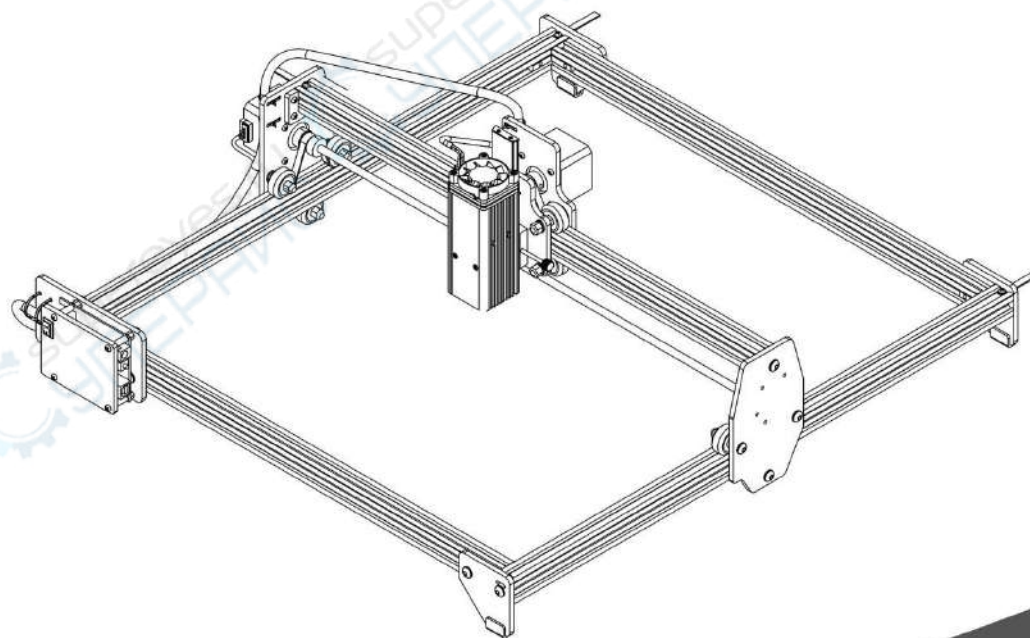


JL3
User Manual



JL3 Engraving Machine User Manual
Please read this manual carefully before use

Safety instructions

Thank you for purchasing our company's laser engraving machine, which is a high-tech product integrating light, machine and electricity. In order to make you better use and maintain the equipment, please read the manual carefully and follow the steps in the manual.

Important statement!

All losses caused by improper use or failure to follow the steps in the user manual shall be borne by the individual. The final interpretation right of the user manual belongs to the company, which has the right to modify all the materials, data, technical details, etc. in this manual.

Safety Precautions

- ★ Before operating the equipment, the user must read this operating manual carefully and strictly follow the operating procedures.
- ★ Laser processing may have risks, so users should carefully consider whether the processed object is suitable for laser processing.
- ★ Processing objects and emissions should comply with local laws and regulations.
- * This equipment uses the Class IV laser (strong laser radiation), which may cause the following conditions:
 - ① Ignite the surrounding combustibles;
 - ② During laser processing, other radiation and toxic and harmful gases may be generated due to different processing objects;
 - ③ The direct exposure of laser radiation can cause human injury. The place where it is used must be equipped with fire-fighting equipment. It is forbidden to stack flammable and explosive materials around the workbench and equipment. Be sure to maintain good ventilation.
- * The environment where the equipment is located should be dry, free of interference and influences such as pollution, vibration, strong electricity, and strong magnetism. Working environment temperature should be 10-35°C, and working environment humidity should be 5-95% (non-condensing water).
- ★ The working voltage of the equipment: AC100-240V.
- * The engraving machine and other related equipment must be safely grounded before it can be turned on and operated.
- ★ When the equipment is turned on, the personnel must be on duty throughout the whole process. Before personnel leave, all power must be cut off to prevent abnormal conditions from occurring. If any, please cut off the power immediately!
- * It is not allowed to place any irrelevant total reflection or diffuse reflection objects in the equipment to prevent the laser from being reflected on the human body or flammable objects.

Safety instructions

*The equipment should be far away from electrical equipment sensitive to electromagnetic interference, which may cause electromagnetic interference.

*There are high voltages or other potential dangers inside the laser equipment.

Be careful!



1. After the laser is turned on, it is not allowed to aim at humans, animals and flammable materials to avoid skin burns and fire.



2. The brightness of the laser is harmful to the eyes, so please try not to look directly at the laser.

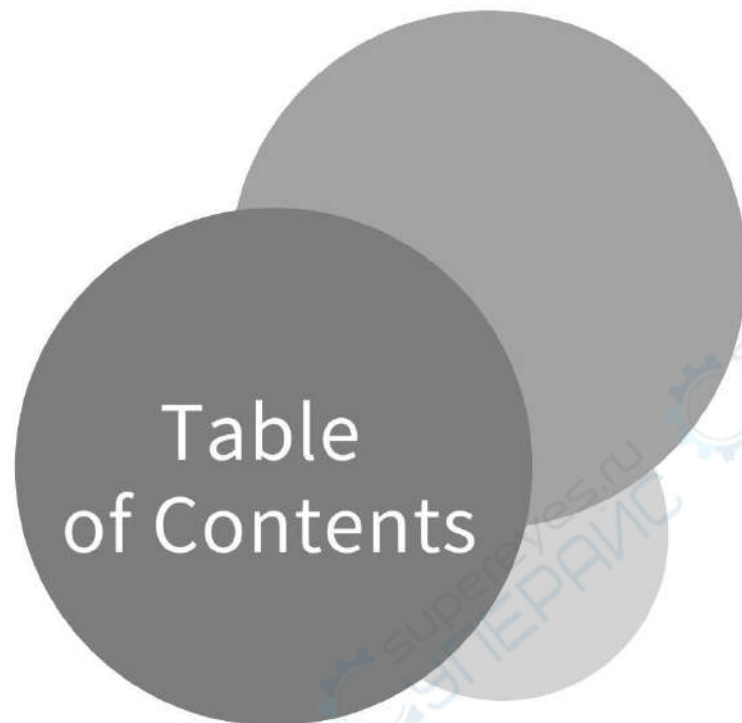


3. Keep your hands away from the machine when the machine is working to avoid injury.



4. Turn off the machine switch when the machine is not in use to avoid third-party operations.

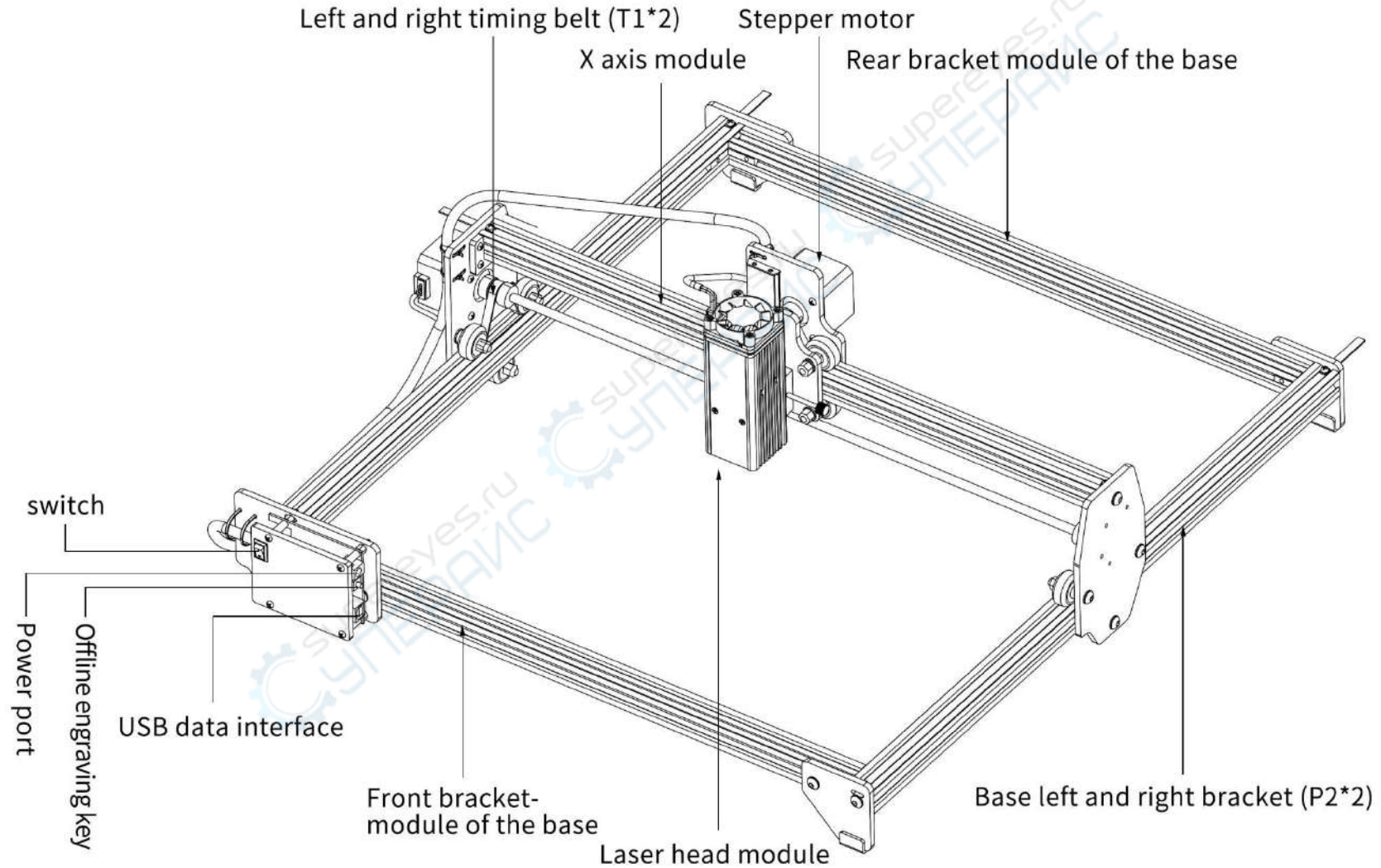
JL3 Engraving Machine User Manual



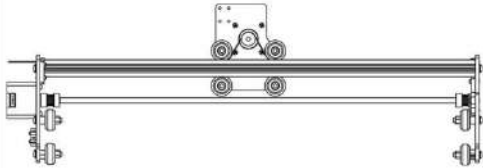

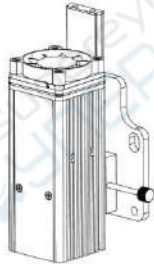
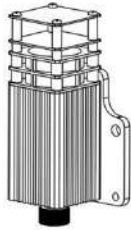





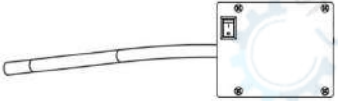
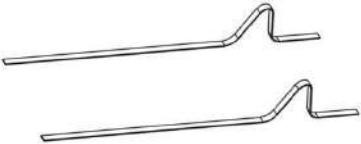






01 Product structure accessories.....	01
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04 Product parameter	09
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01 Product structure accessories

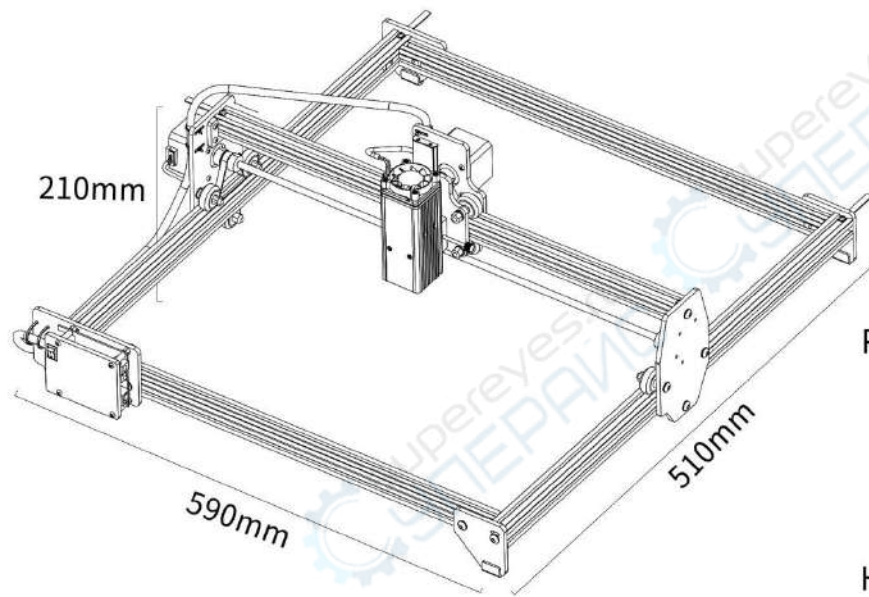
Structural diagram



01 Product structure accessories

 <p>X axis module</p>	 <p>Front bracket module of the base</p>	  <p>Fixed focus laser head module Focus laser head module</p>		
 <p>Rear bracket module of the base</p>	 <p>(P2*2) Left and right brackets of the base</p>	 <p>(N3*5) Timing belt fixing nut</p>	 <p>(S5*5) Timing belt fixing screw</p>	 <p>(S10*5) Bracket set screw</p>
 <p>PCBA harness module</p>	 <p>Left and right timing belt (T1*2)</p>	 <p>(N5*5) Laser head module fixing nut</p>	 <p>(C1*5) Laser head module fixing flat washer</p>	 <p>(S7*5) Lock travel switch</p>
		 <p>(N6*5) PCBA wiring harness module fixing nut</p>	 <p>(C2*7) cable tie</p>	 <p>(C3*4) Anti-slip foot pad</p>

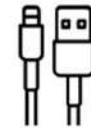
01 Product structure accessories



Accessories details



Power cable*1



Data cable*1



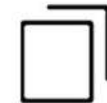
Brush*1



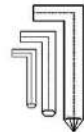
Protective glasses*1



Marker pen*1



Kraft paper+
Black card



Hexagonal wrench*3



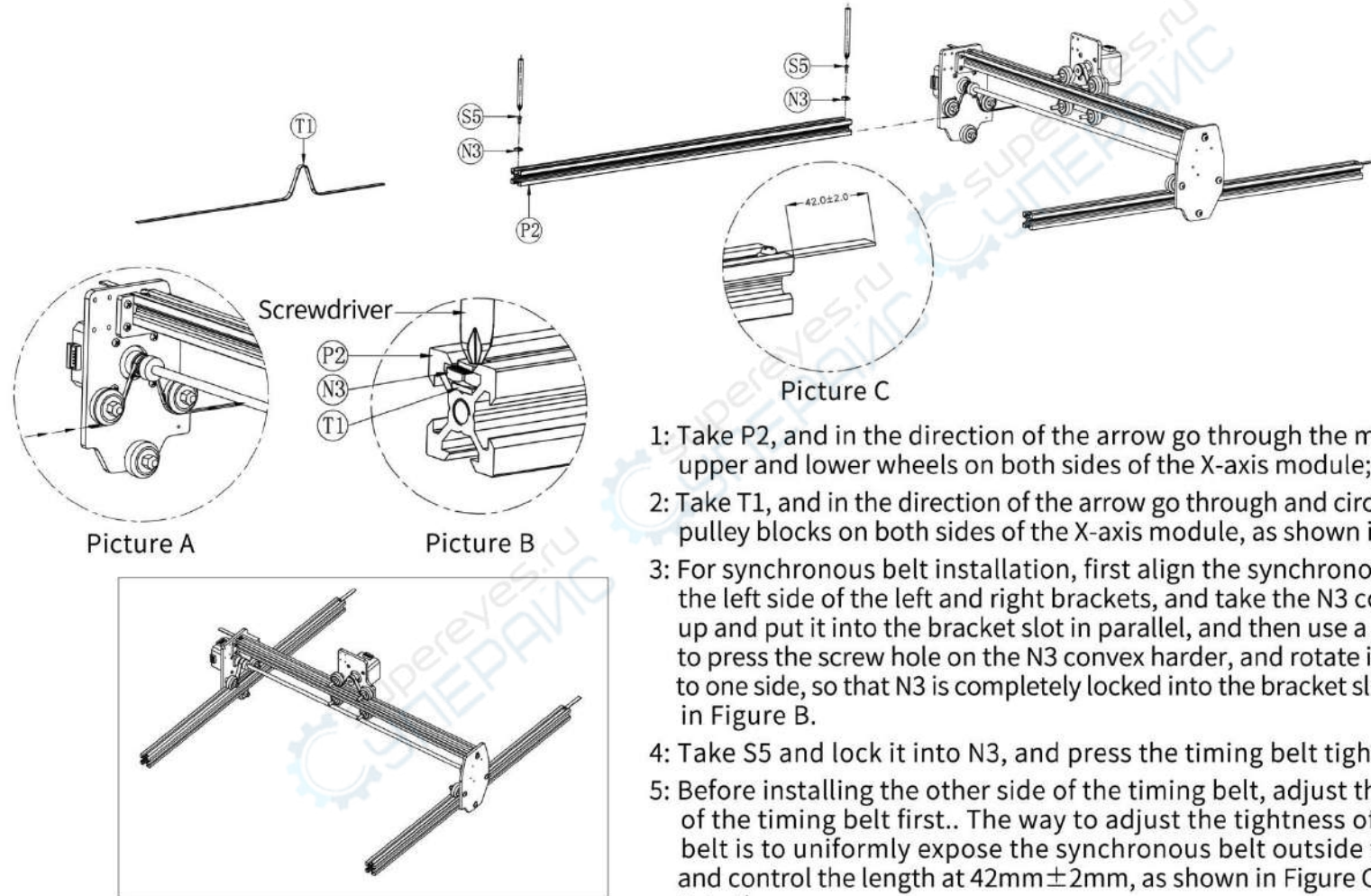
Wrench*2



Instruction
manual*1

02 Assembly guidelines

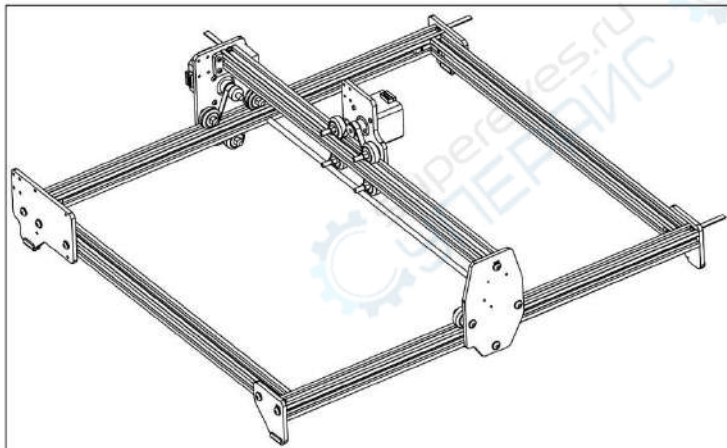
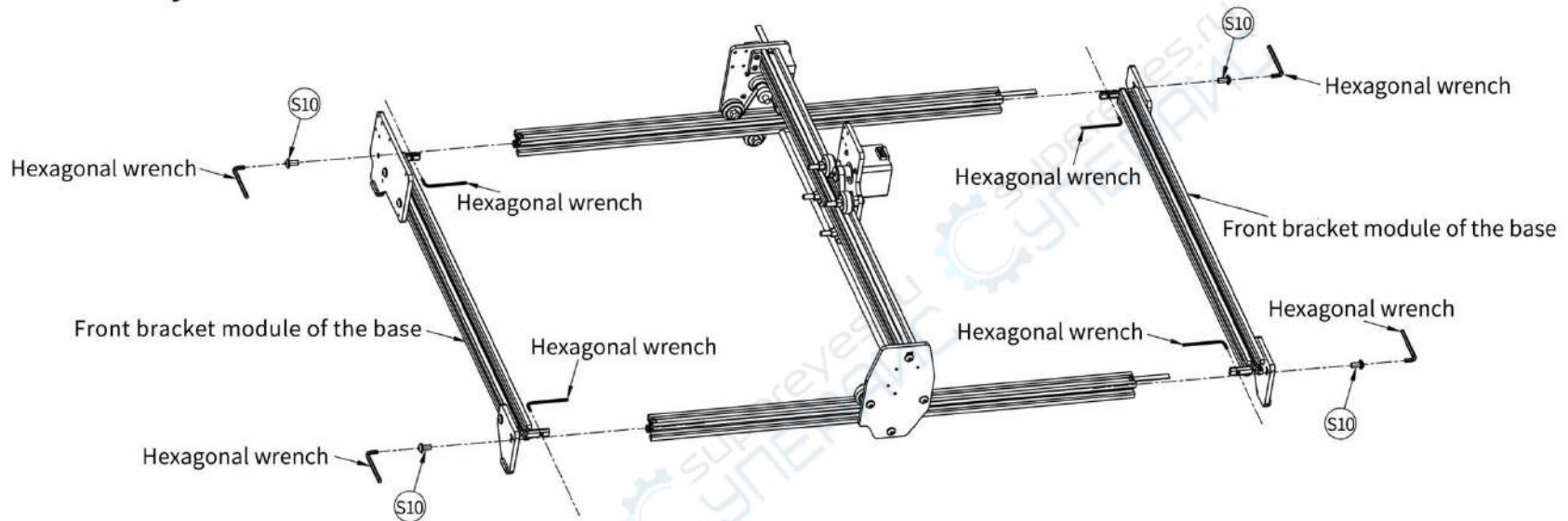
Assembly of X-axis module with left and right brackets and timing belt



- 1: Take P2, and in the direction of the arrow go through the middle of the upper and lower wheels on both sides of the X-axis module;
- 2: Take T1, and in the direction of the arrow go through and circle the upper pulley blocks on both sides of the X-axis module, as shown in Figure A;
- 3: For synchronous belt installation, first align the synchronous belt with the left side of the left and right brackets, and take the N3 convex facing up and put it into the bracket slot in parallel, and then use a screwdriver to press the screw hole on the N3 convex harder, and rotate it 90 degrees to one side, so that N3 is completely locked into the bracket slot, as shown in Figure B.
- 4: Take S5 and lock it into N3, and press the timing belt tightly;
- 5: Before installing the other side of the timing belt, adjust the tightness of the timing belt first.. The way to adjust the tightness of the timing belt is to uniformly expose the synchronous belt outside the bracket and control the length at $42\text{mm} \pm 2\text{mm}$, as shown in Figure C, and install it in the same way;
- 6: Assemble the other side in the same way.

02 Assembly guidelines

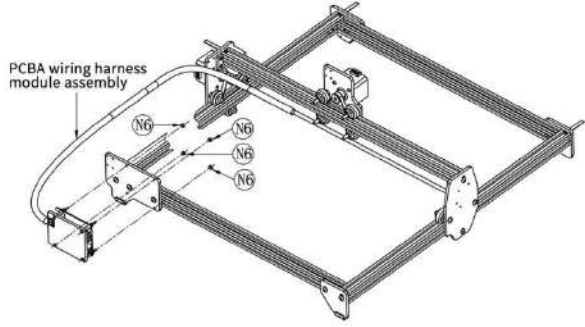
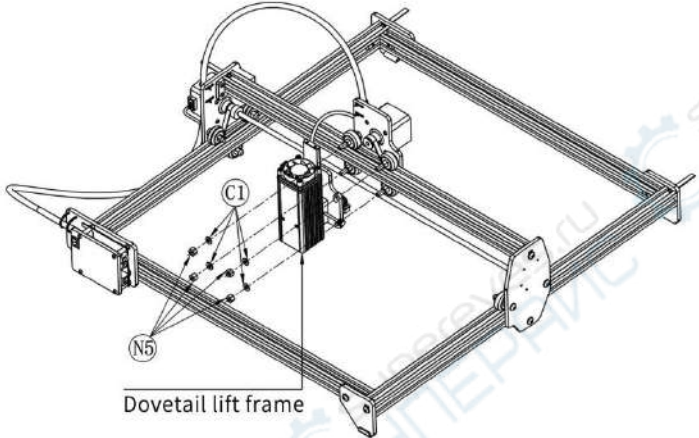
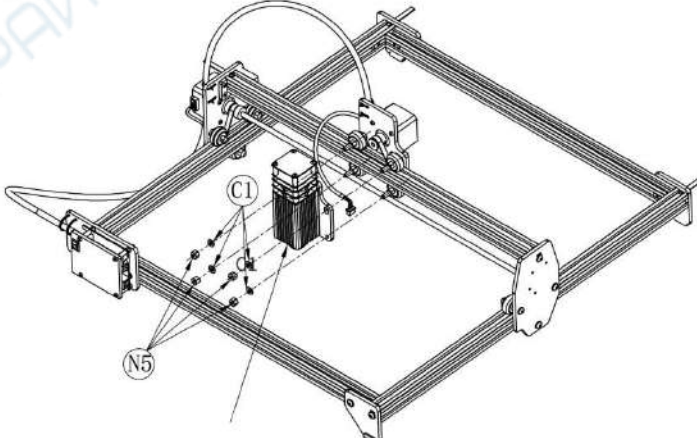
Assembly of front and rear bracket modules of the base



- 1: Take the front support module of the base and insert the right-angle connectors on both sides into the inner slot of the left and right supports, with no gap between the mating surfaces and with the leveled top surface, and then tighten the set screws on the right-angle connector with a hexagonal wrench, and finally pass the S10 through the front bracket of the base.
2. The bracket module behind the base is assembled in the same way.

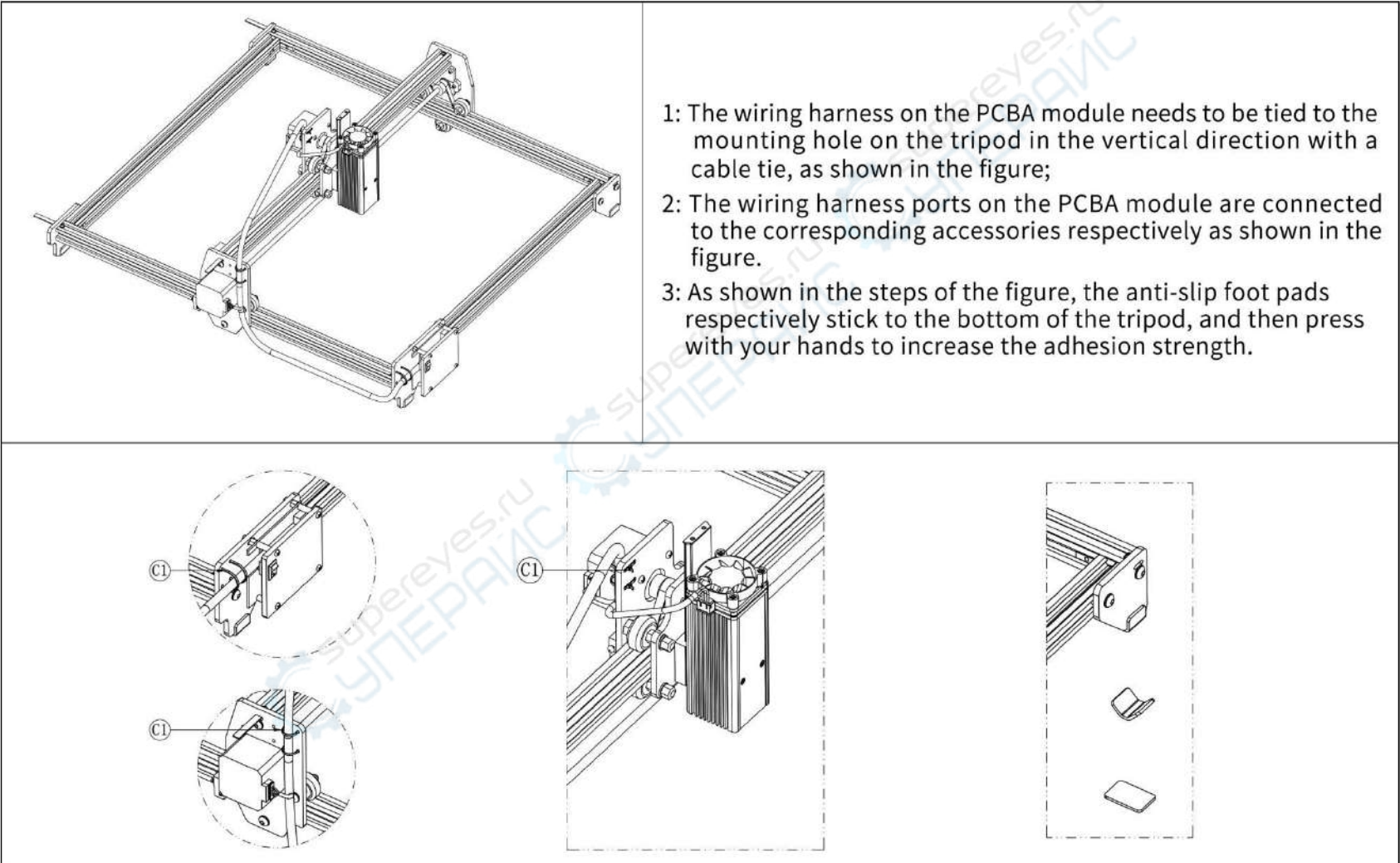
02 Assembly guidelines

PCBA wiring harness module assembly

	<ol style="list-style-type: none">1: Take the PCBA wiring harness module and insert the four mounting screws into the four corresponding mounting holes on the front support module mounting plate of the base;2: Take N6 and tighten them with four mounting screws respectively;3: Wiring (motor, laser module)4: Fixed travel switch;5: Paste the foot pad as required.
 <p>Fixed focus laser head module</p> <ol style="list-style-type: none">1: Insert the four mounting screw holes on the mounting plate of the fixed-focus laser head module into the four mounting screws on the X-axis module;2: Take R and put them into the four mounting screws on the X-axis module, and then take N5 and tighten them with the mounting screws;	 <p>Focus adjustment laser head module</p> <ol style="list-style-type: none">1: Insert the four mounting screw holes on the mounting plate of the focus-adjustment laser head module into the four mounting screws on the X-axis module;2: Take R and put them into the four mounting screws on the X-axis module, and then take N5 and tighten them with the mounting screws;

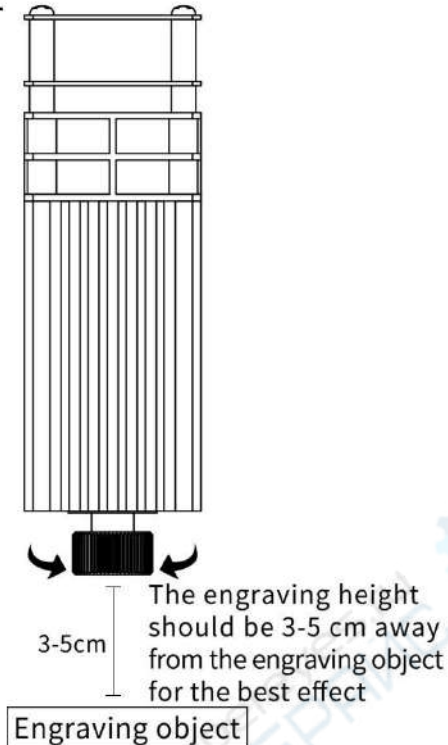
02 Assembly guidelines

Cable tie, wiring, foot pad assembly

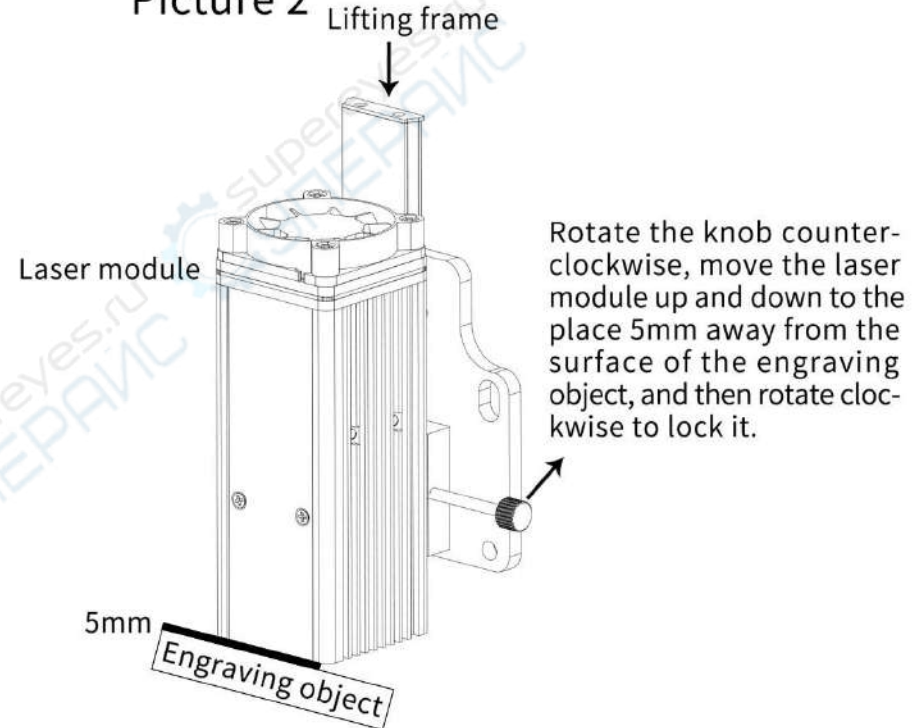


03 Laser focus adjustment guidelines

Picture 1



Picture 2



Laser focus adjustment instructions:

1. Subscription Figure is a focus adjustment laser module. You need to manually rotate the laser cap left and right to focus. The smaller the light spot is, the better the engraving effect will be.
2. Subscription Figure is a fixed-focus laser module. Place a fixed-focus film on the engraving surface, manually adjust the lifting slider up and down, and place the laser module close to the fixed-focus film, and then remove the fixed-focus film to complete focusing.

04 Product parameters

Model	JL3
Body material	High-strength aluminum body + acrylic
Laser focusing	Knob focus adjustment laser module/Fixed focus module +lifting Fram
Focusing range	Focusing laser module: 50-100mm; fixed-focus laser module: determined by the lifting frame
Best focal length	JG04Focusing laser module : 50mm, light spot <0.5mm; JG10Fixed focus laser module : 5mm, light spot <0.5mm
Whole machine power supply	DC005, DC12V/5A
Data interface	USB Type-B (square port USB), Wireless connection: dual-mode Bluetooth 5.0 BLE
Cooling method	Air cooling
Whole machine power	<60W
Laser wavelength	455nm
Laser' s life service	>10000h
Spot shape	Dot-like
Laser control	High-speed PWM
Engraving area	Fixed focus: 365mm*370mm/Focus adjustment: 365mm*390mm
Engraving accuracy	0.05mm
The engraving speed	can reach 80mm/s; regardless of the engraving result, the moving speed can reach 300mm/s
Engravable materials	paper, wood chips, non-transparent plastic, stone, cloth, leather, etc.
Support system	win7 /win8/ win10/IOS/MAC/Android
Picture format	JPEG/BMP/TIF/GIF/PLT/PNG/DXF
Product size	590*510*210mm
Packing size	600*370*167mm
Product weight	2.65kg
Package weight	4.4kg
Others	32-bit ARM high-precision and high-speed master control; Support the highest baud rate of 921600bit/s; Support the open source GRBL software platform in the future

05 PC-side driver software download and installation

How to obtain the driver software:

Insert the accessory U disk into the computer. The U disk has been added with drivers, application software, pictures and other materials (Note: When using it for the first time, please copy all the materials on the U disk to back up your computer to prevent loss due to improper operation)

Windows driver software installation

1 01_Windows

2 driver

3 driver.exe

4 Click Install

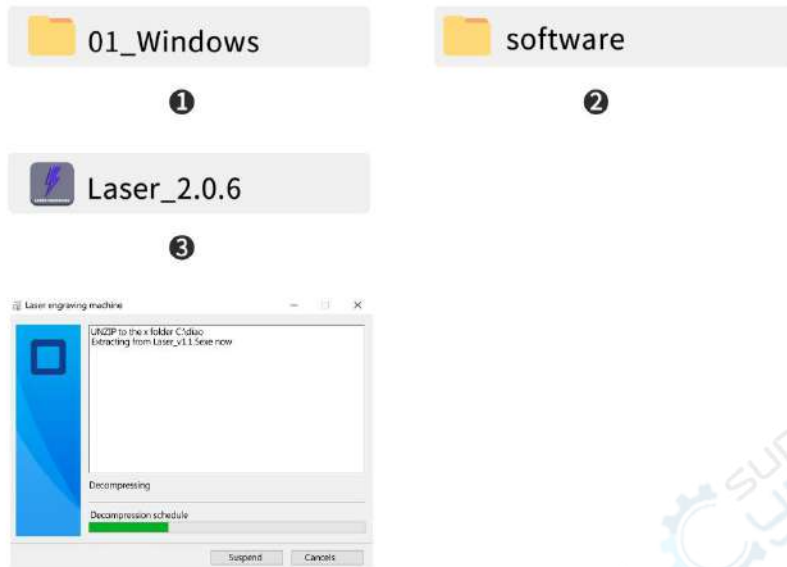
5 Click OK to complete the installation

1. Drive installation path:

Double-click the U disk folder /windows/driver/driver.exe/ click install/After driver installation, please watch the relevant installation demonstration video of the U disk for the detailed steps

 win driver and software installation video

06 PC driver software installation online operation



5 After the progress bar has done, Laser installation is completed.

2. Software installation path:

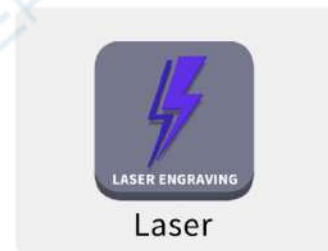
Double-click the U disk data file /windows/software/Laser_v2.0.6/installation programOrder/click to allow all installations of the program/complete installation/Laser

Prompt:

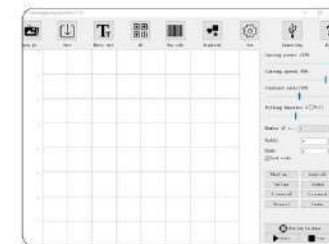
After clicking Laser_2.0.6, anti-virus software or computer butler may prompt risk. The Laser_2.0.6 file is a win system installation package. If it is misjudged as a suspicious file, please select to allow all operations of the program to complete the software installation successfully

3. Online operation:

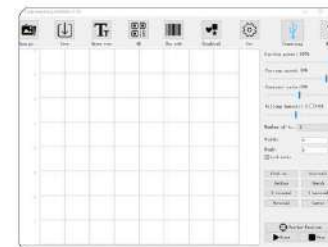
Double-click the software icon-Click the connected device icon-The icon turns blue and the connection is successful



1 Double-click the software icon



2 Click the connected device icon



3 The icon turns blue and the connection is successful



06 PC driver software installation online operation

Mac driver installation



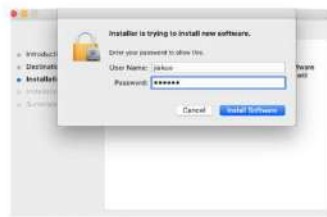
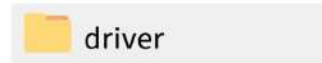
4 Click to continue



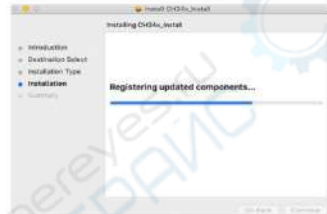
6 Click to continue the installation



8 Complete the installation



5 Enter the computer password



7 Continue the installation

1. Drive installation path:

Driver installation path: double-click the U disk/02_MAC/driver/CH34x_Install_V1.4.pkg/Installation introduction/installation type/installation/summary installation is complete

Note: The software can be installed after the driver installation. Please watch the video for details.

 Mac driver and software installation video

06 PC driver software installation online operation

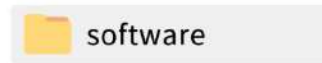
Mac software installation and online



③ Double-click the software icon



⑤ Complete the installation



④ Drag the icon to the right Applications folder with the right mouse button

2. Software installation path:

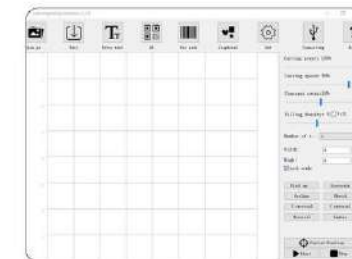
Double-click the U disk/02_MAC/software/Laser_2.0.6/ software icon moves to the right/finish installation

3. Online operation:

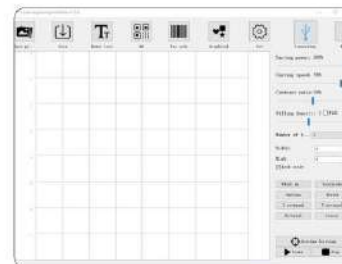
Double-click the software icon-Click the connected device icon-The icon turns blue and the connection is successful



① Double-click the software icon



② Click the connected device icon



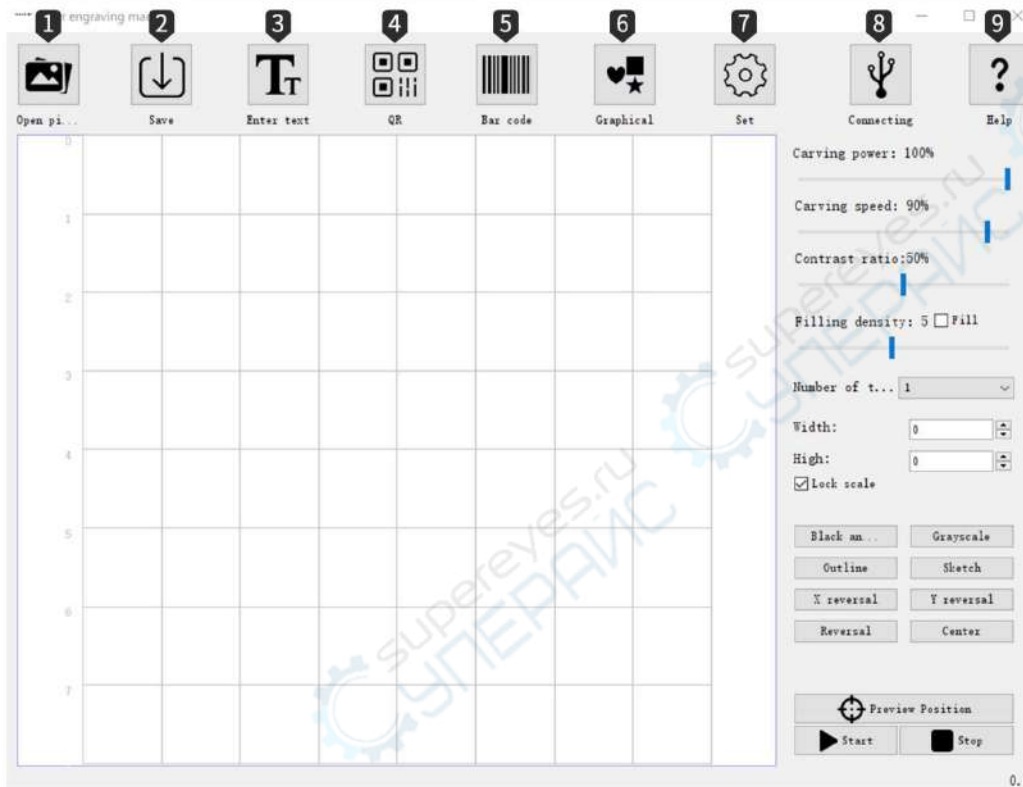
③ The icon turns blue and the connection is successful




Connected devices

07 Introduction to the use of PC software

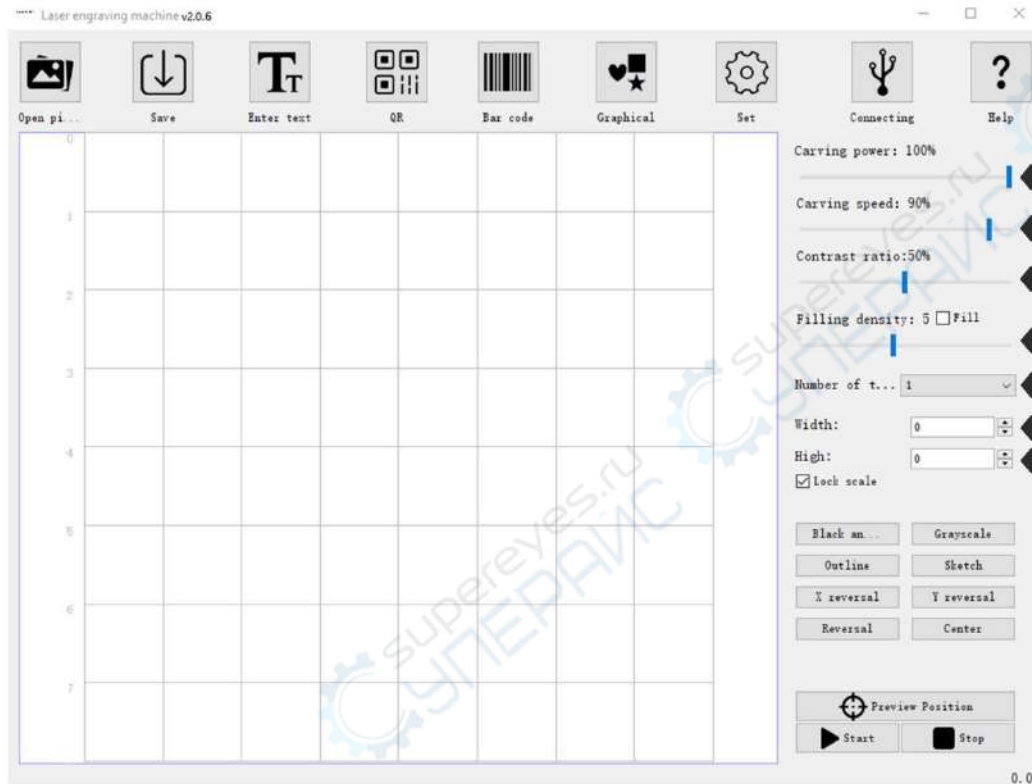
Introduction to the functions of the software interface icons:



- 1 Open pi:**
Load the picture from the computer
- 2 Save:**
Save the edited text image
- 3 Enter text:**
Enter text, font, style, size, landscape, solid orientation, vectorization
- 4 QR:**
Create a QR code
- 5 Bar code:**
Create a barcode
- 6 Graphical:**
Round-square-heart-pentagon, with quick creation
- 7 Set**
Laser low light state adjustment
- 8 Connecting:**
The icon turns blue after the connection is successful 
- 9 Help:**
Open the official website link; watch the instructional video to check the FAQ

07 Introduction to the use of PC software

Software parameter setting:



1 Carving power :

Adjustable power for engraving different materials

2 Carving speed :

Engraving speed setting, the speed of engraving determines the depth of engraving

3 Contrast ratio :

Drag the slider to adjust the contrast of text image



4 Filling density :

Filling: The filling effect can only be effective for vector graphics. Select the vectorization, click and fill the text image, and slide the filling slider to adjust the filling density

5 Number of :

Setting times represents engraving times

6 Width:

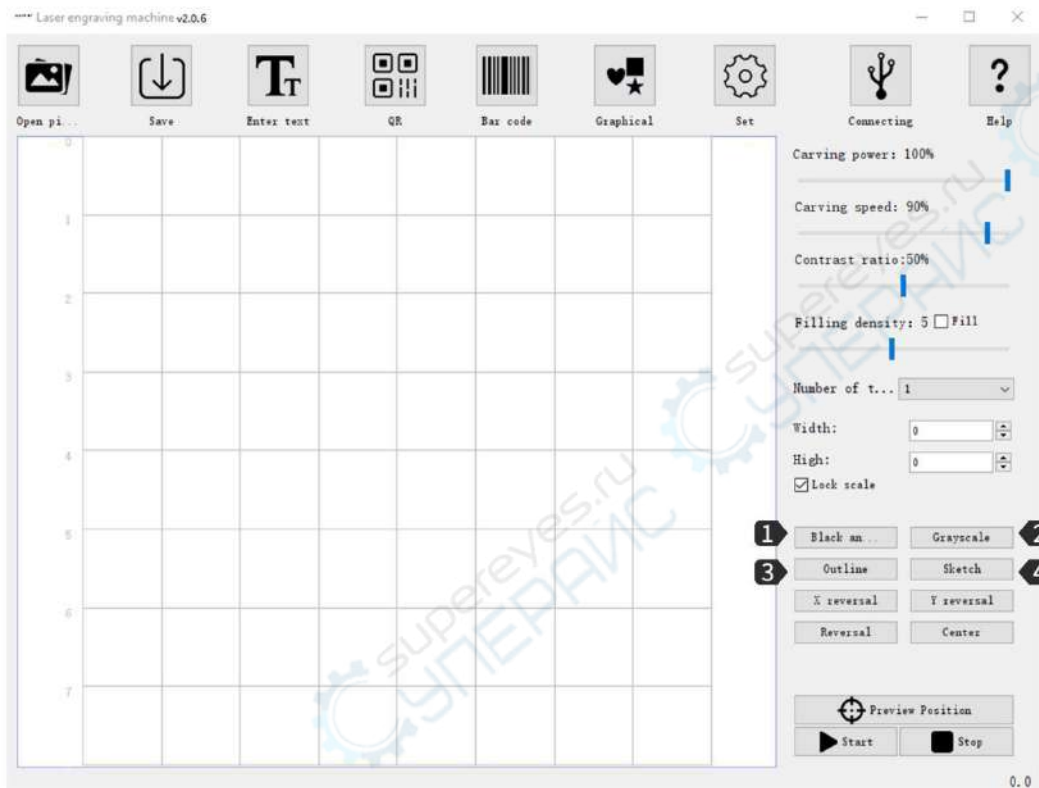
The width and height of the text image can be adjusted freely in a single item

7 Height:

Lock the image text to zoom in and out proportionally

07 Introduction to the use of PC software

Software parameter setting:



1 Black and white:

Black and white processing of the image

2 Grayscale:

Grayscale mode can be used for engraving photos to turn the image into gray

3 Outline:

Cutting mode for the engraving machine to cut the wireframe

4 Sketch:

Sketch mode, enhance the three-dimensional sense of the line outline of the picture



Black and white



Grayscale



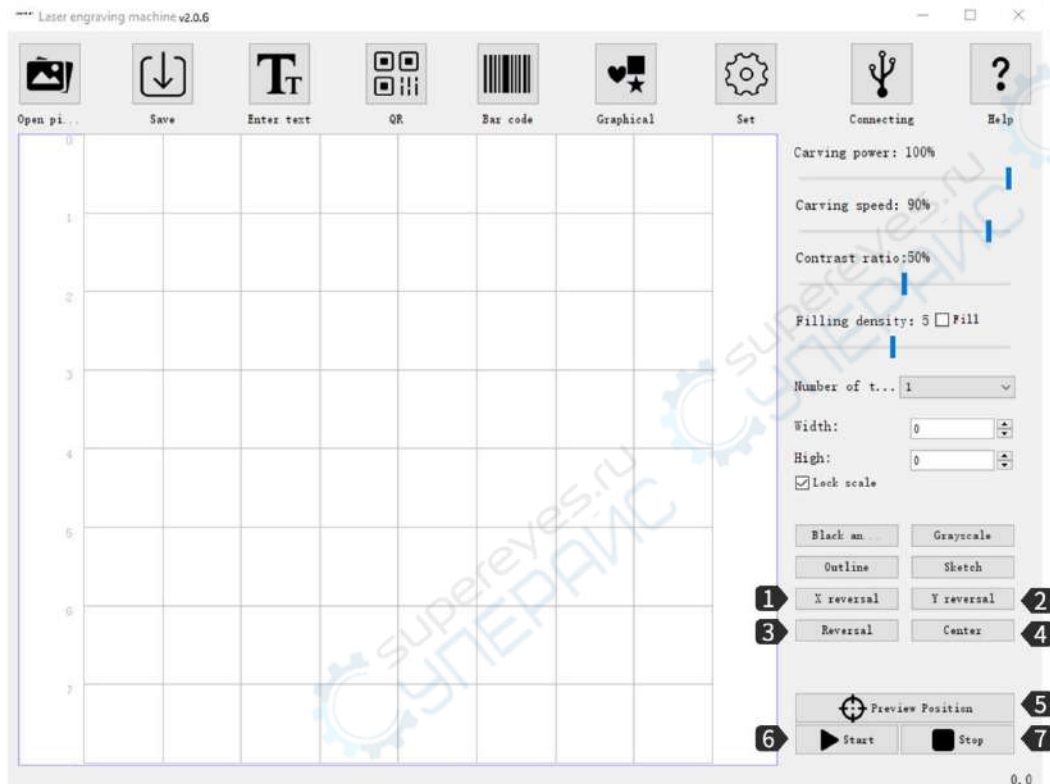
Cut



Sketch

07 Introduction to the use of PC software

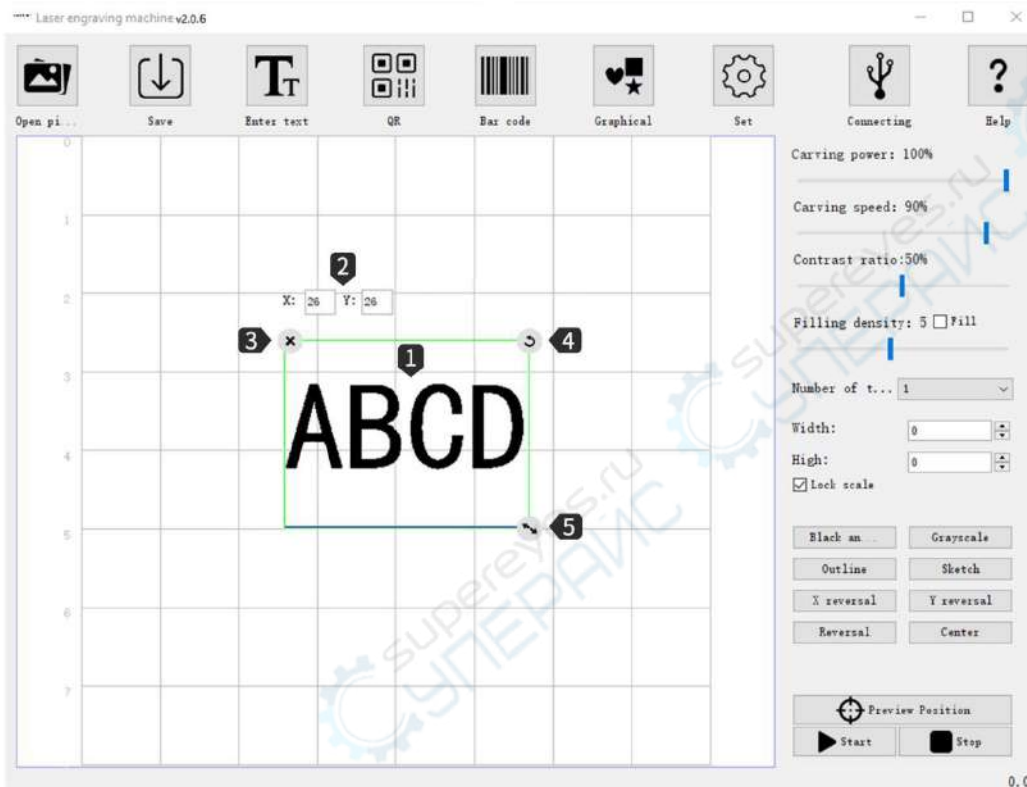
Software parameter setting:



- 1 X reversal:**
Left and right mirror image reverse
- 2 Y reversal:**
Reverse mirror image up and down
- 3 Reversal:**
Reverse the background color of the text and picture
- 4 Center:**
One-click the center of the text image in the preview area
- 5 Preview position:**
Engraving preview, confirm the engraving position
- 6 Start:**
Start engraving
- 7 Stop:**
End engraving 0.0 record the engraving timing

07 Introduction to the use of PC software

Introduction to the loading content of the interface:



- 1 After loading the text image, drag to change the position of text picture with the left mouse button, translate the drawing board with the right mouse button, and zoom the drawing board with the mouse wheel.
- 2 X:19 Y:23 only represents the coordinate of the position of the text image. If the position of the text image changes, the coordinates will change accordingly.
- 3 ✕ Clear the text image on the drawing board
- 4 ↻ Click with the left mouse button to rotate the corner of the text image 360°
- 5 🔍 Click and drag with the left mouse button to zoom in and out the text image

08 Software Download and Online on Mobile Devices

1. Software Download and Installation:

Method 1: APP download URL:
www.dkjxz.com/download/JL3_APP.zip

Method 2: Scan the QR code to download.



URL to Obtain Information:

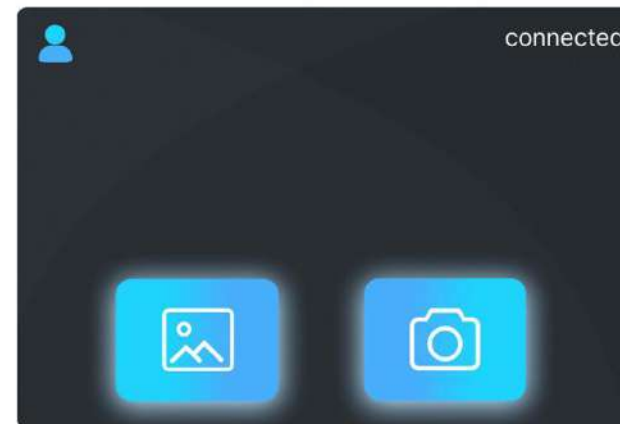
User Manual Download URL:
www.dkjxz.com/download/JL3_User Manual.zip

Video URL:
www.dkjxz.com/download/JL3_video.zip

Note: 1. For Android system, open the browser to scan the QR code to download;
2. Corresponding authority should be permitted after successful installation;

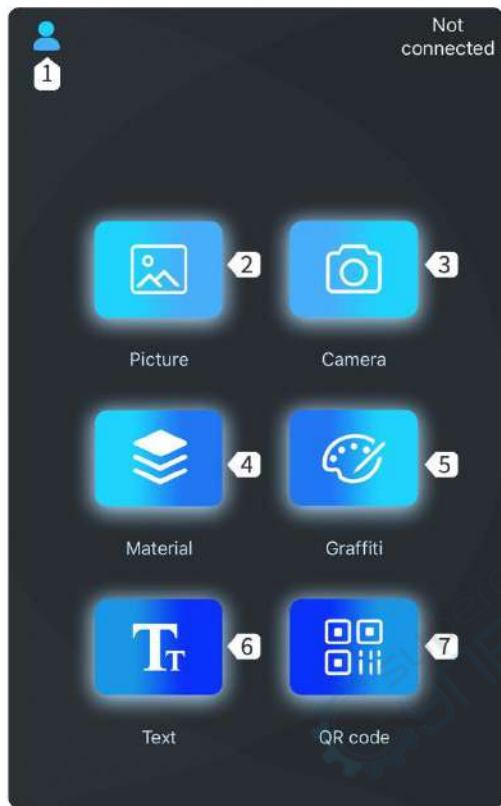
2. Connect APP with Machine

- 1 Connect the machine to power supply;
- 2 Activate Bluetooth function in the mobile phone;
- 3 Open engraving software in the phone, click "No Connection" in the upper right corner to automatically search for the device;
- 4 Then click "Engraver-000###";
Note: "000###" represents the serial number of the machine.
- 5 Wait for 1~2 seconds till "Connected" displayed in the upper right corner, which indicates that the APP has successfully connected to the machine, then continue with the next step.



09 Introduction to Software Application on Mobile Devices

Introduction to software interface (loading) :



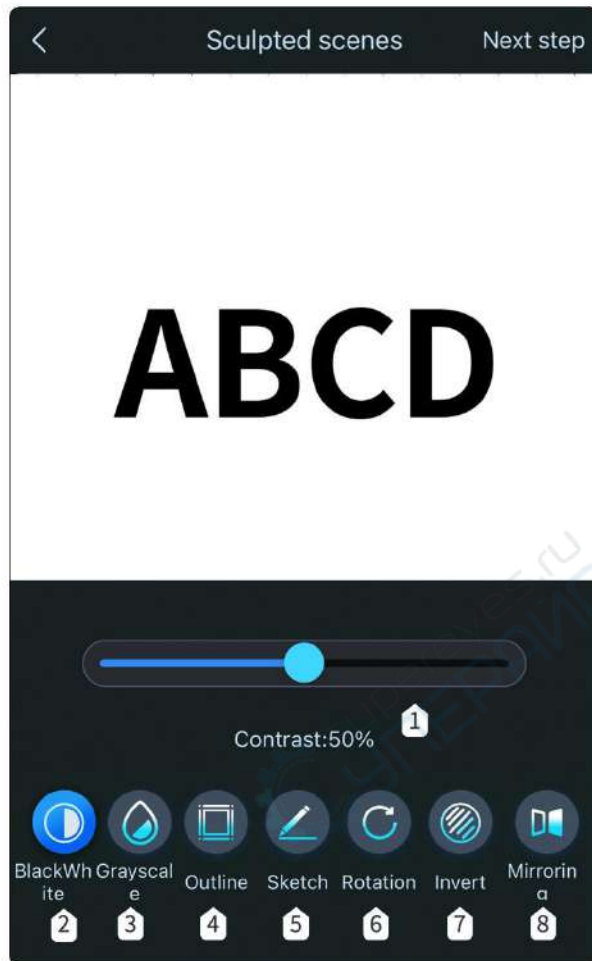
- 1 Setting**
New User Guide/ Feed-back / User Agreement and PrivacyClauses/Equipment/Language Setting
- 2 Load Photos for Engraving**
Add photos from Album
Add photos from Gallery
- 3 Take photos via camera**
- 4 Software Built-in Graphics**
- 5 Add Graffiti**
Self-draw Text
Photo
- 6 Edit Text**
- 7 Add QR code**
QR Code,Barcode



- 1 Cutting**
Customized Cutting, Round Cutting, Square Cutting
- 2 Photo or Text**
(Content can be superimposed)
Input Text
Load Photos from Album
Shoot via Camera
Add Photo from Material Library
- 3 Eraser**
Modify the photo with erase

09 Introduction to Software Application on Mobile Devices

Introduction to software interface (Loading content) :



1 Contrast
Drag the slider to adjust the contrast of text and photo

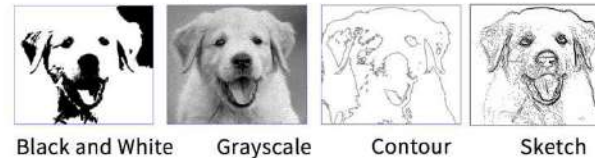
ABCD ABCD ABCD
Contrast 16 Contrast 50 Contrast 80

2 Black and White
To process photos to black and white

3 Grayscale
Grayscale mode, adopt the function for engraving photos to adjust photo grayscale

4 Contour
Cutting mode for wireframe cutting of engraving machine

5 Sketch
Sketch mode, enhance the 3D effect of photo outline



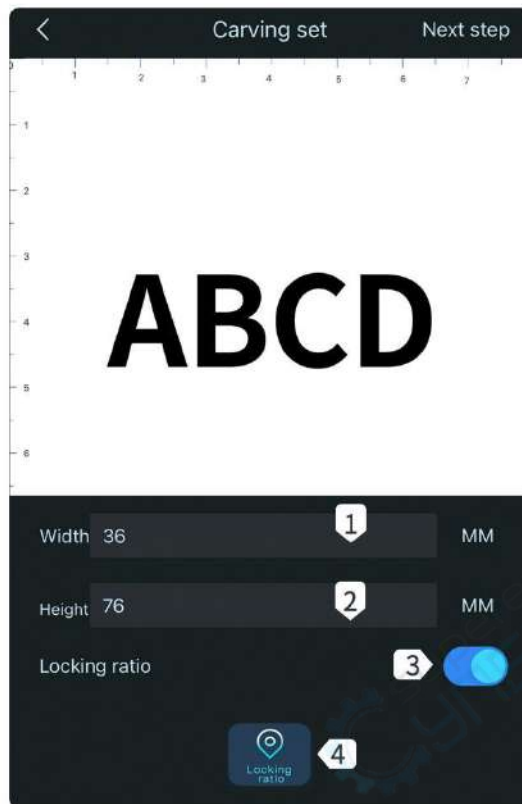
6 Whirling
Can rotate 90 degrees, 180 degrees or 360 degrees

7 Reverse Color
Reverse background color of text and photo

8 Mirroring
Horizontal Rotation Effect, Vertical Rotation Effect

09 Introduction to Software Application on Mobile Devices

Introduction to Software Interface (Load Content):



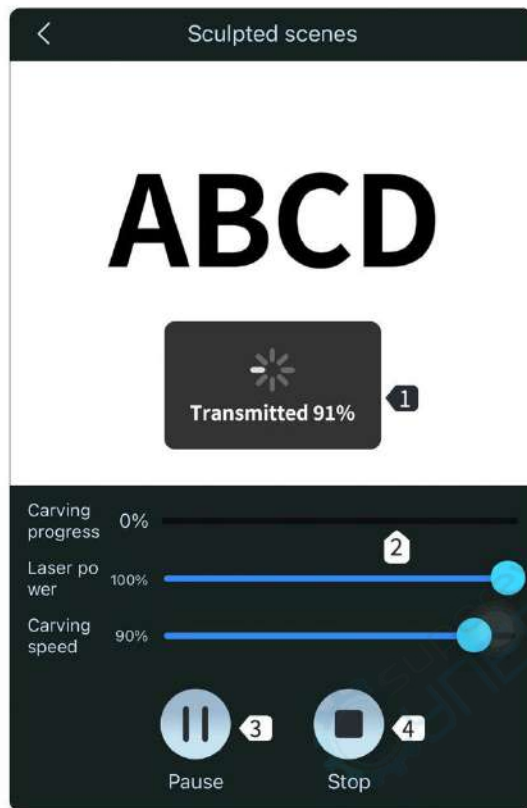
- ① Width
Set engraving width
- ② Height
Set engraving height
- ③ Lock Ratio
Scale engraving size proportionally
- ④ Region Positioning
Preview Engraving Position Determine Engraving Position



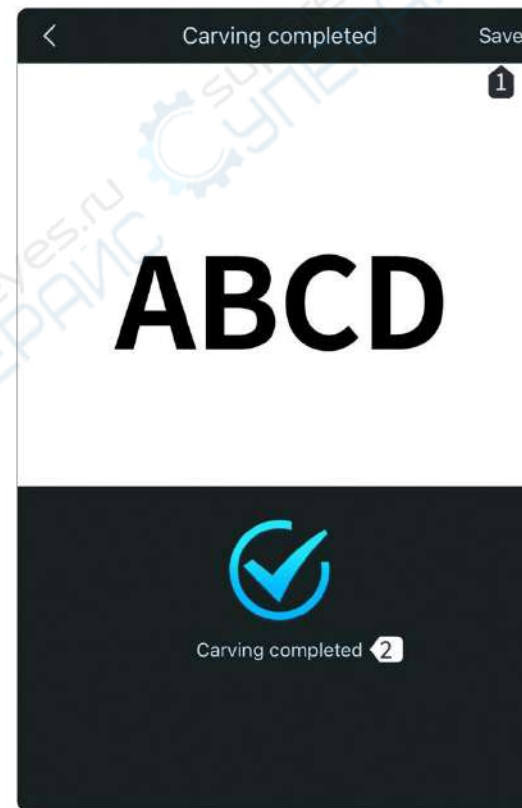
- ① Material Selection
App built-in materials, which can be directly selected based on the materials to be engraved
- ② Add Materials
Add and set materials, material name/laser power/engraving speed
- ③ Laser Power
Adjust power level to engrave different materials
- ④ Engraving Speed
Engraving speed setting, engraving speed determines the engraving depth
- ⑤ Repetition Times
It represents the number of engraving times

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Introduction to Software Interface (Load Content):



- 1 Uploading content**
When the transfer progress has been 100% completed, the engraving can be started.
- 2 Carves Progress**
Show me the progress of the sculpture
- 3 Suspend**
Suspend engraving
- 3 Stop**
Stop engraving



- 1 Save**
Save the current engraving content and view in the phone album
- 2 Engraving Completed**
Current content has been engraved

10 FAQ

JL3 FAQ

I、No response from the machine when being powered on.

1. No power supply: Please check the socket and switch as well as the machine power socket to ensure that they have been correctly plugged with normal power supply.

II、It cannot be connected to computer

1. USB cable not connected: Please check the USB data cable interface on the machine and computer to ensure it's correctly plugged. The USB interface on the front panel of some desktop computers is invalid, it's better to connect to the interface on the back.
2. Driver not properly installed: Install the driver according to the instructions. After the installation is done, the computer will recognize the device as a serial port, which means the hardware connection is OK.
3. Other special problems: Pull out the USB data cable and power cable, keep the machine power off for 5 seconds and then try the connection once again.

III、No response from the phone APP when being connected to the machine.

1. Wrong Bluetooth connection: Make sure it's connected to the Bluetooth released by the machine. Please read "App Connection" in the User Manual for details.
2. Incompatibility: In the case of abnormal connection due to incompatibility of newly-released phone or upgraded system, please contact our customer service with the screenshot of phone configuration so as to get technical support as soon as possible.

IV、Shallow engraving effect or no traces.

1. Inaccurate focus: Refer to the "Focus Adjustment" in the User Manual to make the correct focus.
2. Engraving speed: Too fast speed is due to short burning time. Please read the "Engraving Parameters" in the User Manual to readjust the parameters.

10 FAQ

3. Photo color is too light: The photo added should be clear. If the line is too thin or the color is too light, the engraving effect will be directly influenced.
4. Position of object to be engraved: If the object is placed obliquely, the focal length of laser is fixed, so the object should be placed horizontally in parallel to the machine; otherwise, the inaccurate focal length will result in bad engraving effect.

V 、 Offline engraving unexpectedly stops

1. The photo is not completely downloaded when being connected to computer, please download the photo once again.

VI 、 Inaccurate focus

1. Read the “Focus” in the User Manual. Please use the yellow focus plate provided with the camera to make the focus. If the focus plate is missing, a thin and rough yellow or white cardboard can be used as the substitution to make the focus once again. Please contact the online customer service for relevant information.

