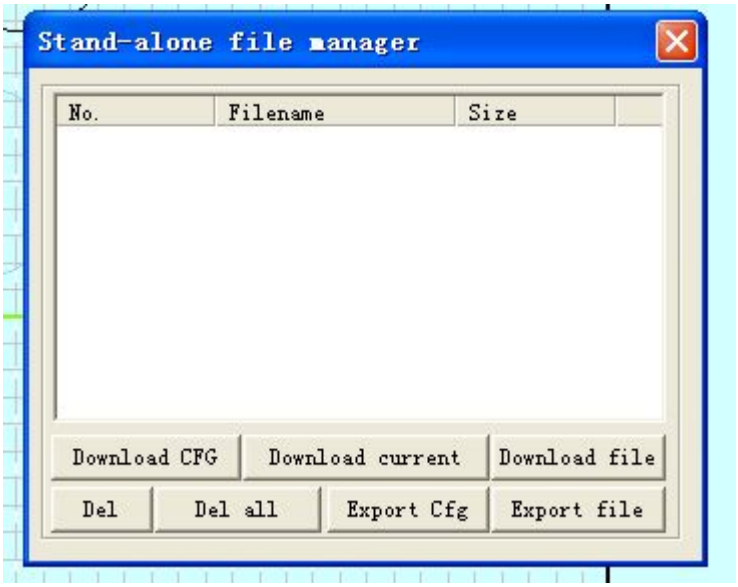
Blank side: from the processing of graphics and cut down the edge of the workpiece between.

Cut Border: Click this button to be cut border operations.

Save parameters: Click this button, you can keep the parameters for the next use.

6.4 offline file (download data)

Click the "Download Data" button, the following dialog:



6.4.1 download configuration

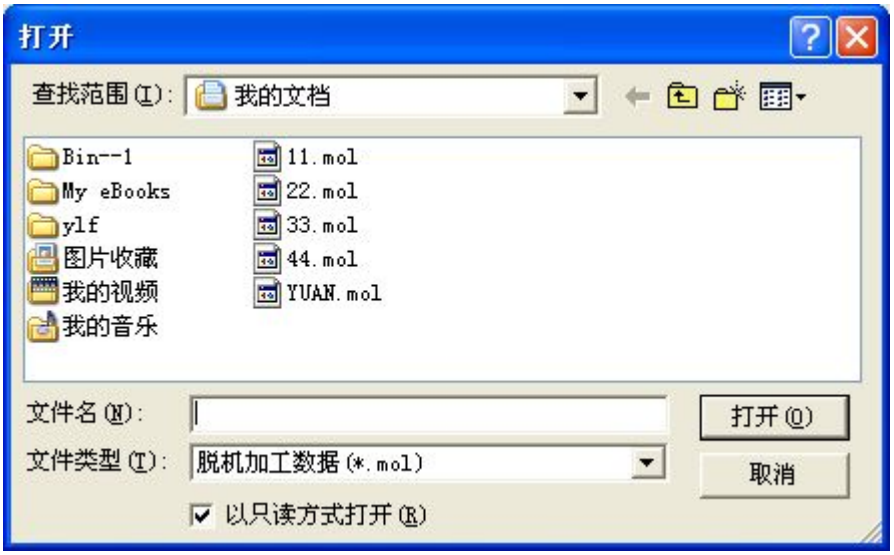
The machine parameters are downloaded to the controller.

6.4.2 download the current processing data

The download is being edited in processing the data to the controller.

6.4.3 download the processed data

Click this button, the following dialog box appears:



Select the file to be downloaded will have been generated processing file is downloaded to the controller.

6.4.4 Delete

After selecting the file, click this button to delete the file.

Delete all 6.4.5

Will delete all files stored in the controller.

6.4.6 Output Profiles

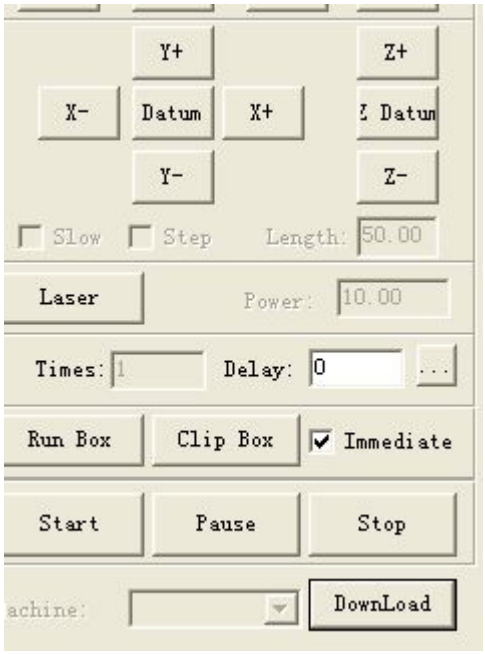
The laser machine settings, engraving parameters, cutting parameters, the slope of the parameters of the power meter to generate a *. Mol files downloaded through U disk to the controller. Note that the file is downloaded to the controller, you must select the file, click "Start" button, the new configuration to take effect.

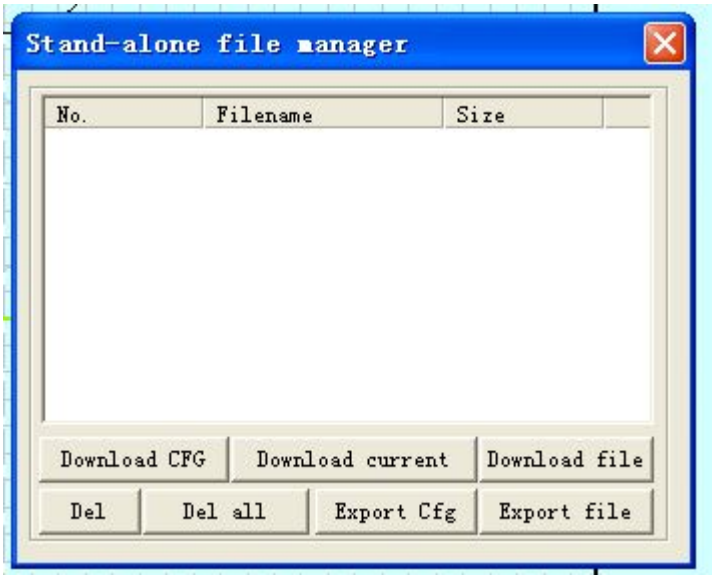
This feature and 6.4.1 (download configuration) the same function.

6.4.7 Output data processing

The processing parameters already configured file generation *. Mol processing files downloaded through the U disk to the controller.

This feature and 6.4.2 (download the current processing data) the same, but when you need to connect a computer to download data.

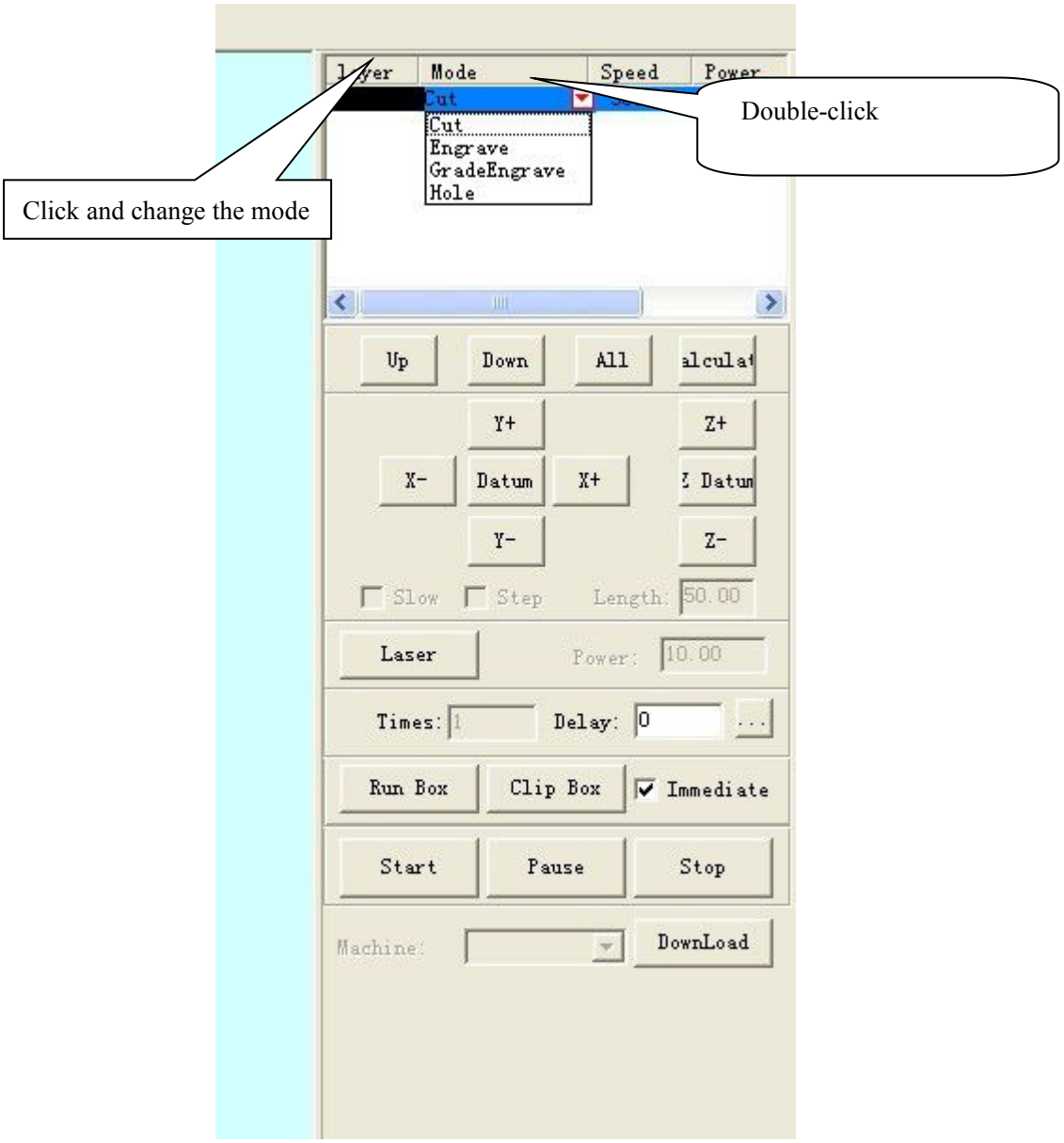




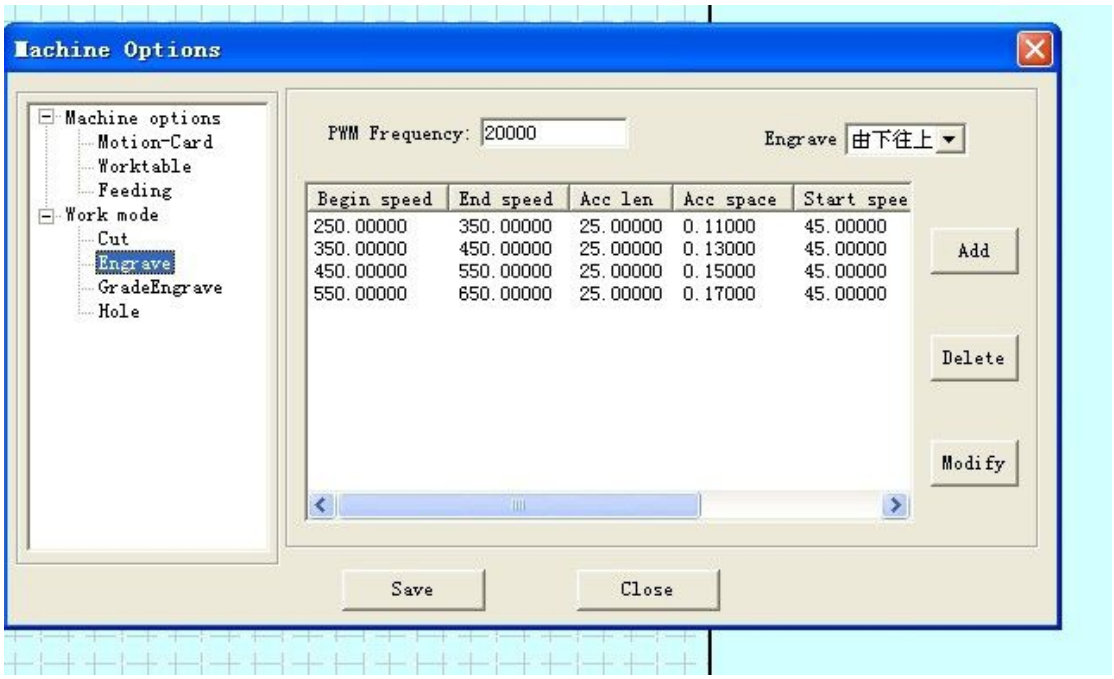
Step Six: Import and export of software

Click on the top left corner of the software (file) option to select: Import You can import in a format supported by software processing

After importing the file you want to modify the processing mode, adjust the speed of power as shown below:

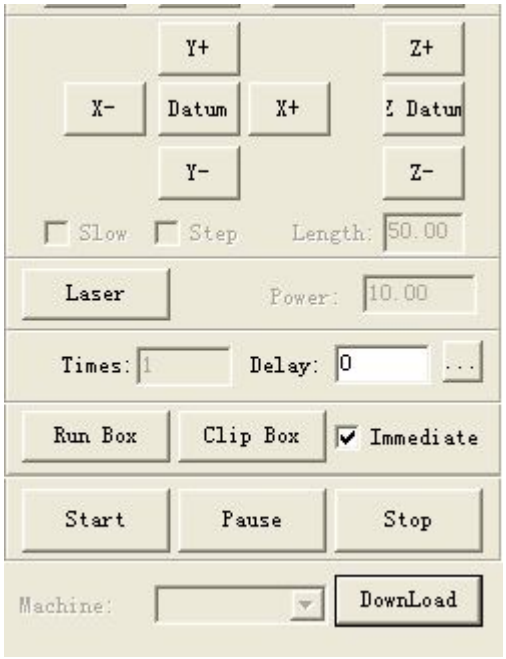


3 speed power adjustment

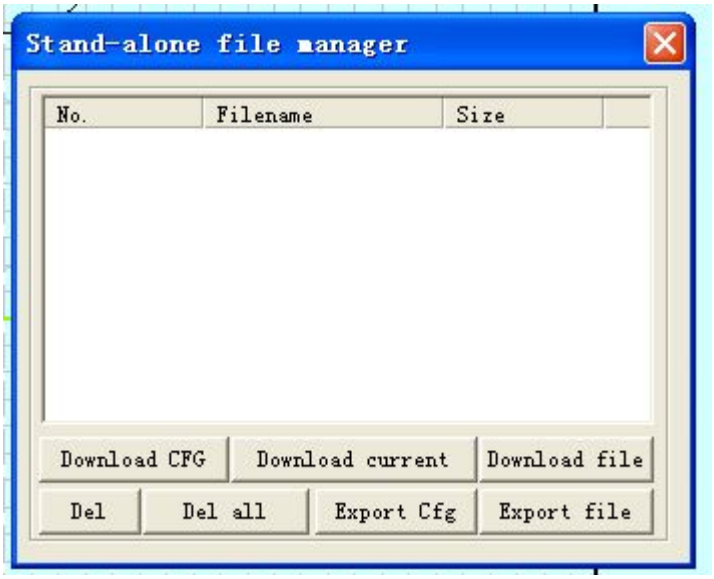


After adjusting click OK

4 After setting the parameters click to download data

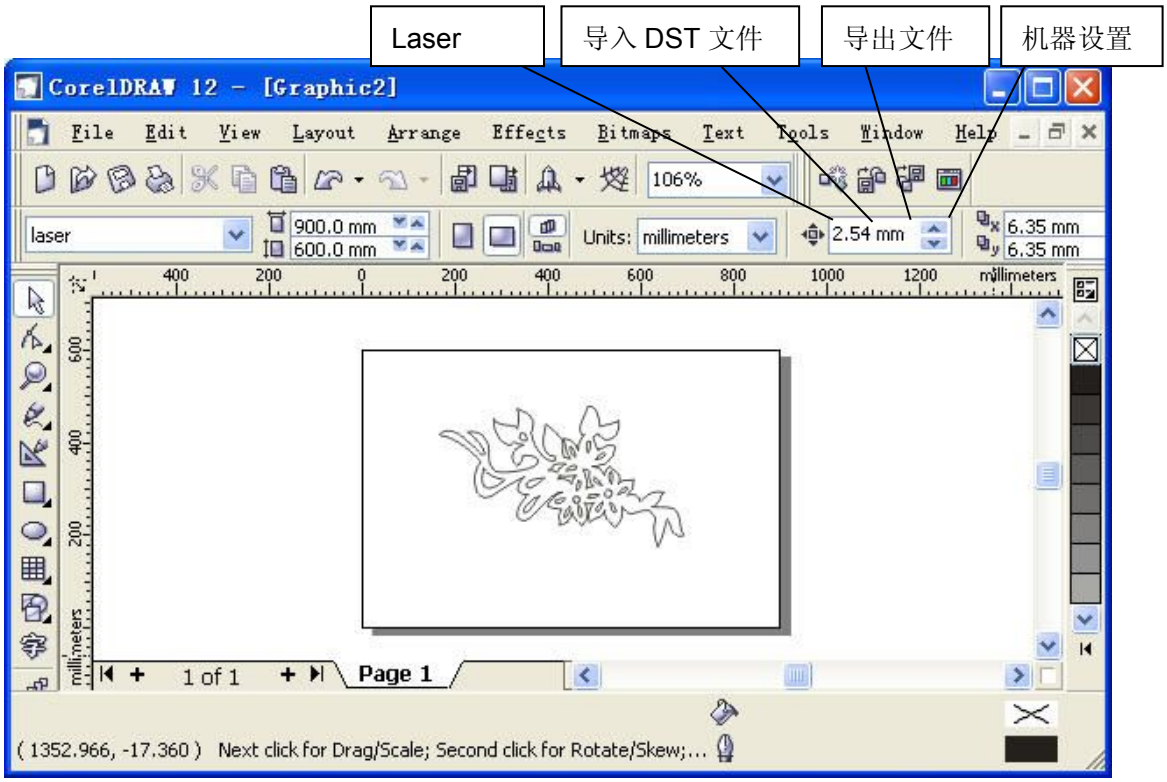


点击此处会弹出对话框如下图



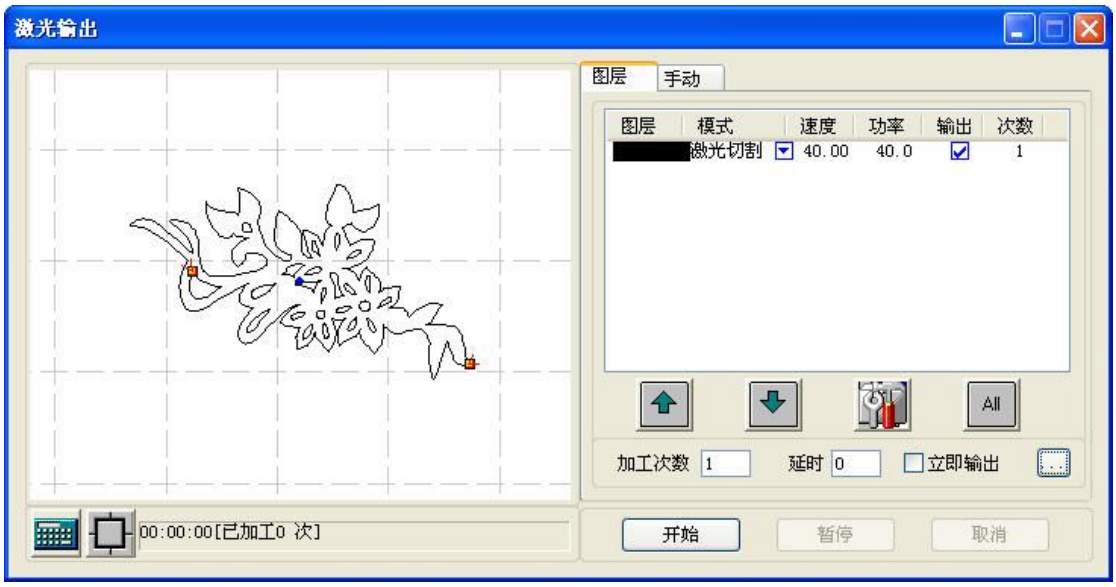
Direct output version of CorelDraw

Control system increases the laser processing in CorelDraw menu, which includes: the laser output, import DST files, export files, and machine settings. As shown below:



The laser output

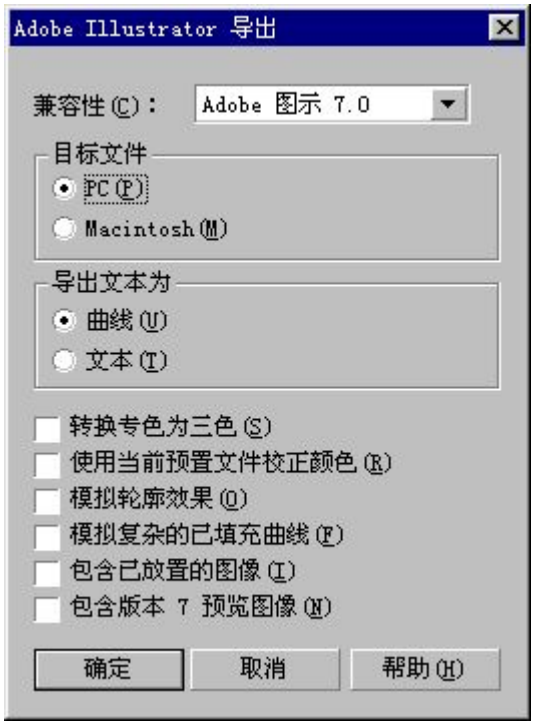
Click this button, a dialog box as follows:



How to generate AI with Corel Draw graphics file format

AI format with cutting would be more smooth, the impact is small. Try using the recommended cutting AI format files, especially uniform cutting. If you find some places when cutting speed significantly impact graphics processing deformed, please file into PLT.

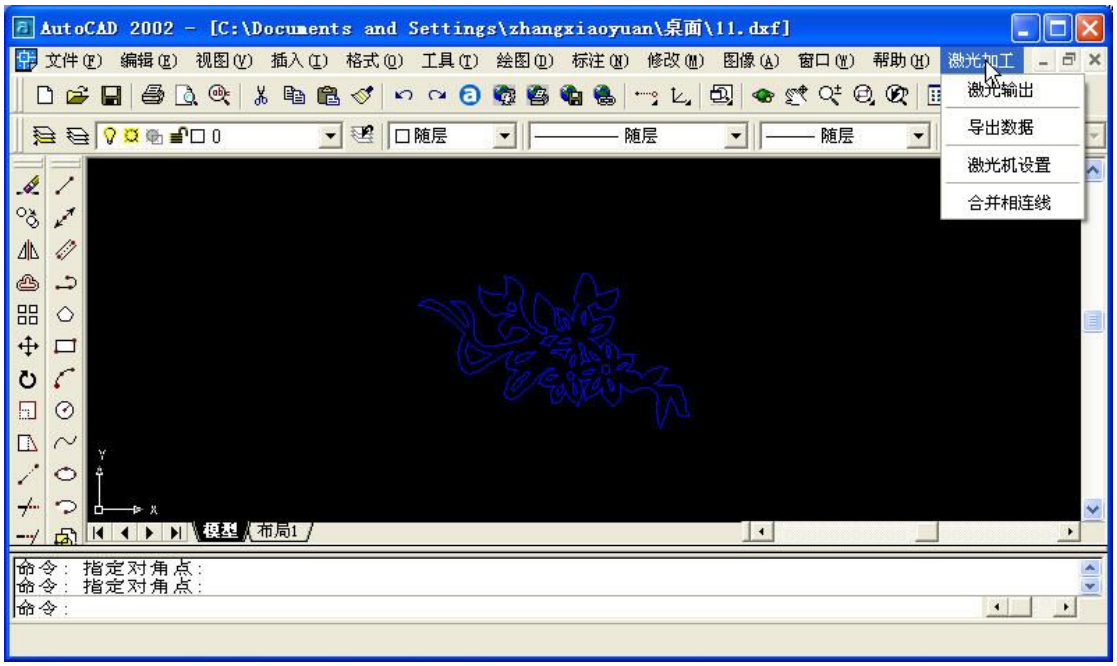
Corel Draw graphics will be produced after the completion of the output file type selected for AI (Adobe Illustrator), then there will be a "Adobe Illustrator Export" dialog box, click the chart to select various options:



Direct output version of AutoCAD

Control system increases the laser processing in AutoCAD menus, which include: laser output, export data, settings, and combined laser machine is connected to the line. As

shown below:



3.1 The laser output

See "Chapter II 2.1"

3.2 Exporting Data

Save the configuration parameters have completed processing the file down.

3.3 Laser machine settings

Click this button to enter the laser machine parameter setting interface.

See "Chapter VI."

3.4 Merge connected lines

Will be connected to multiple segments into one segment. Select the data to be processed, click the button.

The seven step : the files to be leaded successfully. Then the machine can work now

Remark: if there is any questions , please call after-service cell : 13402215145(5154)

A Machine Installation and debugging

B. Connect the Water-circulating pipe and anode-cathode wire. Then put Clasp on the laser tube . Connect the laser power and laser , then connect data line . out-light of laser tube towards to the first reflector; laser tube near the clasp must place rubber pad

C .water tank is filled with mineral water, connect water pump, air pump, water inlet pipe and water outlet pipe. Circulating water for few minutes , if there has bubbles in the laser tube, turn the laser tube and squeeze out the bubbles

D、Burn more than 2MM diameter copper wire into the earth. (pth of more than 1M),

On the other end of the wire connect to the laser power. **Note: Must be strictly grounded !!**

Pay attention to this :When connected to the water chiller and cutting machine , remember to check warming system and protection system are working properly.

E、How to connect air compressor : users should connect the fan outlet and inlet of the machine by silicone tube , then air compressor can operate , Wind will be issued at the exit of the lens .

F 、 Blowers should be linked cutting machine outlet, the maximum distance is 2 meters . The blower fan on the inside of the tube is connected with another drum , and then placed outside the mouth . Turn the power can operate .

G、control card device :

Put the control card into the PCI hole and fix with screw

H、With a 37-pin data cable interface control card (input interface) output of the computer machine interface control card

Ⅱ light path structure and ajustment

1.light path diagram

Coordinate system of laser engraving machine

Laser engraving machine coordinate system and the direction of movement agreement follows :

right corner (or upper-left corner), X, Y axis maximum coordinate system, System installed at the origin of the signal

1.1 Laser tube

Installation of the laser tube :bring the laser tube out from package box, then put the laser tube on the laser tube socket. The distance between laser tube and laser tube socket is 0.5-1cm, fix it , connect the positive and negative, water cooling system, preparing all the thing before starting work

1.2 The first reflection system

Name : the first reflecting mirror flame

Note : make sure the light on the center of the mirror

1.3 The second reflection system

Name : the second reflecting mirror flame

Adjustment method: take a dimming blocks to glue double sided adhesive on both side. One side tear up , the other not .glue the double sided adhesive on the second

reflecting mirror
frame, blocking the lens.
By adjusting the three copper screws behind on the first mirror flame , making the light at one point where the car at the proximal and distal countertops , the light on the center of the second mirror frame.

1.4 The three reflection system

Name : the three reflection mirror frame

Adjustment method: after the adjustment of the light path ,glue the double-sided adhesive on the third mirror frame to block into the optical port. Move around the car by adjusting the three brass screws behind of the second mirror frame , so that the laser in the table left and right ends are playing at one point , and make the light in the middle of the optical port . Move the car front and back ,left and right , look at the light whether is at one point in Different four corners of the worktable. And make sure the light in the middle of the optical port.

1.5 Focus system

Adjustment method : after the adjustment of the light path , By adjusting the brass screws on the third reflecting mirror frame to adjust the focusing mirror is or not testing in the center position of the optical port .

The chapter four operational process

1. Open the laser light
   a. Ensure that the cooling system is installed , no leakage
   b. Ensure the laser head and other mobile location no barrier
   c. Ensure the water chiller is filled with cold water
   d. Ensure the cold water can be circulated normally
   e. Make sure the pipe is connected properly with the blower system , the blower plug insert in the socket behind the machine
   f. The exhaust fan and power supply connected and turned on
   g. The power supply to the machine
   h. Open the laser power
2. Open the operation system

A Ensure that the laser machine connected to the computer intact.

B Ensure that part of the laser head and the other moving no obstruction
C Make sure there is nothing on the light path
D Ensure accurate optical path no deviation
E Power to the operating system
F Power to the computer

Note : the Machine applications light is invisible high-intensity light , harmful for

people and flammable. Don’t power to the operating system before the optical path is not accurate .

1. Starting location and width introduction

The default value is the starting point (0.0) in the table at the bottom right corner . Users fixed position by being carved features of the software testing process thereof. Shall comply with engraving cutting width is different: engraving on processing acceleration through the front of the machine , and its maximum width is smaller than the width no acceleration of carvings , empathy is the same as the cutting width .

2 Program on / off the power

a. Power on procedure :

firstly , open the computer
secondly , turn on the laser power
thirdly , connect the Power steering

b. Power-off procedure

firstly , power-off Power steering
secondly, power-off laser power
thirdly, power-off the computer power

3. Software operating procedures (please refer to the software manual)

The chapter five FAQ and adjustment

1.whether there is laser emit from laser head or not

a. there is no laser emit from the laser tube ,check the laser power, if there is no power supply, power the laser tube. If the laser tube is aging or damaged , it is necessary to replace the laser tube . if the laser power supply is damaged, replace the power supply equipment .

b. if the reflector and lens are deflection, users need to adjust the optical path.

2. cutting /engraving depth is not enough

If the output power of the laser tube is low, users should increase the output power by operating the control power.

If the engraving /cutting speed is fast , users should reduce the speed

If the reflector and lens are polluted by the work clothes and dust, or reflective layer of reflector and lens is destroyed , users should clean or replace the mirror.

If the focus is not on the right position, users should adjust

If the laser tube is aging , users should increase the laser power or replace the laser tube .

If the laser power supply is not sufficient, users should adjust or replace the laser power

3. the machine can not work normally after type setting

a If you do not plug in the power steering system , users need to turn off the switch and manipulate the machine is connected to the data line.

B If the data cable between the computer and the laser machine is not connected , turn off the master switch , connect the data cable .

4. Engraving and cutting process overhead lines

If the communication line is a problem, replace the communication line .

If the laser machine and the computer is not positioned well on the ground , the user should put the well laser and a computer on the ground .

If there is problem with the software, users should replace the software and reinstall the driver software.

If the laser machine conflict with console dust and ambient humidity , Cables and internal wiring, users should clean and warm up the machine Before it is running

If the external power supply instability and chaos , users should use a stable power supply .

If the computer system error , reinstall the system or replace the computer.

If the surrounding environment has a high frequency of contact surface , please stay away from this environment .

When carving or cutting , production can not accept or partial replacement or partial loss

If the design of the file exceeds the working width of the laser machine , users should be re -designed to reduce the width and wide , so that in the proper range .

If the document exceeds too much, users should be appropriate to reduce the ability to distinguish , scanning speed or accelerate change without prior scanning before scanning

MPC6515 Solutions to common problems :

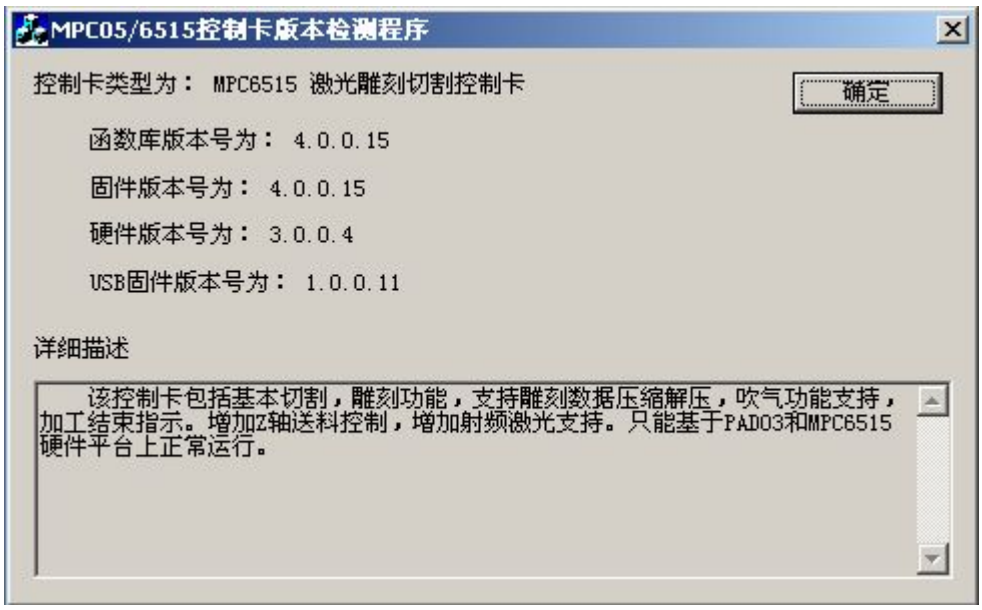
:

一、Library firmware does not match with the card :

LED D5, D6, D7, D8 are always light on MPC6515/MC version ,

Inspection methods : power the control card and computer communications under conditions , click ”Mpc05Ver+M05.exe”

出现：



Library version : Check the method of the version, please click mpc05ls.dll properties , then click on the " version " to see the version number

Firmware version: Hardware version requires a power control card to detect versions. The firmware version must match the library , or can not export or processing is not normal.

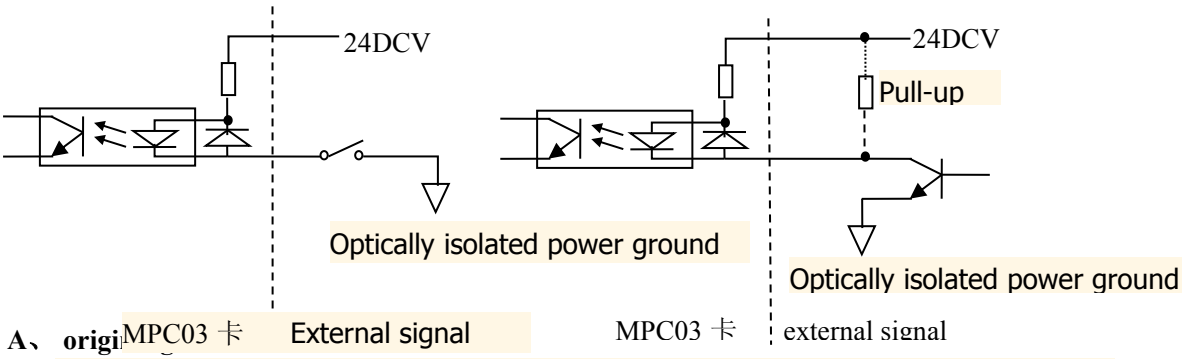
Hardware version : hardware version requires a power control card to detect versions. If it becomes V0.0.0.0 explain the FPGA program inside card is missing , Please use U disk to re-download the program , or if abnormal, please return to manufacturer.

USB Version : is our USB communication line program. This version must determine whether this version , otherwise it will cause communication timeouts.

Note : when Company upgrade, library version , firmware version, hardware version is one to one , Please kinds of customers during use , first click on the habit of "Mpc05Ver + M05.exe" check the version number, to ensure proper .

二、**I/O** Detection signal

1、Input Signal **ELX+、ELX－、ORGX；ELY+、ELY－、ORGY；ELZ+、ELZ－、ORGZ**；Foot switch signal , opening the lid to protect the signal



A、 origi

In the first panel MPC6515/MC X3, X4, X5 pin, If you encounter when homing is not norm**a. Contact -type switch b. NPN** The output of the proximity switch legs ,

respectively, X3, X4, X5 4 feet short of the first to see the origin of the signal is valid , followed by in checking the origin switch is normal .

B、Detection limit switch

In the first panel MPC6515/MC X3, X4, X5 pin. If the limit switch when the encounter is not normal , the easiest way is to take a wire from the X3, X4, X5 , respectively, the first and second legs and X3, X4, X5 4 feet short , to see whether the origin of the signal effective , followed by checking the limit switch is normal.

Note：1、Currently the limit is not recommended that customers contact signals , signal processing out of fear of interference (because high pressure) . Customers are advised to use a soft limit function . If the process appears chaotic eagle species , a phenomenon first thought mangled first limit signal masked, take a wire from the X3, X4, X5 , respectively, the first and second legs and X3, X4, X5 is 5 feet short then the limit signal shielding.

2、Currently home switch manufacturers use different types of different focus for the photoelectric switch, contact switch, optical coupling switch. Problems are often concentrated in the photoelectric switch. When homing does not work , use a multimeter test X3, whether X4, X5 4,5 feet with a voltage of 5V or 24V , if not , that we control card input port problems, from MPC6515/MC board X1 pin on the first leg of the first to lead a wire X3, X4, X5 's 5 feet , because all are on the ground we MPC6515/MC conduction ; If there is voltage , check whether the photoelectric switch normal .

3、Foot switch signal , opening the lid to protect the signal we do not use

4、All input signals are currently on our MPC6515/MC active low default settings.

5、JP1: When the input signal terminal X3, X4, X5 requires 24V voltage jumpers jump in 1,2 feet. When you need to 5V voltage jump at 2,3 foot jumper , when removing the jumper , then X3, X4, X5 5 feet dangling

2、The output signal : Pulse X, direction X, pulse Y, direction Y, pulse Z, direction Z , Power signal (analog) , power signal (PWM), Laser optical signal to open , inflatable signal processing end signal , U disk indicator signal

A、The detection pulse signal

When the X, Y, Z does not move, while ensuring libraries and firmware matching card case , please use a multimeter to test MPC6515/MC on Y3 , voltage Y4, Y5 first one foot and 3 feet between : When we give X, Y, Z command when the voltage Y3, Y4, Y5 first MPC6515/MC feet and 3 feet between the left and right should be 2.5V, when we do not give X, Y, Z instruction, voltage Y3, Y4, Y5 first MPC6515/MC feet and 3 feet between the left and right should be 5V.

B、Direction detecting signal

When the X, Y, Z in only one direction, while ensuring the library and card cases firmware matching, between using a multimeter to test MPC6515/MC on Y3 , Y4, Y5 first 2 feet and 3 feet voltage : When we instructions to X, Y, Z in different directions ,

the voltage Y3 MPC6515/MC on , Y4, Y5 first two feet and 3 feet should be jumping between 0V and 5V voltage between the changed.

C、Detecting the laser light signal ON

Keep laser power and Y2 terminals wiring removed, ensure that the control card and the laser power is not connected . In the above voltage multimeter test MPC6515/MC first Y2 feet and 4 feet between the light around 0V, no light around 5V.

D、Power signal (analog) , power (PWM) signal detection

Keep laser power and Y2 terminals wiring removed, ensure that the control card and the laser power is not connected . With a multimeter between the first detection MPC6515/MC Y2 above 4 feet , 3 feet and whether there between 0V ~ 5V voltage change at different laser power control.

Note ：

1、Currently, our power analog signals are controlled . Make sure jumper JP2 newspaper has been removed , and the software "syscfg.ini" file inside the "" laserpowermode = 0 "

2、Meaning D1 ~ D8 indicator

group	Pin Definitions					
	1	**2**	**3**	**4**	**5**	**6**
X1	24V Positive power supply	24VPower ground				
X2	Foot Switch	Cap protection	Retention	5V/24V ground	5V/24V positive	
X3	Z -axis positive limit	Z -axis negative limit	Z-axis orignal	5V/24V ground	5V/24V positve	
X4	Y -axis positive limit	Y-axis negative limit	Y-axis orignal	5V/24V ground	5V/24V positve	
X5	X -axis positive limit	X-axis negative limit	X-axis orignal	5V/24V ground	5V/24V positve	
Y1	Blowing	End Processing	U disk direction	Retention	5V/24V ground	5V/24V Positive
Y2	Laser power ground	Analog Output	Laser power	Laser switch		
Y3	Z -axis pulse	z -axis	5VPower ground	5V Positive power supply		
Y4	Y -axis	Y-axis	5VPower	5V Positive		

	pulse		ground	power supply		
Y5	X-axis pulse	X-axis	5VPower ground	5V Positive power supply		

X1：Input Power Connector（24VDC）

Description : MPC6515 a single 24VDC power supply, additional power output pin for the controller provides power .

	MPC6515 a single 24VDC power supply , make sure the correctness and reliability of the device power , high voltage may burn the board, low voltage can cause not working properly
警告	

JP1：

Description : associated with the X3, X4, X5. When the input signal terminal X3, X4, X5 requires 24V voltage jumpers jump in 1,2 feet. When you need to 5V voltage jump at 2,3 foot jumper , when removing the jumper , then X3, X4, X5 5 feet dangling .

JP2：

Description : associated with Y2. When the laser power to take analog control , remove the jumper , the laser power pick two feet. When using the PWM signal to control plug jumper , laser power connection 3 feet.

JP3：

Description : associated with Y1. When the output drive 24V relays Y1 , jumpers jump in 1,2 feet. When you need to drive a 5V relay , jumpers jump at 2,3 feet. When removing the jumper , then Y1 6 feet dangling .

JP4：

Description : associated with the X2. When Universal input X2 requires 24V, jumpers jump to 1,2 feet . 5V voltage when needed , jumpers jump 2,3 feet. When removing the jumper , then X2 is 5 feet dangling .

三、Problem PAD04 panel

1、After the PAD04 power , the LCD screen has been prompt , " the system is started, later ," This phenomenon , then, in ensuring the connection between PAD04 panel and MPC6515/CPU normal circumstances , is PAD04 above MAX232 burned .

2、Currently PAD04 128T easy to fall behind , carefully install PAD04, 128T Weld, otherwise after power-on, the LCD screen will have yellow or black screen .

3、After the PAD04 power , the LCD screen does not display , please check MPC6515/CPU J2 above the 9-pin plug is soldered , or whether there is 24V voltage between terminals X1 check MPC6515/MC above .

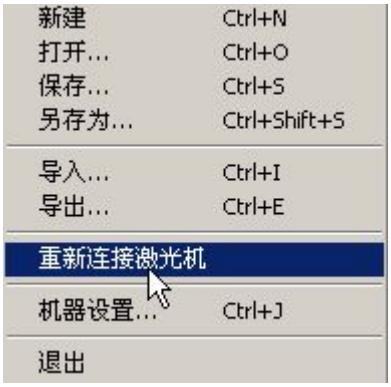
4、Currently PAD04 panel also has a version number , and then power on the panel , " the system is started, later V3.0.3"

Note: The version V3.0.0, V3.01, V3.02, V3.0.3

四、Communication timeout

1、when communication time out,

Please click on the software inside the "File" following " Reconnect laser machine"



Click on the " output processing " , or re- open the software . Communications timeout occurs , the software in the process of transferring files , the file is missing, control card refuses to continue to transfer files . USB2.0 high speed transmission because the current output are easy to lose data .

五、 **20061215** Install and use the software

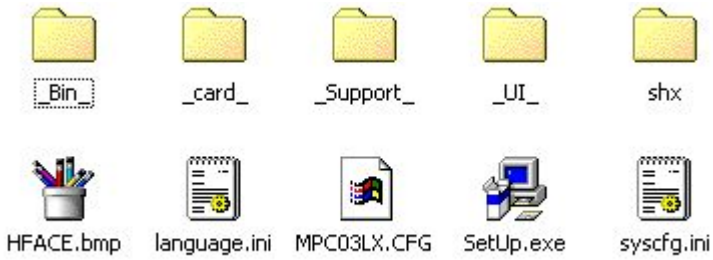
1、After opening the software will have three files 20,061,215 , as follows :

A、DOC： Instructions

B、Driver: The following three documents:

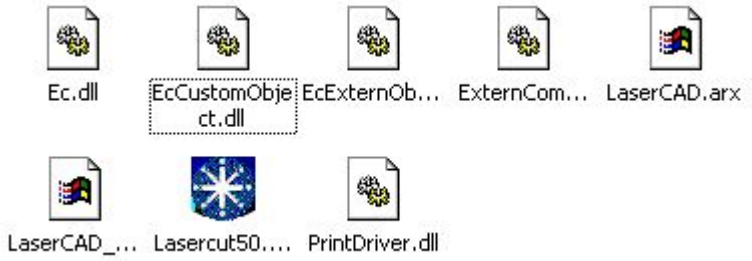
USB port driver will automatically recognize when a system is installed in English , suggesting that the corresponding English . when Dongle drivers is installing the software , automatically installed later.

C **Install file** ： Install the software (including the dongle installation)



C、

a. Bin below ：

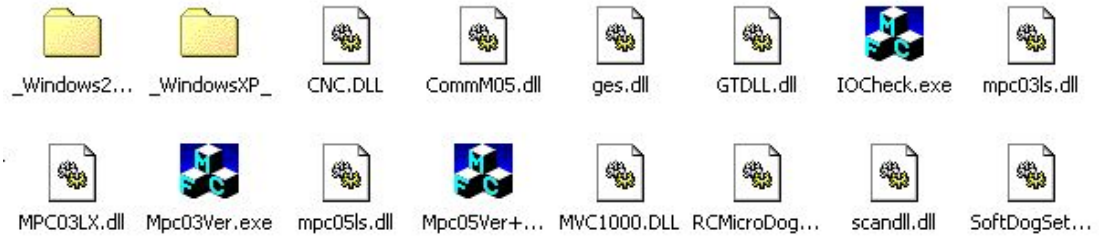


When you install the software , BIN files are all installed inside the "LASERCUT50" below

Where is the red dog, blue dog transition between the two files .

Note ： after a software upgrade , you can just copy the "Lasercut50.exe", "PrintDriver.dll" to Bin which can

b. Card files：



This file is MPC6515 card and a computer USB communication library, check the version by clicking on the properties of this document at the point of release. Make sure its version is normal. As follows：

This file is used to detect the version number , see the previous use .

This file is MPC6515 library card , make sure the firmware of this library and card hardware match. Detection follows:

Note ： The MPC6515 can copy the "Mpc05Ver + M05.exe", "CommM05.dll", "mpc05ls.dll" If after three files control card can be upgraded to the card file below .

c. Boot image file：

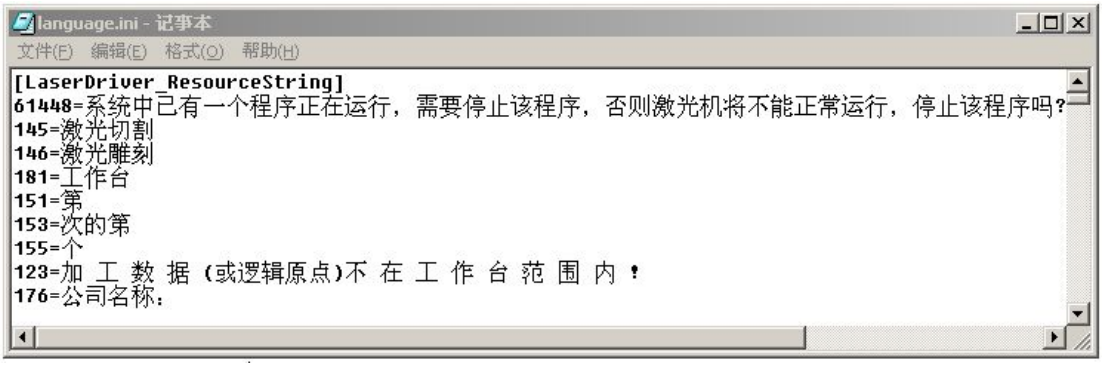
HFACE.bmp

This file is different from the MPC03-LV is 20,050,308 software inside the boot screen file HFACE.001 file extension is different.

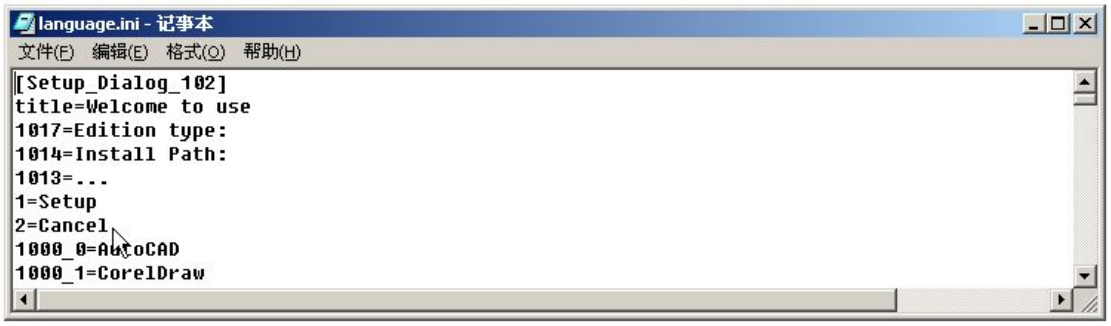
d. Language file

language.ini

When installed, including open interface software is Chinese or English or other languages. When installed inside the Chinese , then the interface software is open Chinese



When installed inside the English words , then the software interface is the English when opened



Note ： If you want to change into other languages , it only needs to translate this Chinese documents into other languages , but not to modify the inside of punctuation , otherwise it will default to my company's language prompts .

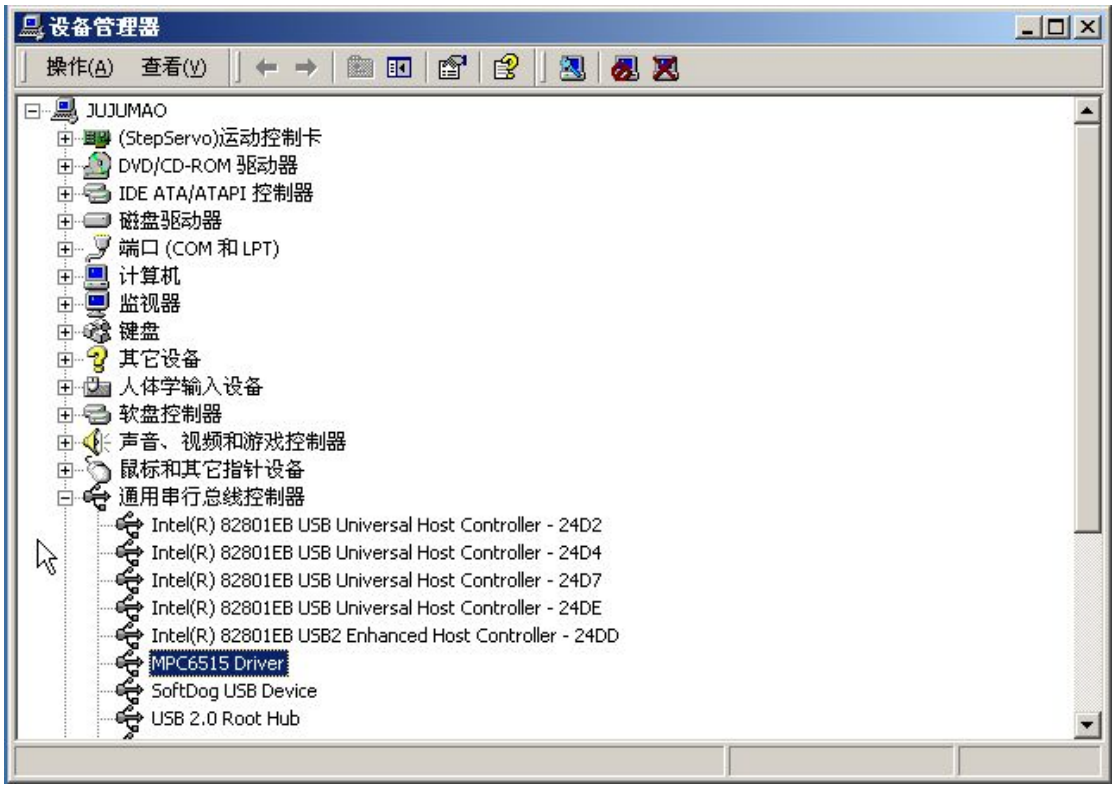
syscfg.ini file

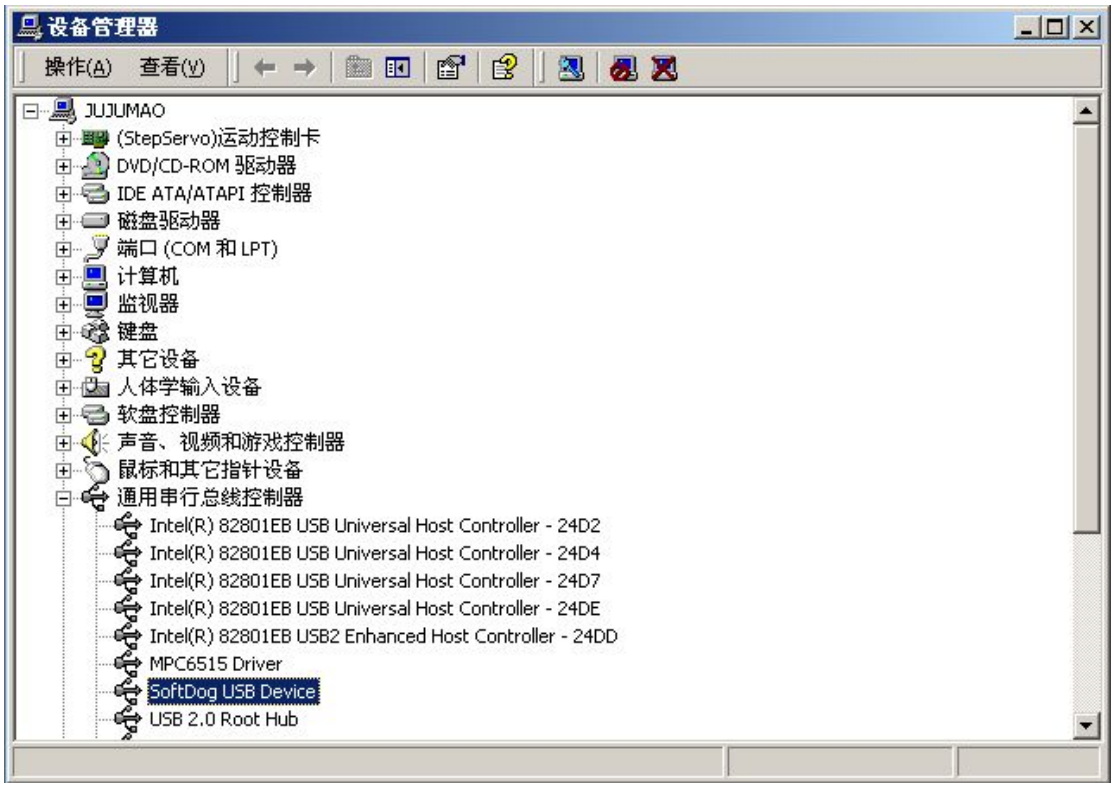
All parameters stored in the software save the entire inside of this file , If you burn a CD to the customer , you only need this file from the installation directory (for example, the installation path is : C :/ LASERCUT50) directly copied to the installation files inside.

SIX、Currently , software support COREL direct output current (support COREL11, 12, but recommends that customers use COREL12 version because COREL11 version too much , REL13 has come also compatible for testing), CAD direct output support CAD2000 to any version of the software later .

七、Find a dongle , USB driver

Click : "My Computer " Properties →click on the " Hardware" , → click " Device Manager " →in the " Universal Serial Bus controllers" Here you can find the driver, as follows :





00010003	If the version number of the library and the card does not match , you can replace the appropriate library .

Note： Correct all problems should be handled under the guidance of the manufacturer or distributor engineer technician !

Chapter 6 Warranty

1、The content and duration of the warranty

（1）Warranty contents

Whole year warranty from the date of purchase , the laser tube (laser tube burst by high circulating water temperature and crack by low circulating water temperature , not warranty) , optical lenses warranty period of three months , (fans, pump, water pump) warranty period of four months.

（2）Warranty period

One-year warranty for host from the purchase date , three months warranty for laser tube , optical lenses, random software .

2、Unsuitable for warranty issues

（1）Beyond the warranty period or who can not produce the card。

（2）No phenomenon can be considered in the performance impact on the feeling (such as: sound, vibration , static electricity, etc.) .

（3）Use losses and falling aging (such as: painting, spray , plating, plastics natural fading and deterioration) .

（4）Random accessories (such as: pipes, air ducts , cable lines, power lines , etc.) as well as belts, buttons, switches , potentiometers, and other consumables.

（5）Matters operation fails to "manual" as specified in (eg : ground , etc.) .

（6）Unused quality accessories provided by the Company .

（7）Natural disasters, fire , theft and other force majeure .

（8）Damage due to dust, chemicals , and other similar factors triggered .

（9）The Company 's non- designated maintenance department to repair damage caused dismantled .

Under the terms and conditions specified in the free repair warranty card , therefore , beyond the scope of the warranty period and repairs will be charged.

The company does not burden other than the maintenance and repair costs due to maintenance of the Company occurred and incidental costs associated with warranty and loss brought to stop using (eg : loss brought telephone charges, car rental , freight , lost income , use of) .

Machines random wearing a single receipt service , the service is completed make sure to sign for the future convenient service , resulting in unnecessary disputes ! And stay like a copy , the original band (sent) back to the company stubs.

Note: If in doubt please call telephone service : 13402215145 (5154)

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