12 /16

Install the Laser Shield
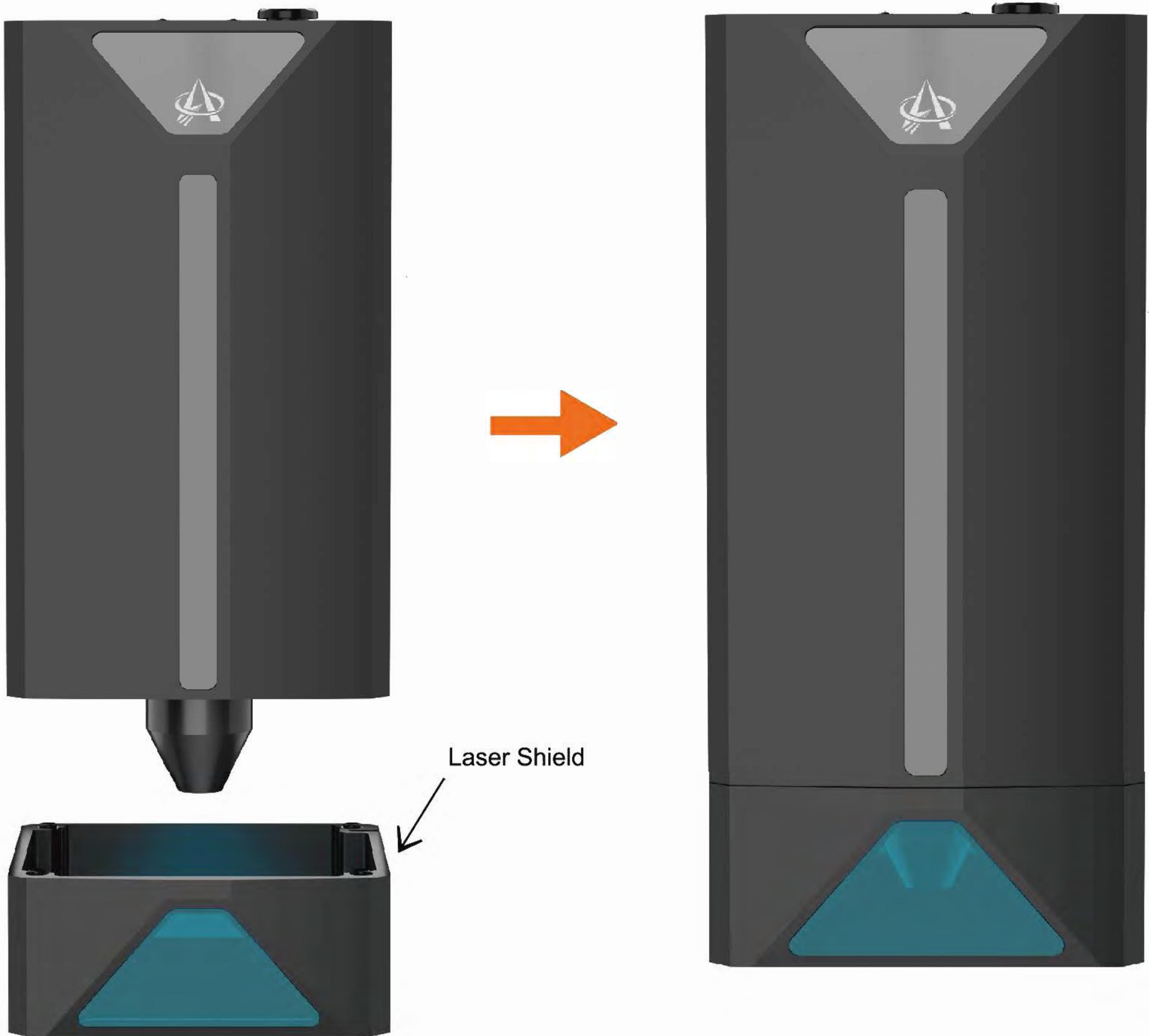
Laser Shield

Step 12: Attach the magnetic side of the Laser Shield to the laser module.

13 /16

How to Focus

Lever

Focus Stick
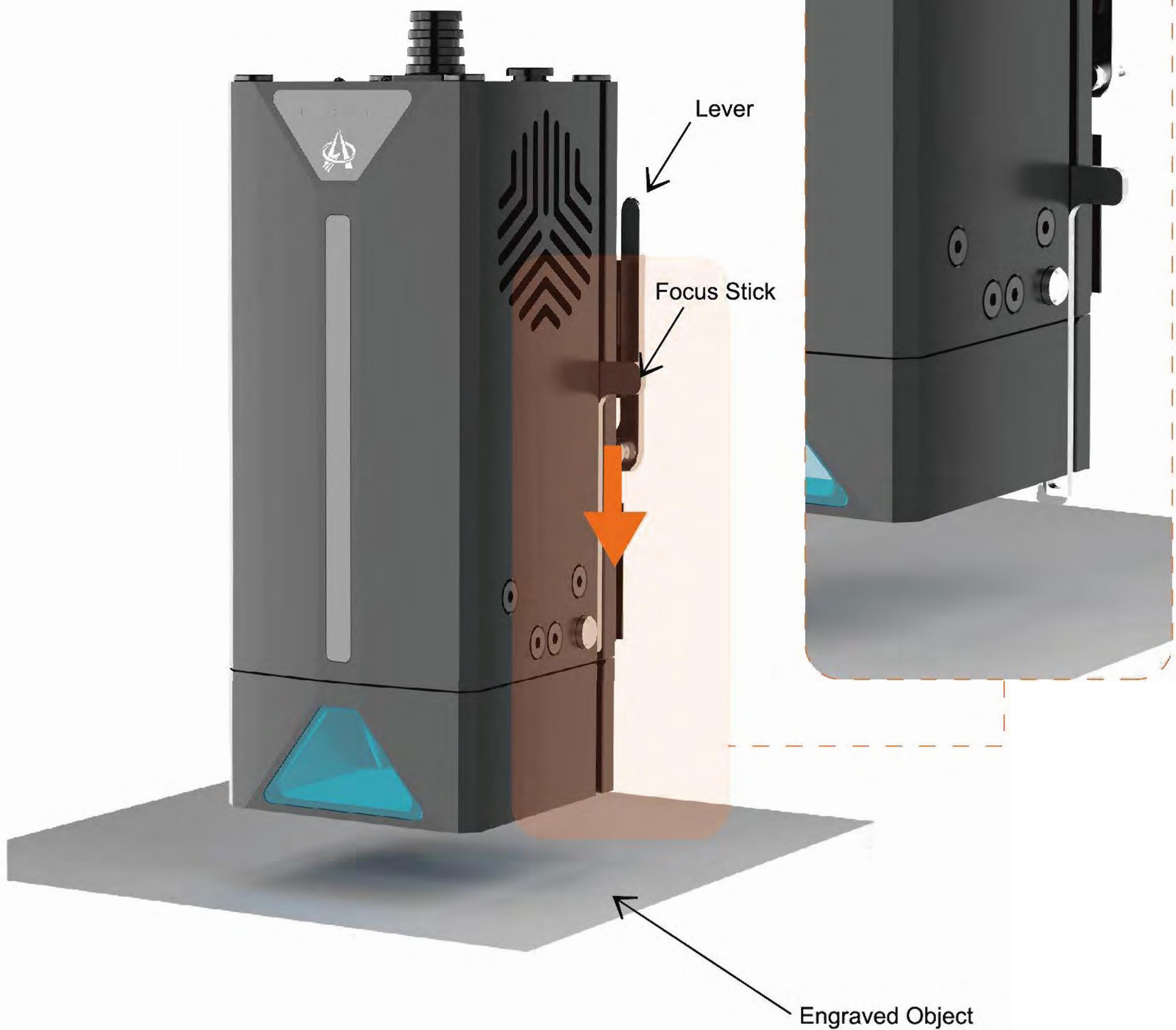
Engraved Object

Step 13: Place the engraving object and push the Focus Stick down to fix.

14 /16

How to Focus

Pull it down

Focus Stick

Lever

Step 14: Pull down the lever, let the laser module move down until the Focus Stick is against the engraved object, and then lift up the lever to fix the laser module.

15 /16

How to Focus

Pull it up

Release

Step 15: After focusing, please press the small button to reset the Focus Stick to prevent it from being damaged.

Machine Assembly

Complete

Safety Lock
(Keep the Key. Professional Use Only)

Emergency Stop Button

Power

Y Rotary ←→ Y Motor

YRR

USB

⇄
Serial

I/O
Port

24V 8A

Wifi Aerial

Step 16: The type-C to USB cable is used to connect the computer and machine. Ensure that the type-C end is plugged into the laser machine, while the USB end is plugged into the computer.

03

How to Use

Power

engrave

3.1 Machine status description

State	Operate	Phenomenon	Result
Power On	Press and hold the power button for more than 500ms.	The white LED will transition from dim to bright, and the light strips will gradually illuminate from the center towards both sides.	The machine is now powered on and quickly seeking its zero point.
Power Off	Method 1: Press and hold the power button for more than 3000ms (3 seconds). Method 2: On the home screen, select "Shutdown" from the bottom left corner.	The white LED will transition from bright to dim, and the light strips will gradually dim from both sides towards the center.	The machine will power off and all operations will stop.
Standby	The machine is powered on and in an idle state.	The white LED is constantly on, and the light strips are displaying a colorful and breathing pattern.	The machine is in a standby mode, ready for operation.
In Operation	The machine is powered on and in a working state.	The cyan-blue LED is constantly on, and the light strips have a light blue background with a green progress bar indicating the engraving progress.	The machine is in a processing state, actively working on engraving tasks.
Fault Indicator	The machine has encountered a malfunction and cannot perform engraving motion.	The LED shows no change, and the light strips slowly flash in yellow, accompanied by a <di,du> sound.	The machine is unable to proceed with engraving, indicating a malfunction.
Screen Feedback	Using the screen.	Upon tapping the screen, it emits a <di> sound.	The screen provides feedback and navigates to the corresponding information.

3.2 How to connect the machine to a computer

- Install the driver: Before installing the computer driver, please power on the machine and connect it to the PC using a USB cable.
Then, choose the appropriate driver file based on your computer system and proceed with the installation.

Computer System	Driver File	Remarks
WIN 7 / WIN 8	zadig-2.5.exe	To install this driver, the machine needs to be in the powered-on state and connected to the computer via USB for the installation to proceed.
WIN 10 / WIN 11	No installation required	
Mac	No installation required	

- To check the driver installation, follow these steps:
  - ① Find the Device Manager on your computer.
  - ② Navigate to the Ports section.
  - ③ Disconnect the USB cable from the computer.
  - ④ Observe that the new serial port disappears from the Ports section.
  - ⑤ Reconnect the USB cable.
  - ⑥ Verify that a new serial port appears, indicating successful driver installation.
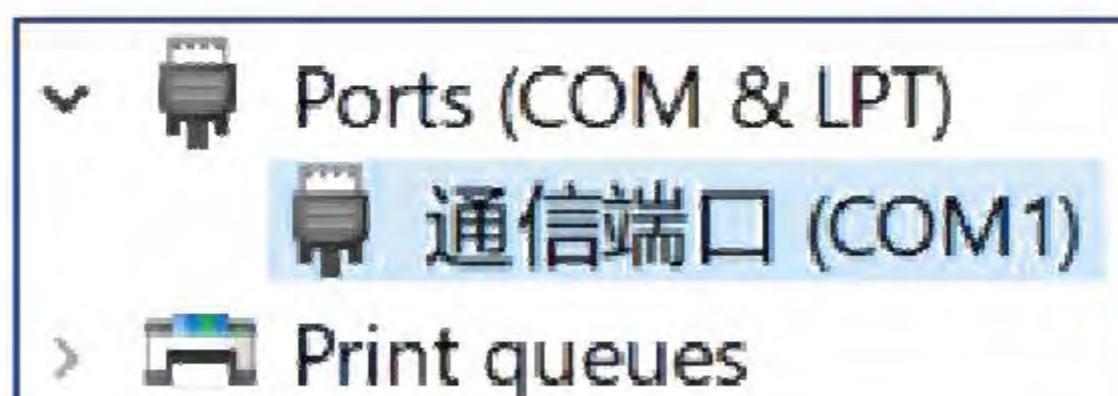

- Connecting the machine:
  - ① Launch the LaserGRBL/LightBurn software.
  - ② Select the COM port that corresponds to the one identified in step two of the installation process.
  - ③ Click on the "Connect" button.
  - ④ If a welcome message appears in the command box, it indicates a successful connection.
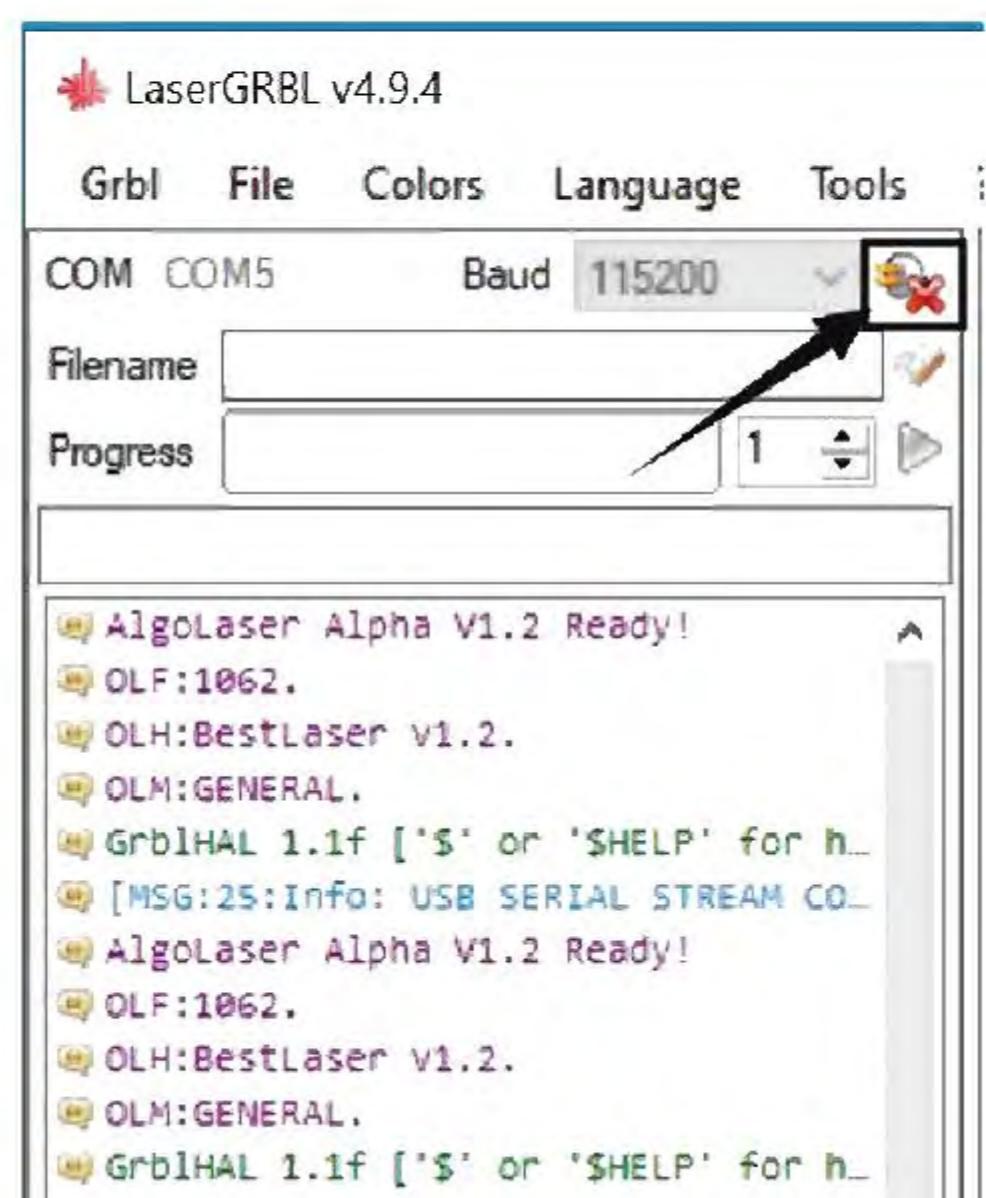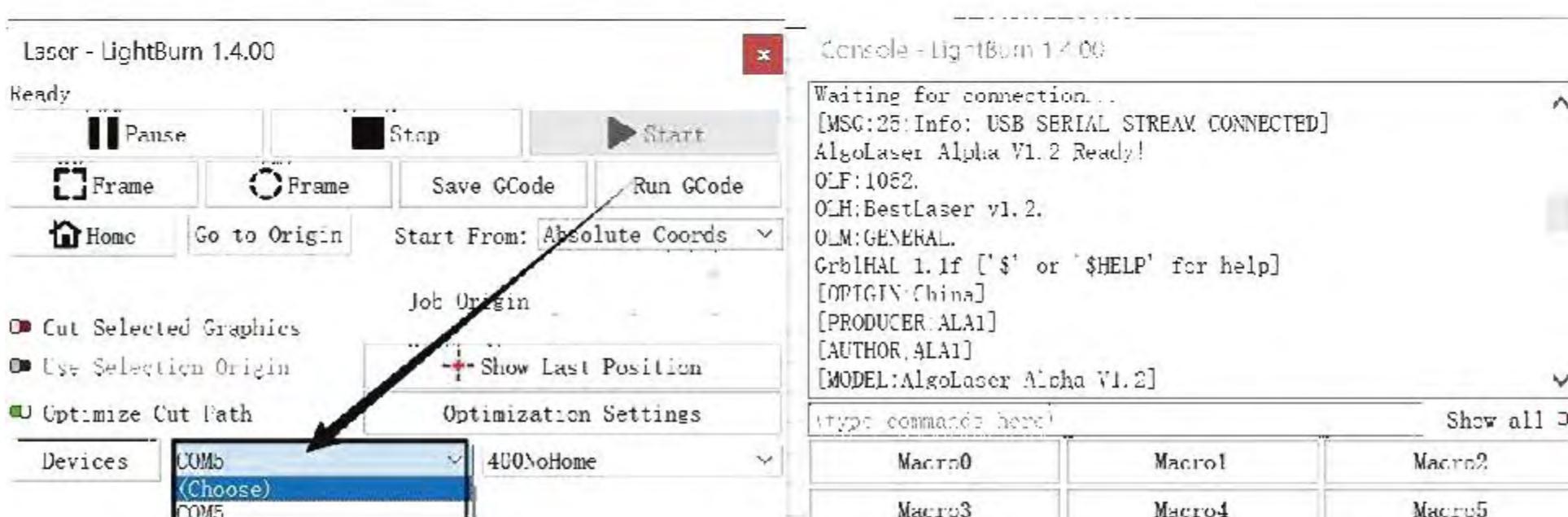
For resolving driver issues on Windows 7/8, you can follow these steps

Resolution for Driver issues on ESP MCU Espressif CDC Device Error
（Applicable to WINDOWS 7/8 ）
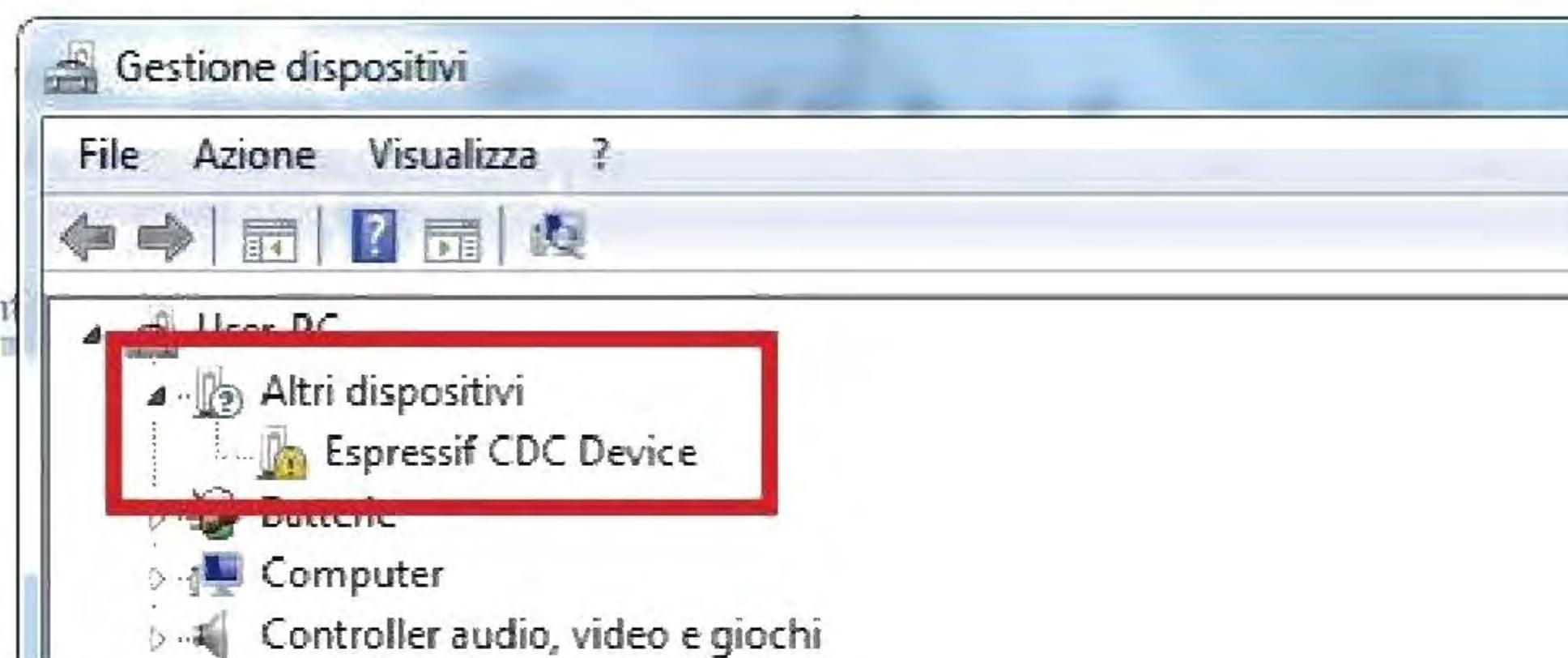
- Click the download link to download the file: Zadig-2.5.exe

Zadig-2.5.exe

Download:https://zadig.akeo.ie/

- Once download is complete,
  please run the application with Administrator Rights.

- Once opened, select List All Devices in Options from the menu.
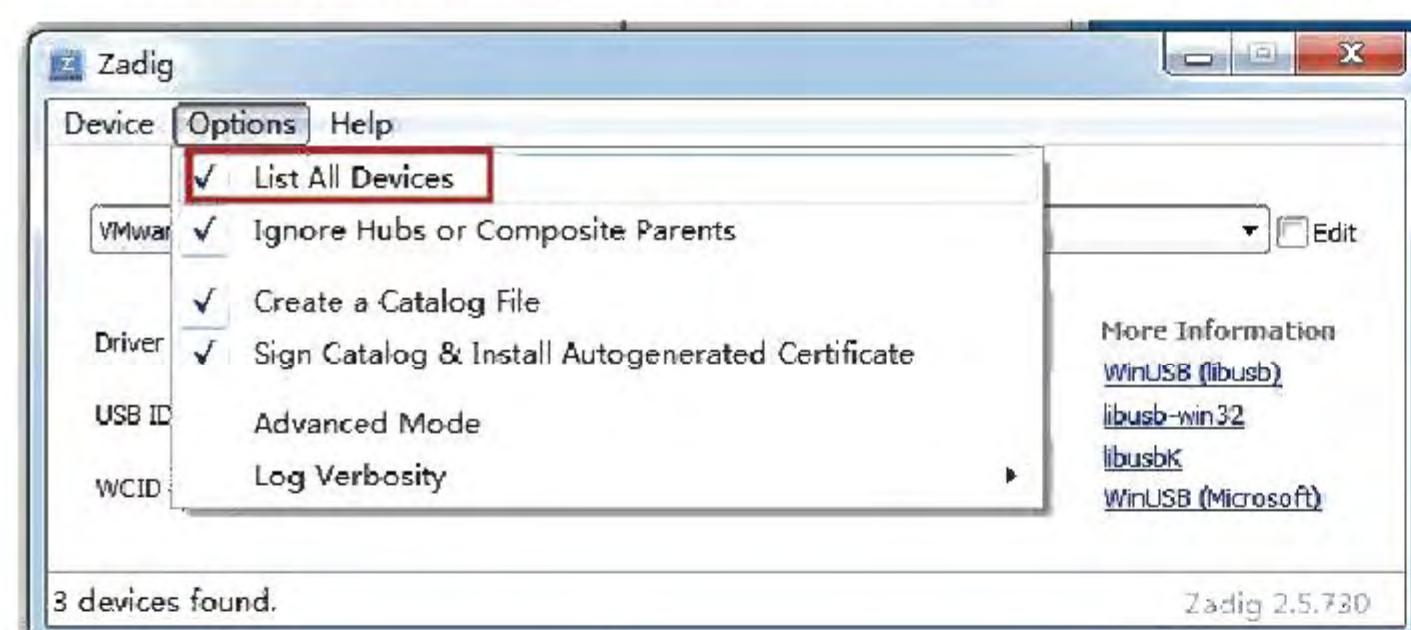

Wait for the refresh

- Select Espressif CDC Device (Interface 0) from the drop-down list.
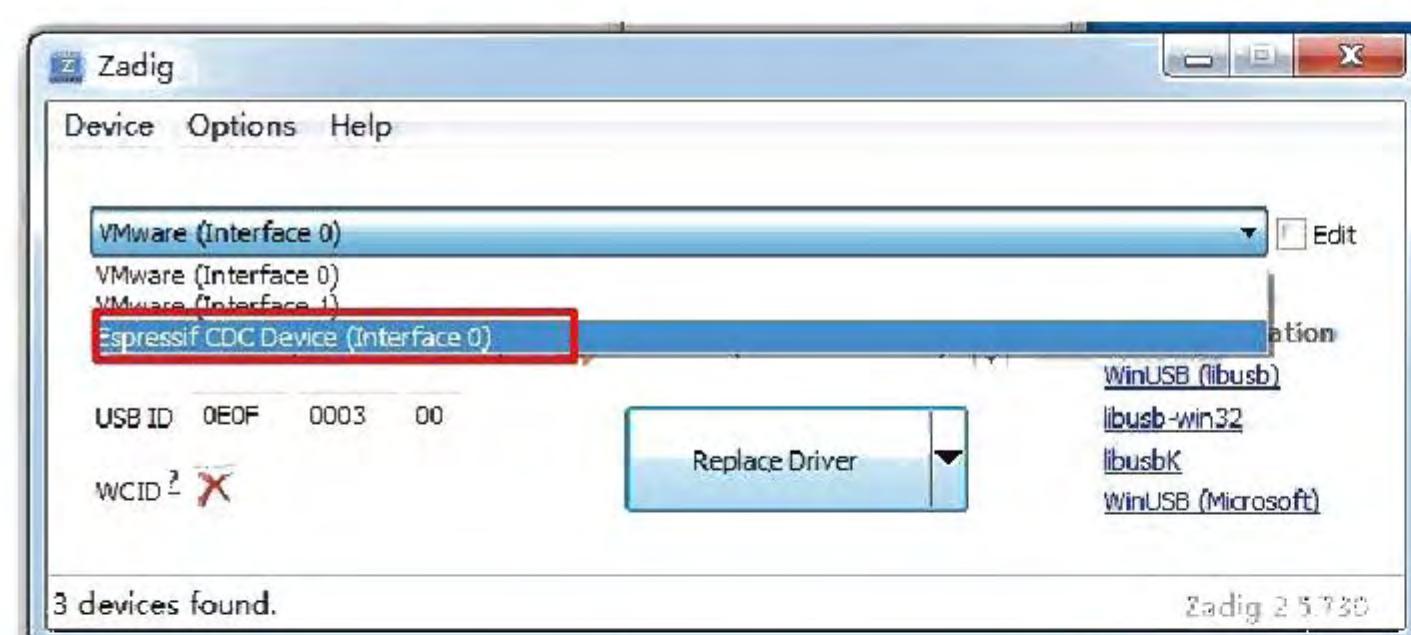
- Select USB Serial (CDC) from the list of drivers available.
 Click the Install Driver button, and wait for the installation to complete.
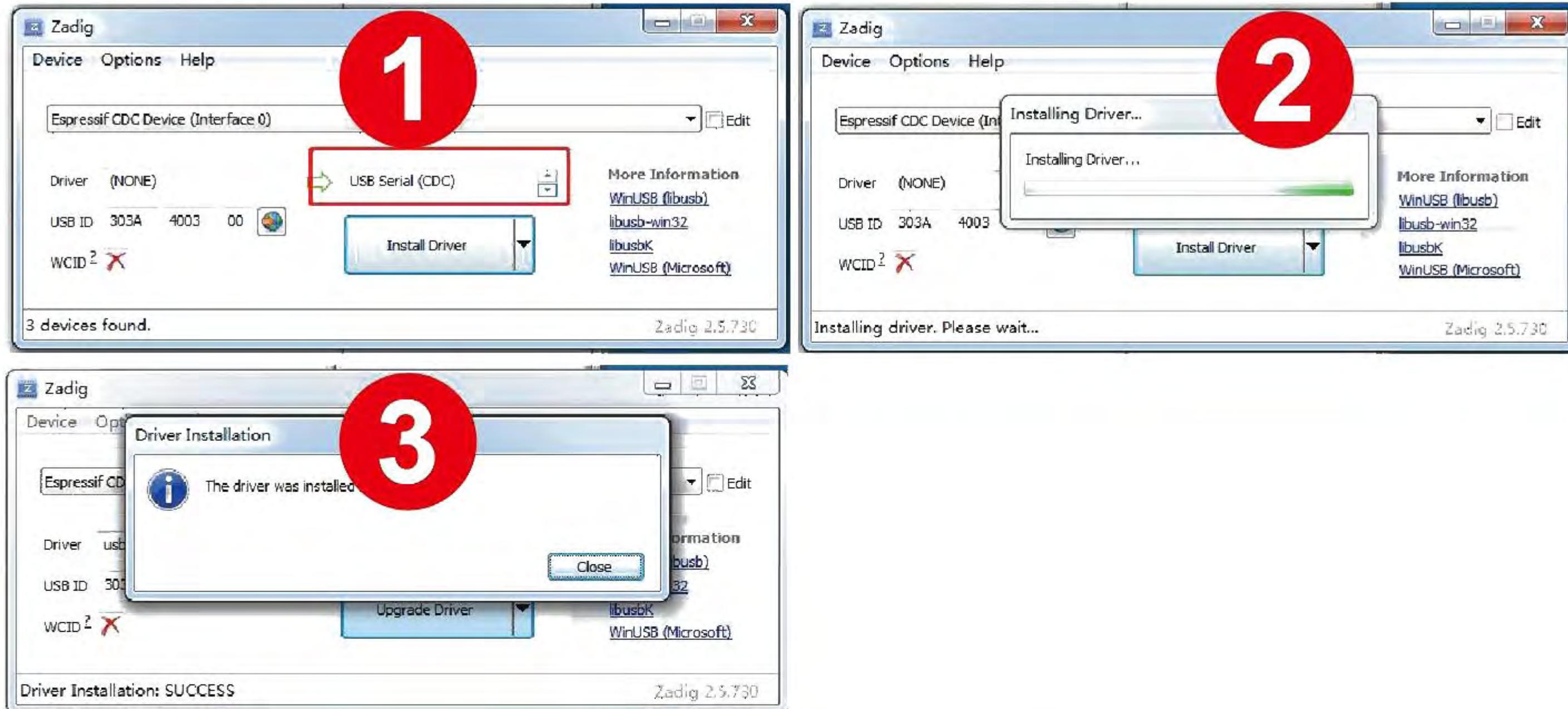
- When you are done, you can close the Zadig software.

- The New Espressif CDC Device (Interface 0) (COM X) port in Device Manager.
  Note: The COM number might be different in your machine.
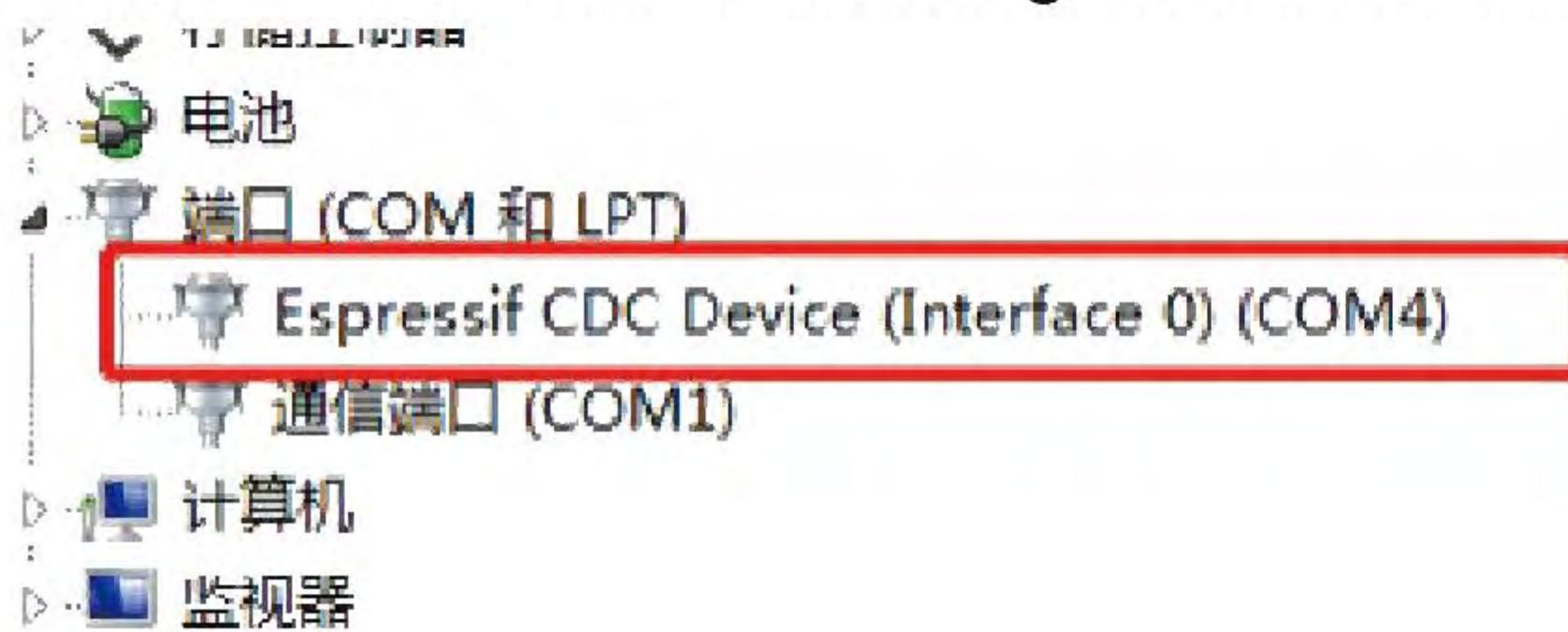
3.3 YRR/YRC connection -- Operation description

- Connection: Unplug the Y-Axis motor wire from the Y-Axis motor and connect it to the corresponding motor jack of YRR/YRC.

- Connect the control terminal: Use USB or other methods to connect the computer.

- LaserGRBL: Send "$22=0" in the "Type gcode here" field.
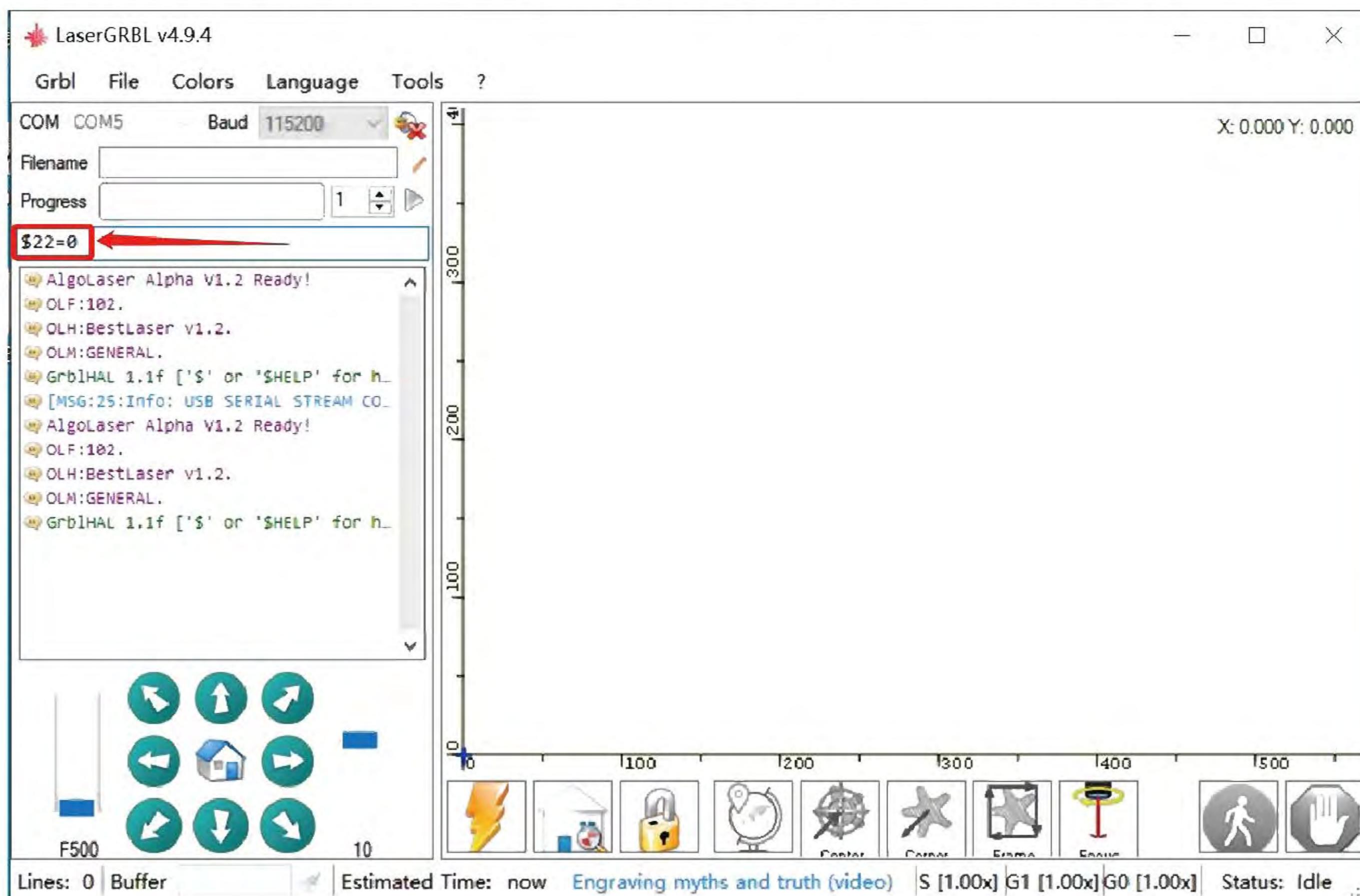
- LightBurn: Send the command "$22=0" in the "(Type Commands here)" field.
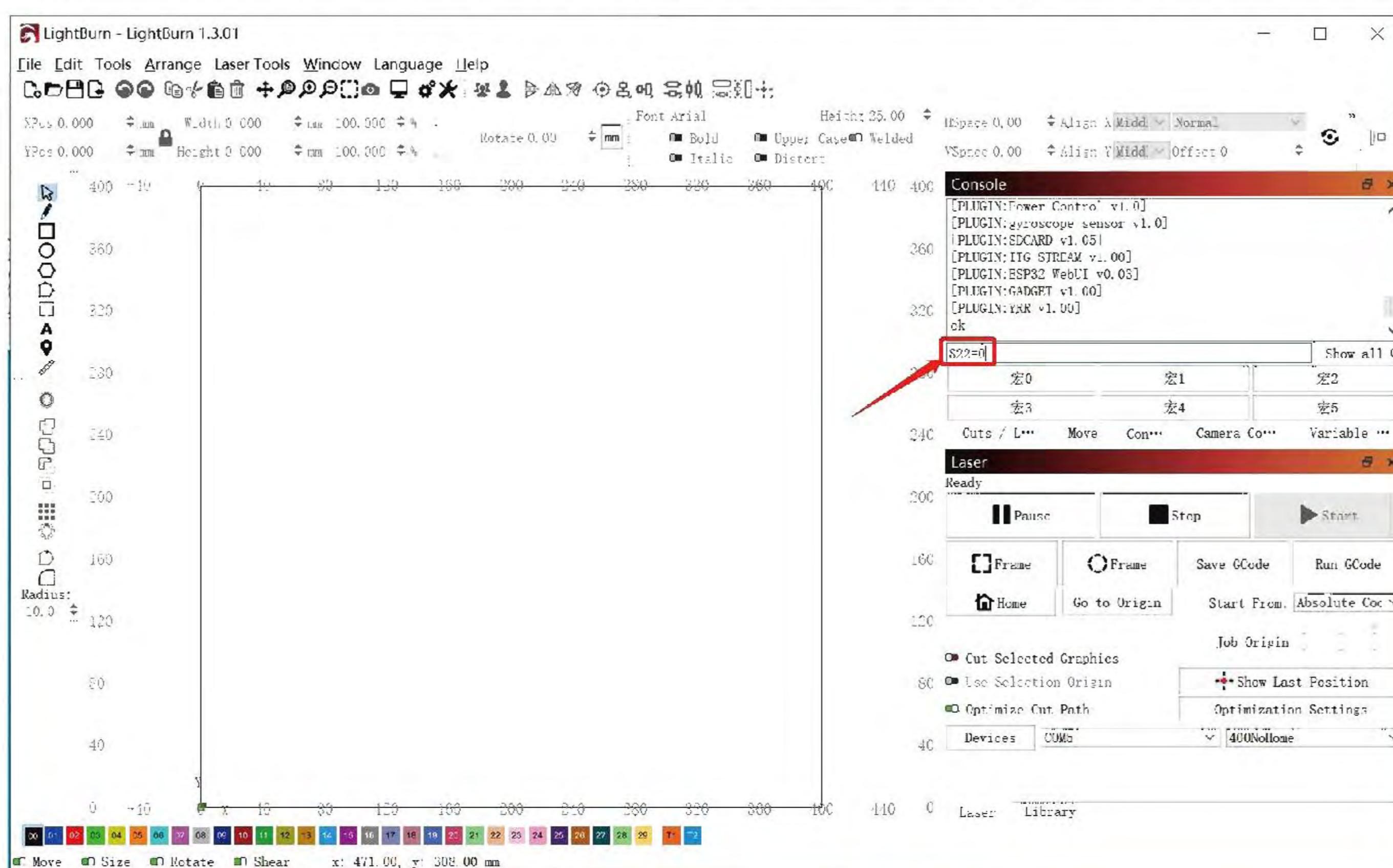
3.4 YRR/YRC Connection -- Operation description

- Connection: Unplug the Y-Axis motor wire from the Y-Axis motor and connect it to the corresponding motor jack of YRR/YRC.

- Connect the control terminal: Use USB or other methods to connect the computer.

- LaserGRBL: Send "$22=0" in the "Type gcode here" field.
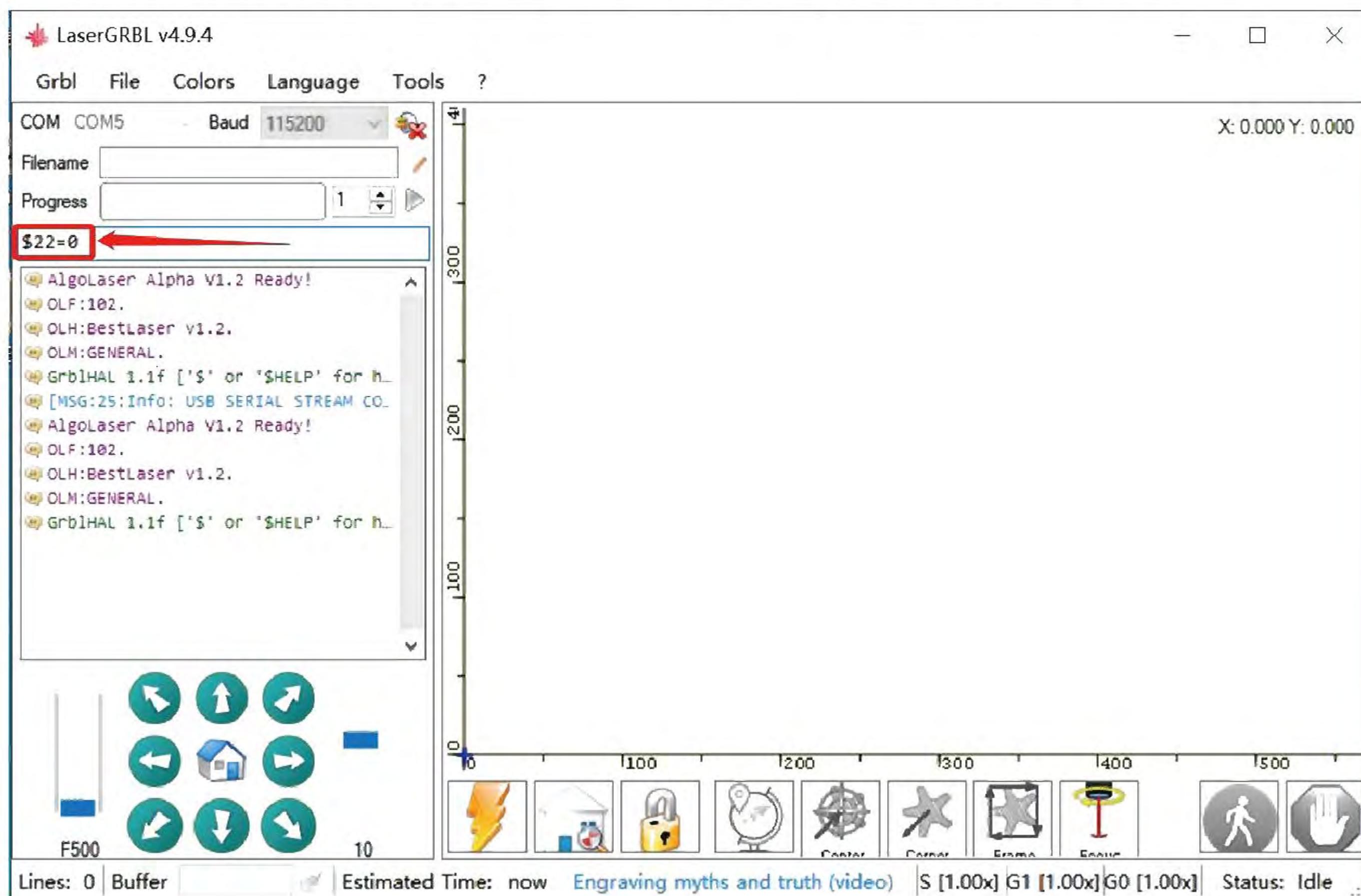
- LightBurn: Send the command "$22=0" in the "(Type Commands here)" field.
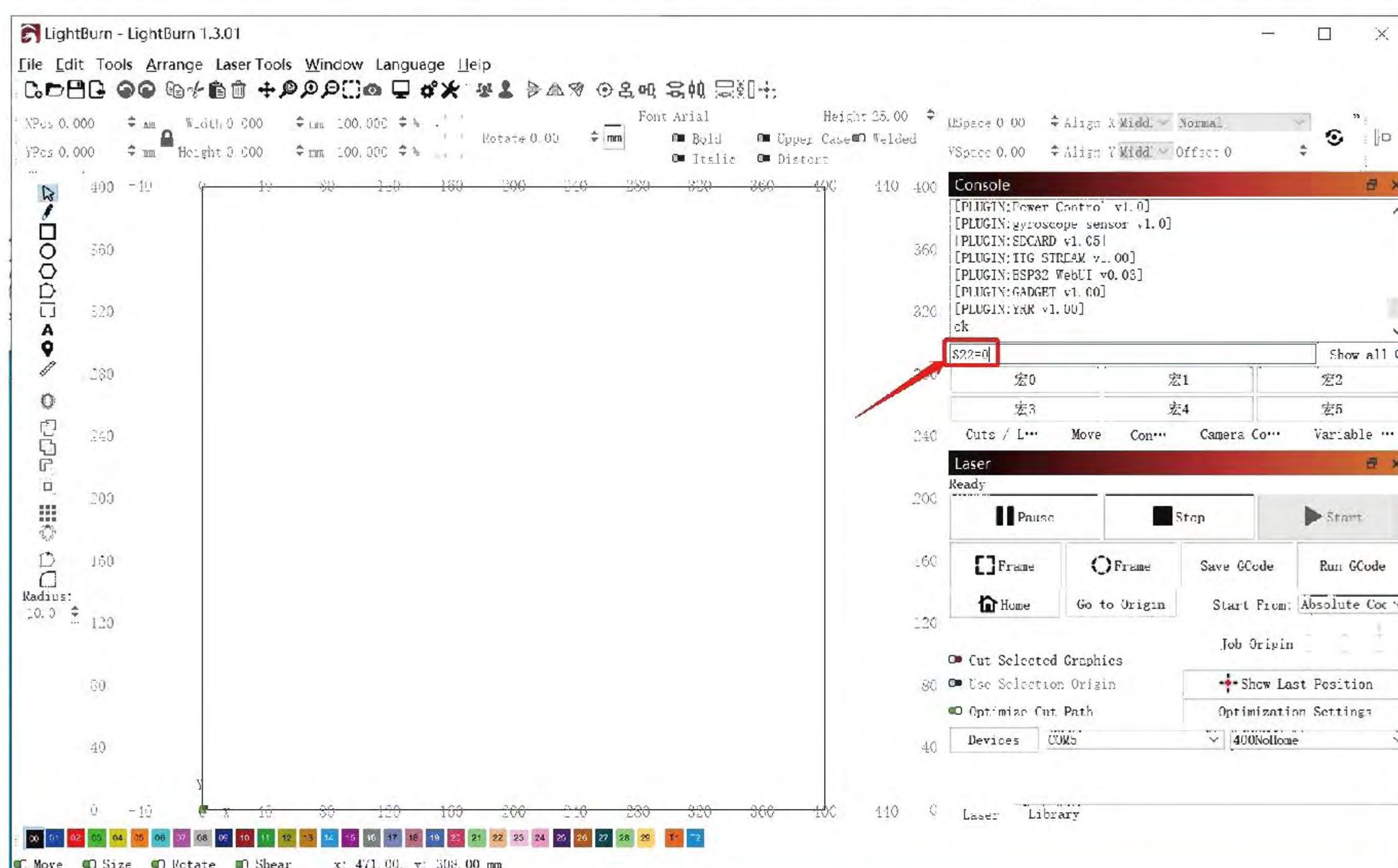
3.5 First-time screen usage instructions:

- Screen Switch: The screen will automatically power on and off with the machine.

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Machine shutdown is in progress.
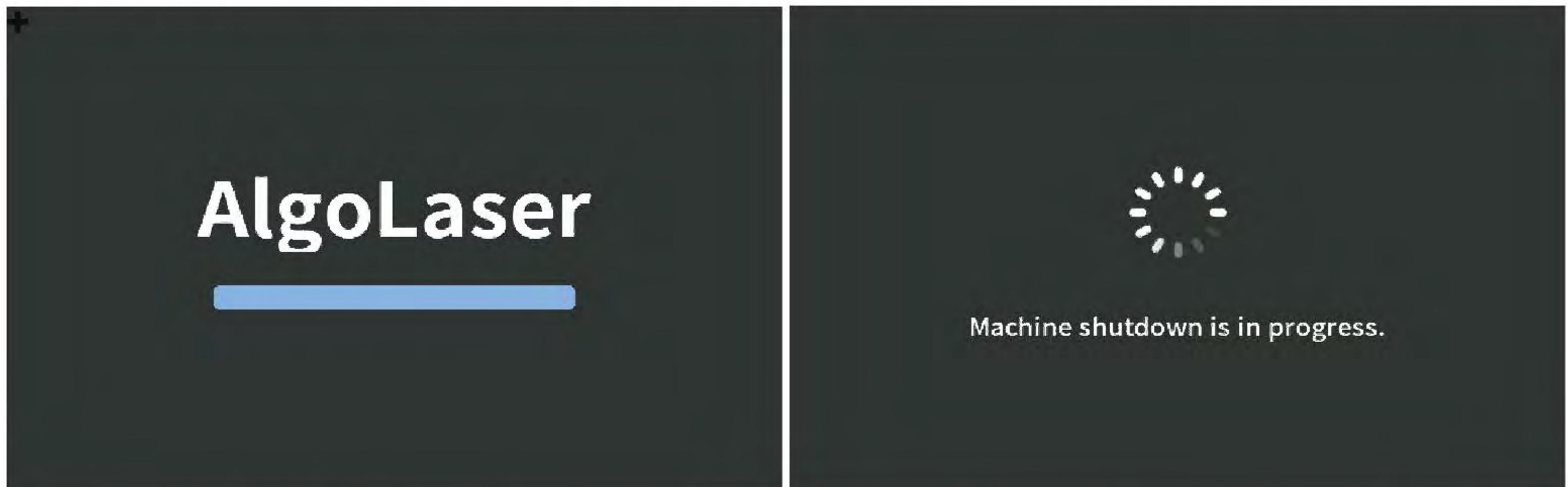
- First-time Use Guide: A. Language Selection: Choose your preferred language to proceed. If you skip this step, you can refer to the user manual to set a new language.

English(USA)

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Devotion Leads to Profession

Chinese   Chinese(zh)

1/5

English(USA)   English(UK)
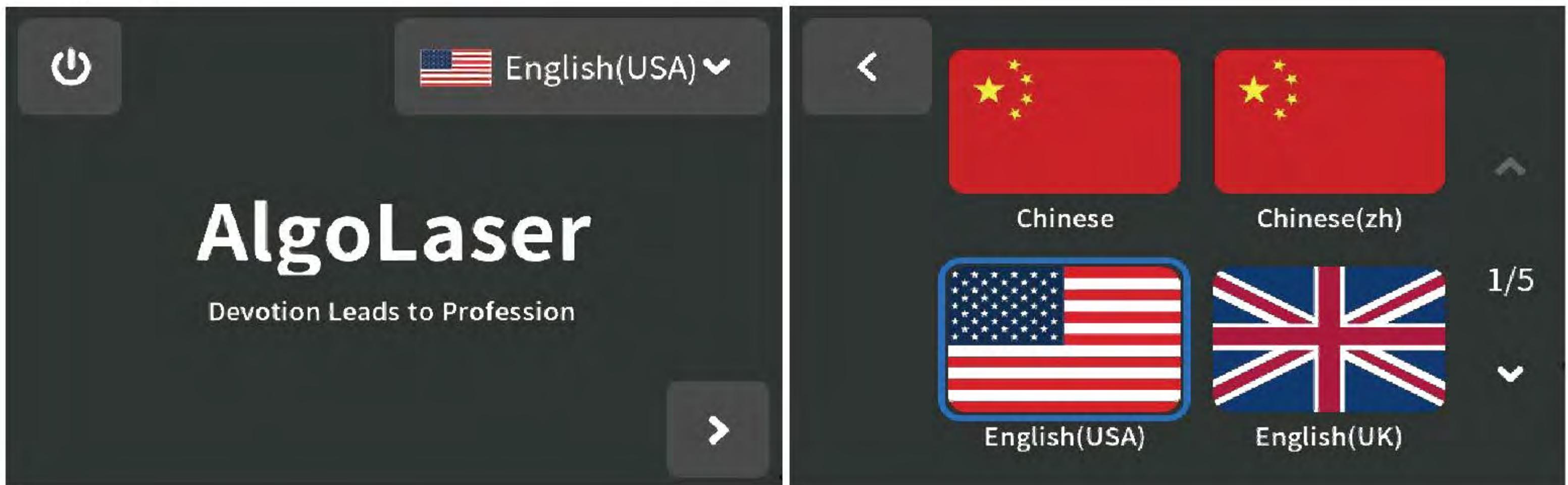
B. Device Naming: Give a unique name to your device. If you have multiple devices, make sure not to use the same name for any of them.

Rename Device

Enter a New Name

ⓘ If you have multiple devices, be careful not to duplicate the names.

🔗 After naming, the device address changes as follows:

http:/xxxxxxxxxxxxxxxxxx

Enter a New Name

1# q w e r t y u i o p

ABC a s d f g h j k l

_ z x c v b n m . , :
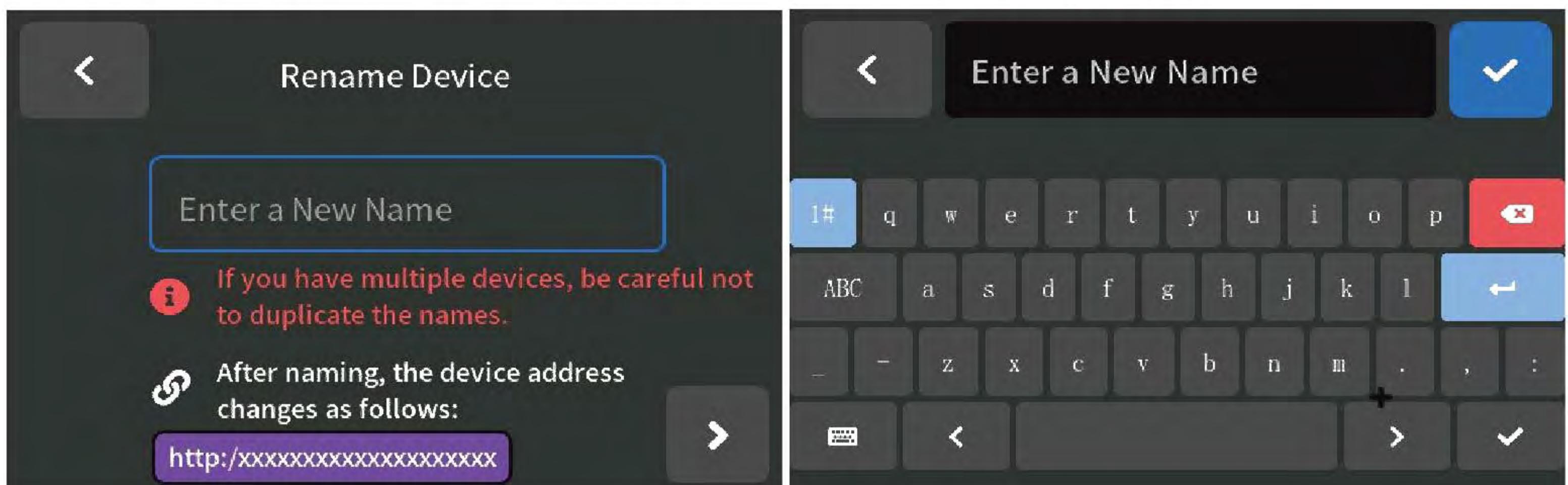
C. Network Connection: Choose the detected WiFi network and connect. If you need to add a WiFi network manually, click on the "+" icon on the left to manually add the WiFi network. Alternatively, you can click "Skip" to bypass the connection setup and proceed to use the device.
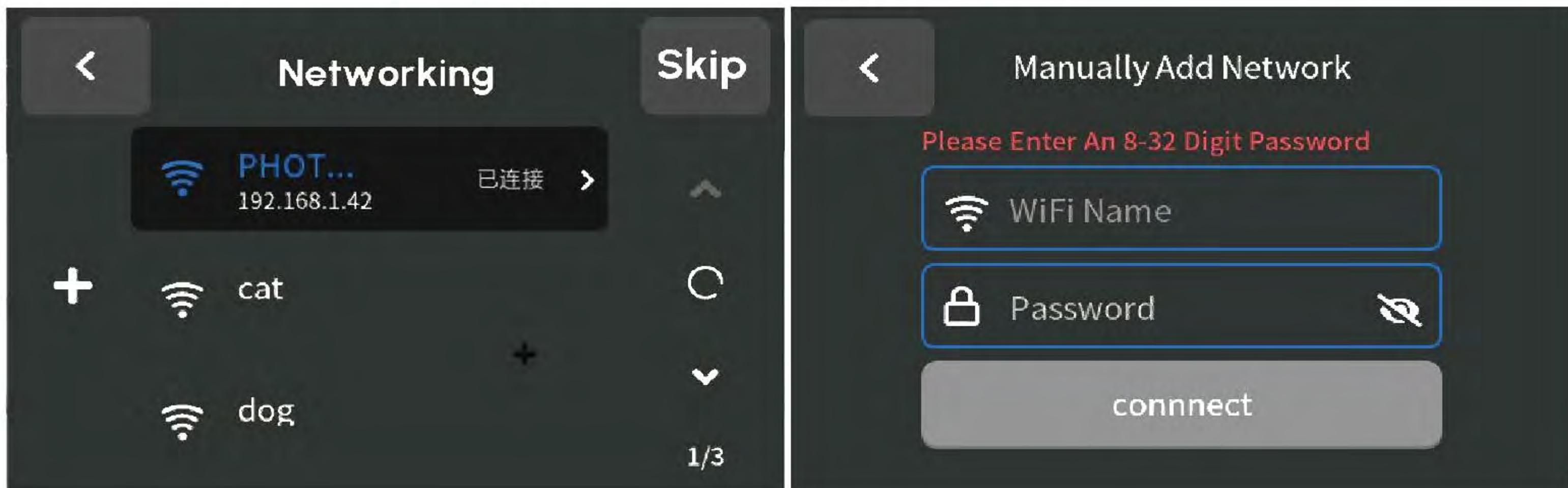
- Engraving via Screen: A. After powering on the machine, click on "Engrave" on the home page to enter the "Engraving Source" page. Select the desired engraving file source, which can be either from the SD card or USB. If using USB, make sure to insert the USB drive to access the data.
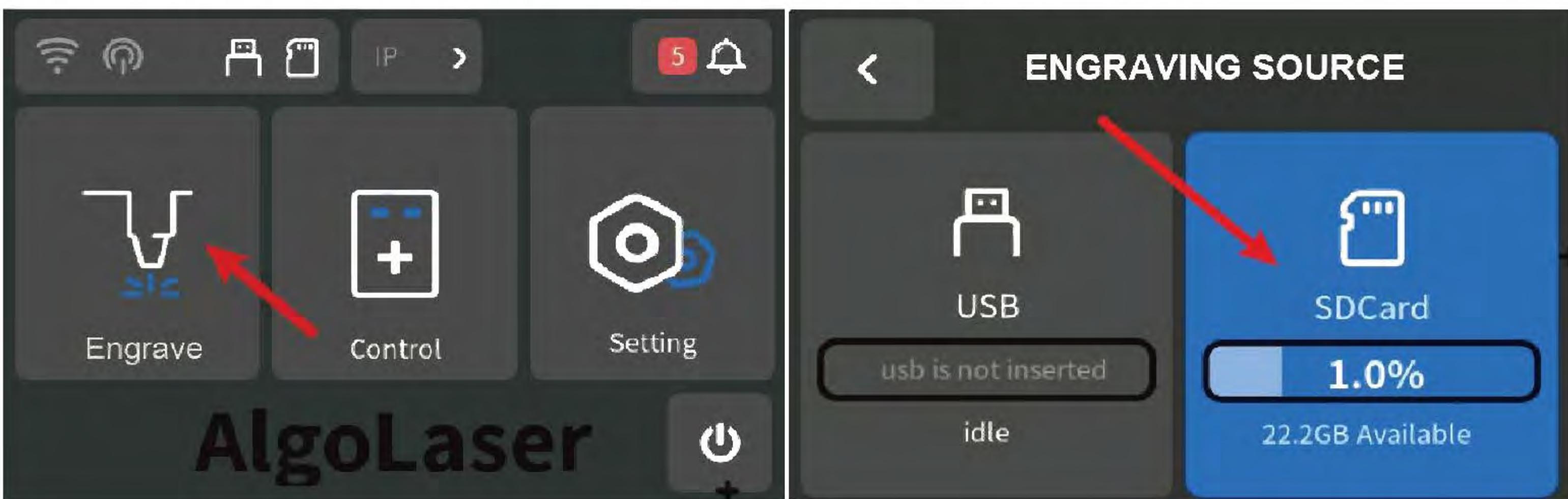
B. Select the file from the USB or SD card (jpg, png, bmp, or Gcode format), preview it, and click "Engrave" to start engraving.
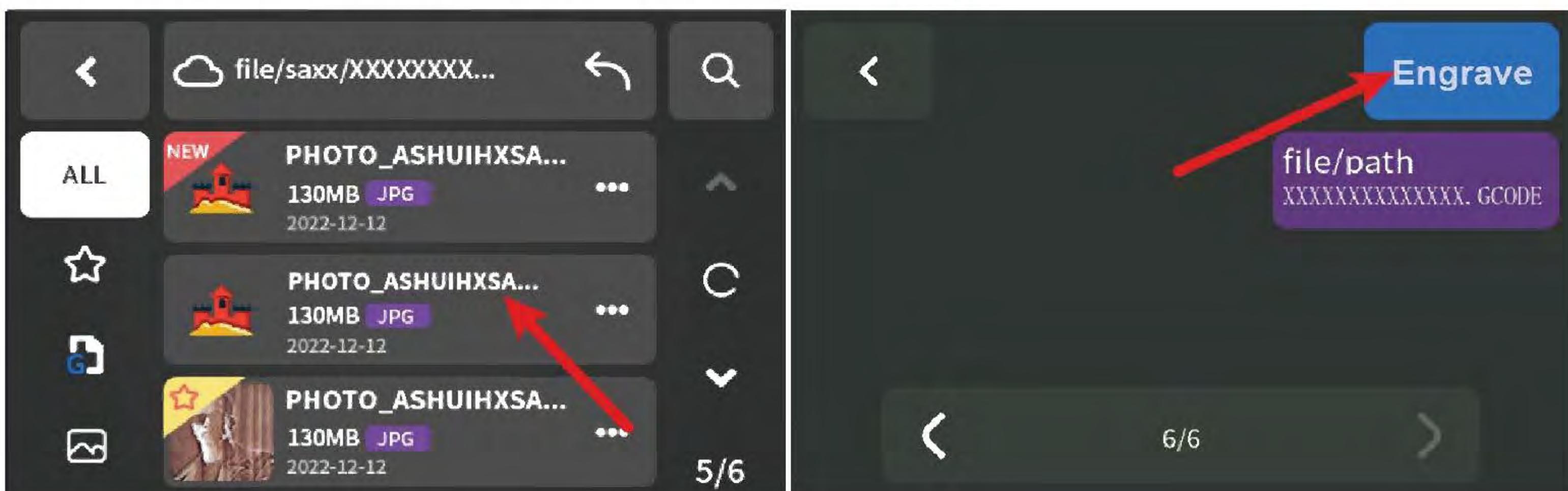
C. On the parameter page, select the engraving quality, power, mode, speed, and number of passes. Once the parameters are confirmed (detailed data available in the published cutting data), click "Start Processing" to enter the engraving preview page. Select "Engrave" to prepare for engraving, and use the right button for image preview.
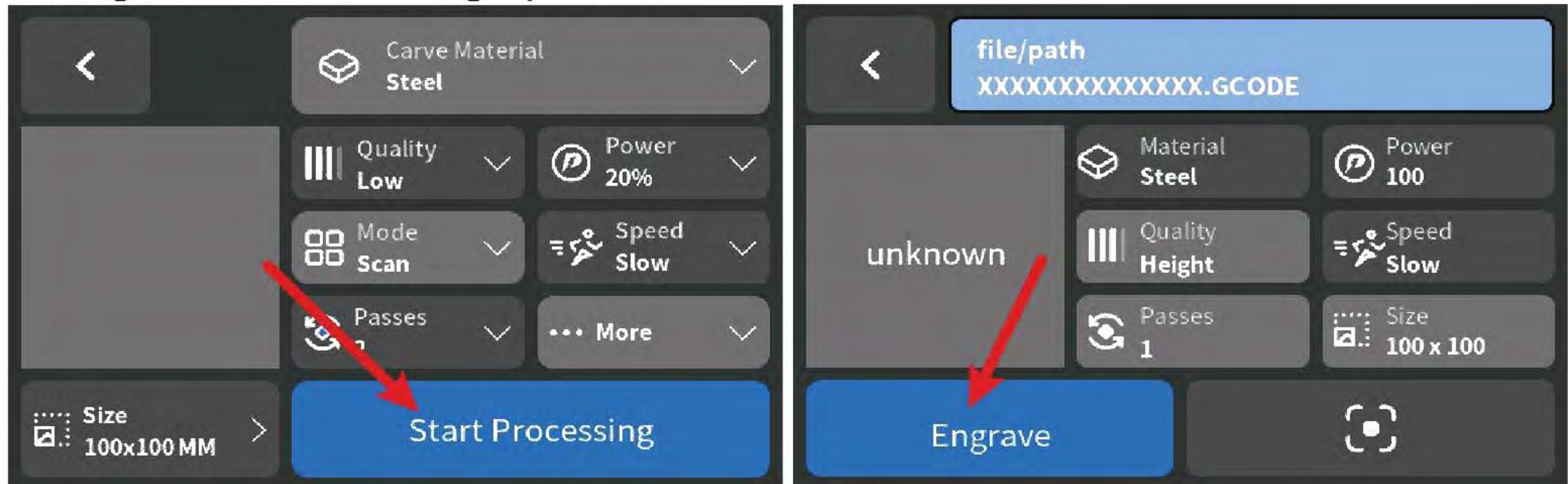
D. Focus verification is essential to ensure the correct focal length. Click "Next Step" once the focus is confirmed. For multiple engravings, adjust the number of passes using the "+" and "-" buttons. Once the desired number of passes is set, click "Next Step."
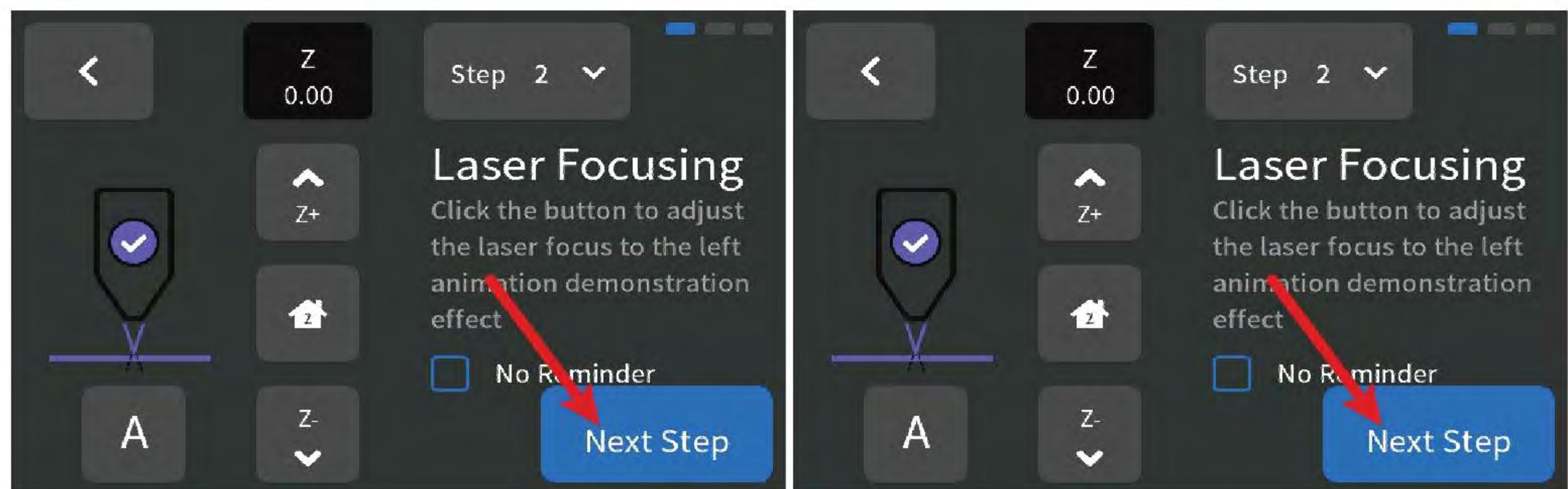
E. Preview the engraving area and set the origin point to ensure the laser module is positioned correctly. Once everything is verified, click "Engrave," and the laser engraving machine will start the process. Wait for the progress to reach 100% to complete the engraving.
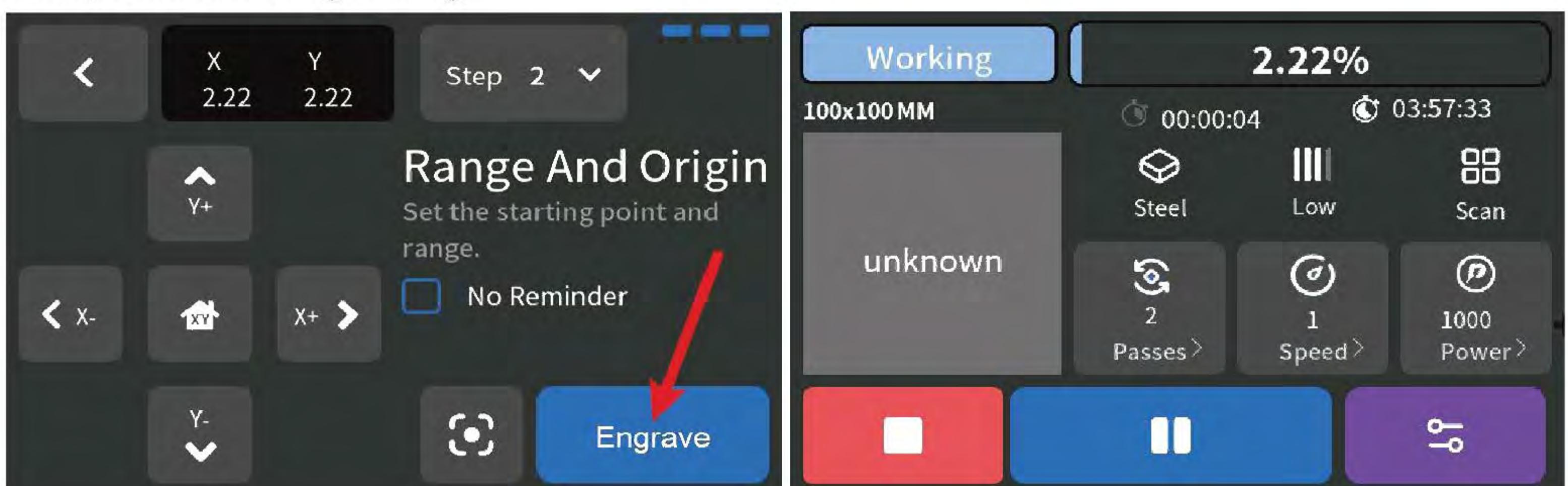
3.4 FAQ

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 ha been correctly plugged with normal power supply.

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.

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

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 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.
* Position of object to be engraved: If the object is placed obliquely, the object should be placed horizontally in parallel to the machine; otherwise, the inaccurate focal length will result in bad engraving effect.

Offline engraving unexpectedly stops.
* The photo is not completely downloaded when being connected to computer, please download the photo once again.

FCC Compliance Statements

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.

Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: 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 against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following 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.

ISED Compliance Statements

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

(1) This device may not cause interference.

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) L'appareil ne doit pas produire de brouillage;

(2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Cet équipement est conforme aux limites d'exposition aux radiations IC CNR-102 établies pour un environnement non contrôlé.

RF Exposure Compliance

This equipment complies with FCC/IC RSS-102 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. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Cet équipement est conforme aux limites d'exposition aux radiations IC CNR-102 établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec une distance minimale de 20cm entre le radiateur et votre corps. Cet émetteur ne doit pas être colocalisé ou fonctionner en conjonction avec une autre antenne ou un autre émetteur.

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