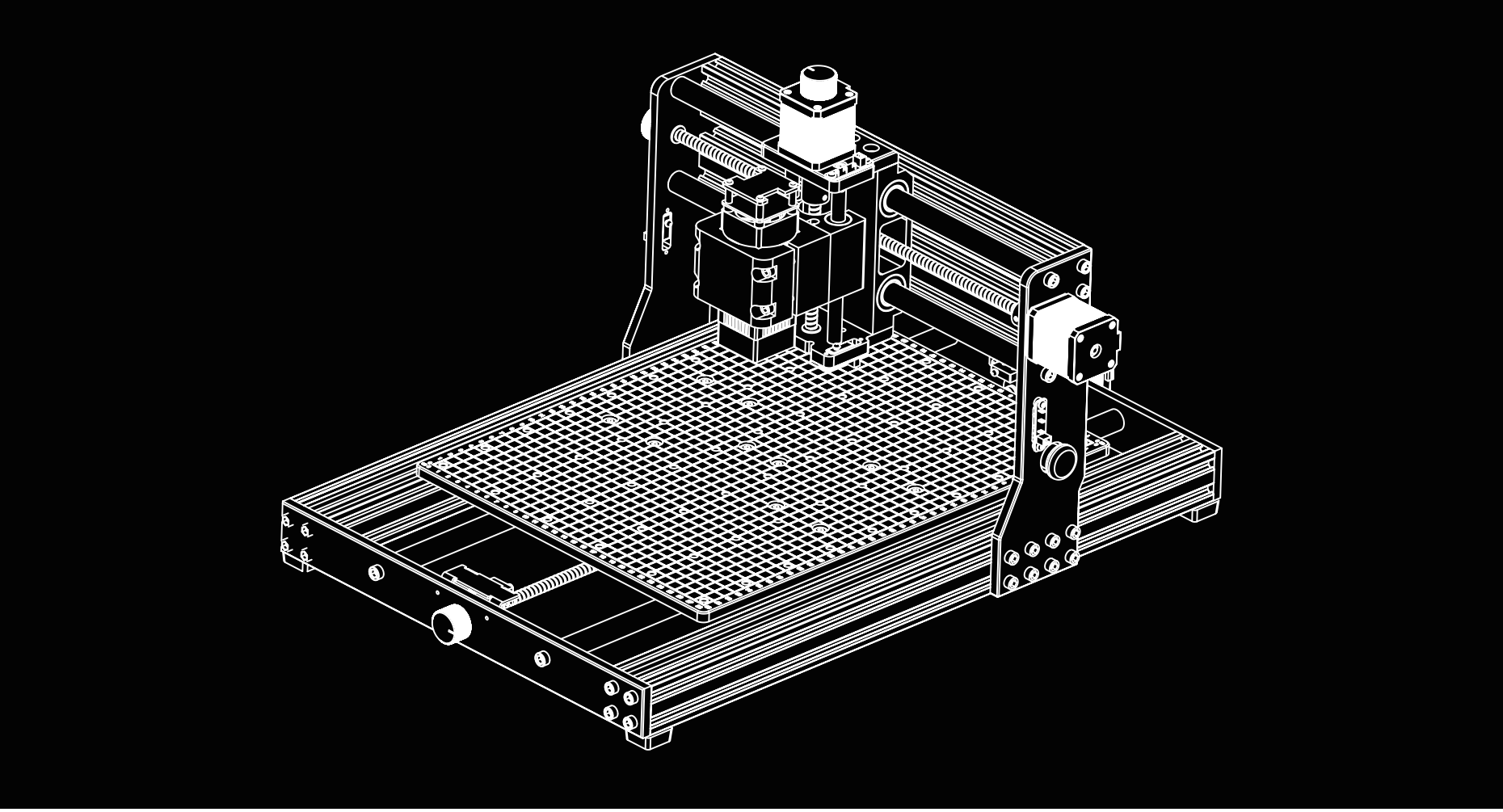

User Manual

4030 PRO Laser Module

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1. Installation of Laser Module

1.1 Installation of 33x33mm Laser Module

What you will need

33x33mm Laser module

Laser gasket

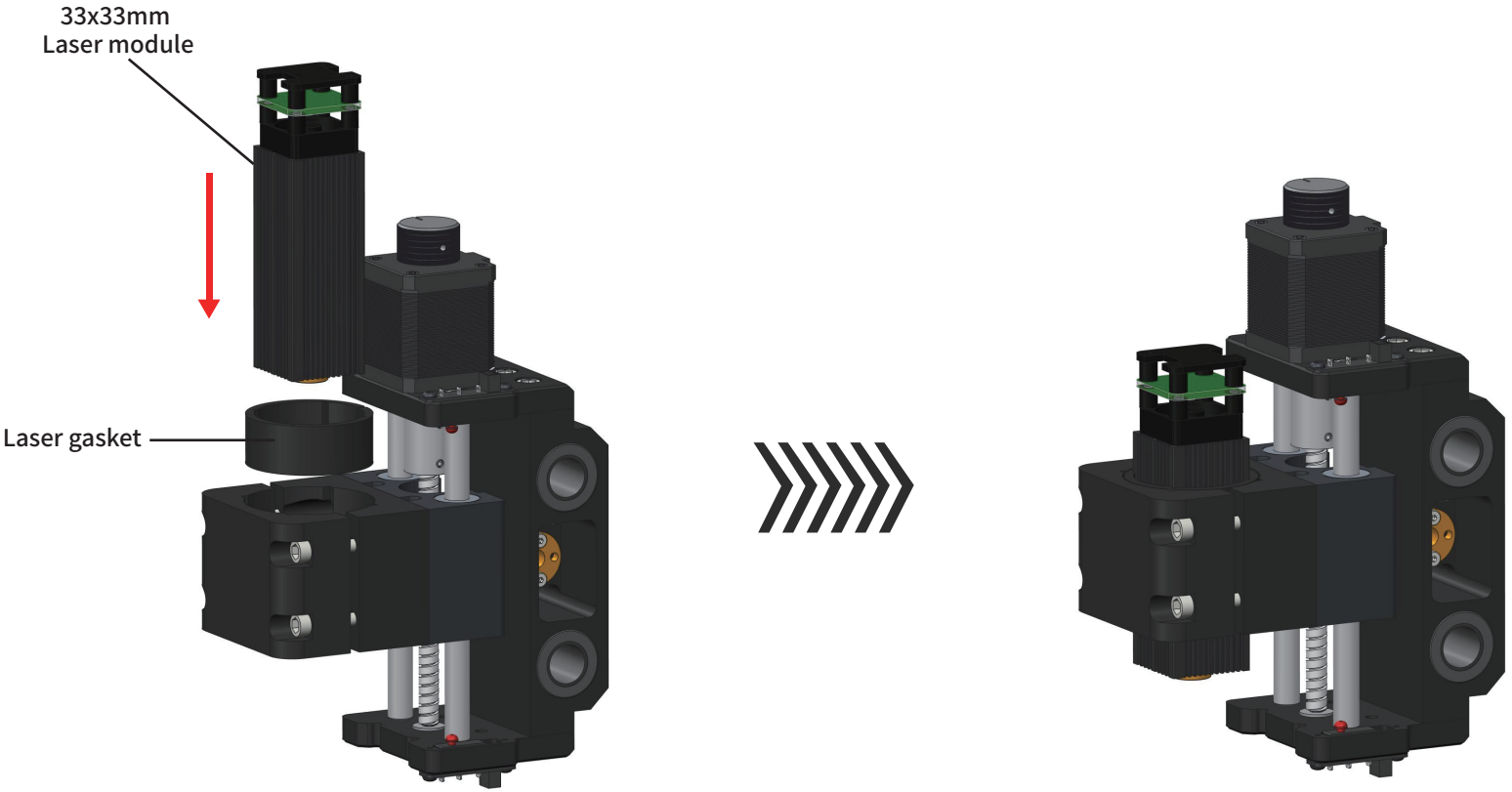
Laser wire

4mm Wrench

Note: Please make sure the wiring sequence of the laser module is 12V+, PWM, GND.

Installation steps

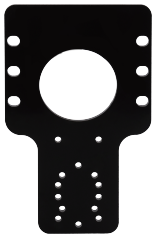
First, Loosen the four screws on the spindle mount with the 4mm wrench.
Then put the laser module inside the laser gasket and stuff them into the spindle mount together.
Finally tighten the screws with a 4mm wrench to fix it.



1.2 Installation of 40x40mm Laser Module

What you will need

40x40mm Laser module



Laser fixing plate

2.5mm Wrench

4mm Wrench

Laser wire

M3*16 Screw

Shim

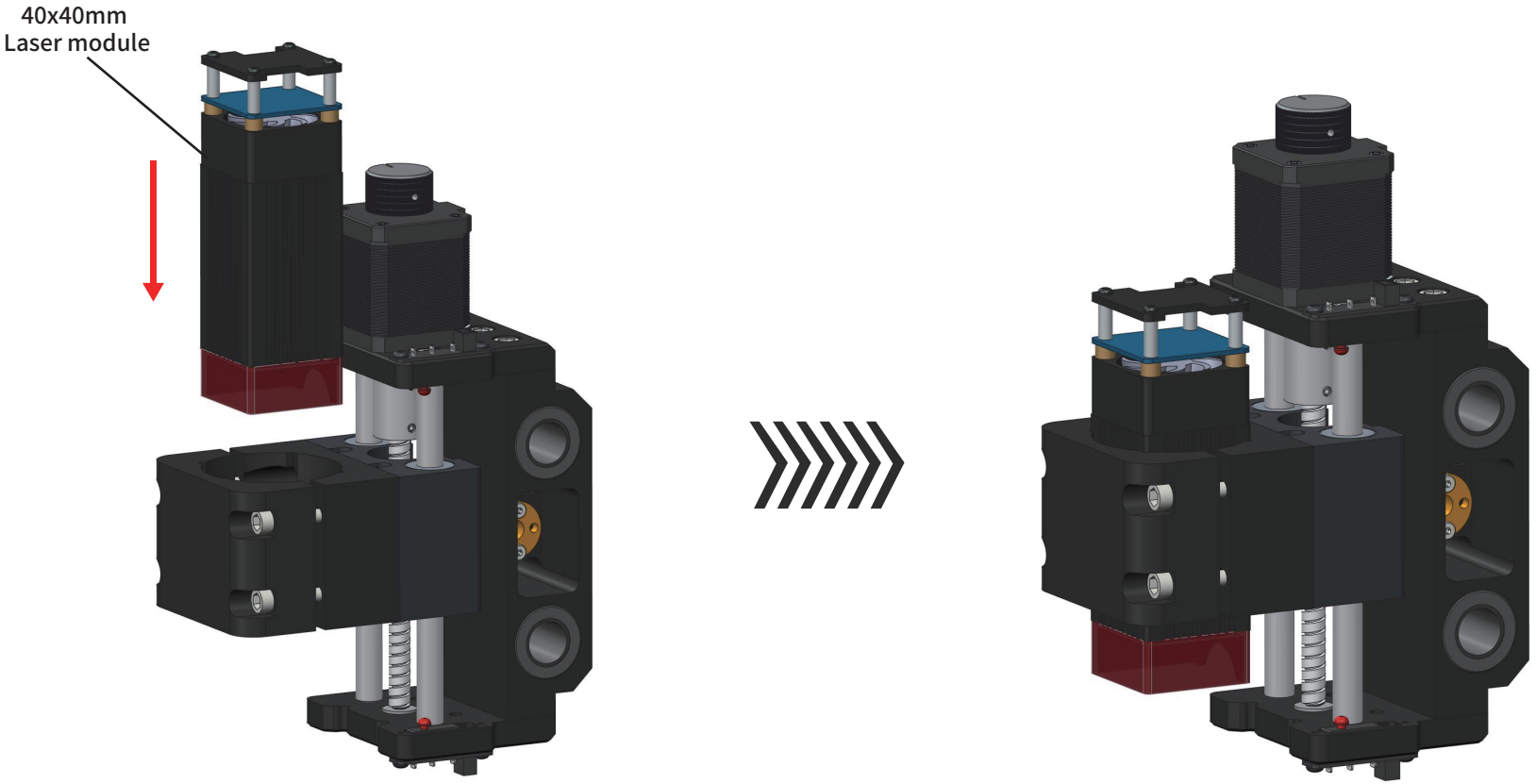
Hand Screw

Note: Please make sure the wiring sequence of the laser module is 12V+, PWM, GND.

Installation step

The first way

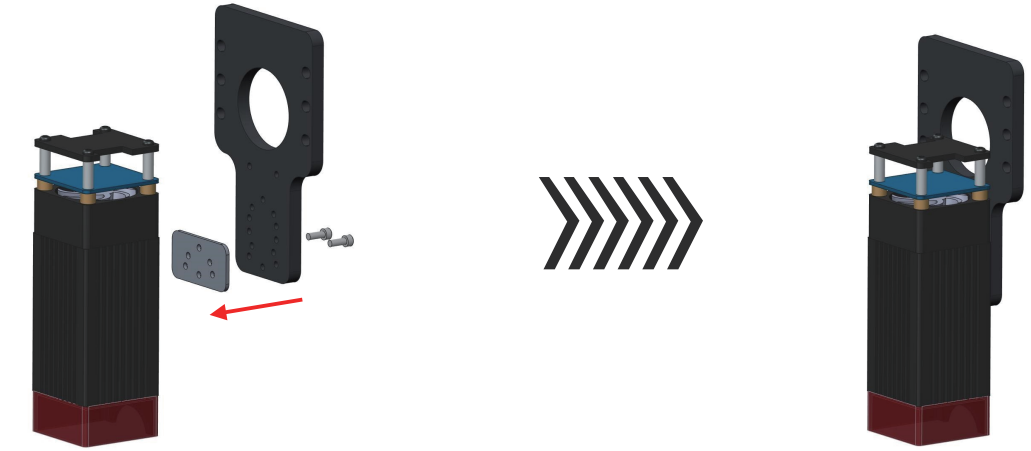
Loosen the screws with a 4mm spanner, then mount the 40x40mm laser module directly on the spindle clamp and finally tighten the screws again.

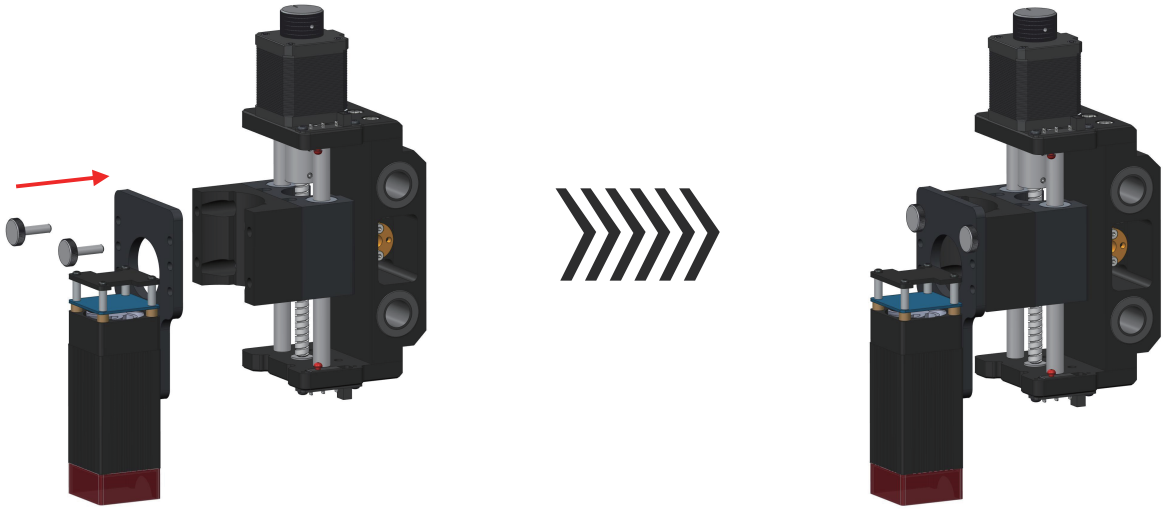


The second way

1.Attach the laser adapter plate and spacer to the laser module using M3*16 screws and a 2.5 mm spanner.

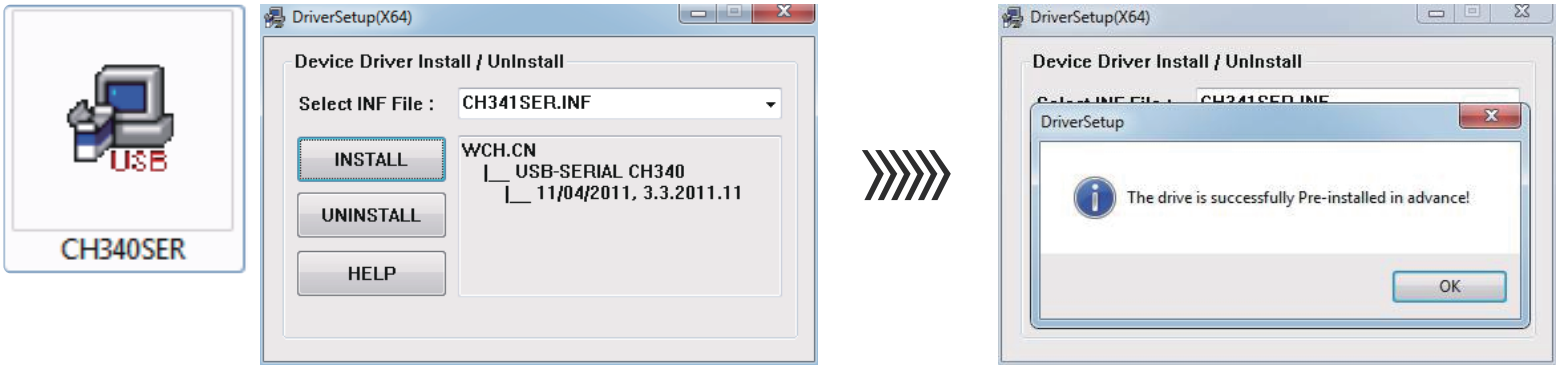
2.Secure the laser module to the Z-axis with the hand screw.





2.1 Installing the driver

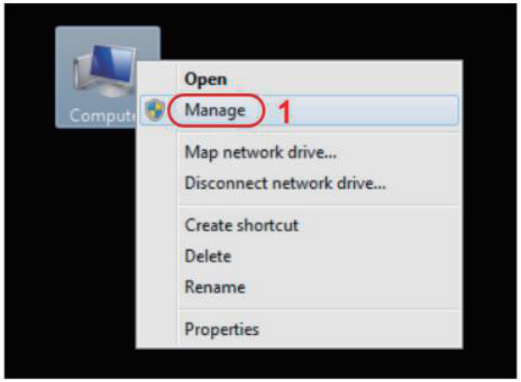
Install the driver CH340SER.exe, you can find it in the U disk.

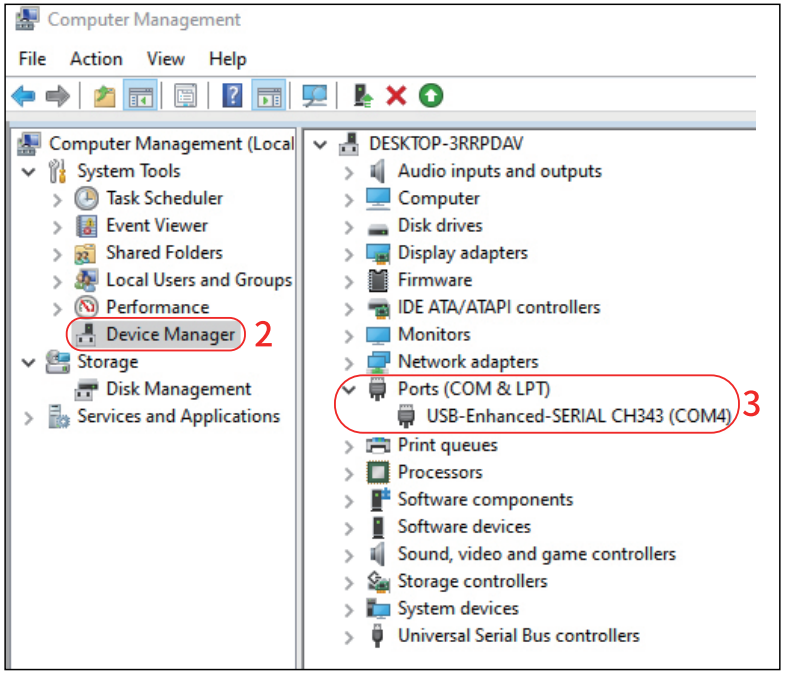


2.2 Find the Machine COM Port

Windows XP: Right click "My Computer", select "Manage" and click "Device Manager".

Windows7/8/10/11: Click "Start"->right click "Computer"->select "Manage", and select "Device Manager" from the left pane. Select "Device Manager" from the left pane. In the tree, expand "Ports" (COM & LPT). Your machine will be a USB serial port (COMX), where "X" indicates the COM number, e.g. COM12.
If there are multiple USB serial ports, right click on each one and check the manufacturer, the machine will be "CH340".

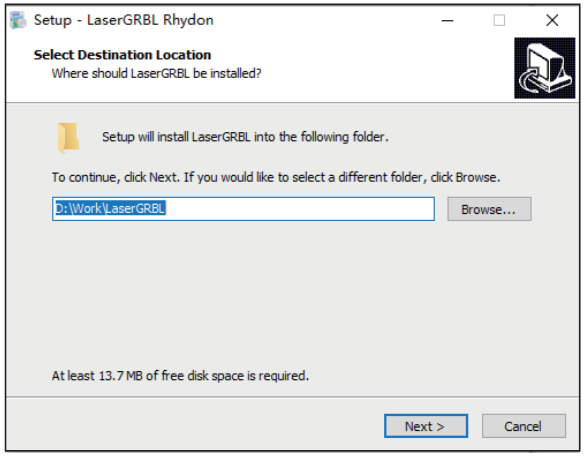


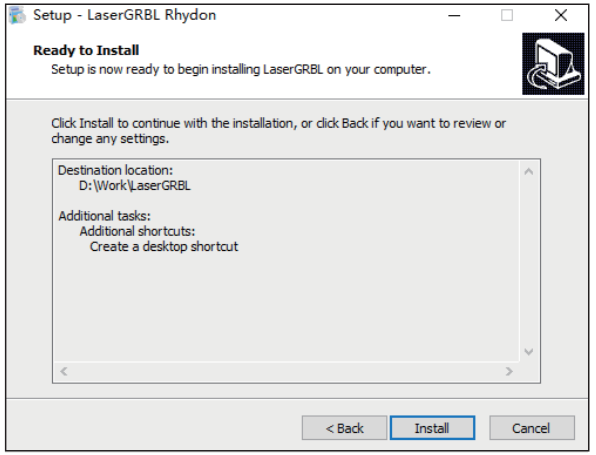


Note: A USB cable is required to connect the control board to the computer in order to see the port number.

2.3 Installing Lasergrbl

Open the U disk (Software for Laser-> Lasergrbl.exe), click Lasergrbl.exe to Install, select the installation path, and follow the instructions to complete the installation.

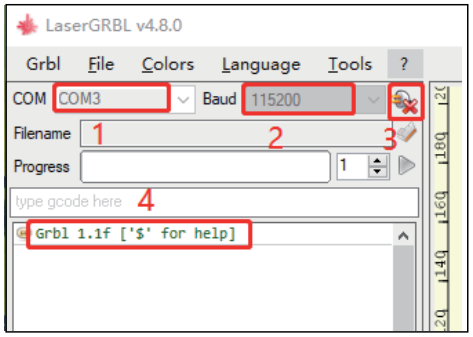




Note: Depending on your needs, you can also upgrade Lightburn software for a fee,which is also a good option.

2.4 Connection Software

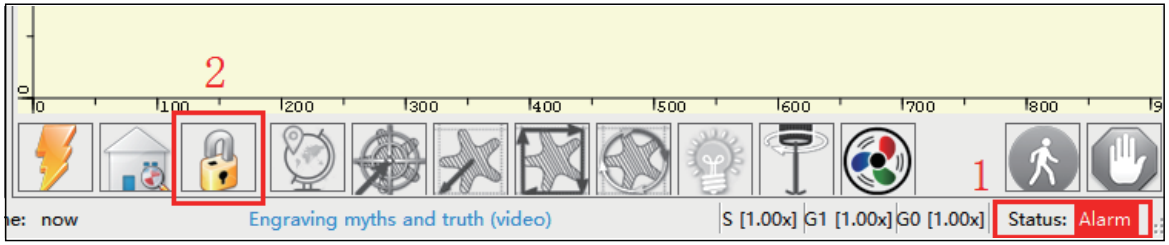
Double-click to open the Lasergrbl software, then select the correct COM and Baud(115200) and click the "3" Connect button. As shown in the picture below:



- If the connection is successful, the control window prints "Grbl 1.1f['$' for help]".
- If the port is selected incorrectly, no message will be returned.

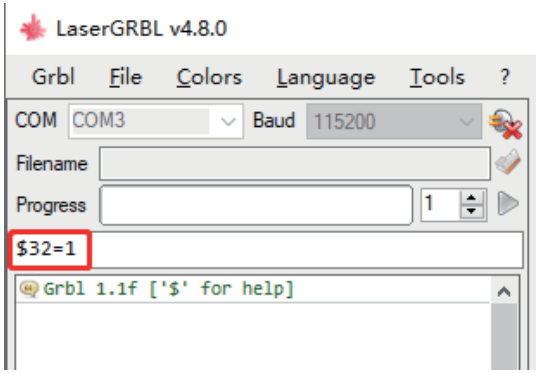
Note:

1. If you successfully connect to the software, a red "Alarm" will appear in the Status at the bottom right corner of the software interface, you need to click the "Grbl Unlock" button or the reset button on the control panel.
2. If the machine touches the limit switch, a red "Alarm" will appear in the Status at the bottom right corner of the software interface, you also need to click the "Grbl Unlock" button or the reset button on the control panel.

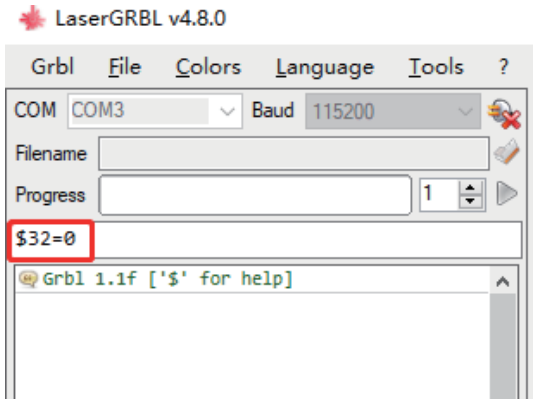


2.5 Turn on Laser Mode

When using the laser module, you need to enter $32=1 in the command bar of the software to turn on the laser mode.

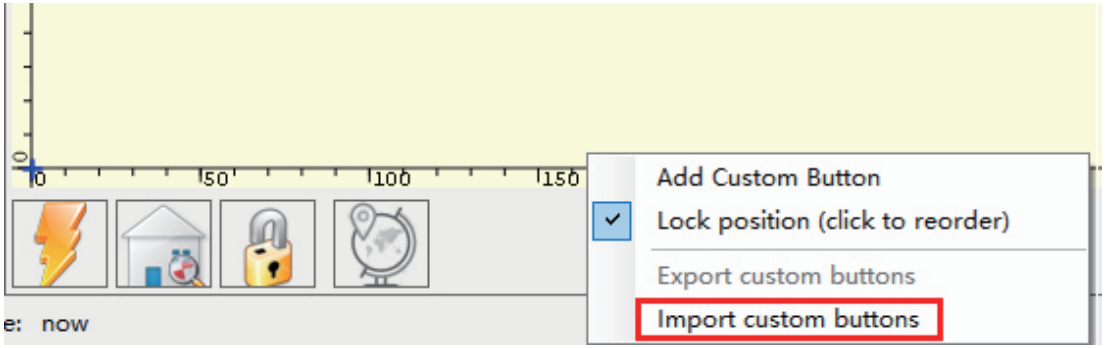


Note: When switching back to spindle mode, enter $32=0.



2.6 Add Custom Button

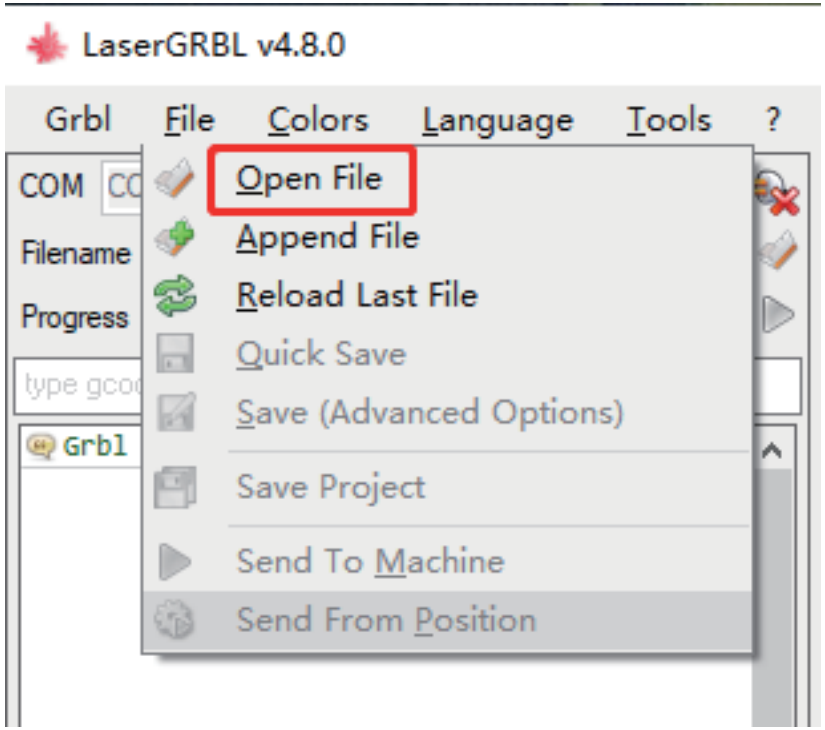
As shown in the figure, right-click in the blank area of the toolbar and choose "Import Custom buttons". Find the "Custombuttons. gz" file in the U disk and click "OK" to complete the addition.



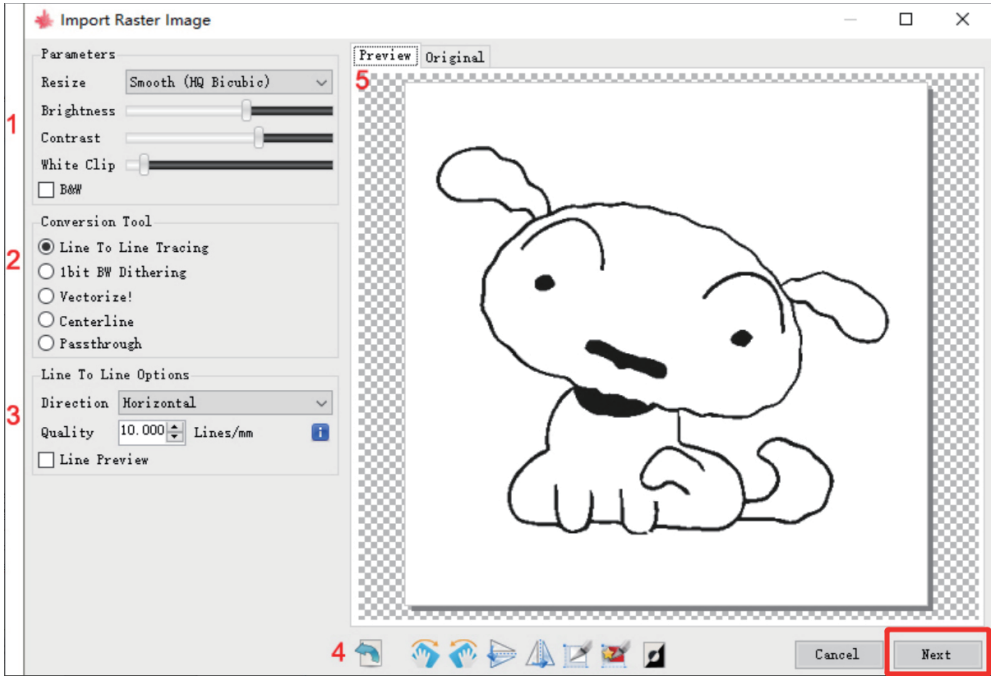
CustomButtons.
gz

2.7 Image Import

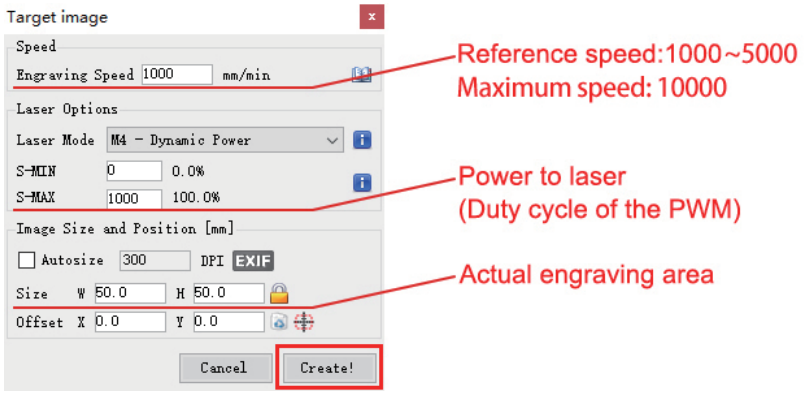
Select "File" on the menu bar and click "Open File" in the drop-down list box to import images in JPG, PNG, or BMP and LaserGRBL will automatically convert the images into the corresponding Gcode instructions without using other software.

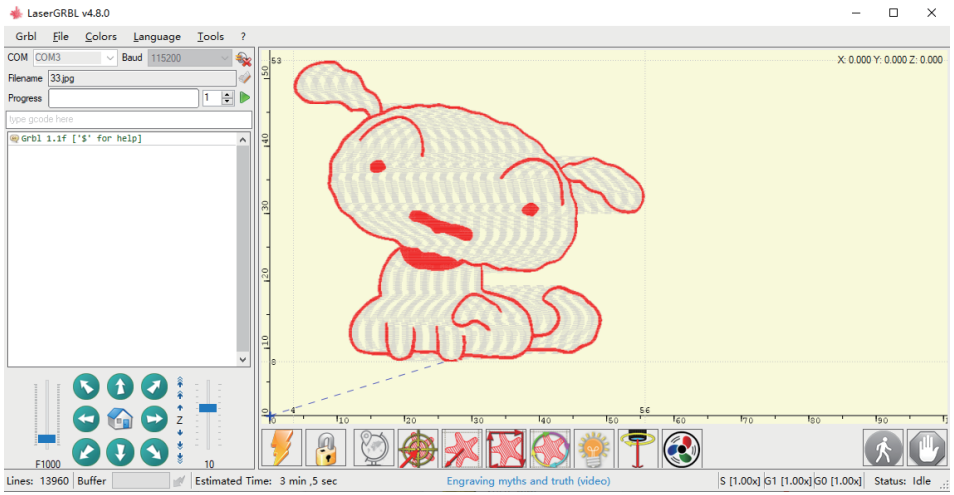


1. Parameters: Transform the original image in grayscale or black and white.
2. Conversion tool: Choose between tools suitable to various types of images.
   Line To Line: For grayscale PWM pictures.
   Dithering: For grayscale dithering technique.
   Vectorize: Produce the best result with logo and hand-drawn images.
3. Tool options: Contain a specific set of parameters for each different import tool.
4. Rotate, crop, and flip tools.
5. Image preview and original image tab.



Speed (Max 10000) and power (Max 1000) are set depending on the mode and carving material.
In engraving mode, the speed between 300 and 3000, power between 500 and 800
In cutting mode, the speed between 50 and 300, power between 900 and 1000 are recommended.

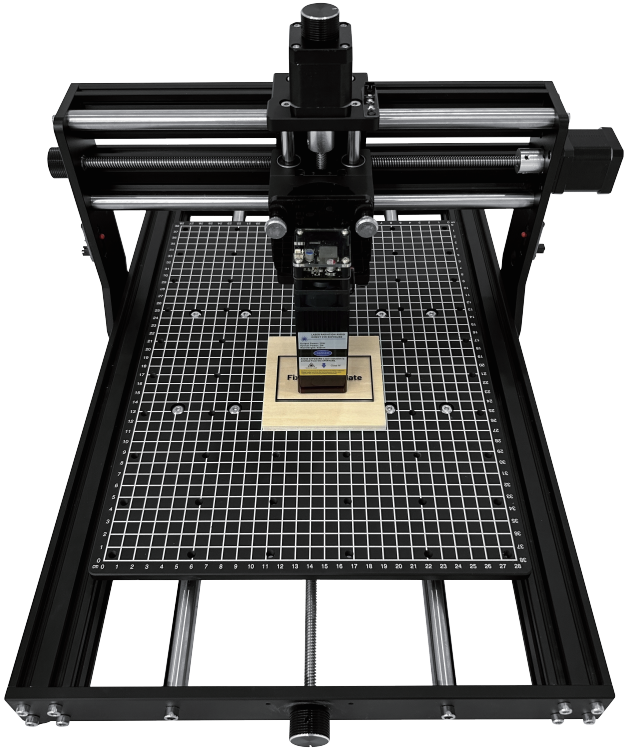




2.8 Adjusting the Laser Focus

You can adjust the distance between the laser module and the engraving material by rotating the knob at the top of the Z-axis and using the focusing tool matched with the laser module to assist in focusing.

When the laser module just contacts the focusing tool, remove the focusing tool to complete the focusing. (Take a 40x40mm laser module as an example below)

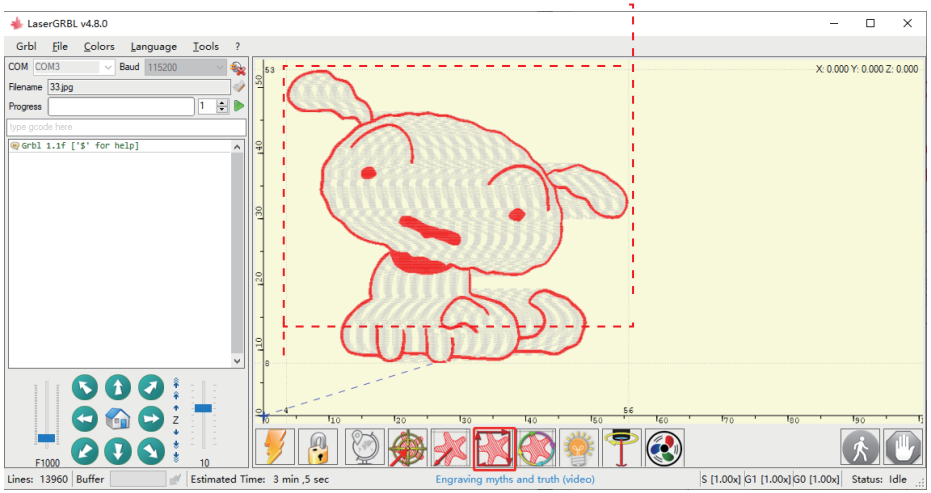


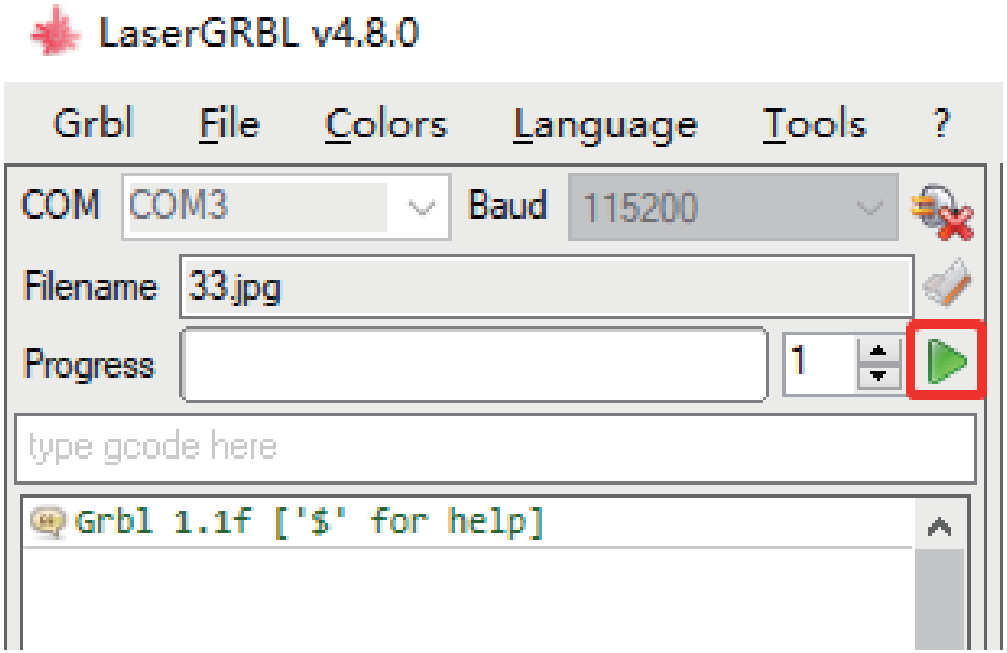
Note: Laser engraving does not require contact with the engraving material, so there is no need to clamp the material with clamps.

2.9 Turn on the Laser & Framing

1. Click the "Turn on laser for Focusing" icon in the toolbar (as shown in the figure below) to turn on the laser.

2. Preview the workspace by clicking the "Framing" icon in the toolbar, as shown below.



2.10 Running Programs

Click on " Run Program" to start the engraving process as shown in the picture below.