

L1 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 for you to better use and maintain the equipment, please read the instructions carefully andfollow the steps in the instructions.

Hereby Certify!

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

Safety Instruction

Before using the equipment, the user must read this operating manual carefully and strictly abide by the operating procedures.

Laser processing may be risky, 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 four types of lasers (strong laser radiation), which may cause the following conditions:
- 1 It will ignite the surrounding combustibles;
- In the laser processing process, 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 injuries. The place of use must be equipped with fire-fighting equipment. It is forbidden to stack flammable and explosive materials on the workbench and around the equipment. At the same time, it is necessary to maintain good ventilation.
- *The environment where the equipment is located should be dry, free of pollution, vibration, strong electricity, strong magnetism, etc. Working environment temperature 5–30°C, working environment humidity 35-65% (non-condensing water)
- ★The working voltage of the equipment: AC100-240V.
- *Only when the engraving machine and other related equipment have a safety grounding wire can it be turned on and operated.
- ★When the equipment is turned on, it needs to be on duty throughout the whole process. The operator must cut off all power before leaving to prevent abnormal conditions. If any, please cut off the power immediately!
- "It is strictly forbidden 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.

(902-220715)

Safety Instructions

Pay attention to!



 After the laser is turned on, it is forbidden to aim at peo ple, animals and flammable materials to avoid skin burns and fire



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



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



 Turn off the machine switch when the machine is not in use to avoid third-party ope rations

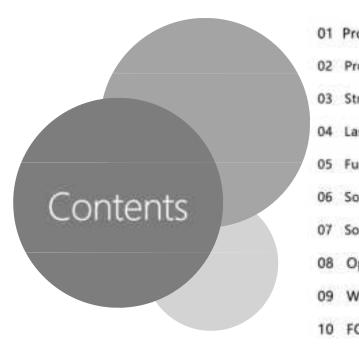
Machine Care and Maintenance



Laser modules are consumables, so it's recommended as follows:

Power off the machine for 10 minutes after 4 hours of engraving, Power off the machine for 10 minutes after 1 hour of cutting.

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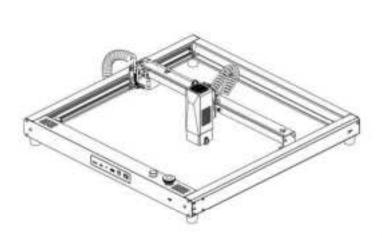
01 Product Parameters

Model	L1
Material	High-strength aluminum, anodized
Laser Module	JG1740B05W Optical Power: 5W; /JG1845B Optical Power:10W
Best Focal Length	5mm
Focus Range	50mm
Power Supply	DC12V/5A
Communication	Dual-Mode Bluetooth 5.0 with wireless connection supports IOS and Android APP.
Port	USB-Type C wired connection supports MAC and Windows APP.
Heat Dissipation	Air Cooling
Laser Service Life	>10000 hours
Engraving Area	400*400mm
Engraving Accuracy	0.05mm
Engraving Speed	150mm/S
Applicable Materials	Paper, Wood, Bamboo, Cloth, Acrylic, Plastic, Leather, Bread, Fruit, Glass, Ceramic, Stainless Steel
Applicable System	Windows/MAC/Android/IOS
Image Format	JPEG/BMP/GIF/PLT/PNG/DXF/JPG,etc
Product Size	604.5*602.5*156mm
Packing Size	645*250*195mm

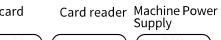
02 Products and Accessories

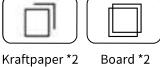
Accessories Details

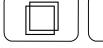
[Standard accessories]

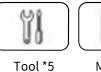














Type-C data cable





[Optional accessories]



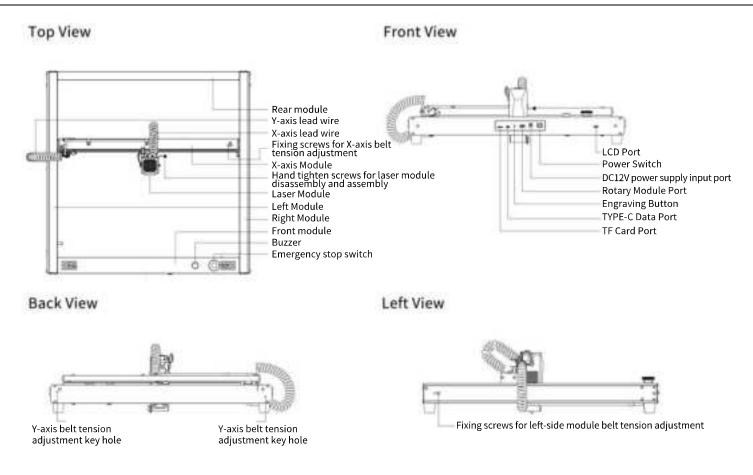


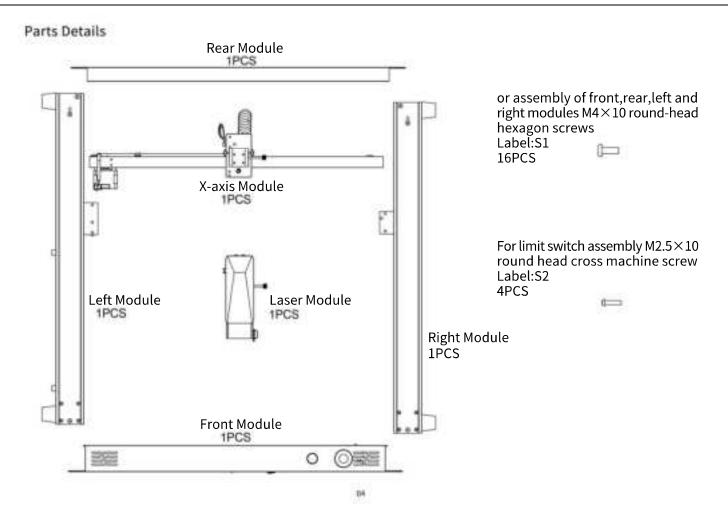


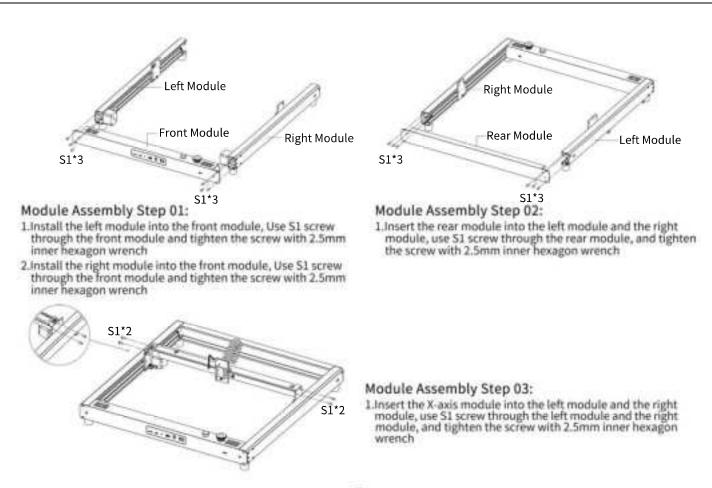
Air pump module

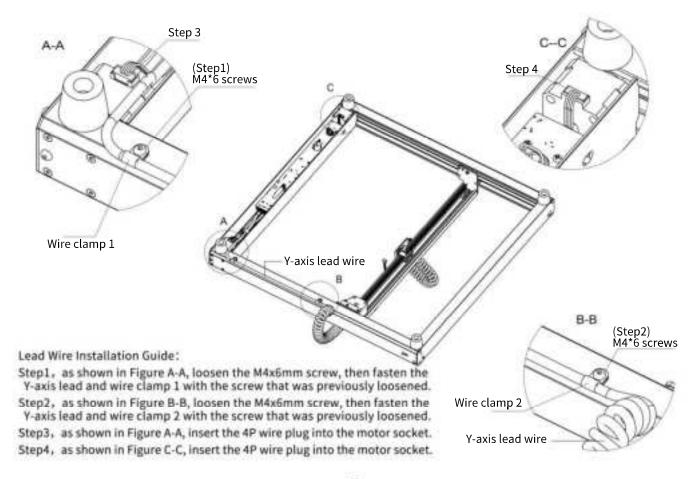
Mini roller

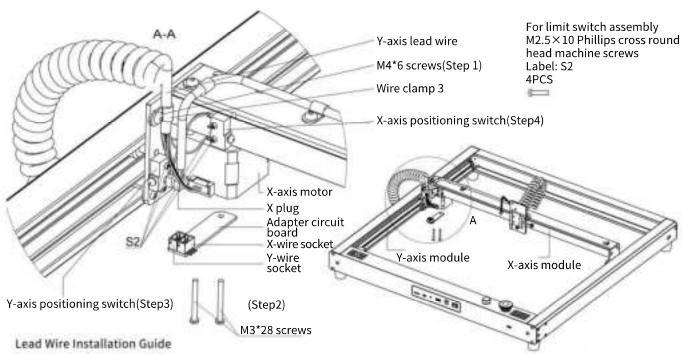
Heightening Module









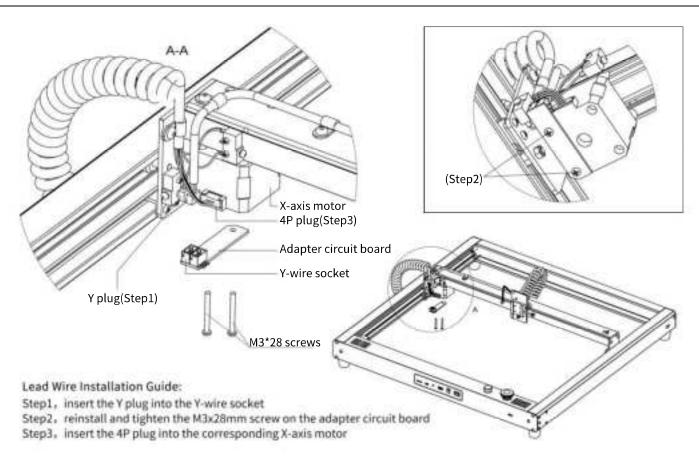


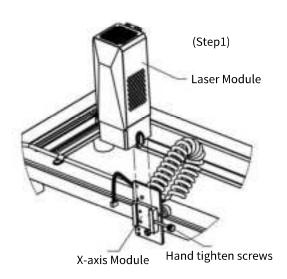
Step1, as shown in Figure A-A, loosen the M4x6mm screw, then fasten the Y-axis lead and wire clamp 1 with the screw that was previously loosened.

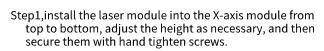
Step2, as shown in Figure B-B, loosen the M4x6mm screw, then fasten the Y-axis lead and wire clamp 2 with the screw that was previously loosened.

Step3, as shown in Figure A-A, insert the 4P wire plug into the motor socket.

Step4,as shown in Figure C-C, insert the 4P wire plug into the motor socket.

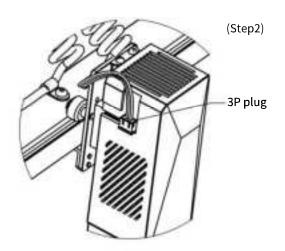


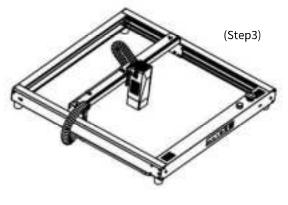


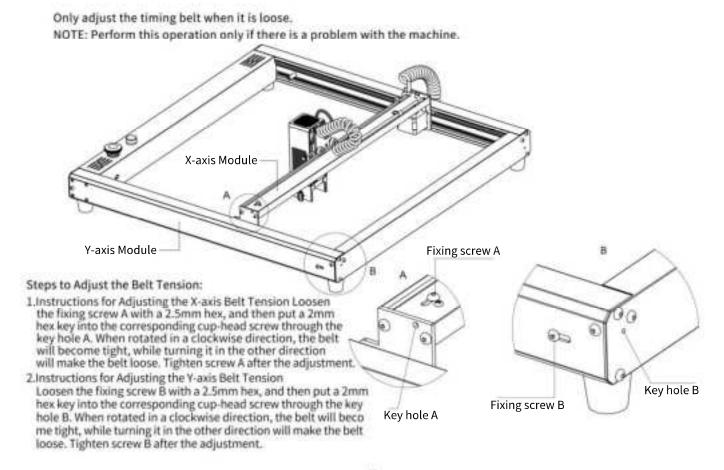


Step2,insert the 3P plug into the corresponding laser module socket

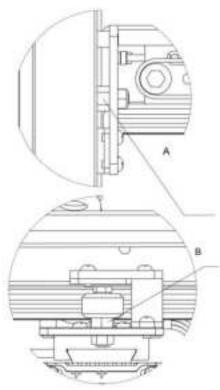
Step3, the assembly is complete.

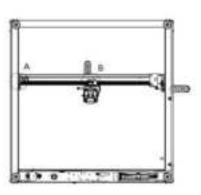






NOTE: Make adjustments only when the timing belt and guide rail are loose. NOTE: Perform this operation only if there is a problem with the machine.





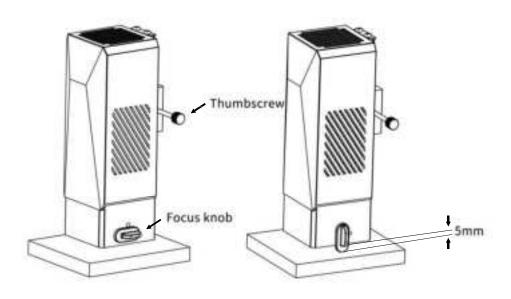
Tension Adjustment of Y-axis Timing Pulley: Align the eccentric pulley with an 8mm open-end wrench, and then rotate it clockwise/counterclockwise directions until the tension is appropriate.

Tension Adjustment of X-axis Timing Pulley: Align the eccentric pulley with an 8mm open-end wrench, and then rotate it clockwise/counterclockwise directions until the tension is appropriate.

04 Laser Module Focus

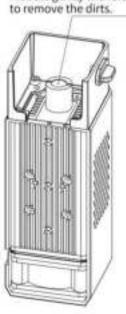
Focus

- 1. Turn the focus knob to make it vertically downward;
- Loosen the thumbscrew to make the focus knob contact with the object to be engraved, then fix the thumbscrew and turn the focus knob.



Lens Cleaning

Please wipe the lens of laser head module gently with alcohol cotton to remove the dirts.



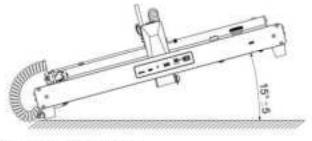
05 Function Display

1.Inclination protection;

If the machine inclination is 15 ± 5 than the horizontal plane for over one second, the machine will stop running immediately, the laser module will stop strong laser output and change the laser into weak flickering at 0.5s of interval. The machine must be restarted to resume normal operation in the case of prote ction state.

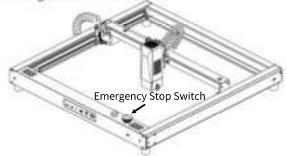
3.Fire Protection;

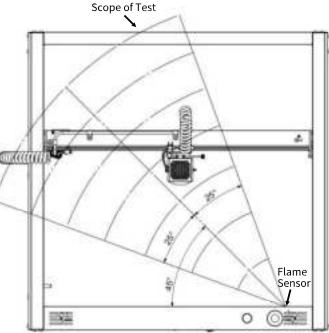
Upon detection of a fire, the flame sensor will trigger a sound and light alarm. When an open fire is detected, the machine will instantly stop working, and the laser module will immediately hait strong light output and transform into weak light flashing. After this, it will turn on and off in an alternate cycle for 0.5 seconds. After going into protection mode, the machine must be switched back on to work normally again.



2.Emergency Stop Switch

When the emergency stop button is pressed, the power supply of the machine will be promptly shut off, and it will come to a complete hait. After the emergency stop switch has been released by turning it clockwise, the machine will go into the reset mode.





Software can be acquired as follows:

Method 1: Acquire the driver, software, photos and other data from the USB flash disc provided (Note: Before the use for the first time, please copy all the data from the USB flash disc to your computer as backup to prevent accidental loss due to improper operation.)

Method 2: Download at the designated website Windows/MAC Download URL; www.dkjxz.com

Driver installation in Windows



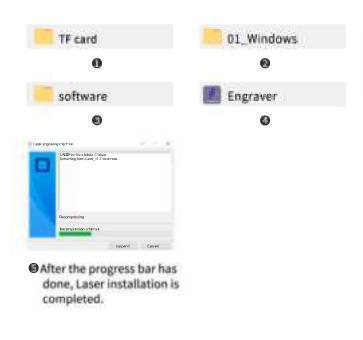
1.Path to Install Driver:

Enter the memory disk and double click the folder /01-windows/driver/driver.exe/click Install/ Driver installation completed. Please watch the relevant installation demonstration video in the USB memory disk for detailed installation steps.

Video of Win driver and software installation

2.Path to Install Software:

Enter the flash disk and double click the folder:/windows/software/Engraver/ After the progress bar has done,the installation is completed /Laser.



Tips:

After clicking Engraver, if anti-virus software or PC Manager prompts to warn the risks. Engraverfile is a win system installation package. If it is misjudged as a suspicious file, Please select "allow all operations" to complete the software installation.

3.Online Operation:

Connect the machine to the computer with data cable Double click the software icon — click the "connect device" icon — the icon turns blue to complete the online connection



Mac Driver Installation



1.Path to Install Driver:

Path to Install Driver: Enter the USB flash disk and double click the folder: 02_MAC/driver/Mac_OSX_VCP_Driver/Installation introduction/installation type/installation/installation completed

Note: The software can be installed after the driver has been installed, please watch the video for detailed operation.

Video of MAC driver and software installation

Mac software installation and online Introduction



2. Path to Install Software:

Enter flash disk and double click the folder: 02_MAC /software/Engraver/move software icon to the right/ complete installation

3. Online operation:

Connect the machine to the computer through data cable Double click the software icon — click "connect device" icon — the icon turns blue to complete the online connection





Double click the software icon

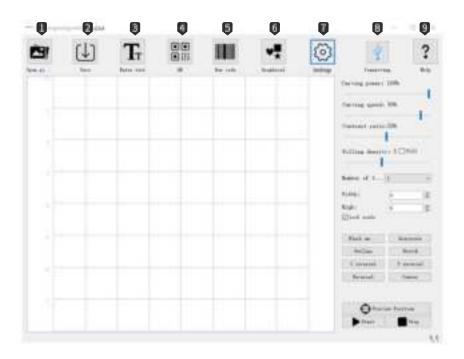
Click "connect device" Icon





 The icon turns blue to complete the online connection

Introduction to Icon Functions in Software Interface:

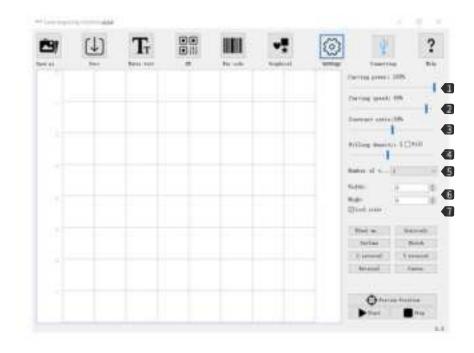


- Open Load photos from computer
- Save
 Save the edited texts and photos
- Input Text Import text, font, size, horizontal, vertical, vectorization Editing function
- QR code Create QR code
- Bar Code
 Create Bar code
- Graphics
 Round-square-heart-pentagon, quick creation
- Settings
 Set the parameters of low light power; set whether to activate the roller



- Connect to device The icon turns blue after the connection is done
- Help
 Open the link; watch the demo video and refer to the FAQ

Setting of Software Parameters:



Engraving Power

Adjust the power level to engrave different materials

Engraving Speed

Set the engraving speed, the engraving speed of determines the engraving depth

Contrast

Drag the slider to adjust the contrast of text and photo

ABCD ABCD ABCD
Contrast 16 Contrast 50 Contrast 80

Filling Density; Filling

The filling effect can only be effective for vector graphics, select vectorization, Click Fill on the text photo, drag the fill slider to adjust the filling density

Engraving Times

Set the number of engraving times

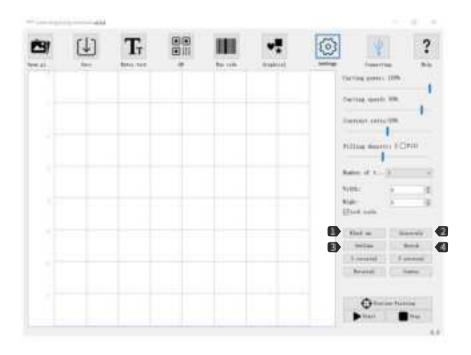
Width; Height

Adjust the width and height of text photo separately at will

Proportional Zoom

Lock photo text to proportionally zoom in/out

Setting of Software Parameters:



Black and White

To process photos to black and white

Grayscale

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

Contour

Cutting mode for wireframe cutting of engraving machine

Sketch

Sketch mode, enhance the 3D effect of photo outline





Black and White

Grayscale

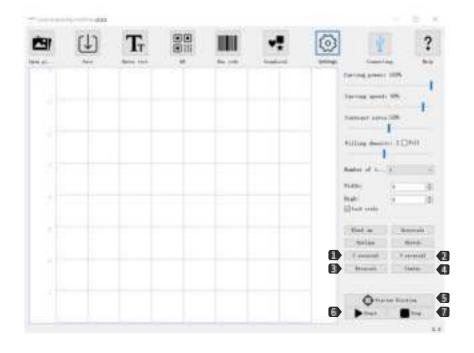




Contour

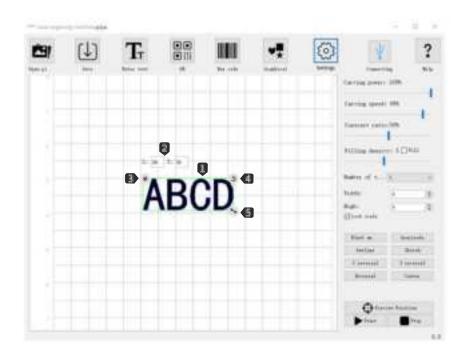
Sketch

Setting of Software Parameters:



- X Mirror Horizontal Rotation Effect
- Y Mirror Vertical Rotation Effect
- Reverse Color
 Reverse background color of text and photo
- Center
 One click to center the text and photo in preview area
- Preview Location
 Preview to confirm engraving position
- Start Start engraving
- Stop Stop engraving

Introduction to Interface Loading Content:



- After loading the text and photo, left click the mouse to move the position of the text and photo, right click the mouse to move the drawing board horizontally, roll mouse wheel to zoom in/out the drawing board.
- X:26 Y:30 only indicate the position coordinates where the text and photo stay; when move the text and photo, the coordinates will change based on different positions.
- Clear the text and photo on the drawing board
- Left click the mouse to rotate the text and photo 360°
- Left click the mouse and drag to zoom in/out the text and photo

1. Software Download and Installation:

Method 1: APP download URL: www.dkjxz.com

Method 2: Scan the QR code to download.



URL to Obtain Information:

User Manual Download URL: www.dkjxz.com

2.Connect APP with Machine

- Connect the machine to power supply;
- Activate Bluetooth function in the mobile phone;
- Open engraving software in the phone, click "No Connection" in the upper right comer to automatically search for the device;
- Then click "Engraver-000###"; Note: "000###" represents the serial number of the machine.
- 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.



Introduction to Software Interface (Load Content):



- Settings
 New User Guide/Feedback/User Agreement and Privacy Clauses/Equipment/Language Setting
- Load Photos for Engraving
 Add photos from Album, Add photos from Gallery
- Take photos via camera
- Software Built-in Graphics
- Add Graffiti Self-draw Text/Photo
- Edit Text
- Add QR code QR Code, Barcode

Roller Settings



- Standby laser power
 Set the laser power in standby
- Roller mode Activate/inactive the roller mode. When it is activated, it can rotate 360° to engrave

Introduction to Software Interface (Load Content):





Introduction to software interface (Loading content):

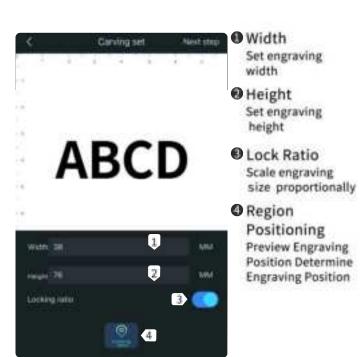


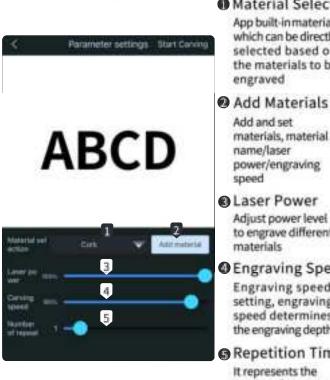
- Black and White
 To process photos to black and white
- Grayscale
 Grayscale mode, adopt the function for engraving photos to adjust photo grayscale
- Contour
 Cutting mode for wireframe cutting of engraving machine
- Sketch Sketch mode, enhance the 3D effect of photo outline



- Whirling Can rotate 90 degrees, 180 degrees or 360 degrees
- Reverse Color
 Reverse background color of text and photo
- Mirroring Horizontal Rotation Effect, Vertical Rotation Effect

Introduction to Software Interface (Load Content):





 Material Selection App built-in materials, which can be directly selected based on the materials to be

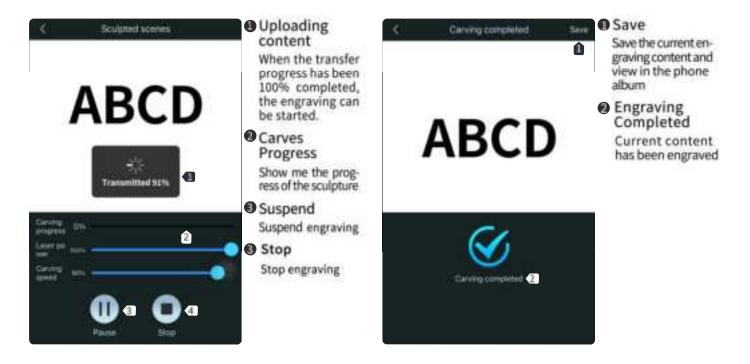
Add and set materials, material power/engraving

 Laser Power Adjust power level to engrave different

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

Repetition Times It represents the number of engraving times

Introduction to Software Interface (Load Content):



Notice!

The product can support GRBL open source software by updating GRBL firmware. Once GRBL firmware is updated, this product will not support phone software, original PC software and the roller components any longer

Path to install GRBL:

FirmwareUpdate/GRBL Firmware/For detailed steps, please watch the demo video in USB memory disk



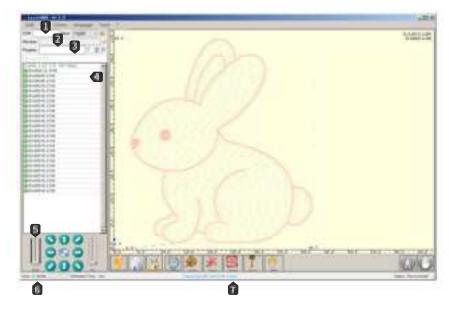
ST GRBL_FirmwareUpdate

Laser GRBL

GRBL website: https://lasergrbl.com/



Introduction to LaserGRBL software interface icon functions:



Connection settings:

Select serial port and appropriate connection baud rate according to the grbl firmware configuration

File control:

Display the loaded file name and the engraving process. Green "Play" button will start to execute the program

Manual command:

You can enter any G code line here then press the "input" button, the command will be placed in the queue

Command log and command return code: Display the commands in queue as well as the execution status and errors

Step control:

Allow manual laser positioning. The vertical slider on the left can control the speed of movement, while the slider on the right can control the step length

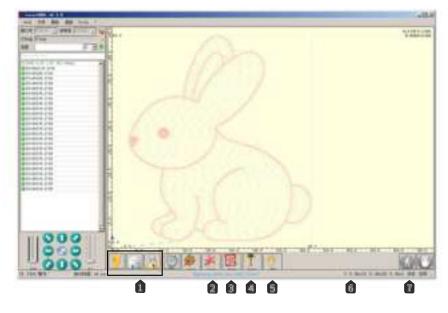
Prediction of line number and time:

LaserGRBL can estimate the program execution time based on actual speed and work progress

@ Engraving preview:

The final work will be previewed in this zone, During the engraving process, a small blue cross will display the current laser position during the machine operation

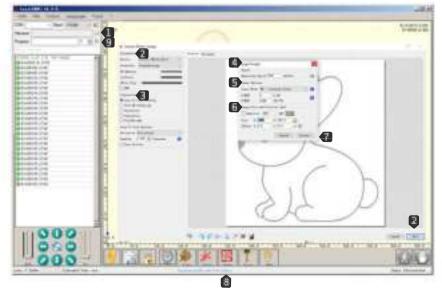
Introduction to LaserGRBL software interface icon functions:



- Grbl reset/home/unlock:
 - These buttons submit soft reset, home andunlock commands to the grbl board. On the right side of the unlock button, you can add some user customized buttons
- Move to the lower left corner: Move the coordinate to the lower left corner of the frame
- Preview of engraving position: After the photo is loaded, click this icon to preview the engraving position
- Activate laser focus:
 Active the laser and focus as required
- Laser: Click the button according to actual needs such as laser test
- © Coverage status control: Display and change the actual speed and power coverage. Overrides is a new feature of grbl v1.1 which cannot be supported in the old version
- Pause and resume:

Press the button to pause and resume program execution, send Pause or Resume commands to the grbl board.

Introduction to LaserGRBL software interface:



① Open:

Click the icon "Open" or drag the file directly to the software interface;

2 Parameters:

Adjust engraving parameters

Conversion tools:

Select engraving mode: line-to-line tracking, lbit BW jitter, vectorization, Centerline, Passthrough

4 Speed:

Set the engraving speed

5 Laser:

Set laser parameters

(6) Image size and position:

Adjust image size and engraving position.

Create

After settings have been completed, click Create.

8 Preview

Click the "Preview" button to confirm the preview location;

9 Engraving:

Click "engraving" button to start engraving.

Notice!

The product can support GRBL open source software by updating GRBL firmware. Once GRBL firmware is updated, this product will not support phone software, original PC software and the roller components any longer

Path to install GRBL:

FirmwareUpdate/GRBL Firmware/For detailed steps,please watch the demo video in USB memory disk



LightBurn

LightBurn website: https://lightburnsoftware.com/



09 Warranty

1-Year Limited Warranty

Dear Customer:

We would like to express our gratitude for your purchase of the JICCODA L1 Laser Engraving Machine. Customer feedback is extremely valuable to us, and we really hope that using this product will be a positive experience for you.

JICCODA L1 has given close attention to product quality and practicality, combining all laser supply chains to provide you with higher standards of quality and affordable products. We are prepared to offer the finest laser engraving and cutting services.

If you have any inquiries, please do not hesitate to get in touch with us at the e-mail address shown below. We provide a limited warranty that is valid for one year.

By visiting our online shop, you will be able to get further information on forthcoming items and accessories.

Once again, thank you very much for your continued support. As we always have, we will keep providing products and services of the highest quality.

Sincerely, JICCODA

After-sales Service E-mail:

Website: Service.Alfawise@gmail.com

10 FAQ

First. No response from the machine when being powered on.

 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.

Second. It cannot be connected to computer

- 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.
- 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.
- 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.

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

- 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.
- 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.

Fourth. Shallow engraving effect or no traces.

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

Fifth. Offline engraving unexpectedly stops

1. It's due to the incomplete image download when the machine is online, please download it once again.

FCC Warnning:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection againstharmful interference in a residential installation. This equipment generates, uses and can radiateradio frequency energy and, if not installed and used in accordance with the instructions, maycause harmful interference to radio communications. However, there is no guarantee thatinterference will not occur in a particular installation. If this equipment does cause harmfulinterference to radio or television reception, which can be determined by turning the equipmentoff and on, the user is encouraged to try to correct the interference by one or more of thefollowing measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1)This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.