Co2 Laser Engraver & Cutter User's Manual



Installation

Hardware

Software

Maintenance

1. Machine Description

This manual is used to provide relevant application knowledge about the installation, operation and maintenance of SCU1390 laser engraving cutting machine . We hope that every user can understand these precautions before installing and operating the machine in order to properly install and operate the machine. If you have any installation problems, you can contact our technicians.

Customers are advised to read this manual carefully before installing and operating the equipment.

1.1 Application

Applicable materials include non-metallic materials such as rubber plates, organic plates, plastic plates, acrylic plates, two-color plates, plywood, wood boards, marble, ceramic tiles, fire-resistant boards, insulation boards, cardboard, leather, artificial leather, fabrics, abrasive cloth, and sandpaper.

Application	Materials		
Handcraft		Plywood	 Glass
Furniture		Wood & MDF	 Bamboo
Advertising		Acrylic	 Leather & Labels
Garment		Fabric	 Foam
Decoration		Signage	 Paper cards
Gifts		Toys	 Marble

1.2 Technical Parameters

Equipment Model	**SCU4030, SCU5070, SCU1060, SCU1390, SCU1414, SCU1610, SCU1325**		
Laser Power	Glass tube: 35/60/80/100/130/150w, 280/300watts RF metal tube: 30/55/80/140/250/350watts		
Cutting Thickness	0-25mm		
Laser Min. line Width	0.2 mm	0.2 mm	0.3 mm
Driver System	Stepper motor	Brushless DC motor	
Cutting speed	≤ 300 mm\s	≤ 500 mm\s	
Engraving speed	≤ 1000 mm\s	≤ 2000 mm\s	
Support File Format	PLT,DXF, AI, DST, DSB,JPG,BMP,GIF,T100,etc		
Worktable Max.Load	20-200KGS		
Control Software	RD-V8		
Cooling Way	Industrial Water Chiller CW5000/CW5200/CW6000		
Running Temperature	5℃～30℃		
Power supply	110~220V/50~60Hz/1-3kW		
Optional Device:			
Autofocus, CCD Camera, Mix laser cut head, 3D Engraving, Smoking Filter, Wifi Box, Warning Lamp, etc .			

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1.3 Argus Laser Machine Cutting Parameters Table

		ARGUS LASER CUTTING PAPAMETERS (Unit: mm/s)						
MATERIAL	THICKNESS	25W	60W	80 W	100 W	130 W	140-150 W	280-300 W
		Cutting Speed	Cutting Speed	Cutting Speed	Cutting Speed	Cutting Speed	Cutting Speed	Cutting Speed
MDF	3 mm	3.5-5	12-15	15-20	18-25	20-30	25-35	45-65
	6 mm	1.5-2	8-10	10-13	13-15	15-18	18-21	30-55
	9 mm	\	2-3	3.5-5	5-7	6.5-9	9-12	25-45
	15 mm	\	\	\	1.5-2.5	3-4	5.5-7	20-32
	18 mm	\	\	\	\	\	3-4	15-25
	20 mm	\	\	\	\	\	\	6-10
ACRYLIC	3 mm	5-8	15-20	20-25	25-30	30-35	35-40	50-60
	5 mm	2-4	7-10	8-15	10-15	12-17	15-21	30-35
	8 mm	1	3-5	5-9	6-10	8-12	10-15	25-30
	10 mm	\	2-4	3-8	4-7	5-8	7-11	15-20
	15 mm	\	2	1-3	2-4	3-5	4-7	12-15
	20 mm	\	1	0.5-1.5	0.7-2	1-3	1.5-4	4-8
	25 mm	\	\	0.2-0.5	0.3-0.7	0.4-1	0.8-8	2-4
	30 mm	\	\	\	0.3	0.3-0.5	0.1-0.8	1-3
PLYWOOD	3 mm	\	18-20	25-28	30-35	40-45	50-55	60-80
	5 mm	\	12-15	22-25	25-28	30-35	35-40	45-55
	9 mm	\	5-8	10-15	12-18	20-25	25-28	25-40
	12 mm	\	\	\	\	8-12	12-18	22-35
	15 mm	\	\	\	\	3-4	4.5-6	20-32
	18 mm	\	\	\	\	1.2-2	2.5-4	15-25
	20 mm	\	\	\	\	\	1.8-2.5	6-10

2.Product Installation & Commissioning process

2.1 Preparation before Installation

- The power cable load exceeds 12-15A. (Your power must be grounded, and the equipment must be grounded separately)
- Several cutting materials (Acrylic sheet)
- Lifting forklift (Remove the equipment from package)
- Computer (With CD reading function)
- Cooling water 6L. (Distilled water, if the local temperature is low , antifreeze should be into the cooling water to avoid it freeze)
- Clean alcohol 200mL (Alcohol concentration 90%)







2.2 Unpack

1. Check outside package before unpack .
2. Open the package from the package long side, and check all items whether they are good after shipping.

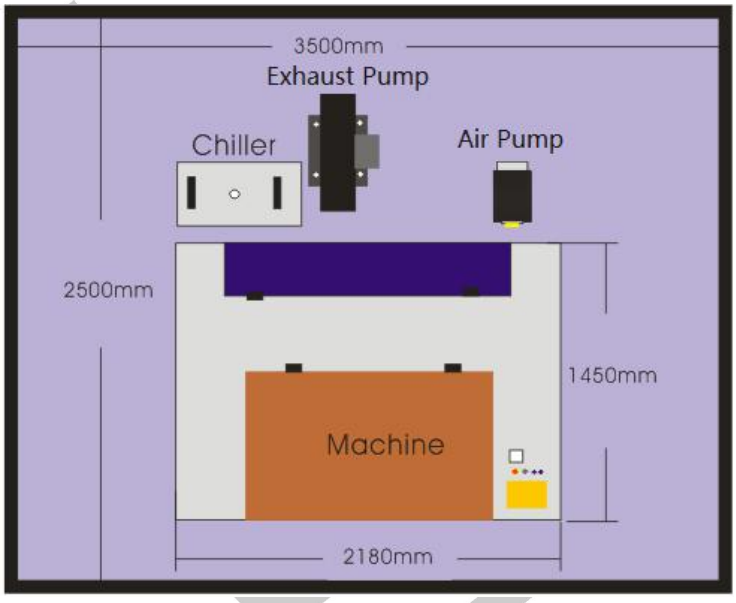


3. Remove the accessories firstly, then use forklift take the host machine out carefully .



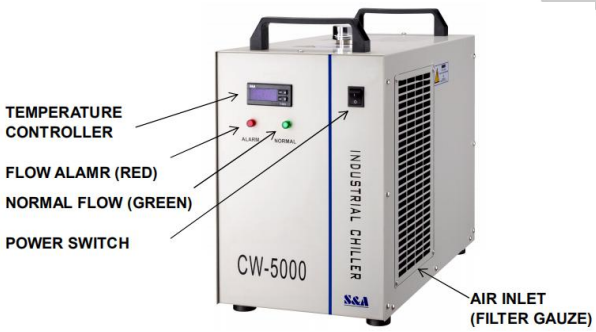
2.3 Device Installation

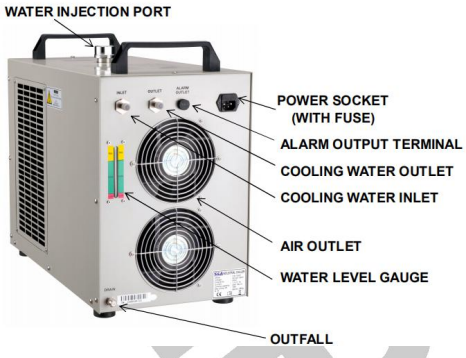
1. Move the Argus machine into your workshop, and keep space for Heat dissipation & Maintenance space, Like this .



2. **Assist Devices:** Water Chiller; Exhausted fan, Smoking Pipes; Air Pump, which also can use Air compressor replace.

1)





2) Air Pump



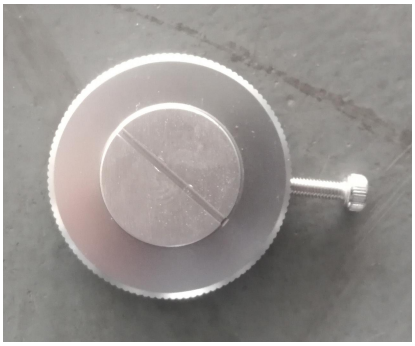
Exhausted Fan



3) Check accessories follow the packing list, which inside tool box.



Tools Box



Argus Unique Focus Meter

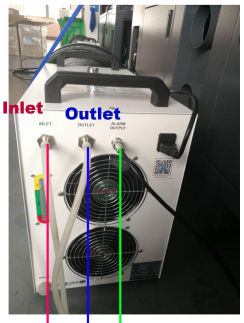
4) Check the power supply voltage before connect the power into machine. For example: if your power is 220V, the voltage between Live wire & Earth wire will be 210-230V, and voltage between Neutral wire & Earth wire will be ≦ 2V. If it over 2V, pls check the Earth wire connection. Or it will damage machine .



5) Connect the assist devices follow the instruction .

1) Cut the white silicone pipe into two parts, and connect them into water chiller & machine ports as follow. Fill pure water into water tank until it arrive yellow area. Connect the water chiller signal cable into the machine .









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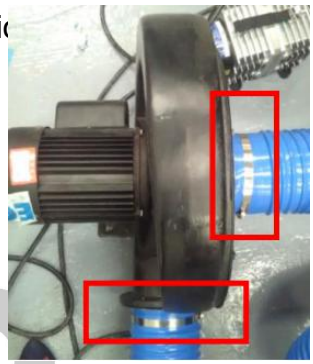
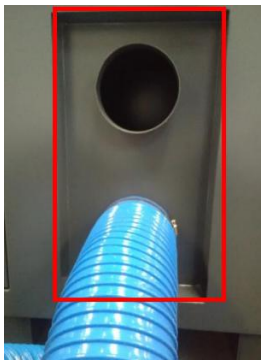
Note: The water chiller inlet must connect the machine outlet, and water chiller outlet must connect the machine inlet , and make the water into circulation running .

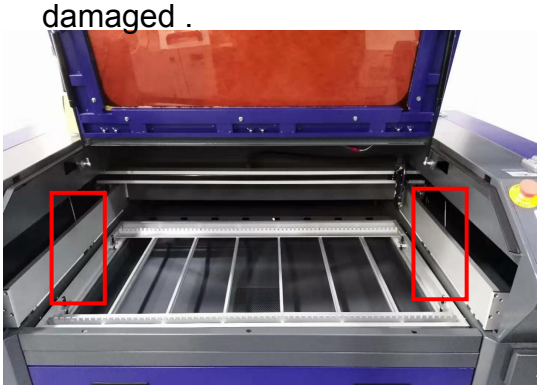




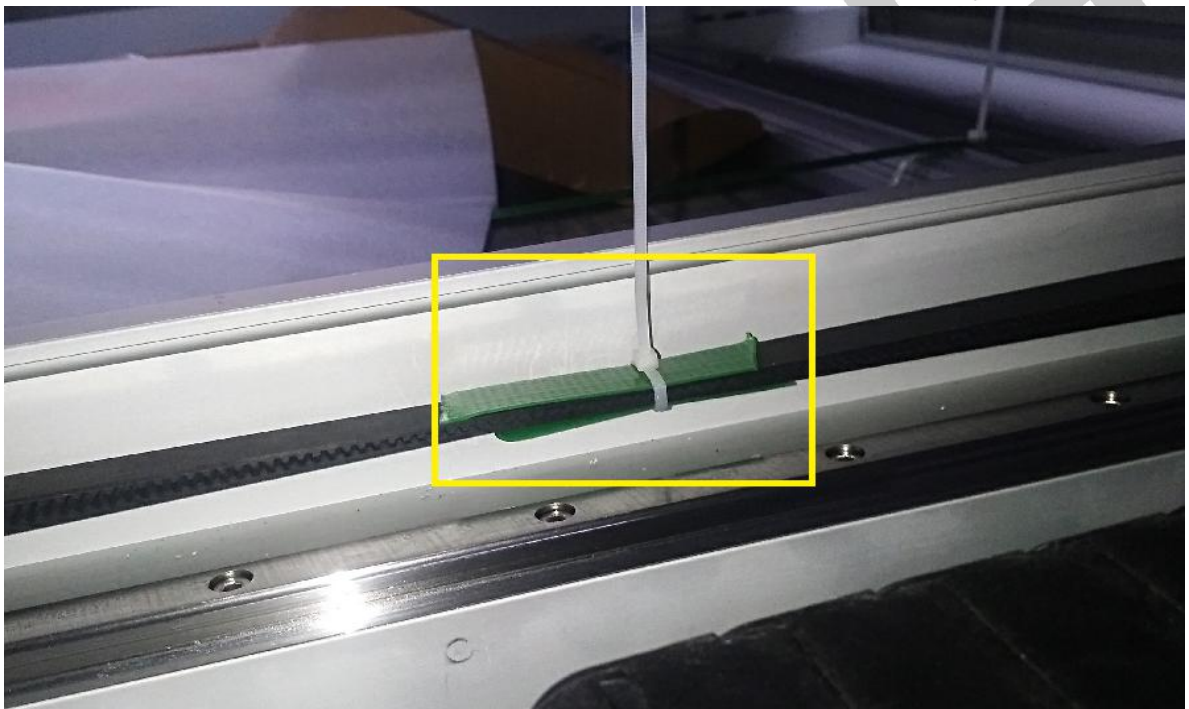


2.4 Security Check

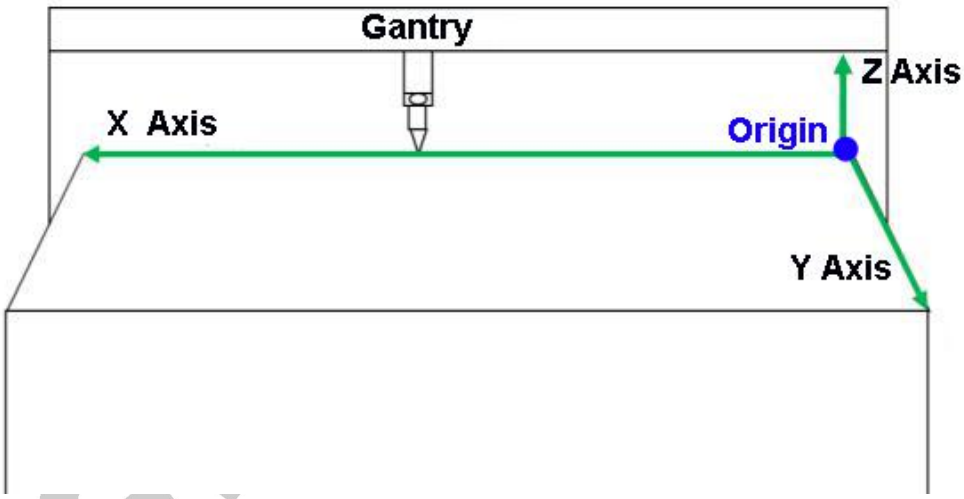
Removal of equipment safety restraints and workbench protective films. **Remove belt fix cable tie as follow photo**, push gantry into worktable center slowly, and check whether the guide rails and sliders move normally. Open machine back cover, and check the laser tube whether its inner and ends are damaged .







The Machine mechanical origin is in the upper right corner, the Y axis is in the Y + direction, the X axis is in the X + direction to the left, and the Z axis is in the Z + direction.



2.5 Power on

1. The laser head must in origin position before power on, also will back to Origin after working,

(Turn on the "**Emergency**" button and "**POWER**" switch)



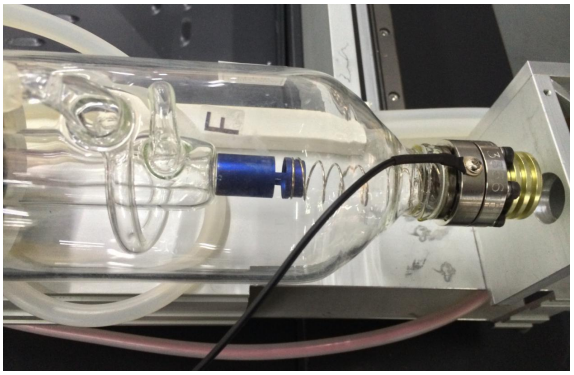
2. Checking each assist device whether work normally.

(Turn on the "**LASER**" button and " **Exhaust**" button)

Note:

Check whether all air bubbles are out of the laser tube.



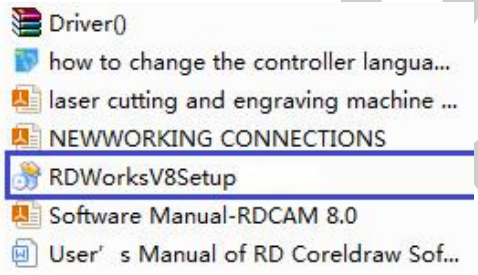



3.Software Installation & Connection

3.1 Install the driver

1) Power on the machine and then connect the USB cable into computer and machine. The USB port is on the Argus machine body right side.

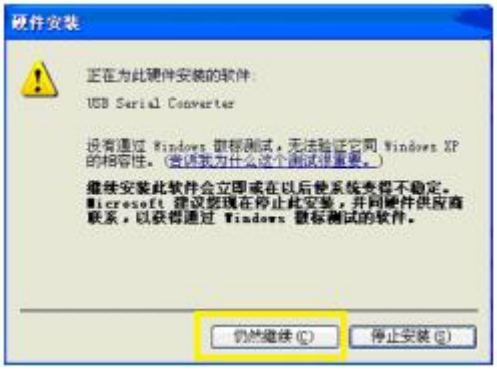
2)Double-click "RDWorksV8Setup8.01.XX.exe" in the installation directory, the following dialog box appears.





3)Click [Install], then click "Install USB Driver".If the following hardware installation prompt appears, select "Continue Anyway" until the installation is complete.





After the installation is complete, the following dialog box appears,

After the installation is complete,
the following dialog box appears,
the USB driver install successfully



3.2 Main Software Install

Select language and set software save path. After the installation complete, the following dialog box appears, indicating that the software has been successfully installed. At the same time, the computer desktop automatically generates software icons.

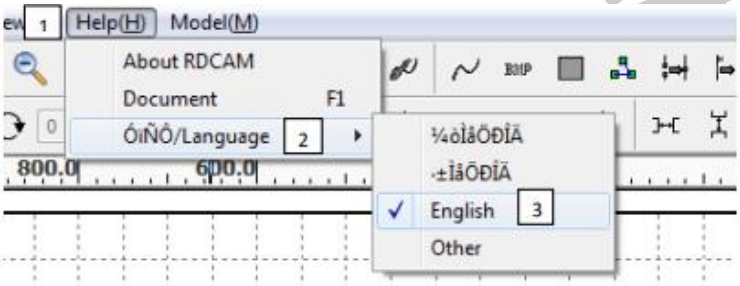






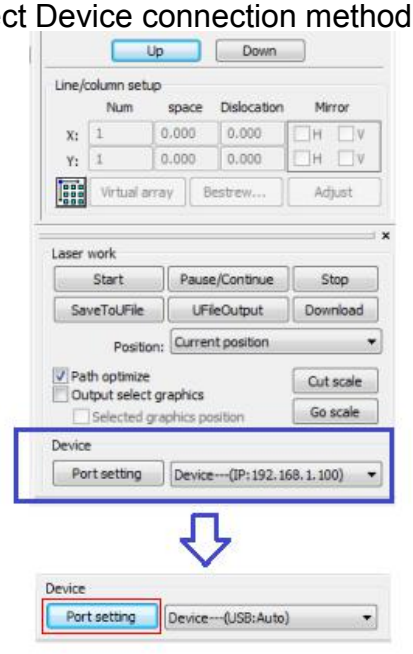
3.2 Machine Communication

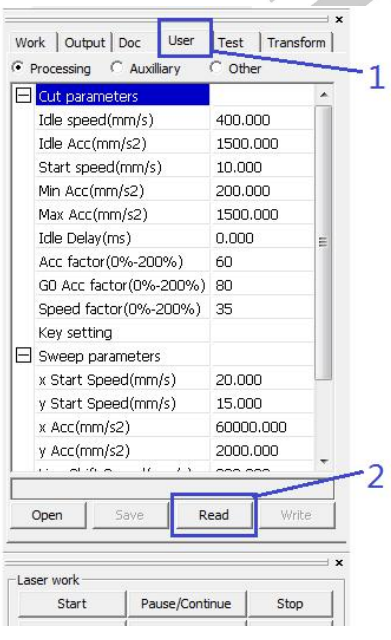
1) Open the software, Change the Language





2) Select Device connection method , normal choose the USB cable



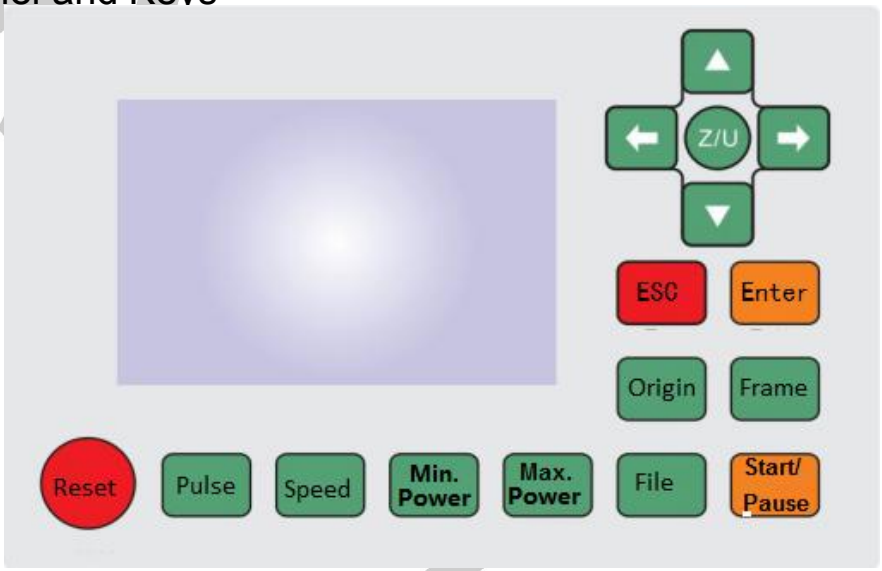


3) Check whether the communication working good, Open the USER setting, Click "Read" button, and check the parameter got it from the machine side.

If the communication has problem, it will show Error message.

4.Machine Inspection & Debugging

4.1 Panel and Keys



Keys Instruction:



: Reset the controller;



: Set the relative origin;



: The laser tube emits laser;



: Frame of the current file;



: The management of the memory and U disc files;



: Speed of the current running layer, or set the direction keys move speed



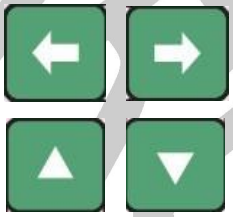
: the max laser power of the current running layer, or set the power of "Laser" key;



:Set the min laser power of the current running layer.



:To start or pause the work;



:To move the X Axis or the left/right cursor;

:To move the Y Axis or the up/down cursor;



: The Z/U button can be pressed when the system is idle or the work is finished. It show some entries in the interface, each entry includes some functions, Z Axis move, U Axis move, each Axis to go home etc.;



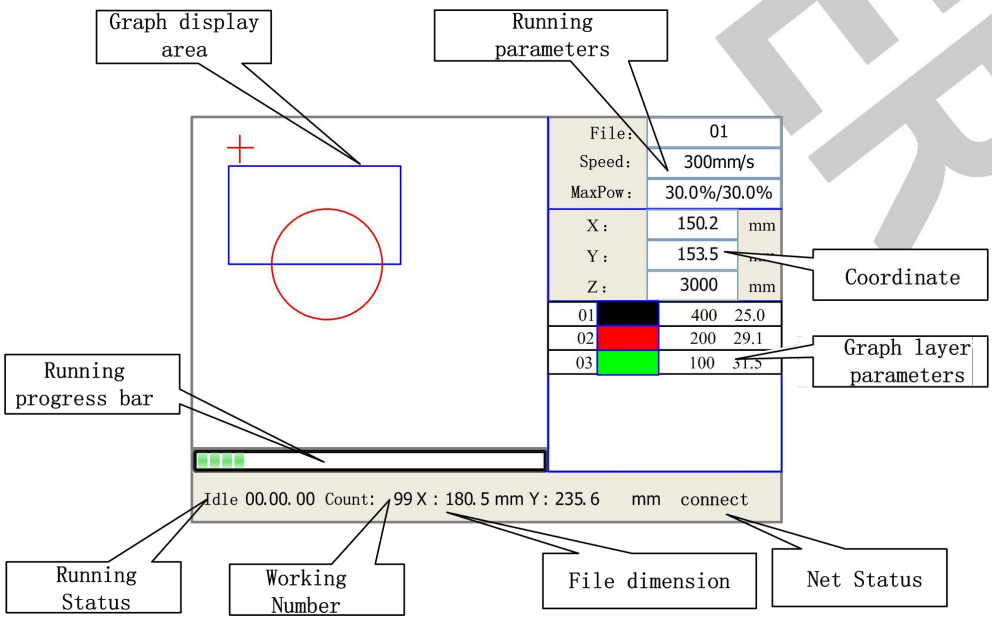
:To stop work, or to exit to some menu;



:Validate the change

4.2 Main Interface Introduction

When the system is powered on, the screen will show as below:



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Graph Display Area: To display the whole file's track, and display the running track.

Running parameters display area: To display the running file's file number, speed, max power etc.;

Coordinate display area: To display the current coordinate of X,Y and Z axis

Layer parameters display area: To display the layers' information of the current file, such as max or min power, speed etc. When system is idle, double click the layer, then users can change the layer's parameters and the changing would be saved.

Running Status: To display the current status of the machine, such as Idle, Run, Pause, Finish, etc.;

Running Progress Bar: To display the progress bar of the current running file;

Working Number: To accumulate the work number of the current file.

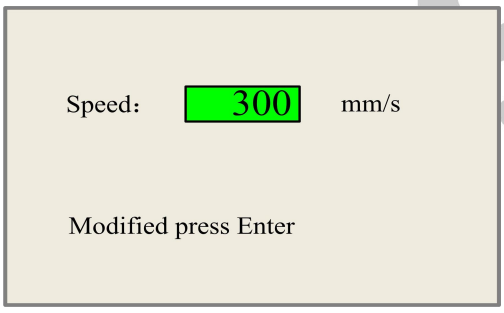
File Dimension: To display the dimension of the current file;

Net status: To display the connecting status of the Ethernet.

When work is idle or finished, all keys can be pushed, users can select a file to run, set some parameters, preview to a select file etc. But, when work is running or paused, some keys will not respond when they are pushed.

Speed Setting

Push the "Speed" key when the screen is on the main interface, it will show as below:



Push the "X+/-" Keys to move the cursor in the numeral area, and push the "Y+/-" keys to change the value, then push the "Enter" key to save the change, push the "Esc" key to invalidate the change.

Max/Min power keys

Push the "Max Power" or the "Min Power" keys when the screen is on the main

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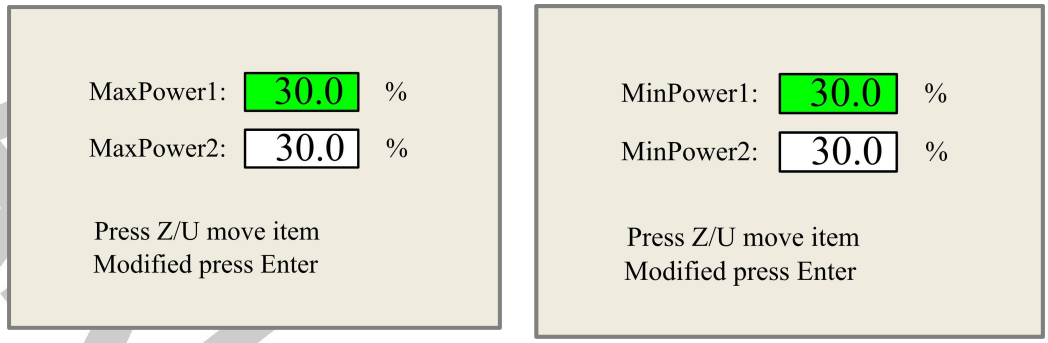
interface, it will show as below:



When "Z/U" key is pushed, the green block can move up and down to denote the changing item, then "Y+/-" keys and "X+/-" keys can be used to change the value.

4.3 Function setting and testing

1) Test the movement direction:

Set the panel SPEED value to 200. Press the panel operation direction arrow to check whether the laser head moves normally in all directions.

Check the work table Up / Down movement is normal, Press the black button . and whether it is stuck or noisy.

Note: Make sure the laser head cannot touch the upper surface of the table before and after test.

2) **Laser Test**

Close the Argus machine Cover, set MIN & MAX-POWER to 30 in the panel, and click the "PULSE" button to check whether the pointer of the panel "mA Ammeter" is swinging. If the pointer swings, it means it work good .





5. Optical Path Alignment Collimation Inspection

If the follow steps operate not right, the laser will damage the machine or hurt the Operator.

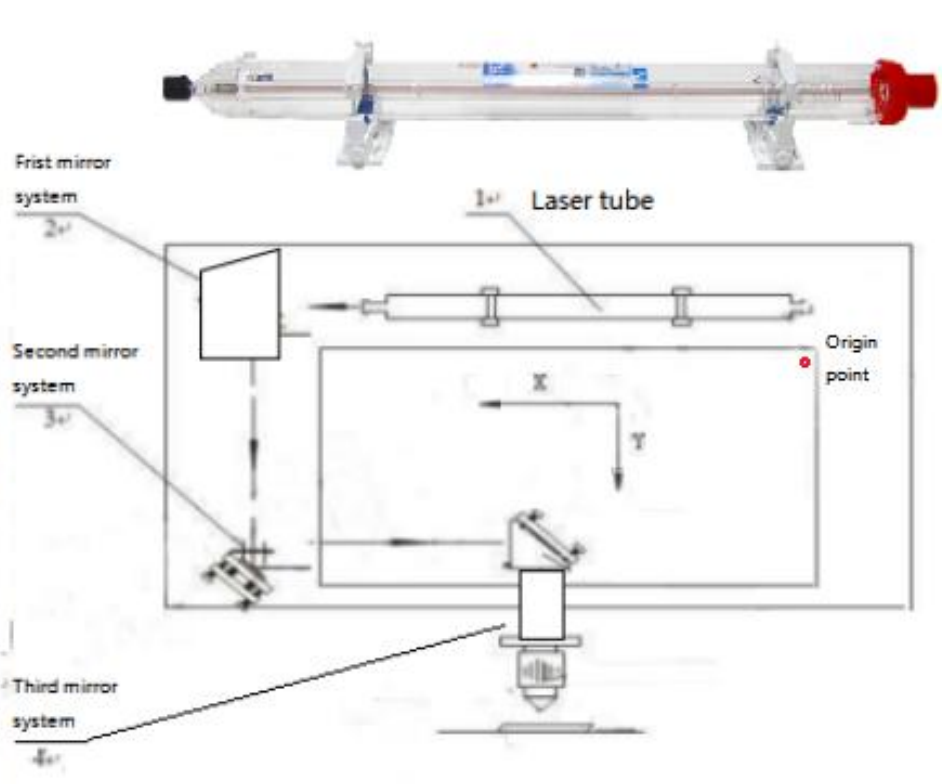
NOTE: Must closed all doors during laser testing.

Reflected light path description: The first reflection system adjusts the optical path alignment in the Y direction; The second reflection system adjusts the optical path alignment in the X direction, and the third reflection system adjusts the optical path output from the laser head.









5.1) Check Y-axis light path

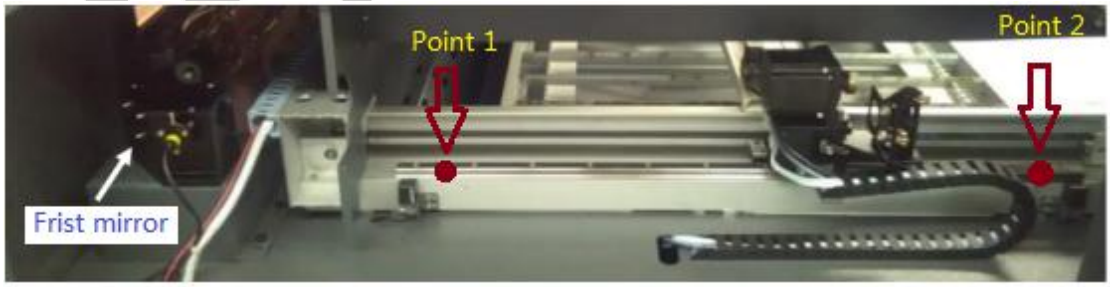
Insert a piece of paper into the target block, install it on the second mirror frame assembly, and then change the MIN&MAX power to 15% (For example the laser tube is the A2S)

This is Optional device, Can use Small Acrylic sheet Replace .

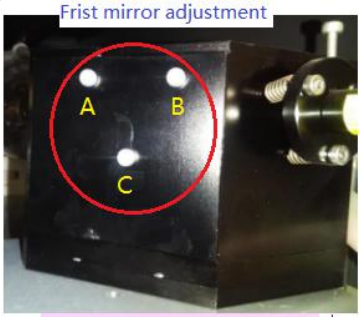




Close the upper cover, move the X gantry beam to the position near the first reflection (Point 1 location), and then click the PULSE button. At this time, a burn mark will be left on the paper. Then move the X gantry beam to the farthest position from the first reflector(Point 2 location), Click again to PULSE, and burn marks will remain on the paper. It is correct that the two burn marks are overlapped. If the two burn marks are not overlapped, the first reflecting mirror needs to be adjusted, and the above operation is repeated to adjust the two burn marks to overlap at the same position.



There are three adjustment screws for the mirror. A & B adjustment is to make the light spot move left and right. C adjustment is to make the light spot move up and down (if the paper can not be clearly observed, you can change to test with a sticky acrylic pieces)

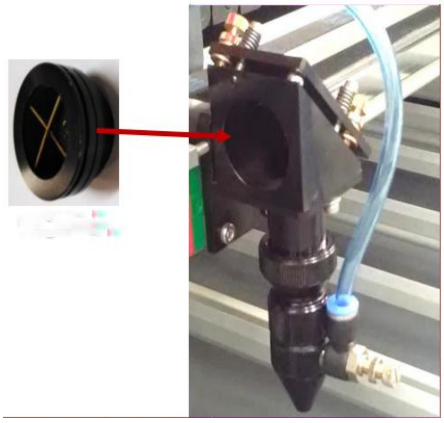






5.2) Check X-axis light path

Insert a piece paper into the target block, install it on the third mirror frame assembly. and then move X gantry beam to the middle location of Y axis

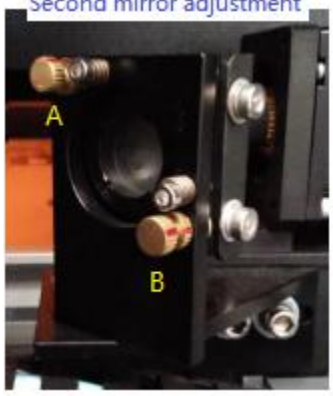


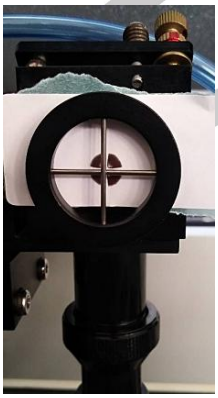


Close the top cover and move the laser head close to the second reflecting mirror(Point 3 location), then click to PULSE, the burn marks will remain on the target. Then move the laser head to the farthest position (Point 4 location) and click the PULSE again to get a second burn mark. The two burn marks need to coincide at the same location. If they do not overlap, you need to adjust the second reflective mirror.



There are four adjustment screws for adjust the mirrors. A Screw adjust the light spot move left and right. B Screw adjust the light spot move up and down (if the paper can not be clearly observed, you can change to test with a sticky acrylic piece)







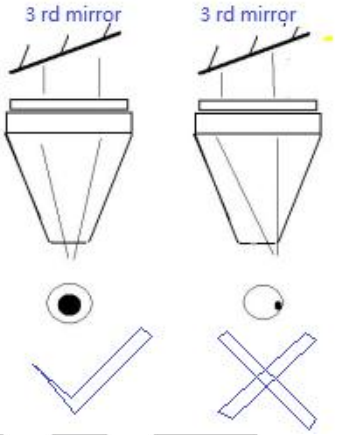
5.3) Check laser point out put

Turn down the air volume of the nozzle side and adjust the power to 10%. Attach the paper(or tape) to the lower end of the nozzle bottom side . Press the paper hard to make the paper leave marks. Close the door and click the PULSE button .





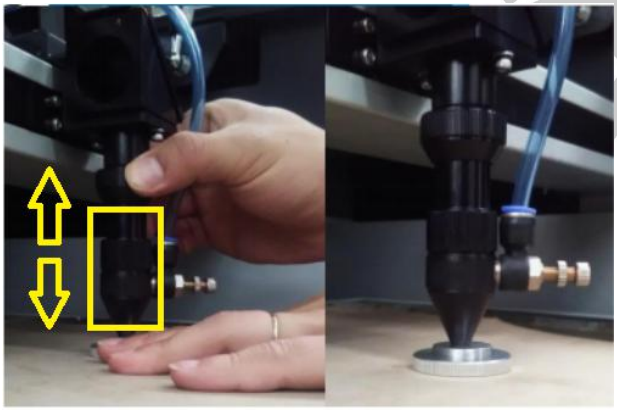
If the laser spot is not on the center of the hole with the nozzle, then the third mirror needs to be adjusted. A screw adjust the laser spot to move left and right way, B screw adjust the light spot to move up and down direction. (The burned hole on the paper must be round. If there is a missing round, it is incorrect and need to adjust again.)

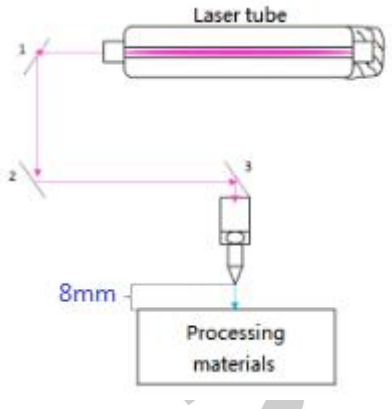




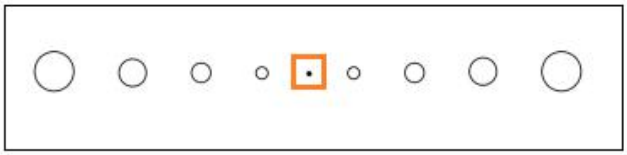
5.4) Check the focus point

Adjust the MIN & MAX power to 50% and the air volume to the maximum. Then adjust the distance from the nozzle to the top surface of the material. and according to the Argus Focus Meter. (Aluminum round adjustment block) then remove it . Then close the upper door and Click PULSE button .



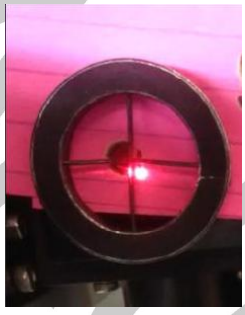


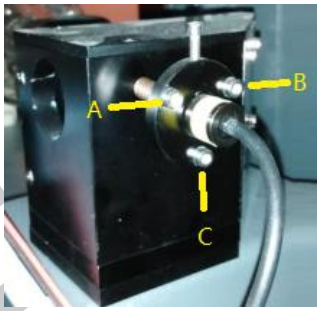
When the laser light beam is focused, the energy at the focus is the largest and the light beam is the smallest. Therefore, it is necessary to adjust the height and position of the tapered head many times.(Normally the distance from the nozzle bottom to the material surface is about 8mm)

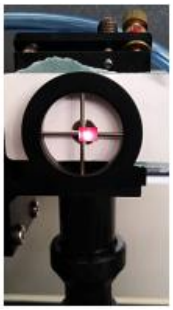


5.5) Adjust the red indicator light

Move the laser head to the far end of the X gantry beam (Point 4 location), and then directly adjust the red light indicating light spot to the center position of the target



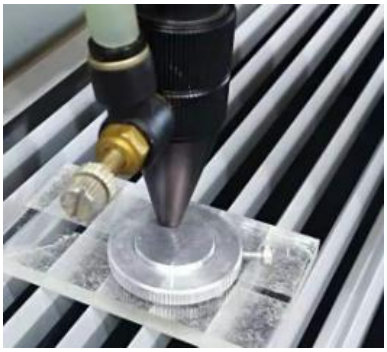




5.6) Adjust the worktable levelness.

The levelness adjustment of the worktable is not an ordinary levelness adjustment. It means that the distance from the table to the laser head is the same.

Keep the laser head height and not move, adjust the screws at the four corners of the worktable. This makes the height distance between the worktable four corners and laser head are same.



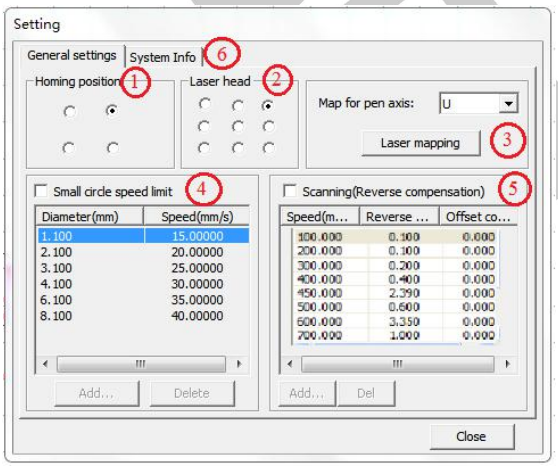


6. Software settings

6.1) System Setting



Fig. 59. Vista de pantalla para acceder a System Setting



1). Home position, set the machine origin position and direction. The software defaults to the lower left corner. .

2). Laser head: The laser head position in the processing drawing can be arbitrarily set and modified.

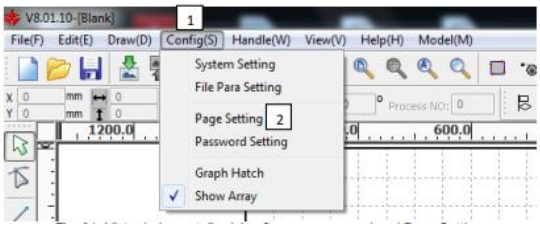
3). Laser mapping:The actual power wattage corresponding to the power set point. This function does not perform actual calibration

4). Small circle speed limit: cutting data optimization, when the function working , it can limit the speed of small circle or small radian curve cutting.the cutting of the line will be smooth at the carve with smaller circle.the value setting can be manually modified and adjusted according to the specific processing effect

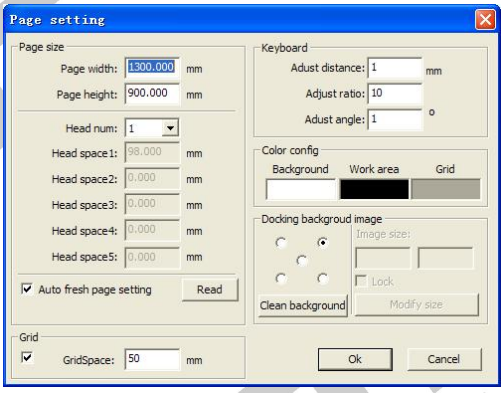
5). Scanning :this function is a mandatory mechanical compensation value for the motion error during the processing of the "X-swing" function. The value is adjusted in the actual processing.

6). System info: View the current control version and upgrade program, language, etc.

6.2 Page setting



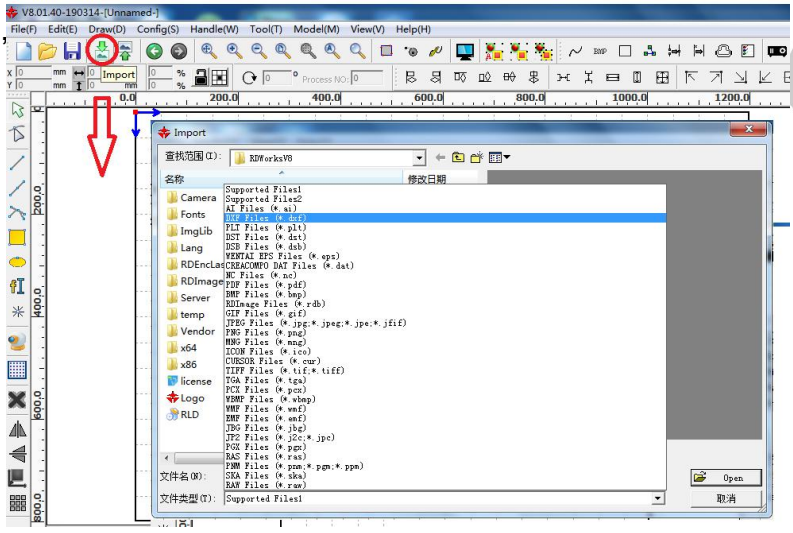
ing format of the current equipment.



7. Software Operation

7.1 Import the file

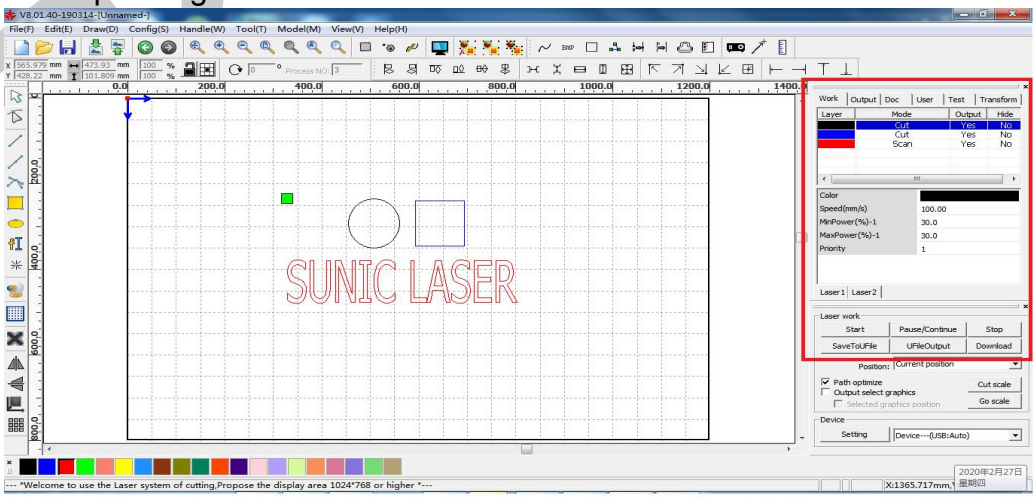
The processing file can be edited by other design software, and then saved as a vector file,



7.2 Graphic processing path setting

Processing graphics can choose multiple colors, each color can be processed in different ways.

The processing of each color needs to be set separately.double-click the color box on the right side of the software, you will enter the path editing dialog box of the corresponding color



First select the corresponding color processing mode:

Scan: The laser will scan the inside of the closed graphic of the selected color

Cut: The laser will cut along the lines of the graphic

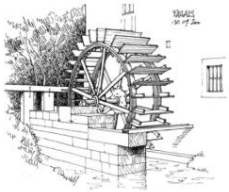
Dot: The laser will dot the lines along the graphics

Pen: This function is used for tool pen equipment, not for laser equipment

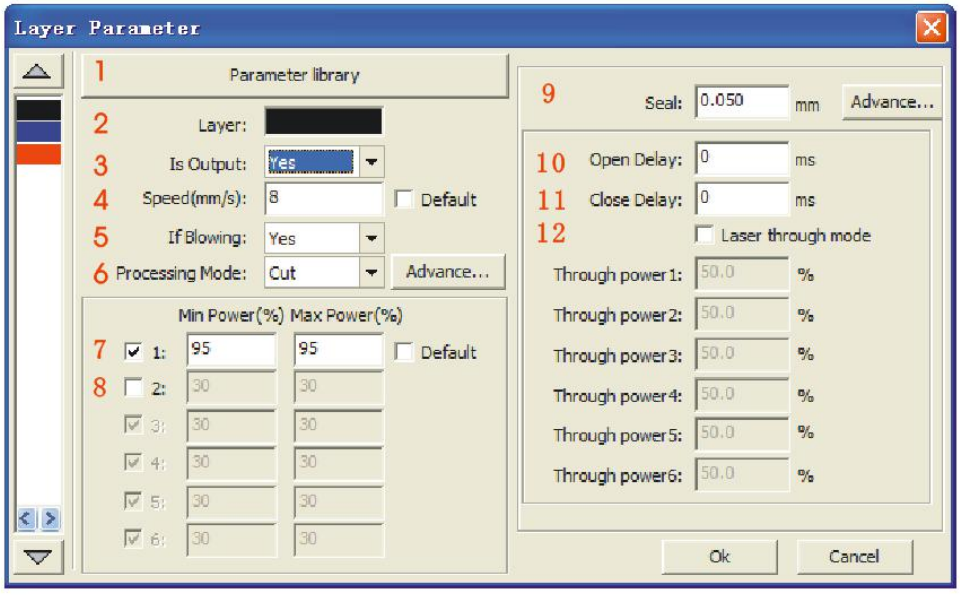

Scan


Cut


Dot


Pen

1) Processing Mode--Cut Function



1. Material parameter : You can quickly import parameters from the material warehouse.

2. Layer: Represents the current color graphic.

3.Is output: Select "Yes" to indicate graphic output; select "No" to not output current color graphics.

4. Speed: Set the layer "Processing Speed"

5. Air blowing: Open the software to control the air blowing function

6. Processing method: you can choose " CUT", "SCAN", "DOT", and "PEN" functions.

7. Laser 1 power setting: energy setting of laser output during processing

Minimum power: This power is the power of the laser output at the corner position during the cutting process

Maximum power: This power is the energy output of the laser in the linear area during the cutting process.

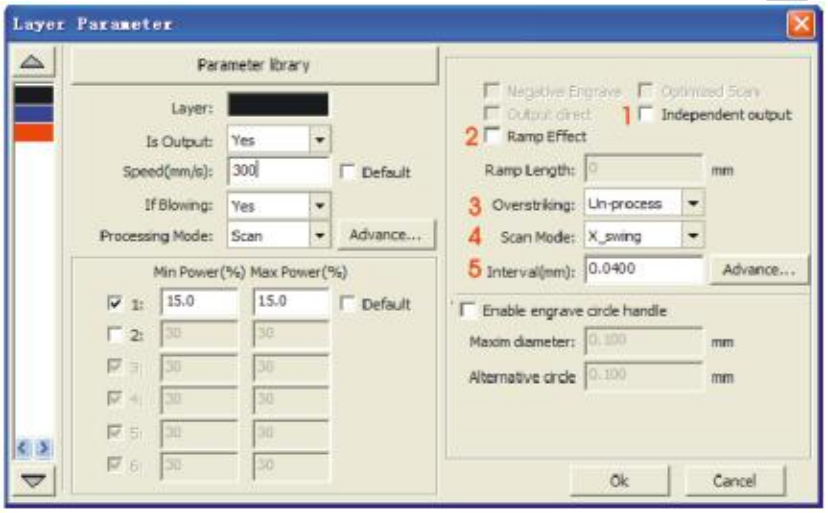
8. Laser 2 power setting: Set the processing power of laser 2; the double-headed device laser 2 is effective.

9. Sealing: When cutting thick materials, the energy will be consumed when the laser passes through the material, so the bottom of the end point will not be able to cut through. At this time, the laser will be required to continue the graphics and continue to process more distance, Cut through completely, the default setting is 0.05mm.

10.11 Laser On / Off Delay: The waiting time when the laser is on / off.

12. Laser through mode: When the machine starts processing, the power of the laser at the starting point is set. The size is set by the process. The function is not turned on by default

2) Processing mode--Scan Function



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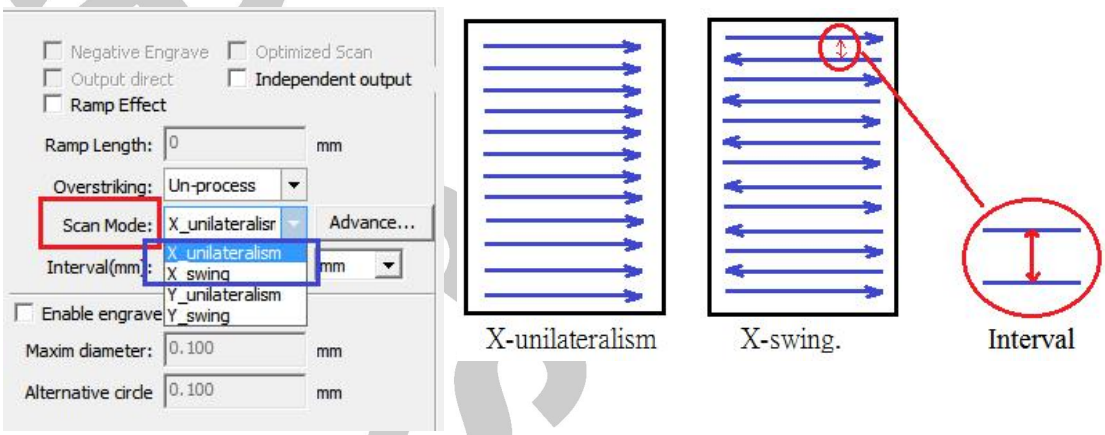
1. Independent output : The function is not enabled by default. When the pattern to be carved is dispersed into separate graphic output.

2. Ramp effect: The carving has a slope. Do not check for ordinary carving.

3. Over striking : The software automatically bolds the file.

4. Scan mode: the laser machine only can working with X-unilateralism and X-swing. The Y shaft can not working with the scanner function .



A1.X-unilateralism: the laser is emitted from left to right each time, and no laser is returned in the return direction. Therefore, the carving time is long and the effect is very good;

A2.X-swing: the laser is emitted from both sides to the left and right. The engraving time is half of the "horizontal one-way", but a "backlash" needs to be set to compensate for mechanical errors.

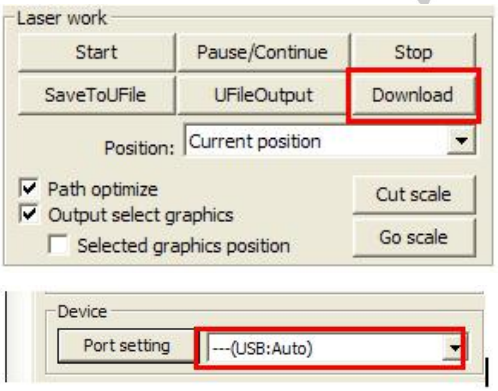
5.Interval : this function is the direct distance between the two scanned lines. The smaller this number is set, the deeper the engraving depth will be, but the longer the processing time will be. The setting value is generally (0.04-0.1mm)

7.3 Load file & Working

1. Download the file to the machine

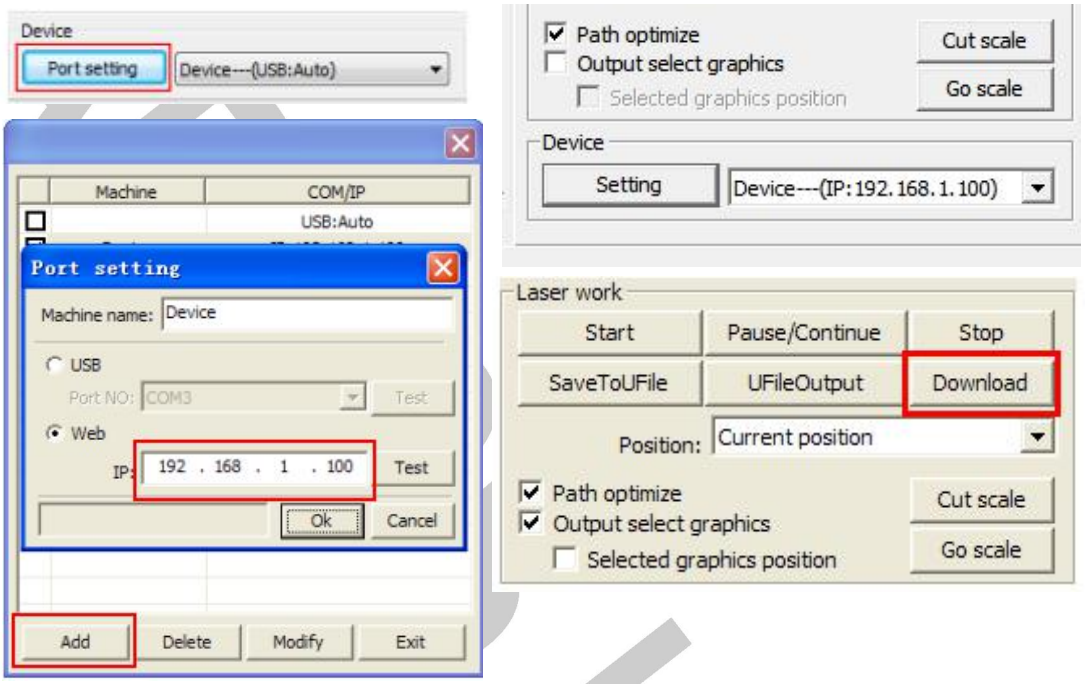
● USB connection and download .





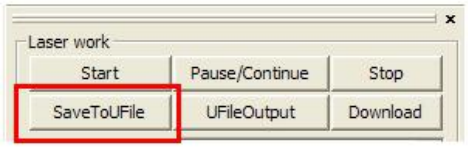
● Network Connect .

You can try to connect the Wifi or connect the network cable to the machine and then download it

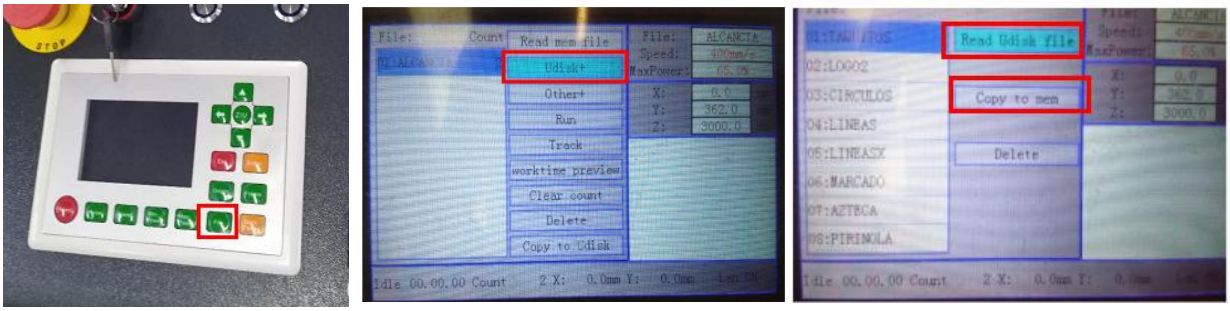


● U-disk

The processing file parameters are setting finish, then choose the "Save to U file" and save the file to the U disk (recommended memory ≦ 8G, format is FAT32).



Plug the U-Disk, then press the "FILE" button on control panel and then Enter the U disk and copy your file to the Argus Laser machine directly .



2. **Operation**

1. Put the material on worktable.
2. Move the laser head to the top of the material, adjust the focus length with the focusing ruler, and the air valve of the blowing nozzle is facing forward,then remove Focus meter.



3. Press the"File" button on the panel, find the file which processed and Press "Enter" , then move the laser head to origin (default upper right corner), Press the panel "Origin", and then Press "Frame", the laser head will walk along the file frame.

Make sure the working area is correct and there has enough working area.

4. Close the cover and press the "Start" to start working

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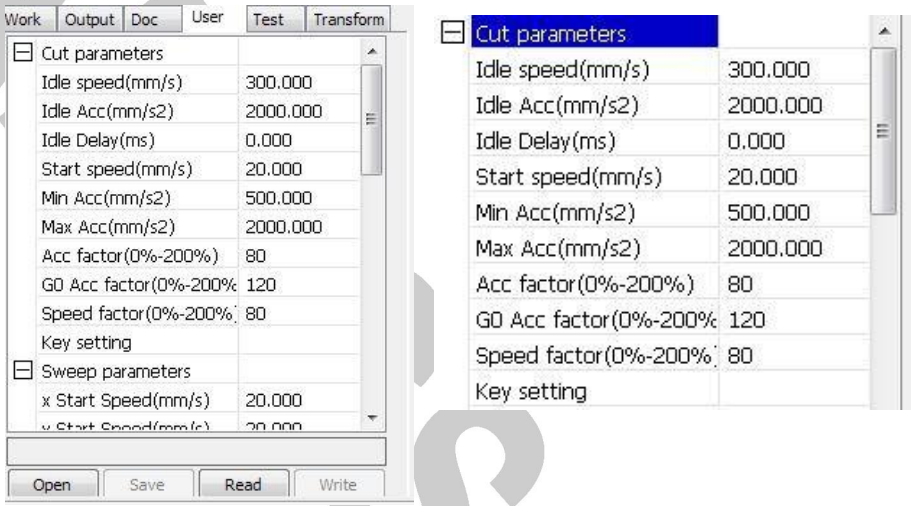
8. Software Basic Setting

8.1 User parameters

Adjust the parameters then click "**Read**", then start to work.

1).Cut parameters



Idle speed: this parameter decides the max. speed of all lines not emitting beams during the machine operation. This parameter should not be lower than the lower of the jump-off speed of the X-axis and that of the Y-axis and not exceed the higher of the max. Speed of the X-axis and that of the Y-axis, if the setting is illegal, the controller will automatically set this parameter within the range above; A comparatively high idling speed can shorten the operation time of the entire figure while excessively high idling speed may cause dithering of the tracks, therefore, you should take all relevant factors into consideration when setting.

Idle Acc: Corresponds to the acceleration of the speed of air travel time, air and air-way-way speed of acceleration to match, if you set too slow the actual speed may not reach the air-way set value, if set too fast, they may not withstand the mechanical structure, resulting jitter. Slightly higher than the general acceleration of air-way cut acceleration.

Cutting Acc: Corresponding to the acceleration of the speed of cutting (cutting speed is the speed of the layer parameters of the layers).

Acc factor: The corresponding coefficient of empty walking speed,the greater the ratio,the greater the idle speed.

Go Acc factor:Corresponding coefficient of cutting speed,the bigger the ratio the greater the cutting speed speed faction: Rount the corner turning speed,the greater the coefficient is larger.

Turning speed: Turning the corresponding deceleration in the cutting process, the minimum speed of the drop, when processing a lot of teeth when the graphics may be appropriate to reduce the turning speed.

Turning Acc: Should match with the turning velocity.

Cutting mode: Split precision cutting, fast cutting, ultra-fast cutting, the user can choose according to the actual applications. Such as the emphasis on accuracy, select the precision cutting, such as emphasizing speed, select the fast cutting.

Acc. mode: this parameter decides the acceleration and deceleration mode (S mode or T mode) of the motor during operation, the motor accelerates and decelerates slowly and smoothly in the S mode and fast and relatively unsmooth in the T mode; the default mode is the S mode.

2) Sweep parameter

Sweep parameters	
x Start Speed(mm/s)	20.000
y Start Speed(mm/s)	20.000
x Acc(mm/s2)	3000.000
y Acc(mm/s2)	2000.000
Line Shift Speed (mm/s)	150.000
Scan Mode	Common Mode
Facula Size(50~99%)	98.000

X Start Speed, Y Start Speed: Off scanning speed in the use of stepper motor drag, do not began to accelerate from 0, but can start work directly from a speed to shorten the overall processing time, but the speed is not too high, and because the X, Y axial load is different from the rate, general the initial speed of X-axis slightly higher than the initial speed of Y-axis

X Acc, Y Acc: With the scanning speed (the speed of layers in

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the layer parameters) to match, if set too small, the scan speed to a longer distance, the scanning efficiency. The machine can be set according to the actual structure, load conditions vary. Since X, Y axis load, generally much higher than the X-axis Y-axis accelerometer.

Line shift scanning speed: this parameter is specially used to control the max. speed of the scanning to shift vertically from one line to the next line below it. If during the scanning, the line space is too large or the block space is too large when scanning block figures while precise positioning for each line or block is required, you can set the line shirt speed of scanning to a comparatively low value. This parameter cannot be less than the jump-off speed of the corresponding axis during the line shift and cannot be higher than the max. speed of the corresponding axis during the line shift, if the setting is illegal, the controller will automatically set this parameter within the range above.

Scan Mode: There are two modes for your selection: the general mode and the special mode, in the general mode, there's no any treatment during the scan, in the special mode, light spots will be treated.

If the special mode is activated, the power of the laser should be increased and correspondingly, the light spot percentage will be lower and the laser power attenuation will be higher, to achieve the same depth of scanning, the laser power should be higher. The purpose to select the special mode is to make the laser to emit beams at high power and in short period, during deep scanning, the effect of flat bottom can be achieved, however, if the light spots are improperly adjusted, this effect may not be achieved and the working mode of high power and short period may influence the service life of the laser. The default mode is the general mode.

Facula Size: When scanning the general pattern of selection,

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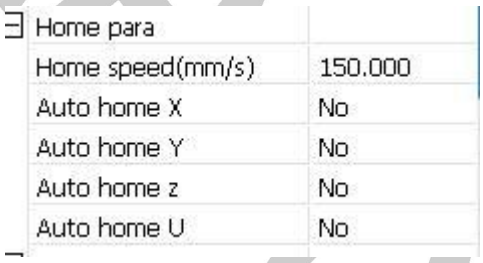
the argument

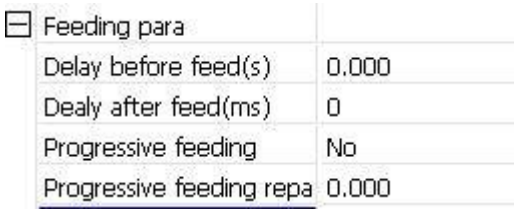
is invalid, when you select a special mode, the onset of the parameters.

Control the parameters of control in 50% to 99%, respectively

3) .Home parameters



Home para	
Home speed(mm/s)	150.000
Auto home X	No
Auto home Y	No
Auto home z	No
Auto home U	No



Feeding para	
Delay before feed(s)	0.000
Dealy after feed(ms)	0
Progressive feeding	No
Progressive feeding repa	0.000

Home speed: This parameter determines the machine is turned back to the origin when the speed of a larger format if the machine can be set to reset the speed is too large, but not too much.

X, Y, Z, U Auto home: The axis can be set whether should reset at boot time.

4).Feeding parameters

Delay before feed: When using the feeding device,a single delay before feeding, the user can arrange such as sorting material at this time.

Delay after feed: refers to material feeding device to reach the designated position, need stability for a period of time before processing.

Progressive Feed: feed uni will material sent to in place of one line is a way of feeding. Progressive feed repay:in the use of feeding device there may be some error on line by line feed



Other	
Array processing	Bi-dir Array
Return position	Origin
Focus depth(mm)	0.000
Backlash X(mm)	0.000
Backlash Y(mm)	0.000

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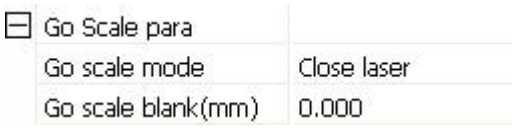

Go Scale para	
Go scale mode	Close laser
Go scale blank(mm)	0.000

5). Go Scale parameters

Go scale mode: Points of light to go off the border, the opening cut borders, corners three modes.

Go scale blank: Walking frame can be based on the actual image size up and down again about the direction of some of the white left side of the border in order to ensure complete contains the actual graphics.

This setting is on the control panel to go with the border-related functions, while walking on the border with the independent software.

6) .Other parameters

Array mode: you can choose the swing mode and the one-way mode.

The Swing mode: cutting the array back and forth in order;

the One-way mode: always cutting the array from one direction to another. If One-way mode is selected, all array units have the same movement modes and the same liquidity of movement, however, this mode will take more time than the swing mode. The default mode is the Swing mode.

Return position: You can select the locating point and the machine origin. This parameter decides the position, the locating point or the machine origin, where the laser head stops upon completion of each operation.

Delay before feed: Using the feeding device, the delay before a single feed, users can arrange the time and the like, such as picking process.

Delay after feed: Refers to the material sent to the feed device in place, the need for stability after a period of time for processing.

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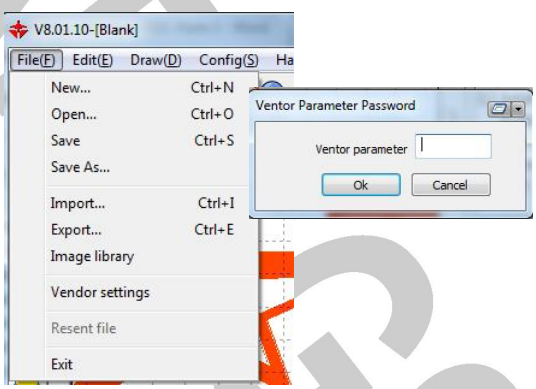
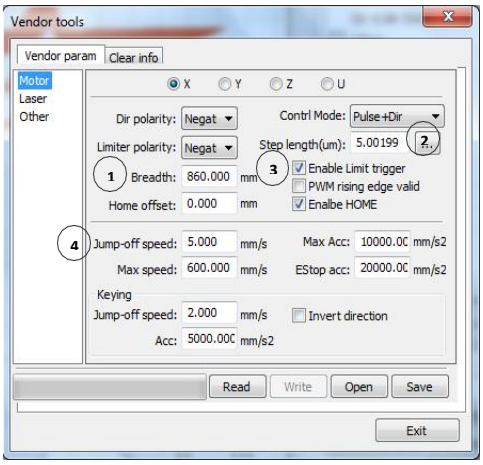
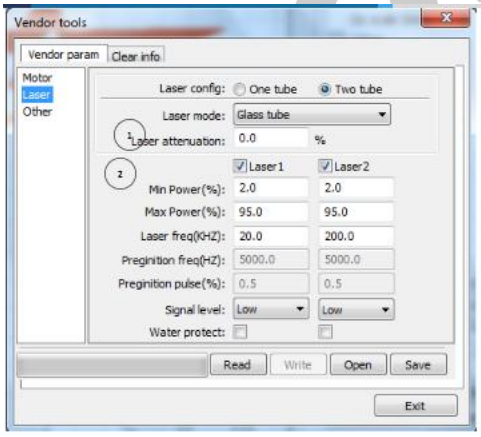
Focus depth: Auto focus operation to find the corresponding panel.

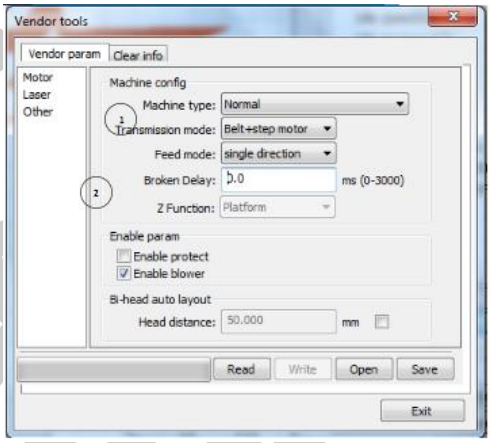
Backlash X, Y: Used to compensate the backlash caused by the machine drive problems.

8.2 System parameters of the VENDOR









1).Laser Parameters

Laser config: Single tube/pipe is optional, according to the number of laser tube manufacturers actual configuration Settings

Laser mode: Glass tube, radio frequency laser (don't need precombustion pulse) and radio frequency laser (need precombustion pulse) optional

Laser attenuation, Min power, Max power, Laser freq, Preginition freq:

Preginition pulse: For radio frequency (%) laser and

precombustion pulse, frequency and precombustion by precombustion pulse width configuration precombustion characteristics of the pulse. Signal level:

Water protect:When can make water protection, the controller must be connected to water protection circuit, the machine won't out of the light, if we do not make water to protect, don't pick up the water protection circuit, the controller will not detect.

Laser frequency used by the control signal is used to set the laser pulse frequency, the glass tube, generally set to about 20 KHZ, Radio frequency tube usually about 5 KHZ;Maximum/minimum power (%) is used to set the limits of the laser power value, namely at runtime, users to set maximum power can not be higher than the set value of maximum power, user Settings cannot under minimum power value for the setting of the minimum power value;Use after a period of time, if the laser power attenuation, is by setting the attenuation coefficient to fine-tuning of laser power, laser without attenuation, attenuation coefficient of 0.

Prompt: If single laser tube is configured, it only shows the laser parameters.

2).Other vendor parameters

Machine type: For the most part should choose general engraving machine, other models for a particular model

Transmission mode: Under normal circumstances should choose "step type belt", choose other type, control algorithm will have small change

Feed mode:A one-way/two-way optional.When for one-way feeding, do not check the coordinate, but has been unilaterally upward;When selecting a two-way feeding, the system will check the maximum minimum coordinates, an odd number of times to one direction, even time to another direction, first initial direction by setting the direction of polarity to change or modify

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feeding the length of the positive and negative value

Broken delay: Can be set to 0 ~ 3000 ms.After power grid, the system power supply does not immediately reduced to 0 v, during a time delay, the power set delay value should be the actual delay values are basically identical.If the value is set, the deflection is in power to continue carving work, a second processing of graphics and graphics or not closed before power, or too much overlap

Enable protect: If can make this, the controller must be open protection circuit is connected, otherwise the machine will not work

Enable blower: If want to use the outlet Wind signal layer and control the fan switch, you must make to the parameters, otherwise, the Wind signal output to other signals

Prompt: Manufacturers in the parameter configuration parameters, such as the direction of polarity, control mode, the types of laser and laser frequency modified four parameters, it is necessary to reset the system, reset after the completion of the changes to take effect.

9) Argus Laser Safety Protection & Notes

1.This laser machine is a Class IV laser product. Warning signs such as "Caution laser, please do not approach" should be set on the door of the equipment workshop or near the work area.

2 .The user of this equipment should perform the operation and maintenance. Since there is no protection for the optical path from the second reflector to the third reflector, please be careful not to put any part of your body into this optical path when working and debugging the optical path to avoid injury! When the equipment is in operation, it must be attended to to prevent fire.

3 .Avoid cutting high-reflection material whenever possible.

4 .Avoid non-equipment operators to adjust the optical system at will.

5. Make sure to use the correct power supply before turning on the machine.

6. Sudden power interruption has a great impact on the laser, please make sure to provide continuous and stable power. In order to avoid sudden changes in voltage caused by equipment electrical appliances, circuits,

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burnout, or burnout, it is recommended that a single power supply regulator with a power of more than 2000W be installed per unit.

7 .This machine is a precision numerical control equipment. At the same time, the laser power supply will also generate high voltage, so the whole machine must be well grounded. Poor grounding may cause the equipment to malfunction, or even shorten the life of the laser tube. The control circuit will be damaged during high-voltage discharge, and personal injury may be caused in severe cases! !!

8. The size of the laser power determines the size of the laser energy. When it is used over a long time, it will greatly affect the life of the laser tube. The recommended power is not higher than 85%.

9. Avoid thunder and lightning during thunder and lightning.

10. When working at high power for a long time, when the circulating water temperature exceeds 35 ° C, the light output efficiency of the laser tube will decrease, and excessive temperature will cause the laser tube to age quickly. Please pay attention to circulating water temperature, water temperature is preferably 20-25 ℃.

11.Excessive humidity may cause laser high-voltage discharge, endangering personal safety, and causing damage to the laser power supply.

12. At least 5 minutes after the power is turned off, the machine can be transported and inspected.

13. Operators who have not been trained by Argus Laser are not allowed to operate the machine, and Argus Laser will not charge the damage.

10) Laser Machines Daily Maintenance

Routine maintenance is essential to guarantee the quality of the processing and extend the life of the equipment.

10.1 Clean the whole machine (Once a month)

1. Note that if you do not adjust the control according to the instructions or procedures specified in the manual, the danger of laser radiation may be caused.

2. Remember to turn off the power and unplug the power plug before starting cleaning and maintenance work.

3. Please keep the machine tidy. Flammable materials in the machine work area and ventilation area can cause fire hazards.

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(NOTE: Check at least once a week to see if the machine has dust accumulation;)

4.General steps for cleaning the machine:

1) Before starting cleaning and maintenance work, remember to turn off the power and remove the power plug; open the protective cover .

2) Take the worktable out, and clean all its surface in outside.

3) Thoroughly clean waste materials and dust piled up from the machine inside, Special the exhausted pipe, keep it clean for smoking out .

4) Check and lean the laser tube surface.

5) Clean the cover, make it is clear to watch the machine working after the cover closed.

6) Change the Water chiller water once two weeks.

10.2 Optical Path Maintenance (Once a week)

1. The lens material on the device is metal molybdenum, which will be polluted by the smoke and dust generated by the processing after a long time, which will reduce the reflectivity and affect the output of the laser. It must be kept clean, checked regularly and cleaned in time. Can use absolute ethanol or special lens cleaning solution, carefully wipe with cotton swab or lens paper. Pay attention to avoid scratching the surface of the mirror with a sharp object; if the lens is heavily contaminated (the normal lens surface is a mirror surface, the surface with severe oxidation has pits), you can use a cotton swab and toothpaste to clean the lens surface. Be sure to clean it. If the reflection lens is hot, it is recommended to replace it in time.





2. The lower surface of the focusing lens in the focusing lens barrel may also be contaminated by volatiles from the workpiece. When it is contaminated, it will also greatly affect the laser output. During processing, we must pay

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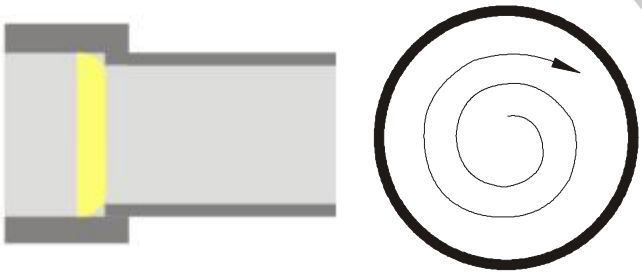
attention to the protection of smoke and air blowing, try to avoid the focus lens from being contaminated. If the contamination is serious, you can take the following methods to clean it carefully:

(1) Move the cutting head directly in front of the middle of the workbench, remove the air blowing tube, remove the focusing lens tube, and check whether the lens is contaminated. If it is only a slight dust, blow it off with a blower balloon; Take off, carefully remove the focusing lens with a lens barrel. Before removing the lens, it is recommended to bring a finger cloth and a cleaning cloth on the workbench. Do not touch the lens surface with your hands during the lens removal process.

(2) Use a blower to blow away the dust on the surface of the focusing lens;

(3) Dab an absorbent cotton ball with absolute ethanol or a special lens cleaner and wipe gently. Wipe gently from the inside to the outside in one direction (as shown on the right). For each wipe, replace the absorbent cotton ball until the dirt is removed. Until after.

(4) Check if the lens is clean. Pass the lens carefully back to the focusing lens barrel. Make sure that the concave side of the lens is facing down and the convex surface is facing up (after the focusing lens barrel is mounted on the tri-reverse assembly).



Note: It is not allowed to wipe back and forth, and the lens surface cannot be scratched. Because the lens surface is coated with an antireflection coating, the damage of the film layer will greatly affect the laser energy output.

At the same time, you can also go to the official website of Lulu to learn the professional steps and precautions of lens cleaning.

10.3 Argus Laser Movement Mechanism Maintenance. (Once a month)

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1. The equipment case, laser power supply, and computer power supply must be well grounded. The grounding screws should be regularly checked for rust or loosening, and cleaned and tightened in time.

2. If the moving parts such as trolleys, slides, and linear guides are contaminated or rusted, they will directly affect the processing results. They should be cleaned regularly and lubricated at the guides to prevent rust.

3. The strip platform needs to be leveled, and the blade is replaced according to the actual use.

4. Pay attention not to block the exhaust port and exhaust duct, check the exhaust fan at any time, and remove the obstruction to keep it open.

5. The cooling water should be kept clean and replaced regularly. The water in the water tank should be replaced every 30 days. When processing, the water level should be checked at all times, and the water temperature should not exceed 30 ℃.

10.4 Optical Path Inspection (Once a month)

The personnel shall not perform the following steps without authorization or training of our company, and our company will not be liable for any loss caused by it. Whether the optical path system is normal will directly affect the processing efficiency and processing effect, and should be paid enough attention.

Check the entire working platform area, whether the laser is hit at the same point, and the spot error is ≦ 2mm.

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