Spider X1S Pro User Manual

TYVOK

SPIDER X1S PRO

USER MANUAL

A letter to customers

A Letter to Customers

Dear customers,

Thank you for choosing Spider X1S Pro. To ensure your convenience, please carefully read this Manual before operating the machine and strictly follow the instructions provided. The Spider X1S Pro team is always ready to provide you with high-quality service. If you encounter any issues during use, please contact us via the phone or email provided at the end of this Manual. To enhance your experience with our product, you can also access operational knowledge through the following methods:

User Manual on TF Card:
Relevant user instructions and videos can be found on the TF card.

Visit Spider X1S Pro Official Website:
www.tyvok.com for information on software, hardware, contact details, device operation, and maintenance.

Best regards,

TYVOK

Guidelines for Safe Operation

Guidelines for Safe Operation

The laser engraving machine utilizes a high-density laser beam to engrave or cut materials, generating high temperatures on the material's surface to vaporize it without combustion. However, most materials are inherently flammable and may ignite, resulting in an open flame that could damage the machine and its surroundings. Please adhere to the following operating principles:

1. Avoid placing this product near flammable, explosive substances, volatile solvents, or high heat sources. Keep it in a well-ventilated, cool, and low-dust environment.

2. Use only the power cord provided with this product during installation: do not substitute with other power cords.

3. Regularly clean the machine body and laser module with a dry cloth when the power is disconnected.

4. The operating temperature for the laser is between 0°C-35°C: refrain from using it in below-zero temperatures or humid environments, and never operate it during thunderstorms.

5. If not using the product for an extended period, turn it off and disconnect the power cord.

6. When the product is powered on, do not touch the electronic components or related areas with hands or other tools.

7. Avoid touching the moving mechanical parts and laser module while the product is in operation.

8. Before engraving, place a non-penetrable flat object such as aluminum alloy or stainless steel on the work surface and then position the material to be processed.

9. Always wear protective goggles during laser engraving to avoid eye injuries caused by direct exposure to the laser beam.

10. During the engraving process, slight smoke or odor may occur: operate in a well-ventilated area.

11. Children under the age of 10 should not use this product without adult supervision to prevent injuries.

12. Prepare a fire extinguisher as a precautionary measure and conduct regular maintenance and inspections. The machine should not run without supervision.

13. Users must comply with the laws and regulations of the country or region where the equipment is located or used, adhere to professional ethics, and fulfill safety responsibilities. The use of our products or equipment for any illegal purposes is strictly prohibited, and our company assumes no responsibility for any legal liabilities resulting from violations. Please read and strictly adhere to these guidelines for safe and responsible use of the laser engraving machine.

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1.1. Packing List

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Power Adapter & Cable

USB Cable

Card Reader

TF Card

WiFi Antenna

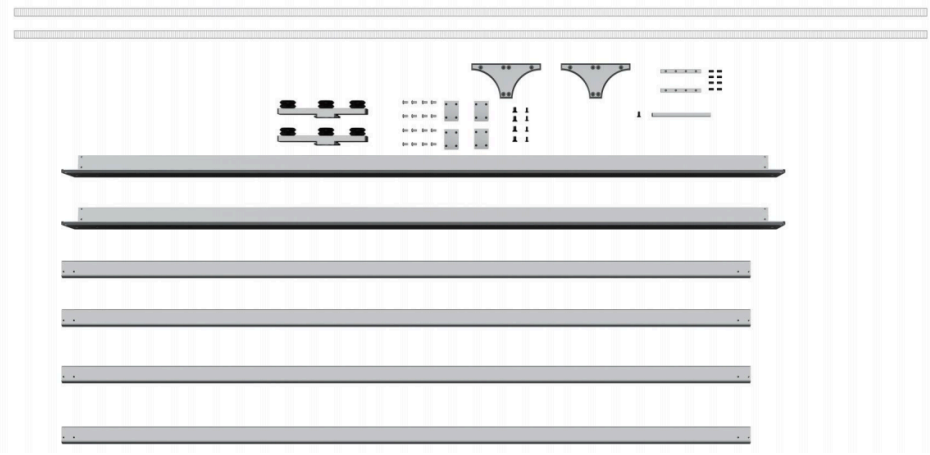
Goggles

Spider X1S Pro

Tool Kit (4 wrenches, cleaning cloth, cleaning brush)

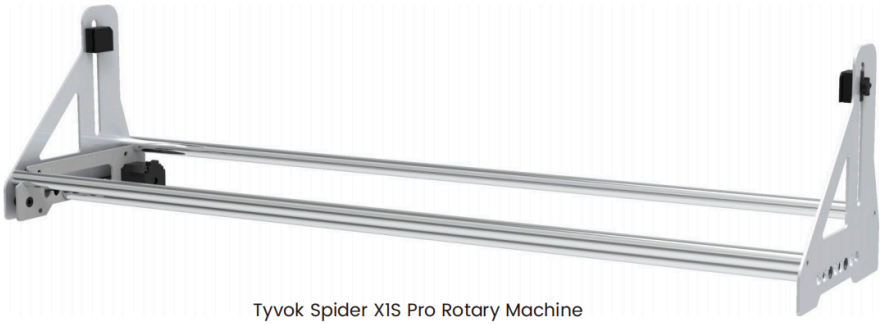
Packing list

Additional Parts List



Frame

1.2 More Accessories to Choose



Tyvok Spider X1S Pro Rotary Machine

Air Assist Proll(50L)

Honeycomb Working Plate(800*2000mm)

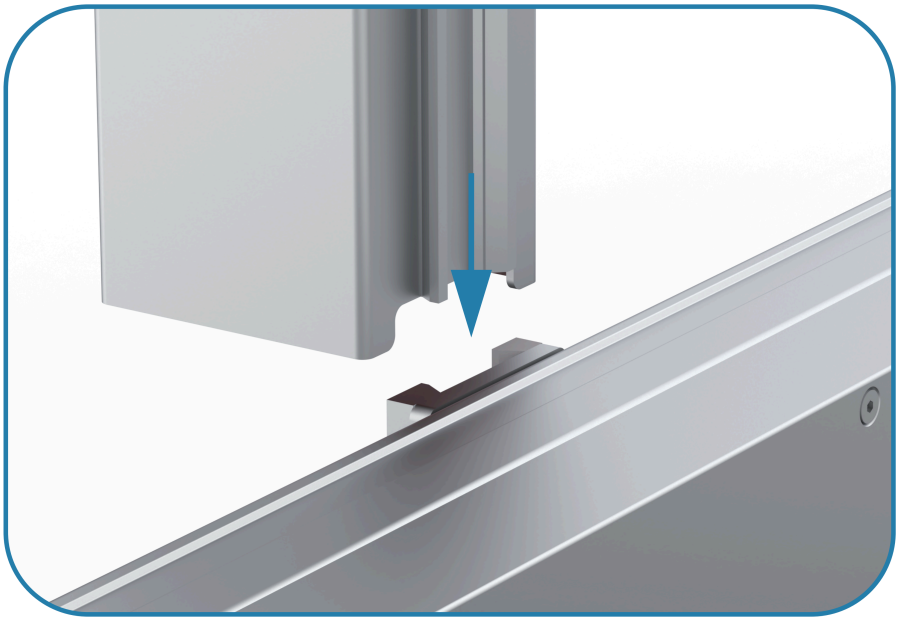
02

ASSEMBLE SPIDER X1S PRO

2.1 Install the Laser Head

2.1 Install the Laser Head

1. Insert the laser head into the guide rail.

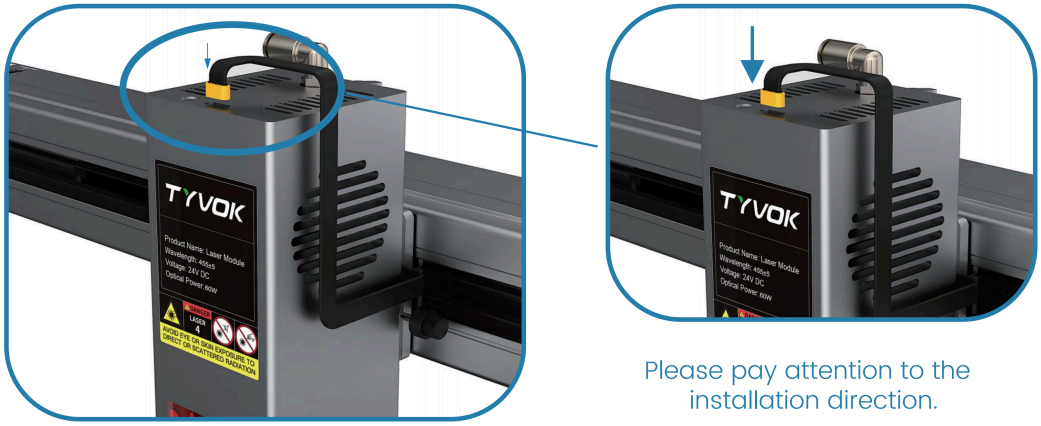


2. Tighten the fixing handle.

2.2 Install The Laser Head Cable

2.2 Install the Laser Head Cable

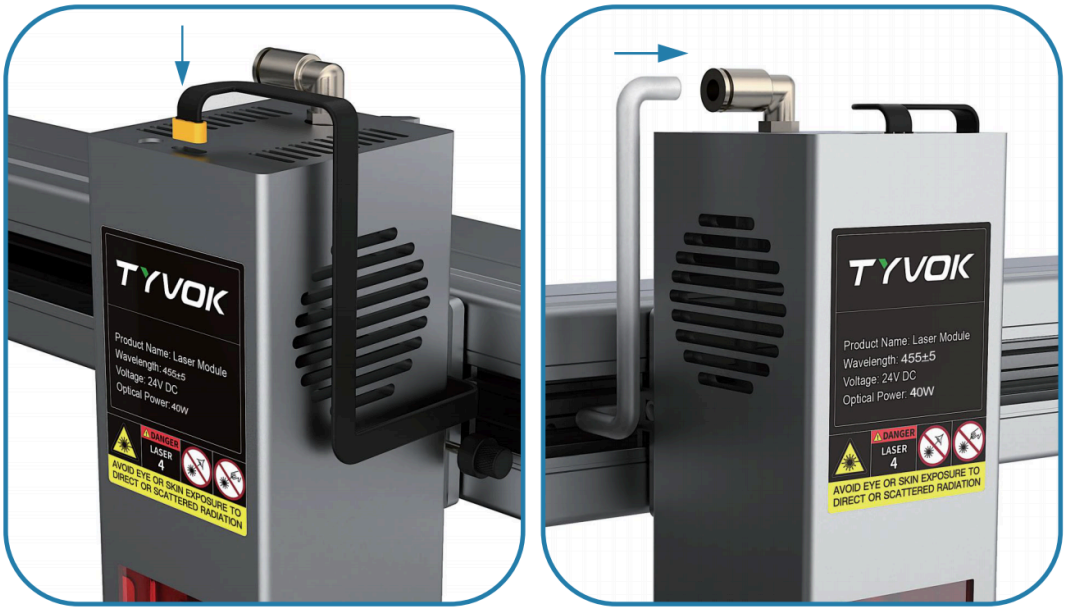
1. 60W Laser Head Cable Connection.



Please pay attention to the installation direction.

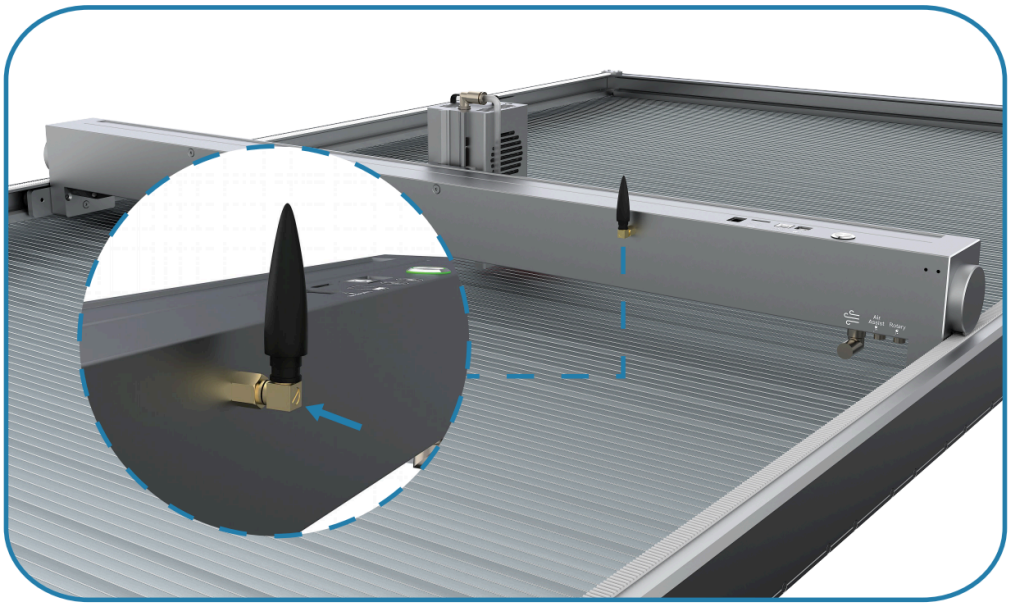
2. Install the air pipe: first press down the connector, and then insert the air pipe.

3. The installation method for the 40W laser head is the same as for the 60W laser head.

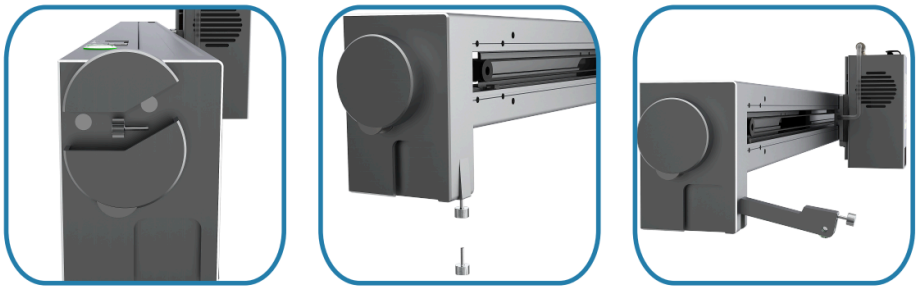


4. Installation Completed Showcase.

5. Install the Wi-Fi antenna.



6. The installation of Spider X1S Pro is completed.



2.3 Install the Standard Frame

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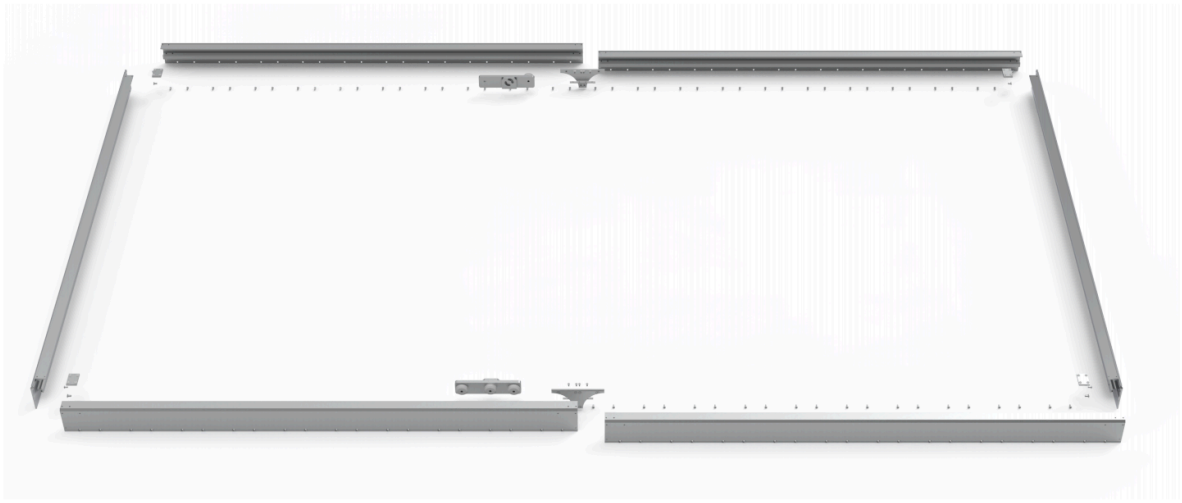
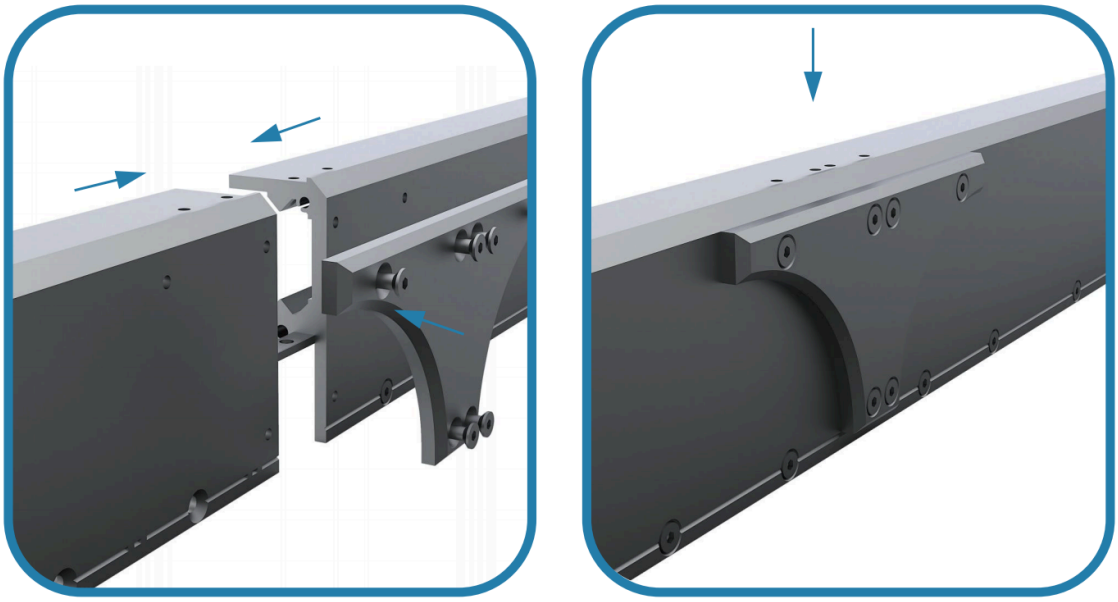
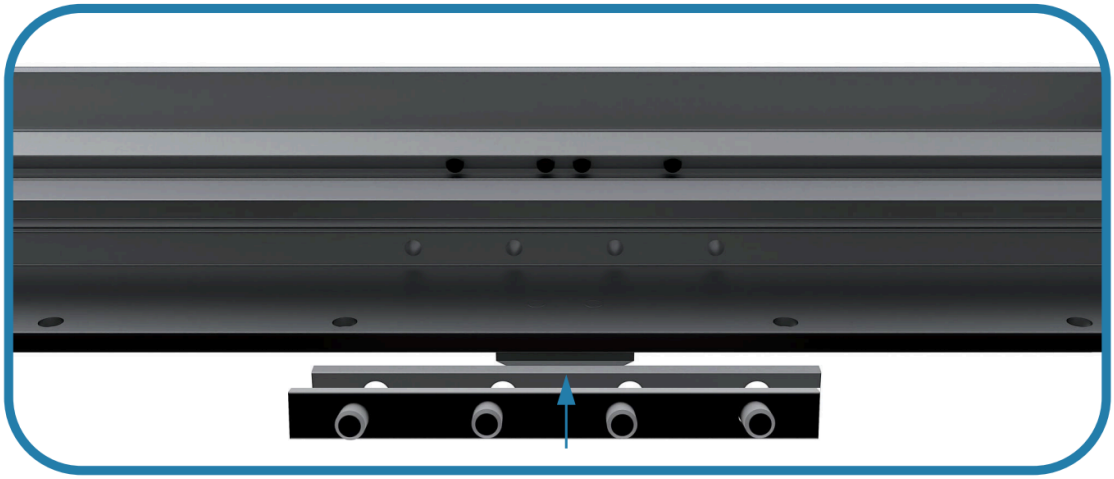


1. Install the two y-axes are fixed with fixing blocks and screws. There is also a fixing bar on the inside to fix. (The installation method of the right frame is the same)



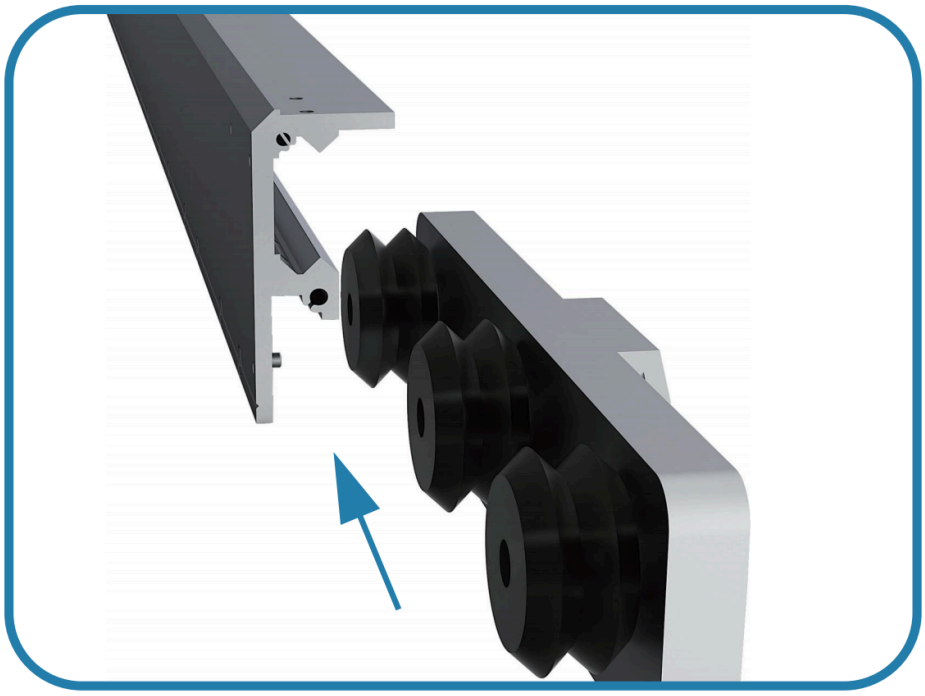
(Frame middle connecting screws: flat head M3-8)

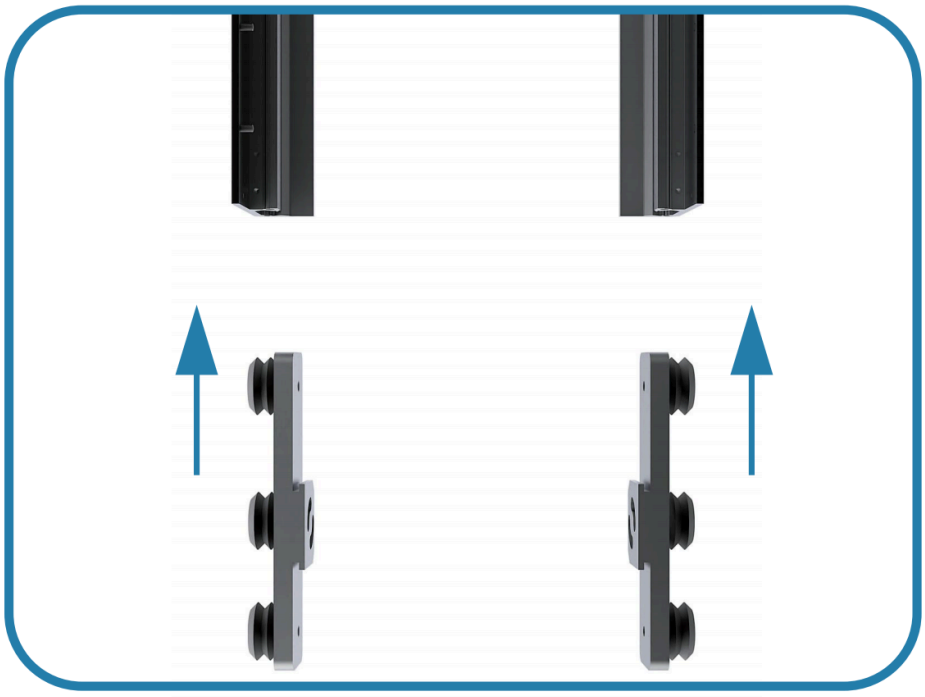
Note: Before fixing the block, align the Y-axis connection and then use the block to fix it.



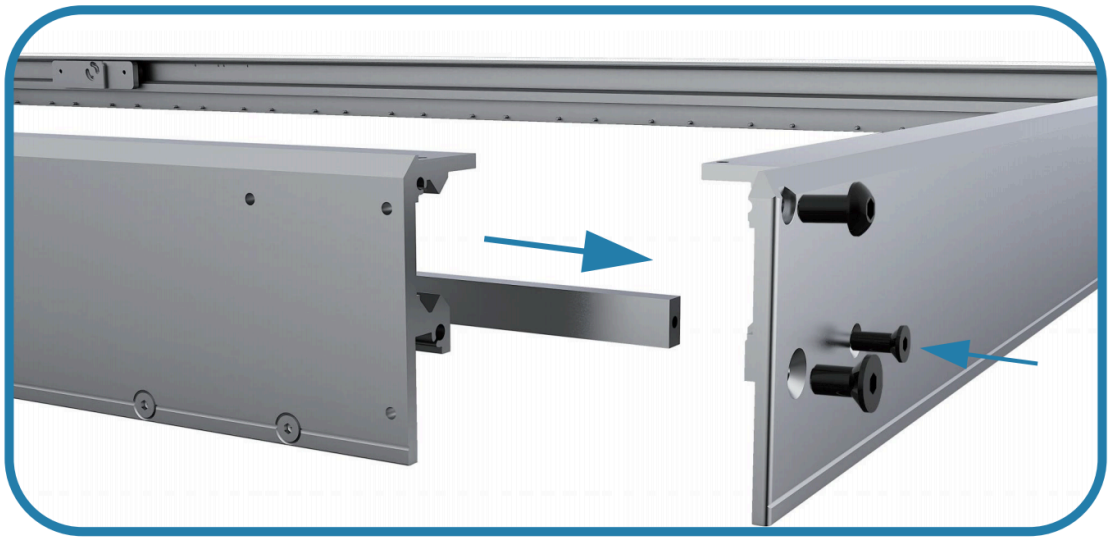
(Frame middle connecting screws: pan head M3-8)

2. As shown in the figure, install the two sliders of the Y axis to the left and right frames of the Y axis respectively.





3. As shown in the figure, install the Y-axis limit block at the corresponding position of the X-axis frame below.



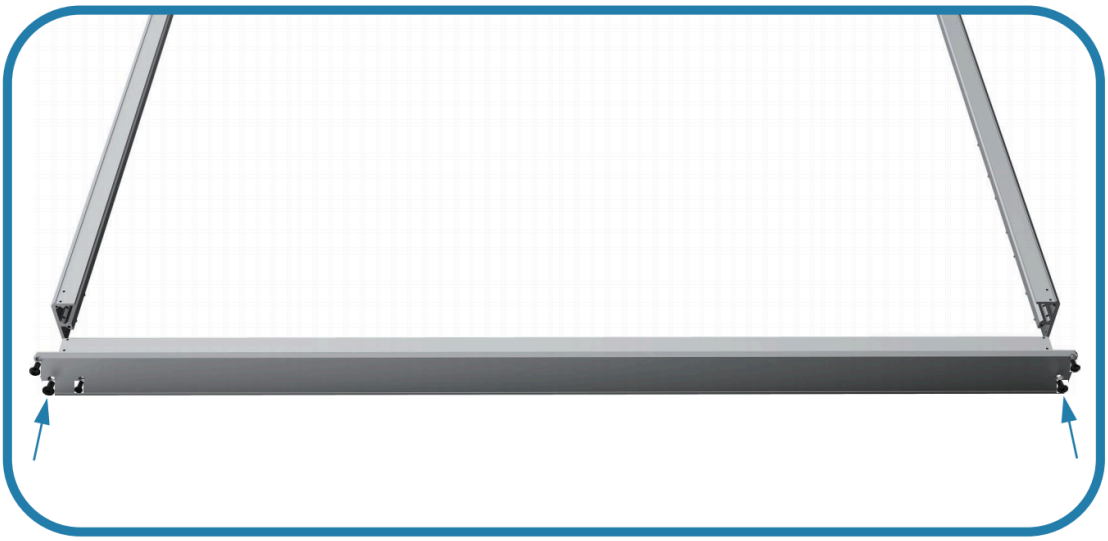
(Origin limit block screw: pan head M3-20)

4. As shown in the figure, connect and install the lower X-axis frame with the installed Y-axis frame.

(Frame corner connecting screws: flat head M4-8/pan head M3-10)

2.4 Install the Belt

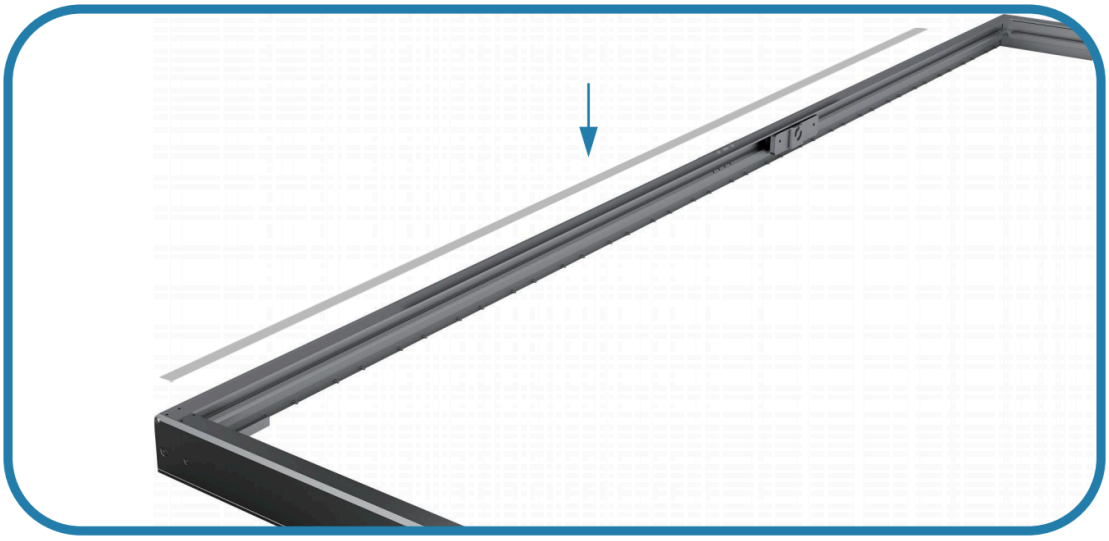
5. Connect and install the upper X-axis with the installed Y-axis frame as shown in the figure.



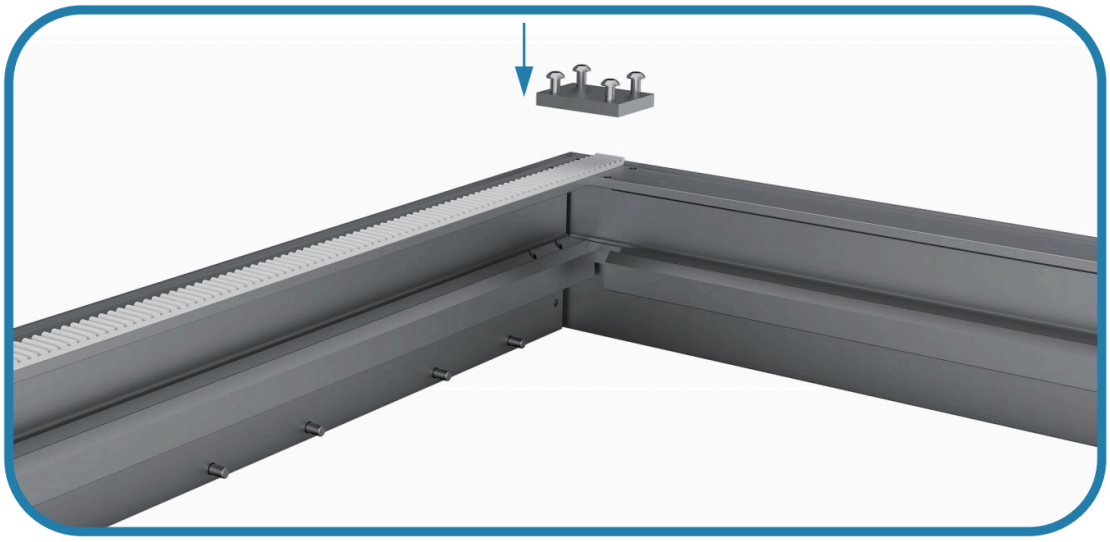
(Frame corner connecting screws: flat head M4-8/pan head M3-10)

2.4 Install the Belt

1. Screw the belt as below picture shown.

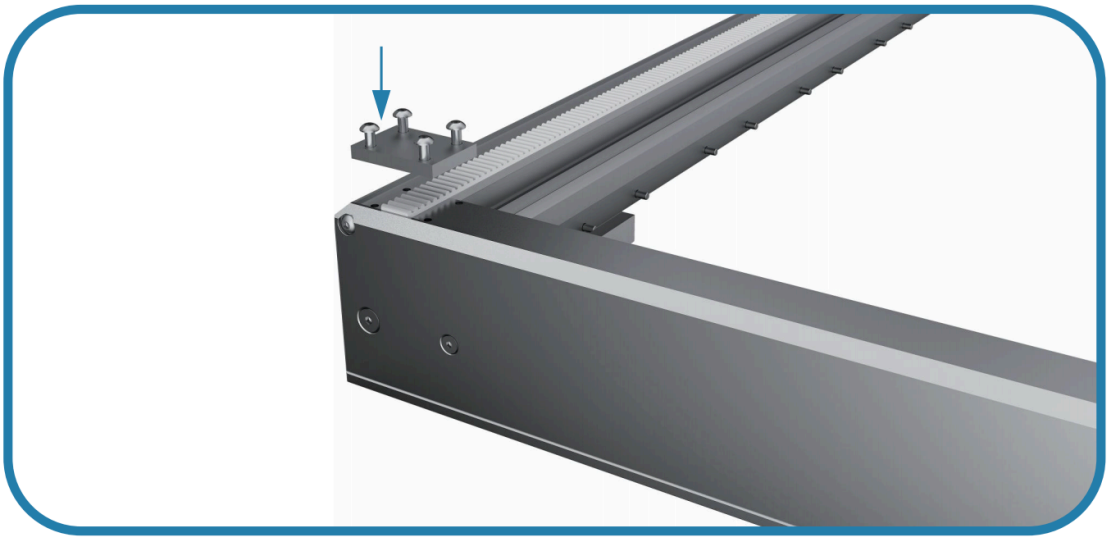


2.As shown in the figure, use the belt fixing block to fix one side of the belt in place.



(Belt compression block screw: pan head M3-10)

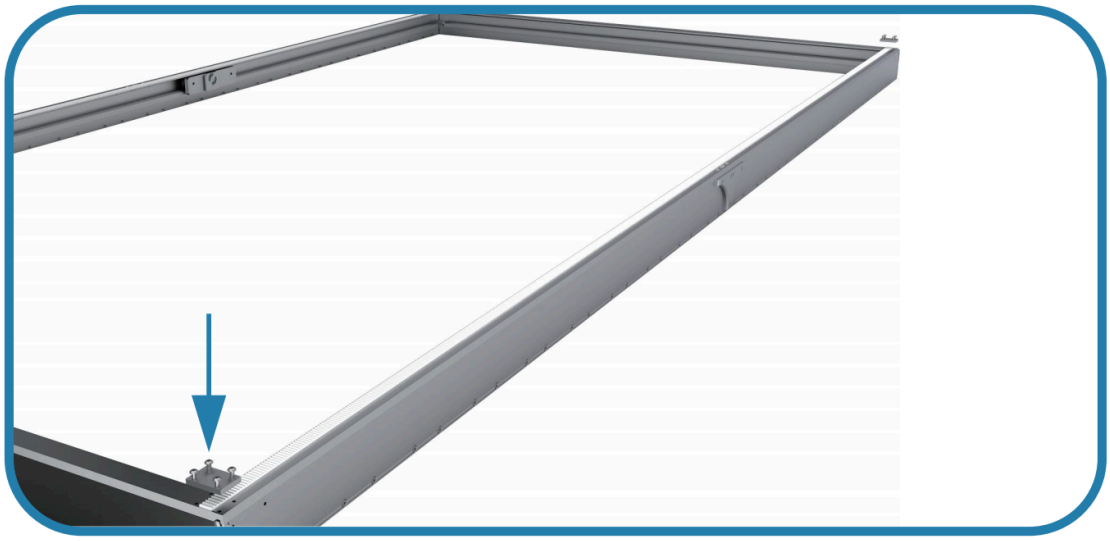
3.As shown in the picture, use a vise to clamp the belt and fix the other side of the belt (if the belt is pulled loose, loosen one end and fix it again).



(Belt compression block screw: pan head M3-10)

2.5 Install the machine to the frame

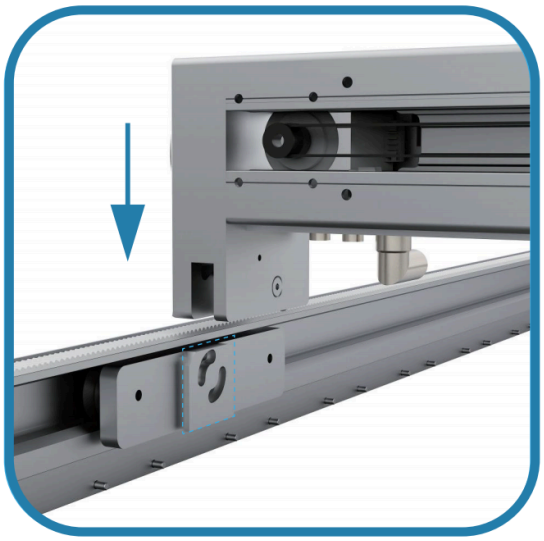
4.The belt fixing method on the other side is the same as above.

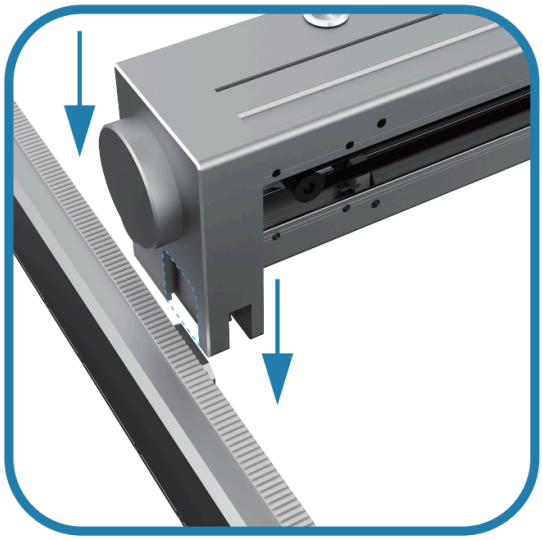


(Belt compression block screw: pan head M3-10)

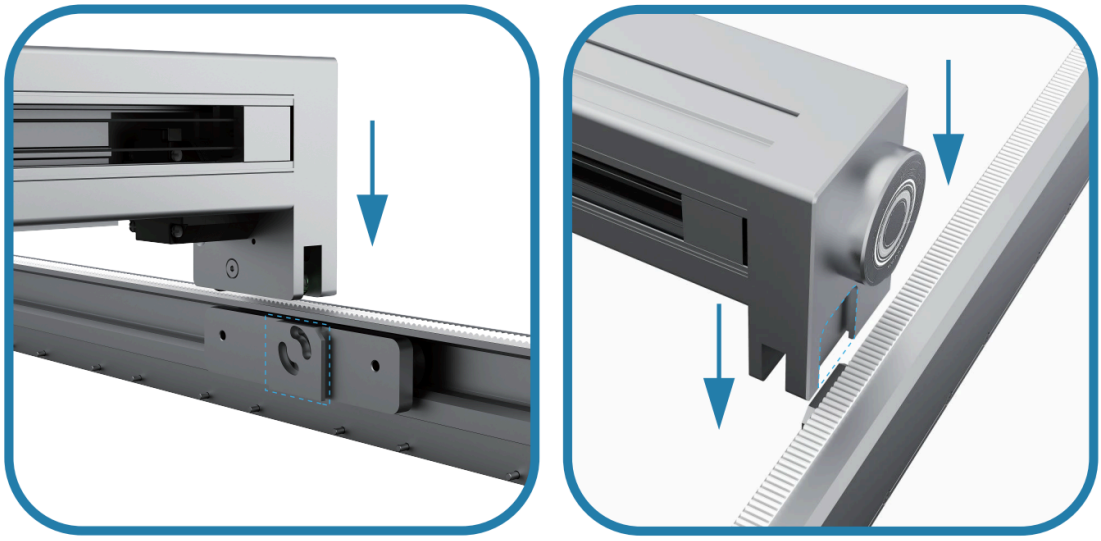
2.5 Install the machine to the frame

1. As shown in the figure, install the slot on the left side of the machine downward onto the slider snap-on.





2. Install the slot on the right side of the machine down onto the slider tab as shown.

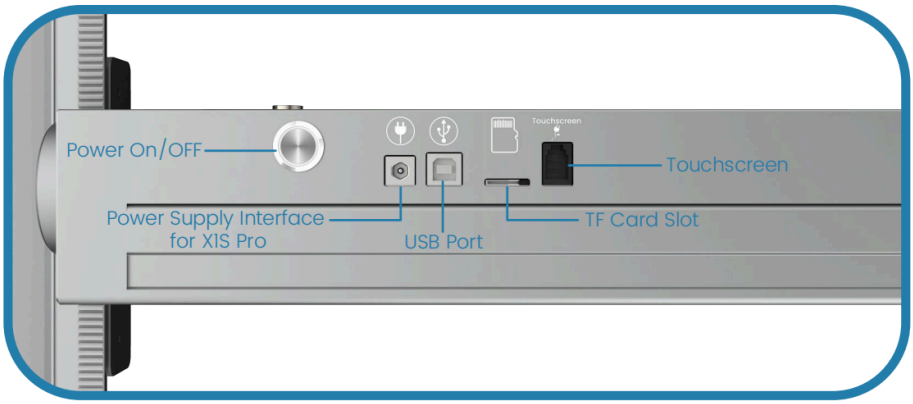


3. As shown in the figure, fix the machine and the slider on the left side and fix the machine and the slider with screws. (The same as on the right side)

4. Testing

Step 1: Connect the machine to the power source（24V power adapter）and turn on the machine switch.

Step 2:Turn on the machine and wait for the device to complete the automatic reset.



How To Use Spider X1S Pro

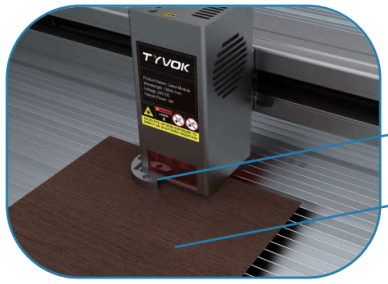
03

HOW TO USE SPIDER X1S PRO

3.1 Adjust the Heigt of 40w Laser Head

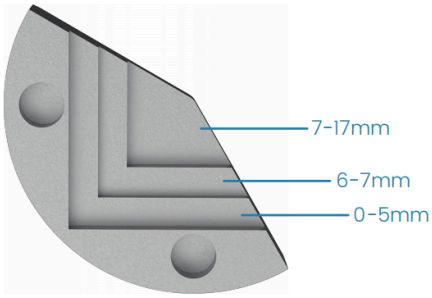
3.1 Adjust the Height of 60/40/20W Laser Head

1. Take out the positioning block from the right side of the machine as shown in the figure For the 40W laser head, use the Height limit block to determine the focal length. Place the Height limit block between the laser head and the workpiece.



2. Loosen the laser head fixing handle.

3.Spider X1S Pro applies a height limit block, it indicates the focal lengths of different materials. For example, when you need to engrave or cut a 7-17mm thickness wood, you can set the focal length to the lowest level.

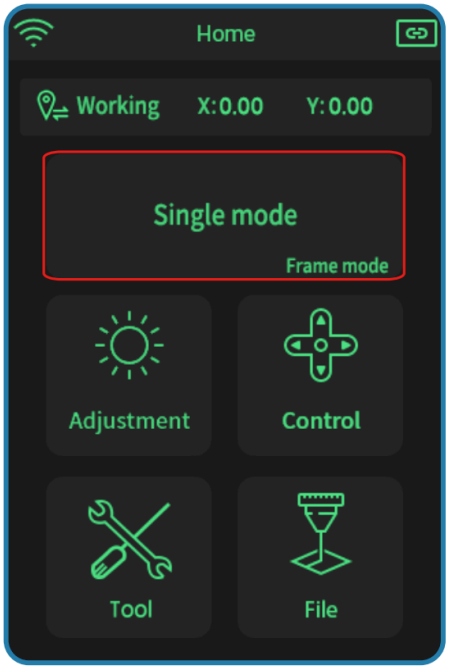


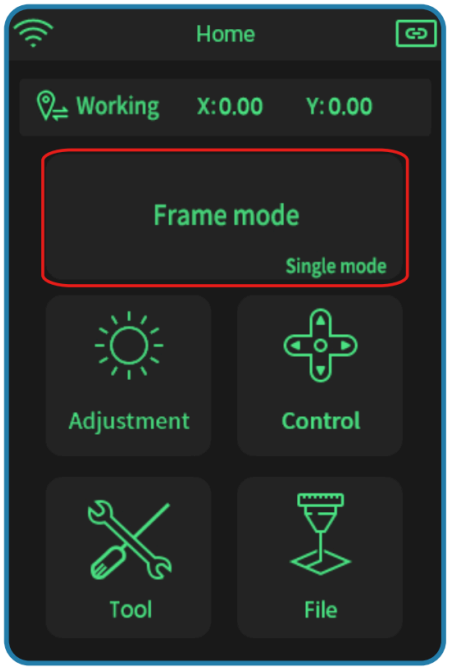
Height limit block

3.2 To switch modes with screen

3.2 To switch modes with screen

1. To switch Single Mode and Frame Mode by clicking the screen zone as below.





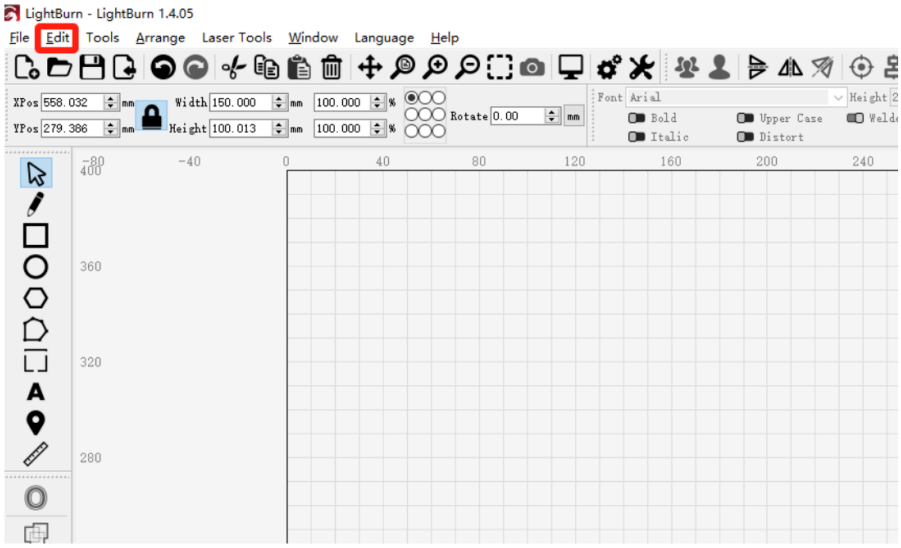
3.3 To switch modes without screen

3.3.1 LightBurn setting

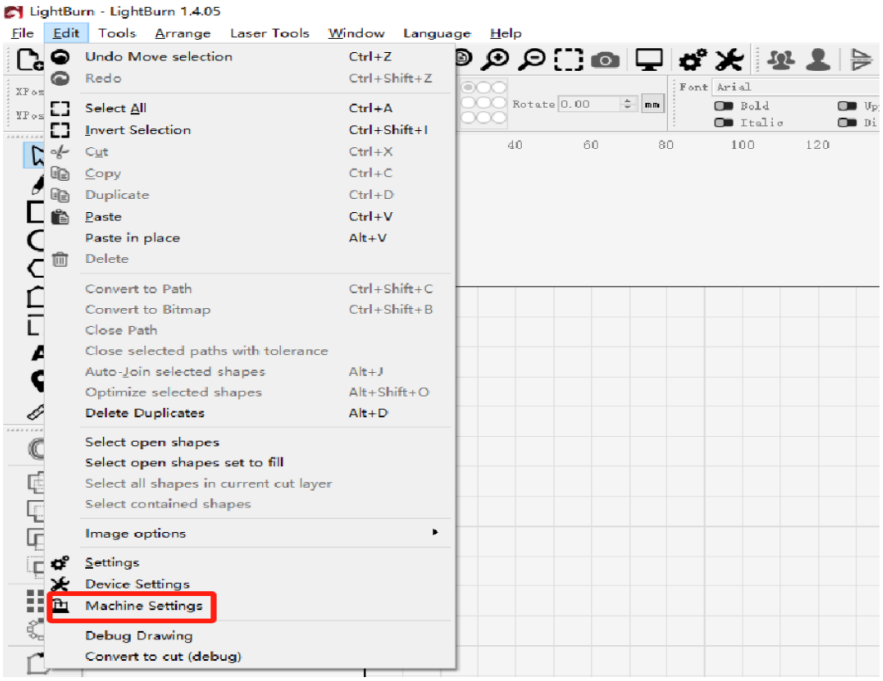
3.3 To switch modes without screen

3.3.1 LightBurn setting

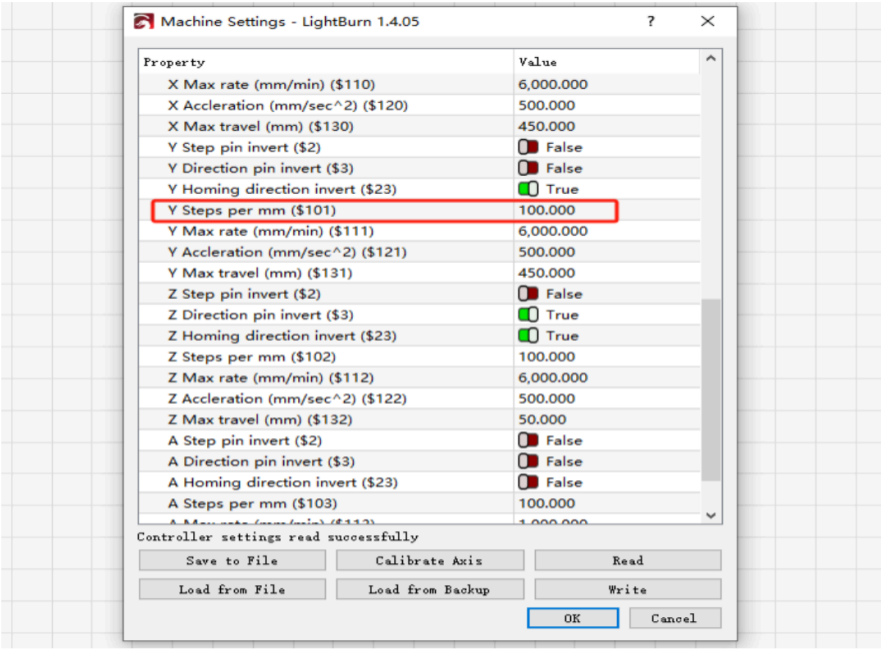
1.To set the parameters on LightBurn, please connect LightBurn with the machine first. Remember to choose the right USB port when you are connecting the machine with it. Then click Edit as below picture shows..



2.Click 'Machine Settings'.



3.Choose 'Y Steps per mm ($101)' and modify the corresponding parameters. After modifying, click 'OK'.



4.To set the different parameters when you are in need of single mode or frame mode.

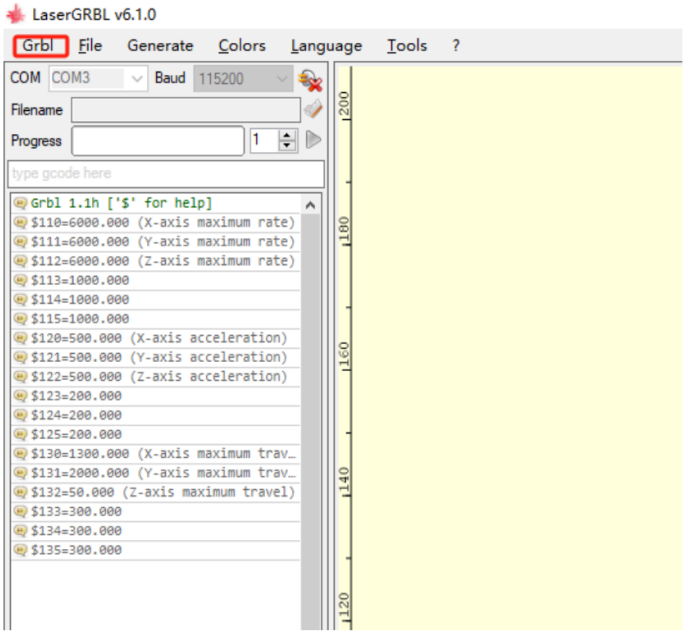
Frame mode:
Y Steps per mm ($101): 71.38

Single mode:
Y Steps per mm ($101): 53.8

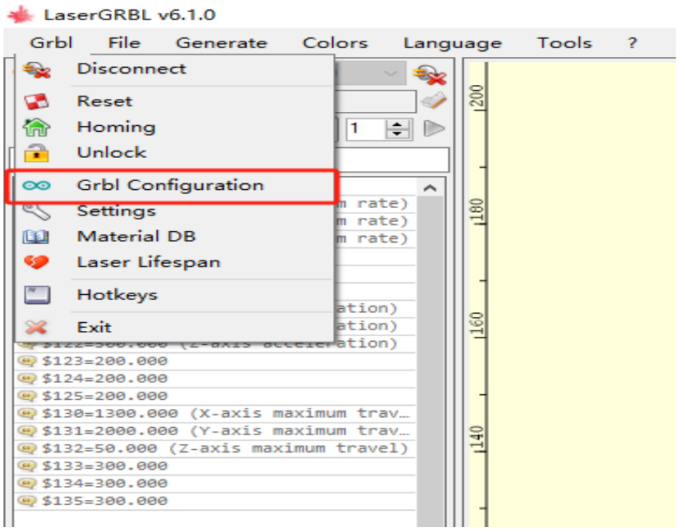
3.3.2 LaserGRBL setting

3.3.2 LaserGRBL setting

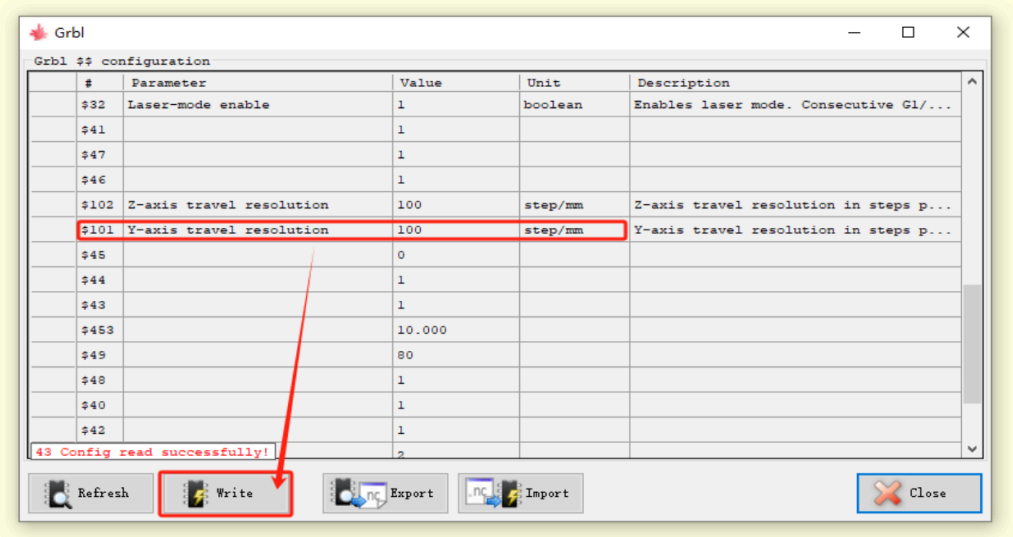
1. To set the parameters on LaserGRBL, please connect LaserGRBL with the machine first. Remember to choose the right USB port when you are connecting the machine with it. Then click 'Grbl' as below picture shows.



2.Then click 'Grbl Configuration'.



3.Choose 'Y Steps per mm ($101)' and modify the corresponding parameters. After modifying, click 'Write'.



4.To set the different parameters when you are in need of single mode or frame mode.

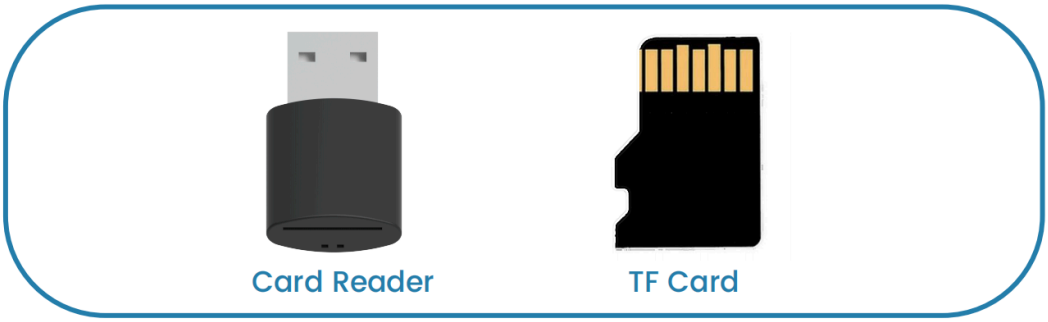
Frame mode:
$101 Y axis travel resolution:
71.38

Single mode:
$101 Y axis travel resolution:
53.8

3.4 Screen operating guide(Optional)

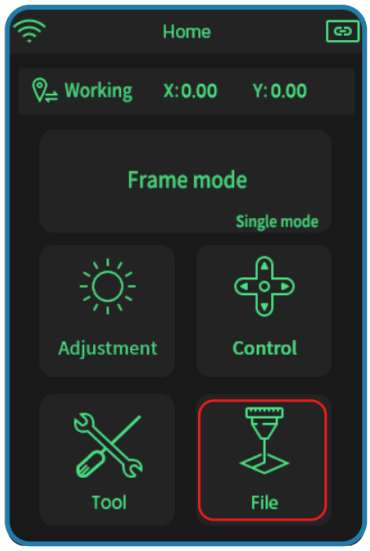
3.4 Screen operating guide(Screen is an optional accessory)

1. Please note there is a must to make sure the TF card is inserted into the machine and it's file included. You can copy the file on PC to TF card by card reader.

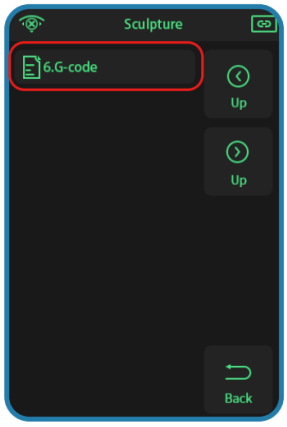


Please don't insert or remove the TF card during the machine is powered on.

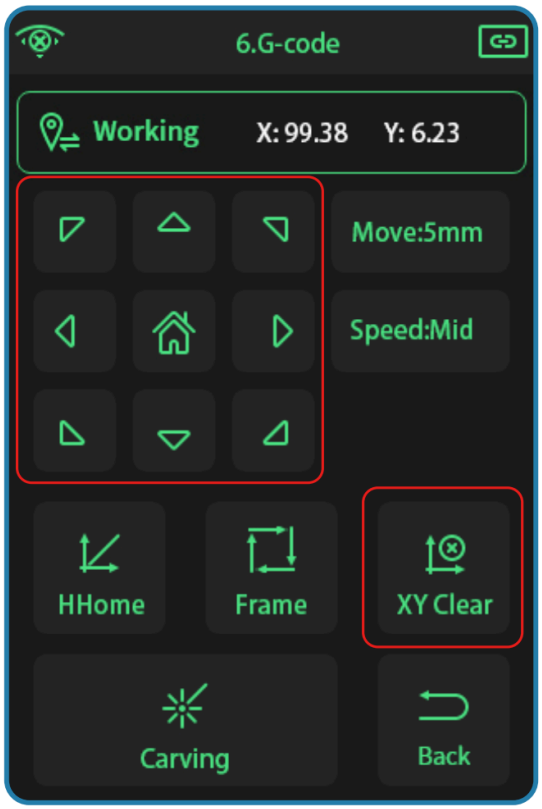
2. After the Spider X1S Pro is turned on, please click "File".



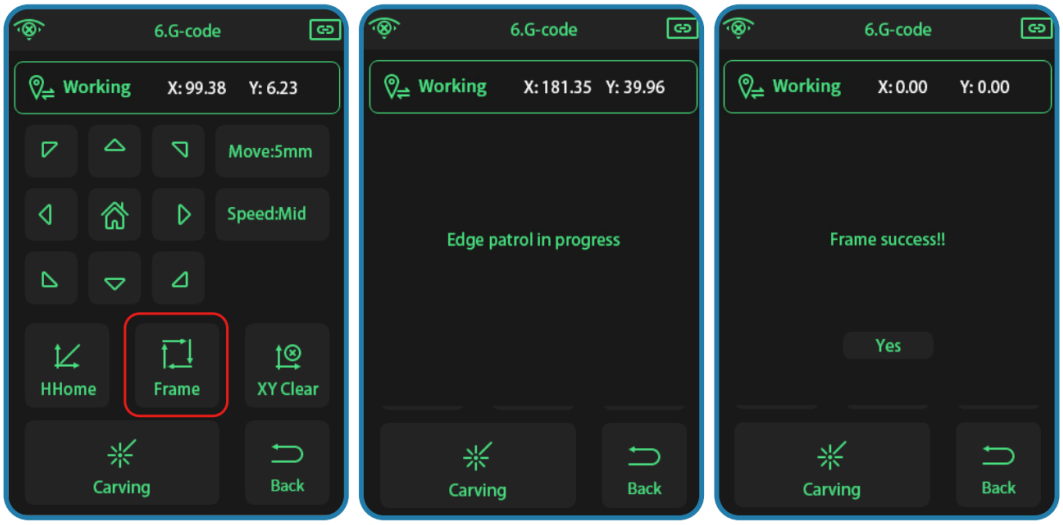
3. Choose the file you want to engrave.



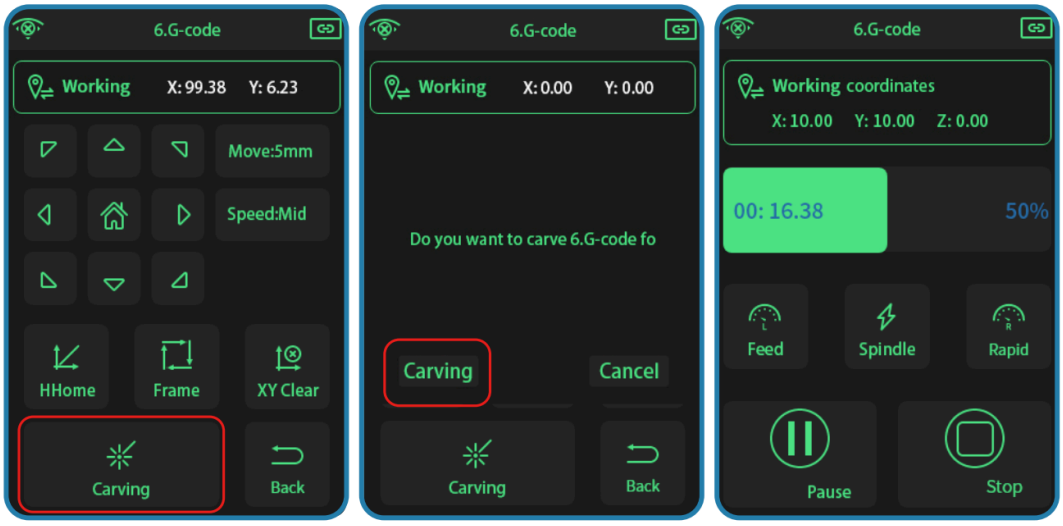
4. You can move the laser head by clicking the arrow directions, and click "XY Clear" to set the origin.



5. Click "Preview" to see the work area of your file.



6. You can click "Start" when you confirm the origin, and just wait for the engraving to be completed.



3.5 To control by USB cable

3.5 To control by USB cable

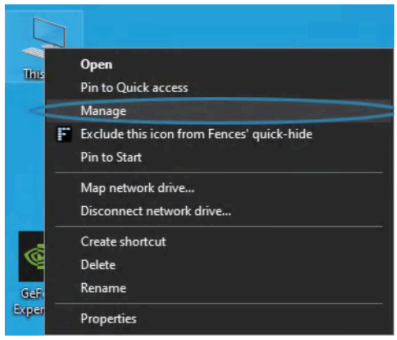
1. Install the CH340/CH341 driver on the PC.
The Machine's TF card contains the installation program for the CH340/CH341 driver. Follow the steps below:

Step 1: Connect the TF card to the computer via a card reader and copy the program named "CH340/CH341 SER.EXE" to the computer.

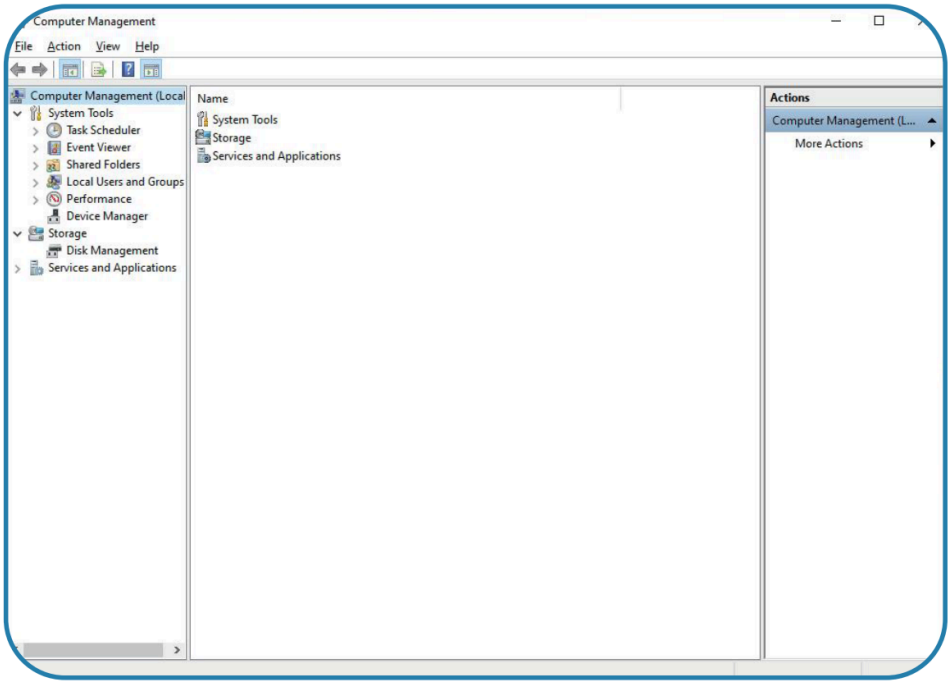
Step 2: Power on Spider X1S Pro and connect it to the computer using a USB cable. Double-click to open the "CH340/CH341 SER.EXE" program.

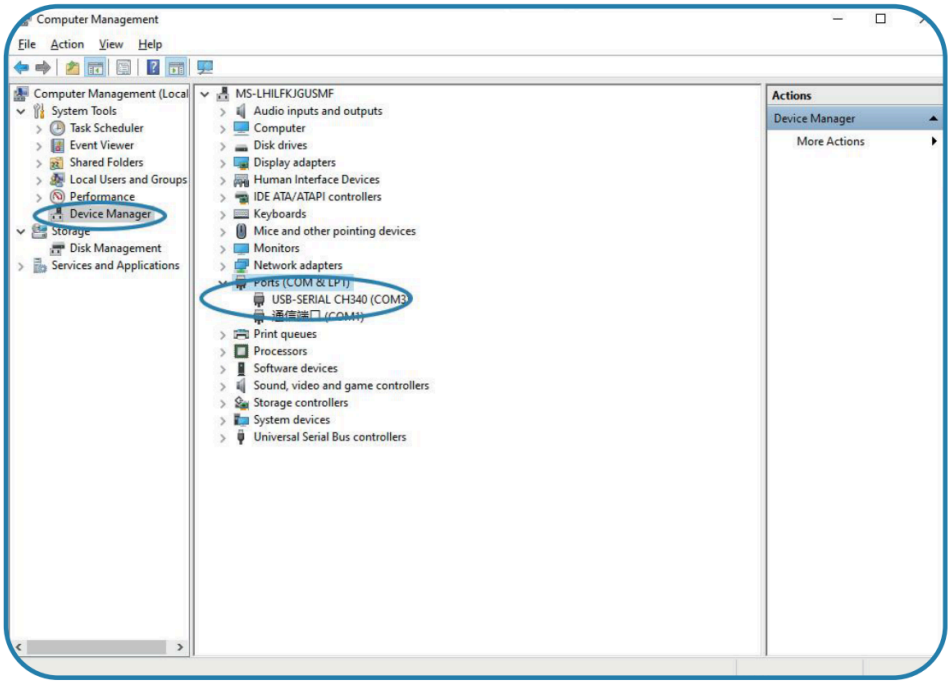
Step 3: Click "Install" and wait for a moment until a pop-up appears, indicating " Driver installation successful."

2. Check whether the driver installation was successful:



Right-click on "This PC" and select "Manage," which will bring up the Computer Management window.

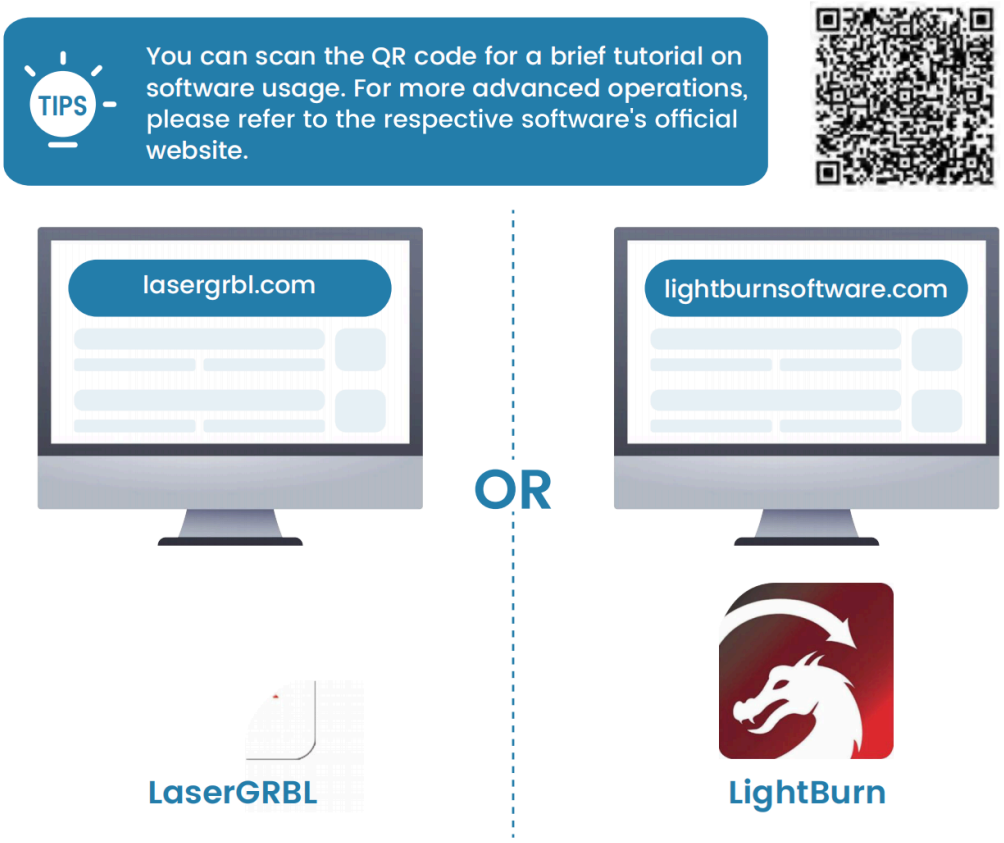




Select "Device Manager", and "USB-SERIAL CH340/CH341" appears under the "Port" column, which means the installation is successful.

After connecting the Spider X1S Pro to the computer with the USB cable, you can use the PC software "LightBurn" and "LaserGRBL" laser engraving software to operate.

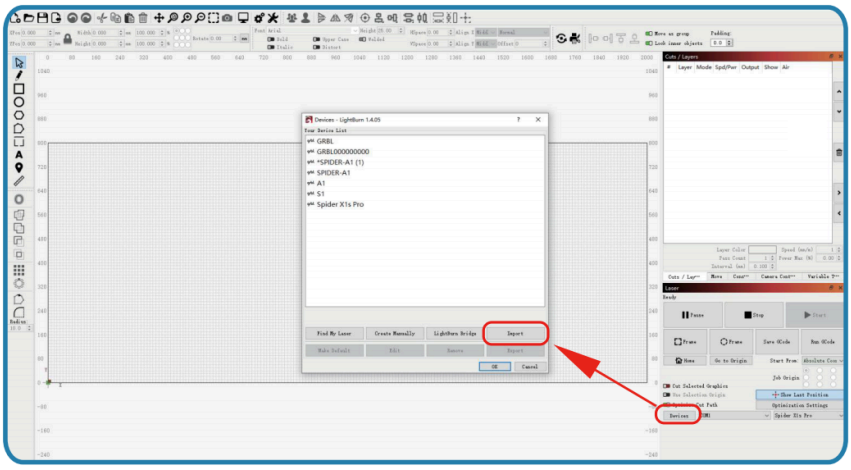
3. After USB connection, operations on the device need to be performed in GRBL or Lightburn. Lightburn requires a purchase after a free trail of one month, while GRBL is free and open source software.



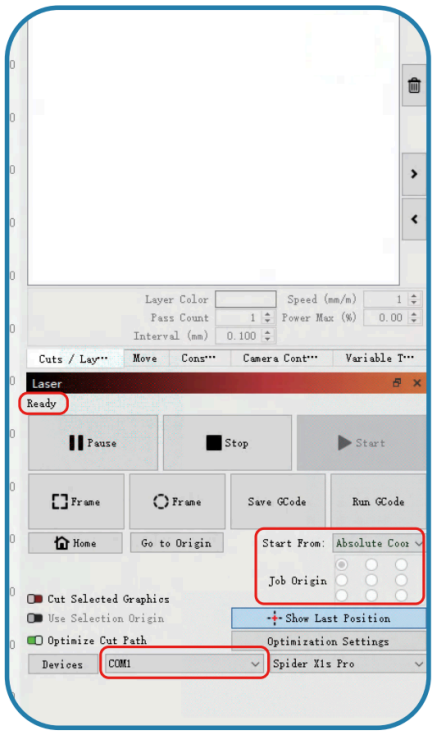
3.6 How to Connect with LightBurn

3.6 How to Connect with LightBurn

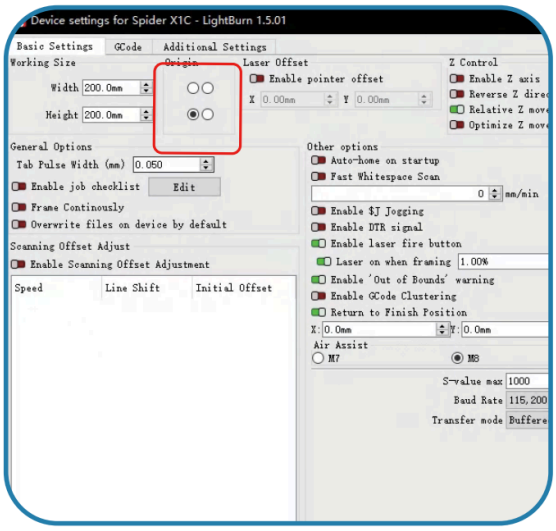
1. You can import the configurations of Spider X1S Pro on Lightburn by click "Devices" on the right corner.



2. To connect PC with Spider X1S Pro by USB cable, and the navigation will show "Ready" when you choose the right port.



3. Click "Edit" on Lightburn navigation bar, then click "Device Setting" to set the origin.



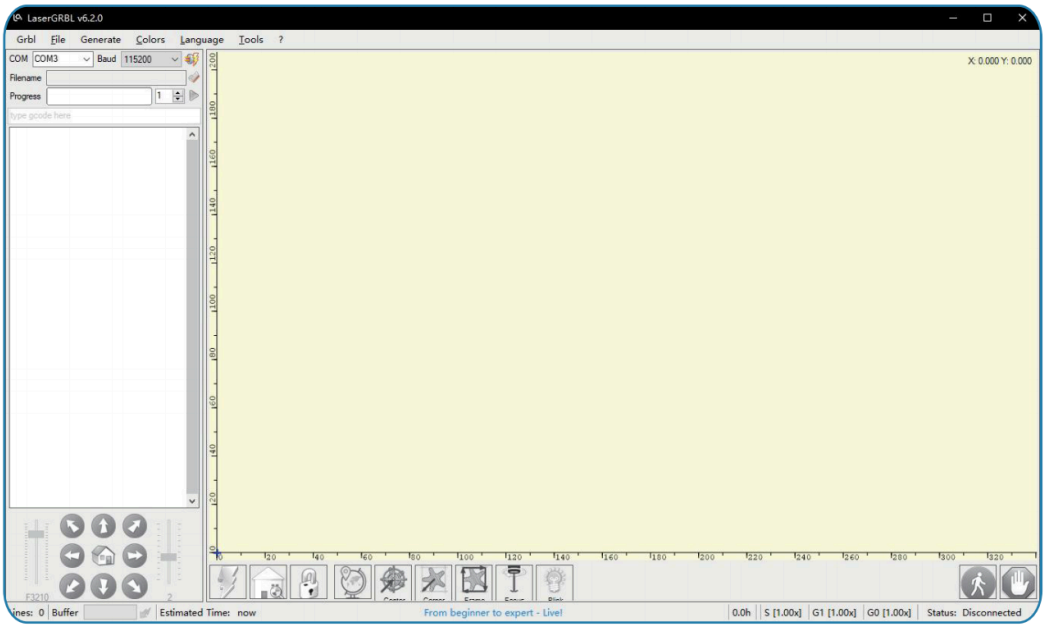
TIPS

Note: When setting the device origin in the lower left corner in LightBurn, you need to set the Start Form to "Absolute Coords" and the Job Origin to the upper left corner.

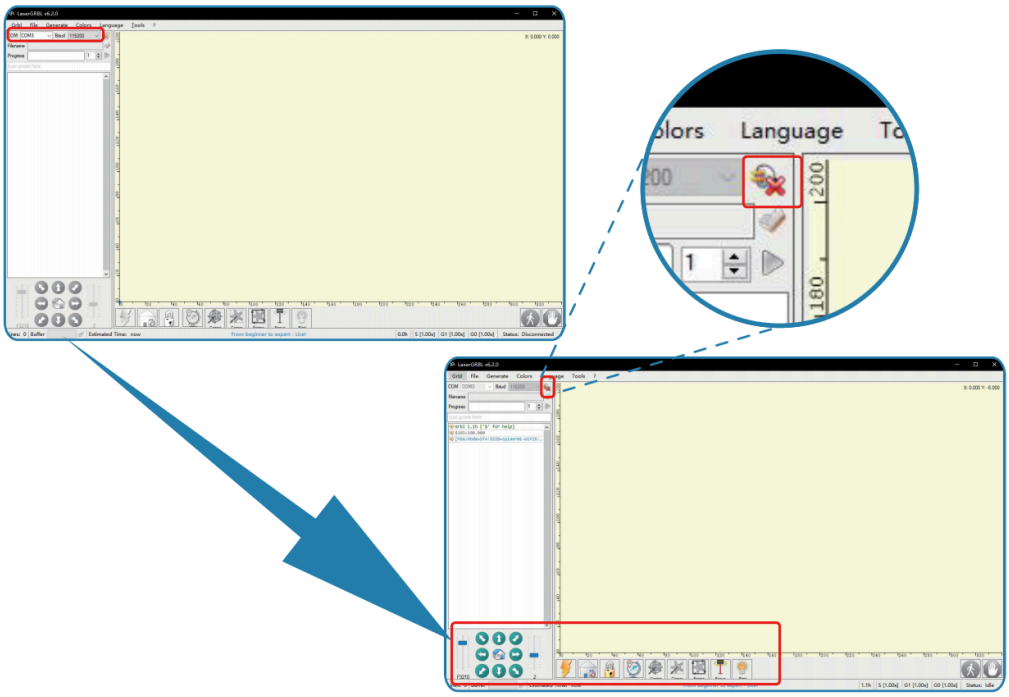
3.7 How to Connect with LaserGRBL

3.7 How to Connect with LaserGRBL

1. To connect Spider X1S Pro with PC by USB cable, please choose the right port and the choose "115200" on Baud.



2. Click the small lightning icon on the right, and the function bar changes from gray to color, indicating that the connection is successful.

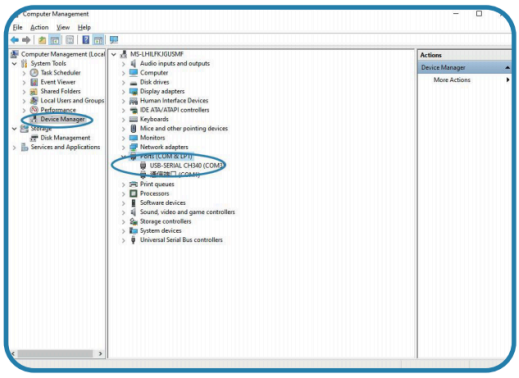


3.8 To control by web wireless on PC

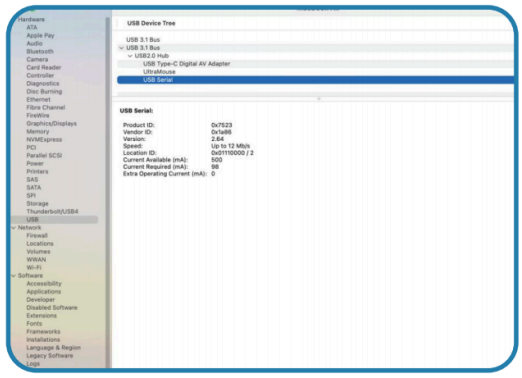
3.8 To control by web wireless on PC

1. First let's connect the Spider X1S Pro WiFi.

2. Spider X1S Pro without screen: to connect Spider X1S Pro with PC by USB cable, please make sure the CH341/CH340 driver has been installed on PC successfully first.
The driver can be downloaded on wiki.tyvok.com or tyvok.com.
Then, please connect Spider X1S Pro with PC by burnning software.



Windows



mac OS

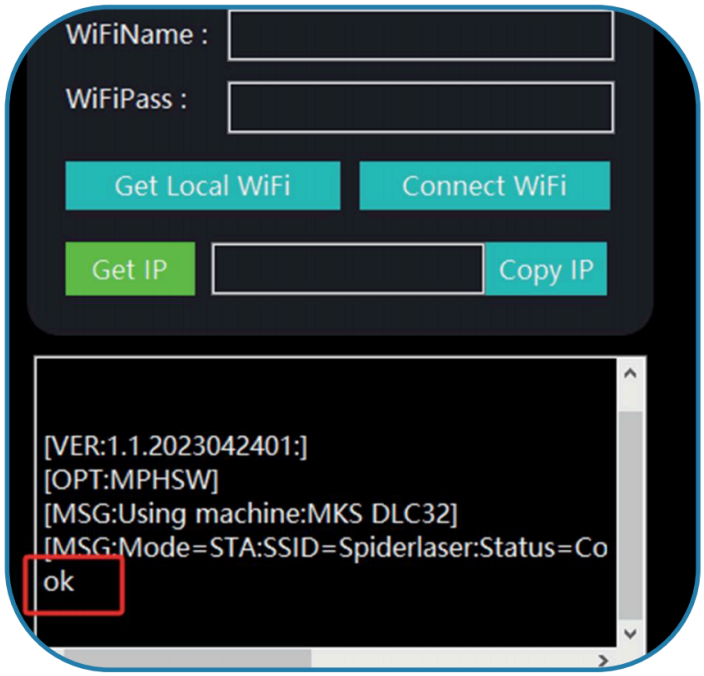
TIPS Note: For Spider X1S Pro with screen, you can click "WiFi" and input the password to connect WiFi. The WiFi band should be 2.4GHz.

3.9 Steps to connect WiFi of Spider X1S Pro on PC

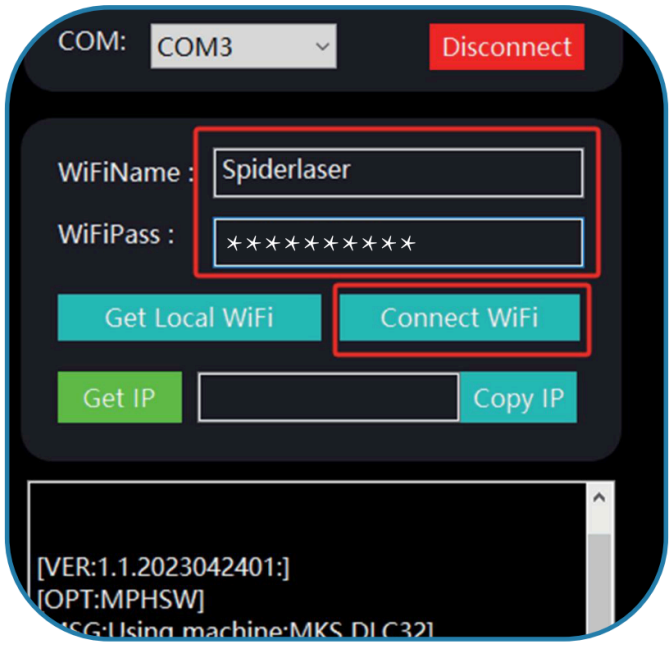
1. Please install the firmware burning program. You can download the burning software from our website "tyvok.com" under "Firmware Download".
2. After software installation, follow these steps to connect X1S Pro via WiFi.
3. Open the software and select.

4. If Spider X1S Pro is connected With PC, the COM port will display the current port. Click "Connect."

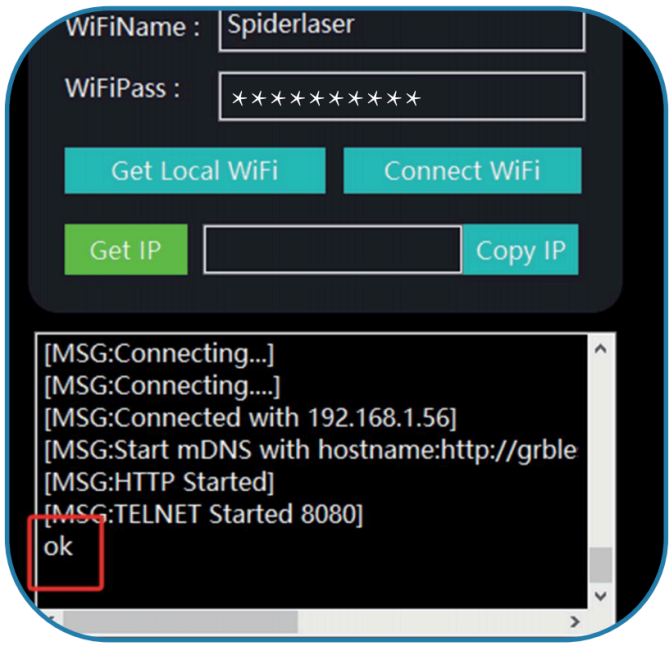
5. Upon successful connection, "OK" will be displayed.



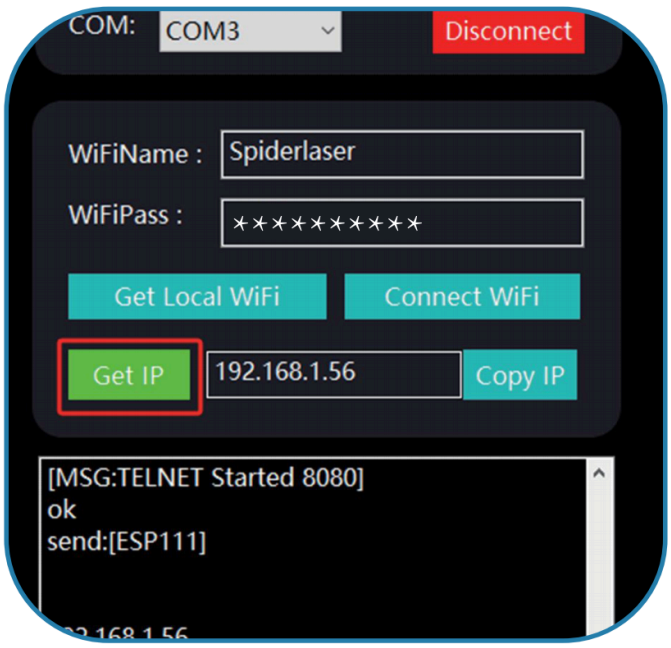
6. Enter the WiFi and WiFi password, then click "Connect WiFi."



7. Wait for a while; when "OK" is displayed, it indicates that the device is successfully connected to WiFi.

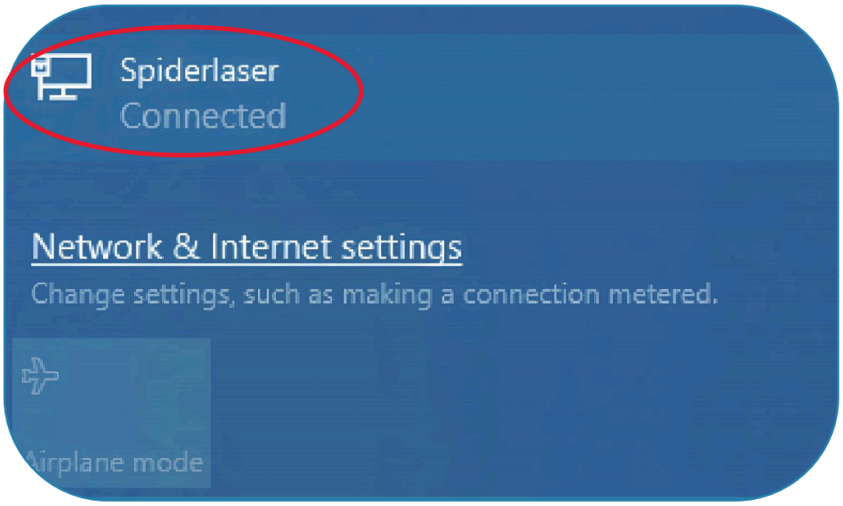


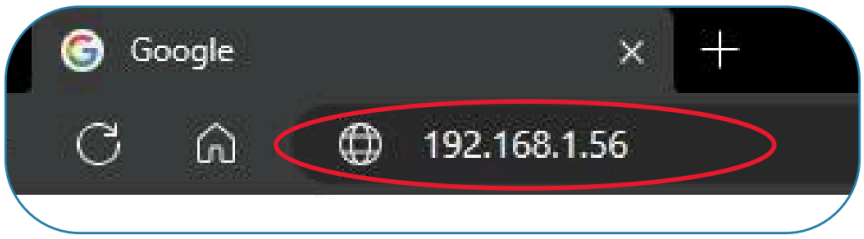
8. Click "Get IP" to obtain X1S Pro's IP address (remember this address). Close the software, and from now on, X1S Pro will automatically connect to WiFi on startup without manual intervention.



TIPS - **You can operate Spider X1S Pro after you've input the IP address in your browser.**

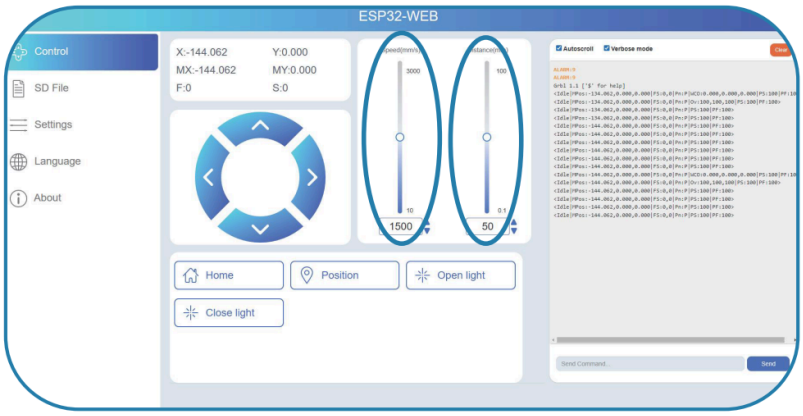
9. Please type in the IP address in your browser on PC like below and make sure Spider X1S Pro is in the same WiFi network with PC. The WiFi band should be 2.4GHz.



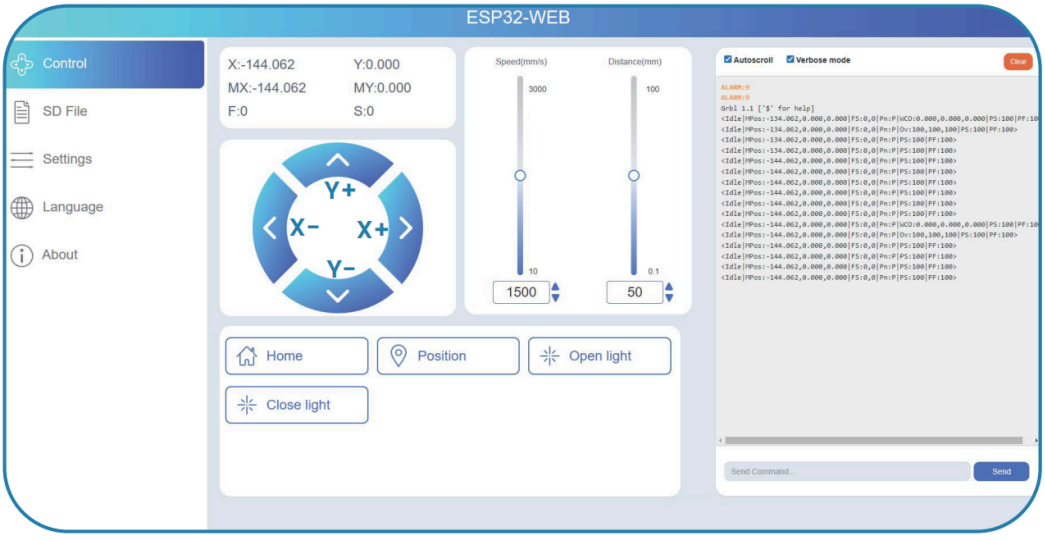


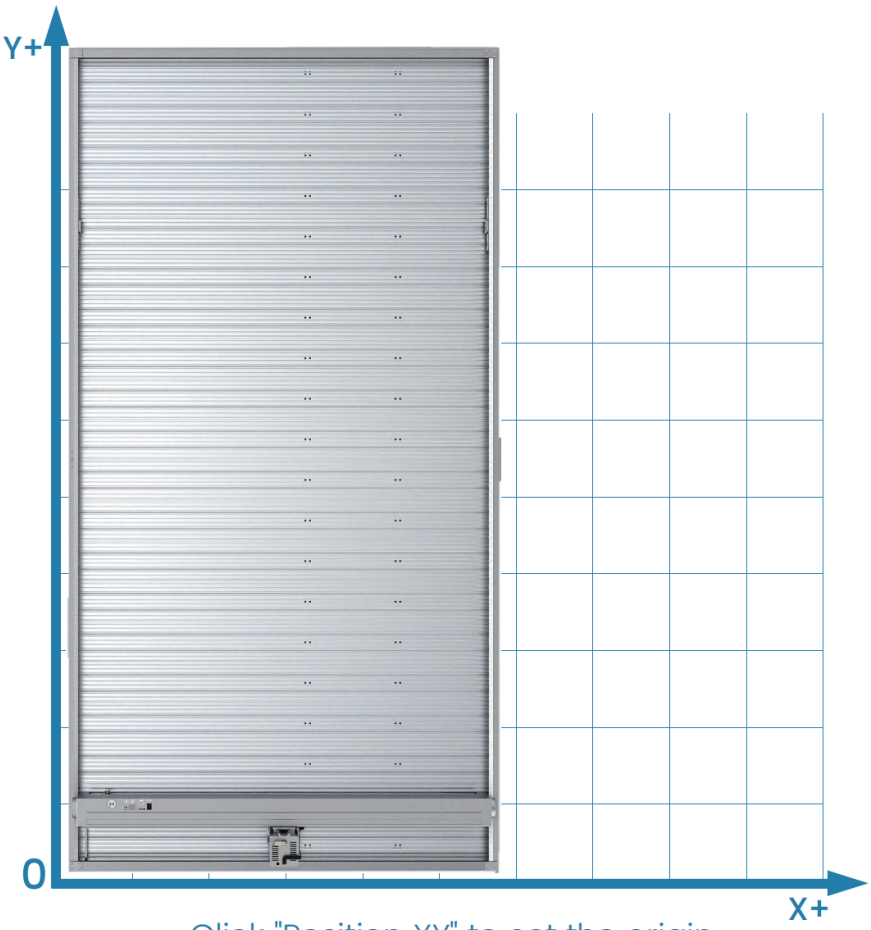
10. Enter the operation page of Spider X1S Pro web terminal. Make preparations before starting on the “Control” page, that is, move the position of laser head and set the origin.

After entering the operation page, adjust the moving distance in the "Distance" column recommended (10mm-20mm)

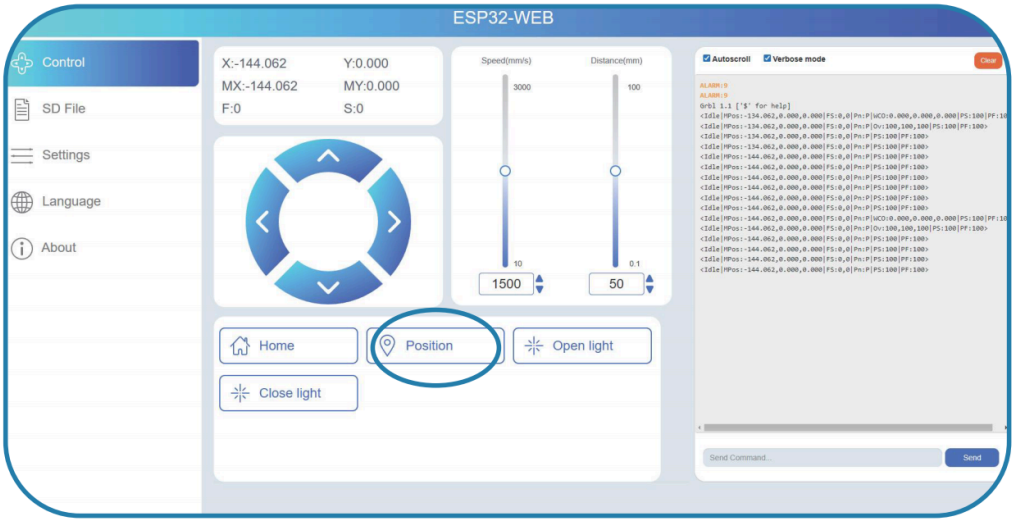


Click the arrow keys to control the laser head and move it to thelower-left corner of the frame (as shown in Figure 2 below). The corresponding relationship between the arrow keys and the machine's movement direction is illustrated in "As shown below".



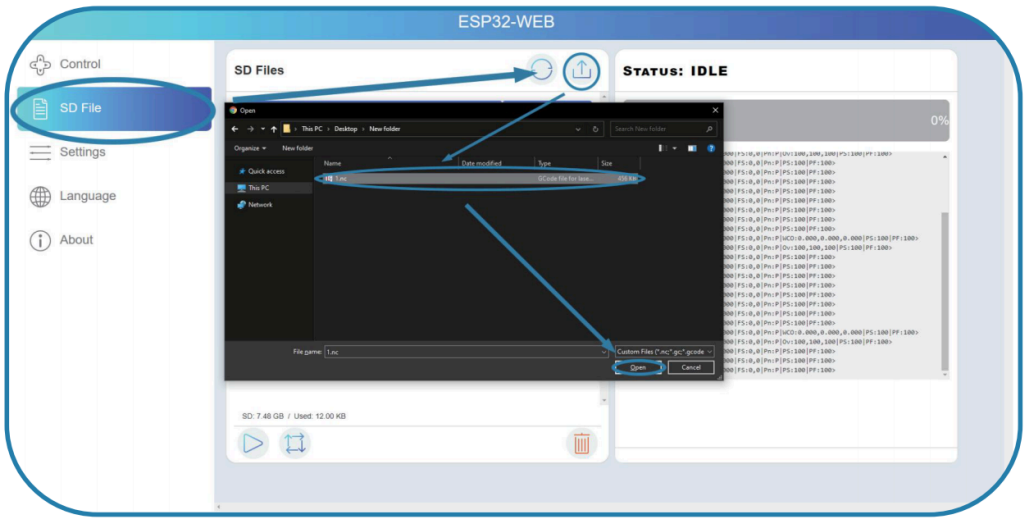


Click "Position XY" to set the origin.

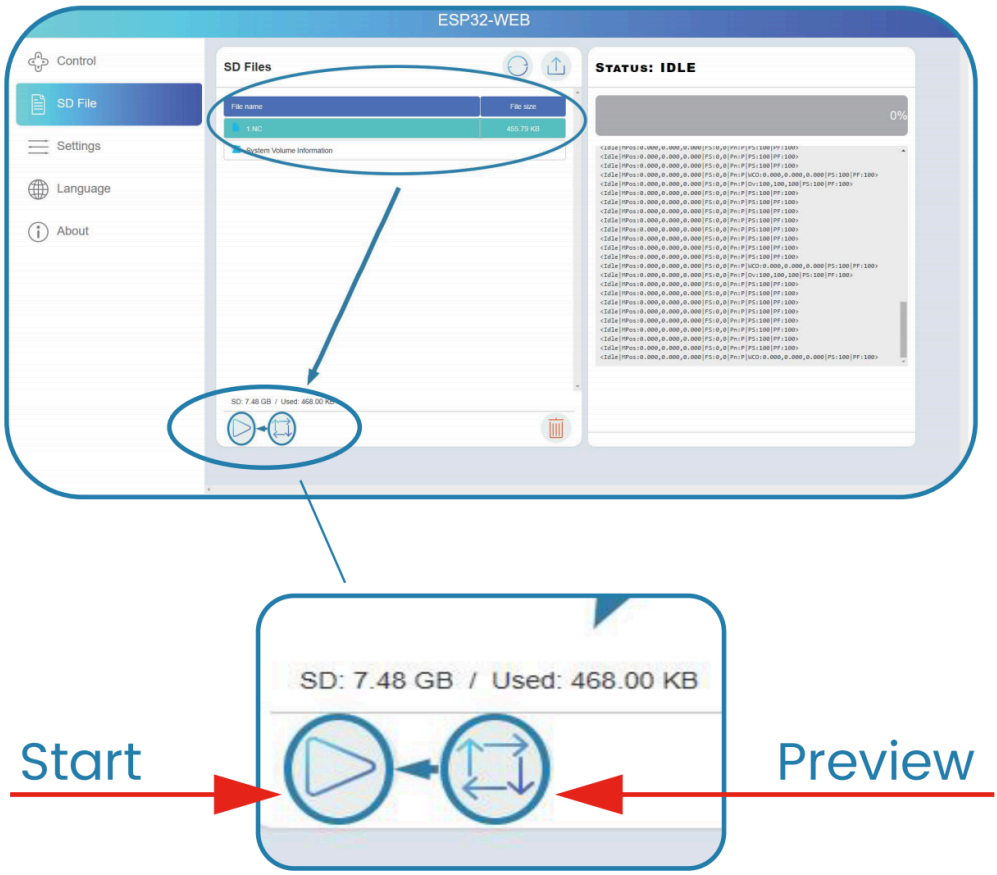


Set the working origin to the lower left corner in various design software to make it consistent with the setting of Spider X1S Pro.

11. Click "SD File", select the working file and upload it to the web-side system.



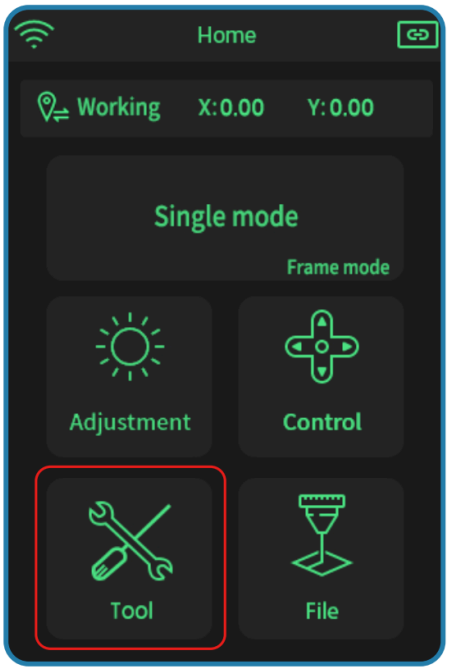
12. Select the file, preview the working area and start working after confirmation.



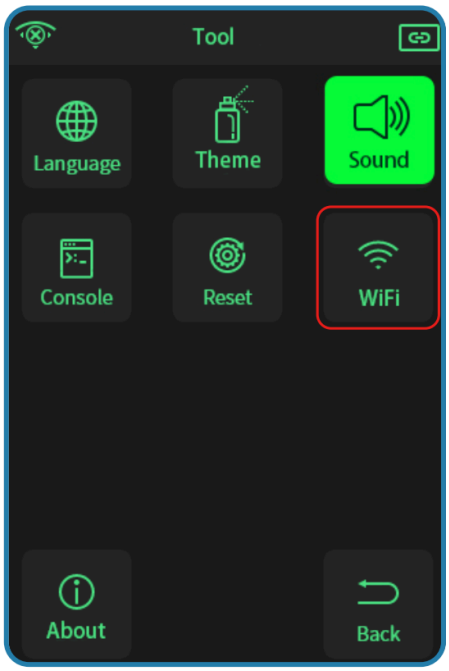
3.10 To connect WiFi with screen

3.10 To connect WiFi with screen

1. Turn on the Spider X1S Pro, click "Tool".

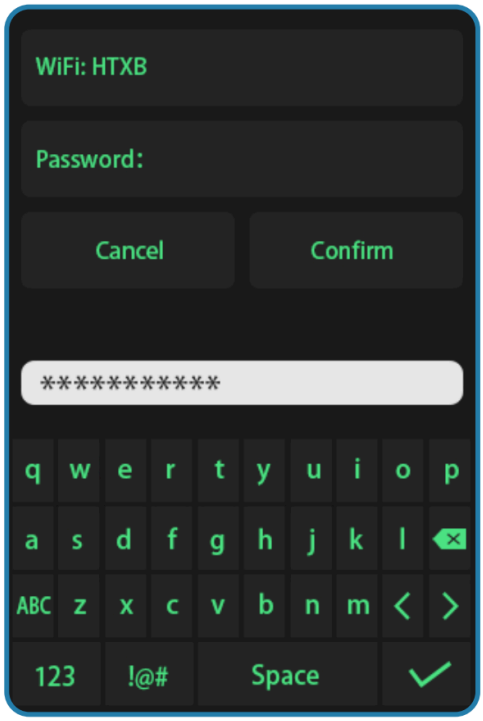


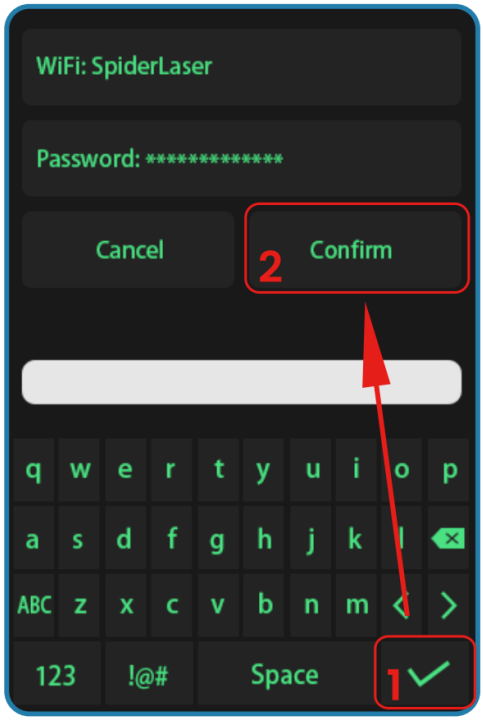
2. Click "WiFi"



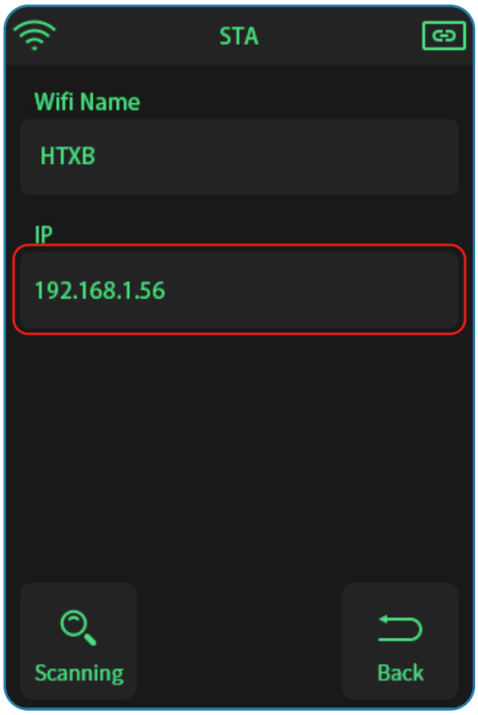
3. Choose the WiFi you want to connect with.

4. Input the password, click "✓", then click "confirm".

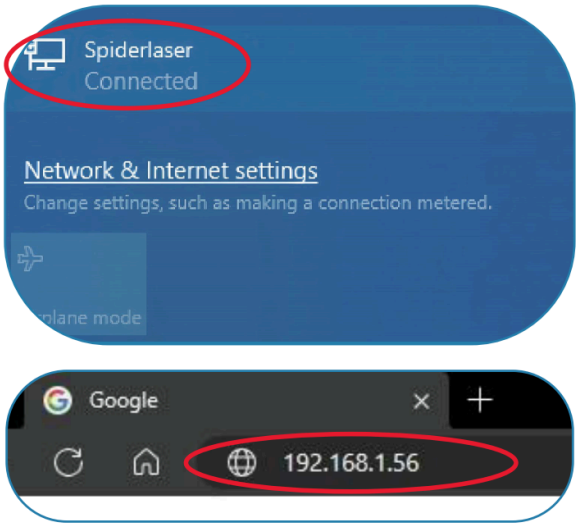




5. After the WiFi has been connected successful, you can get the IP Address like below picture shown.



6. After obtaining the device IP address, ensure that the PC is on the same network as the device. Then, simply enter the corresponding IP address into the browser on the PC to access the device's web interface for operation.



Parameters

PARAMETERS

Model

Spider X1S Pro

Machine size

1110*320*165mm

Net weight

15KG

Operation system

Windows / Mac OS

Input

100-240V ~ 50-60Hz

Output

DC 24V 10A

Machine Power

240W

Laser wave length

455±5nm

Laser power

20W / 40W / 60W

Safety class

CLASS I(FDA classification standard)

Laser engraving software

LaserGRBL, LightBurn

Format files

jpeg, png, bmp, svg, dxf

Type of supporting materials

Cardboard, wood, bamboo, rubber, leather, fabric, acrylic, painted metal, plastic, etc.

Warranty

WARRANTY

Before returning the product and filling in a warranty, please contact after-sale person for going through after-sale formality. And attach this warranty card along with the returned machine.

Repair ☐ **Change** ☐ **Return** ☐
Name: _____ **Telephone:** _____
Address: _____
Serial Number: _____ **Order Number:** _____
Channel: _____ **Date of Purchase Day:** _____
Manufacture Problem Description and Return Reasons/Suggestions: _____
Repair Records: _____

Note: Client needs to fill in basic info. and return reasons. Repair records shall be retained for technicians.

※ Users should abide by the laws and regulations of the country and region where the equipment is located (place of use), abide by professional ethics, and pay attention to safety obligations. It is strictly forbidden to use our products or equipment for any illegal purpose. Our company is not responsible for the relevant legal responsibilities that the violator should bear.
Since each model is different, the actual product may be different from the picture. Please refer to the actual product.
The final interpretation right belongs to Shenzhen Tyvok Technology Co., ltd.

Wiki JS

Youtube

Join in Spider X1S Pro FB Group

Company: Shenzhen Tyvok Technology Co., Ltd.

Address: Room 206, Building 7, Mengliyuan Industrial Park, Yousong Road, Longhua District, Shenzhen, PRC.

Website: www.tyvok.com

Email: cs@tyvok.com