

**G·WEIKE**

# M Series

Installation Manual



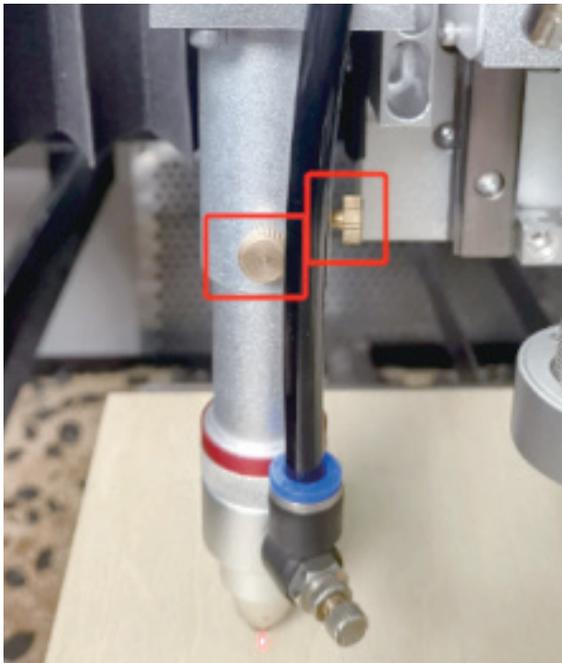
## Tube marking machine

### 1. Fiber Laser Marking

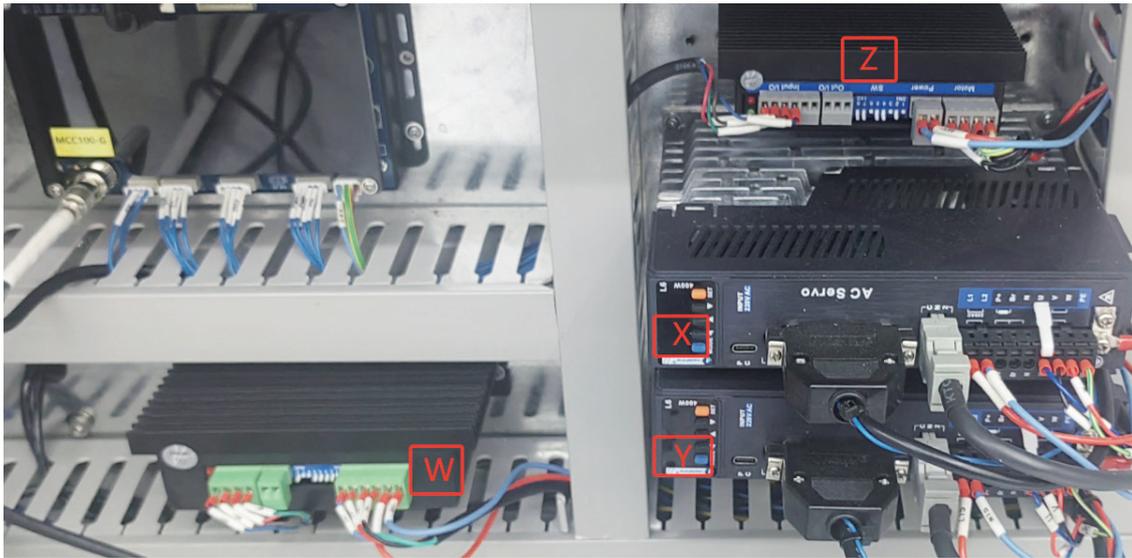
Step 1: Connect the signal line of the laser to the back of the machine bed. Use the chuck to manually secure the pipe.



Step 2: Adjust the CO<sub>2</sub> laser head to the highest position



Step 3: Locate the Y-axis driver.



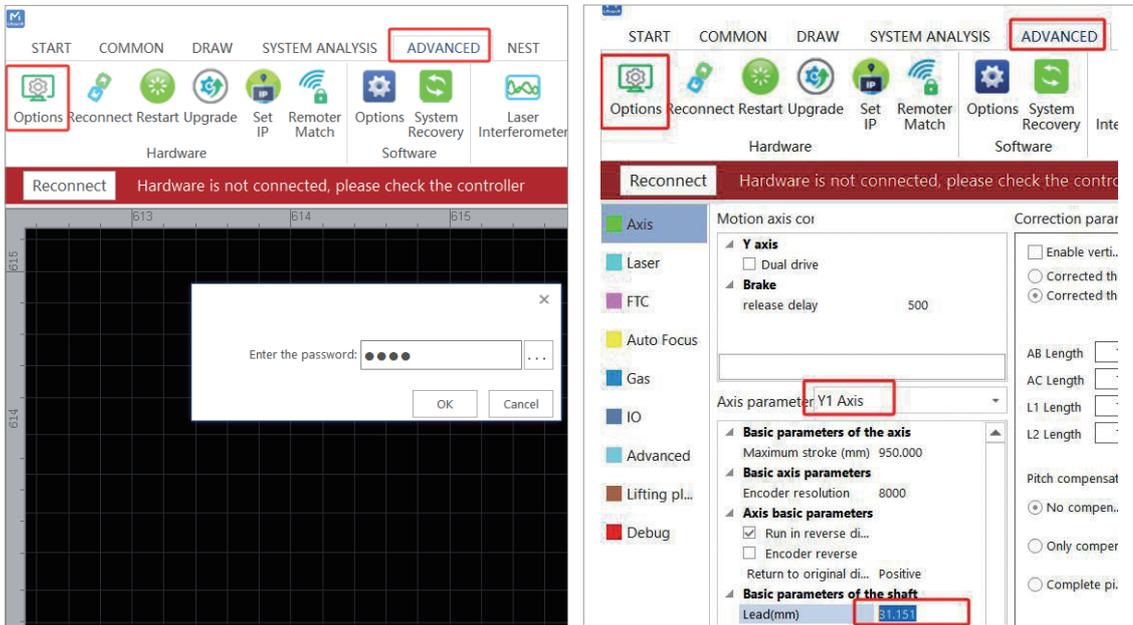
Step 4: Unplug the encoder cable and motor cable of the Y-axis, and install the encoder cable and motor cable of the rotary axis.



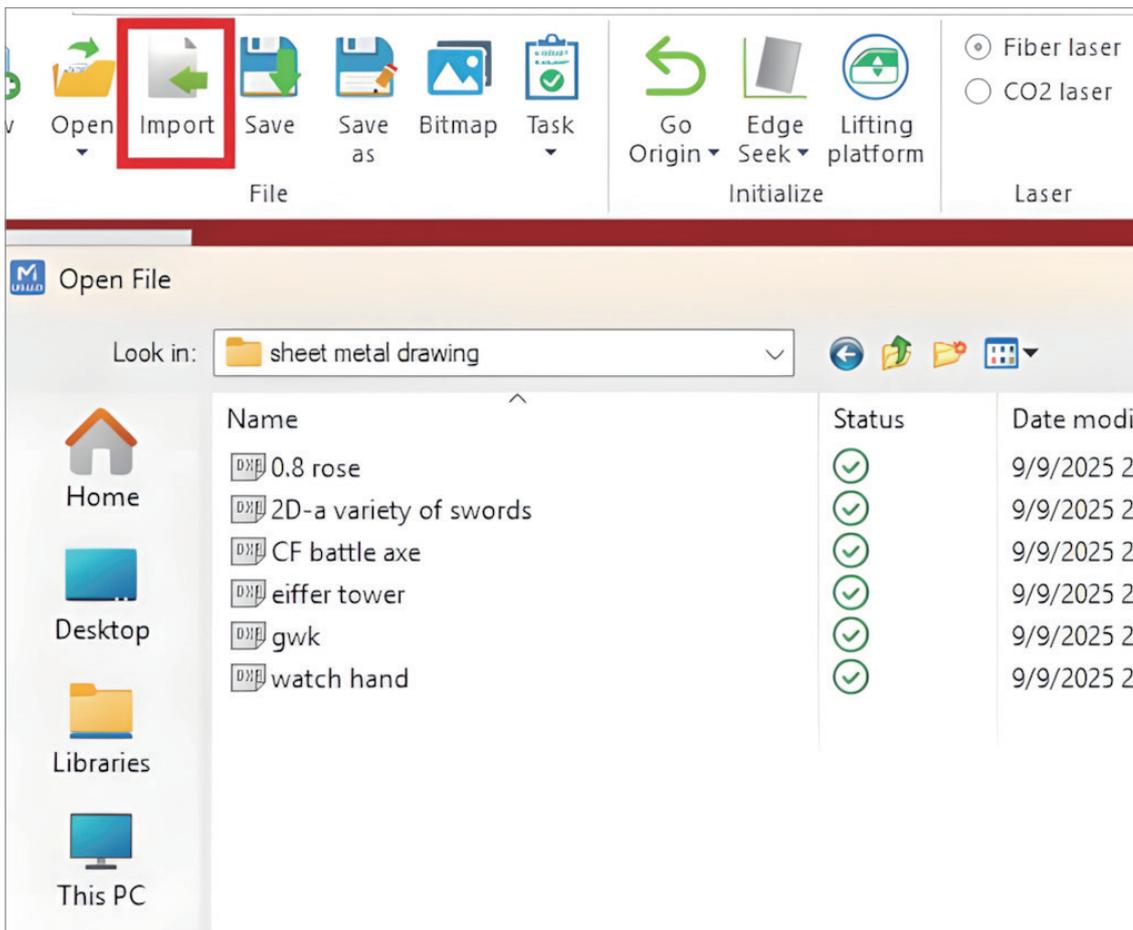
Step 5: WirStep 3: Locate the Y-axis driver e and place the rotary axis, ensuring the rotary axis is positioned parallel to the X-axis.



Step 6: Modify the lead, which is calculated as  $\pi \cdot D \cdot \text{gear ratio}$  (26/48, modify according to actual conditions). Enter the platform configuration, adjust the Y-axis lead based on the obtained value, and use the password 3721. Click confirm after modification.



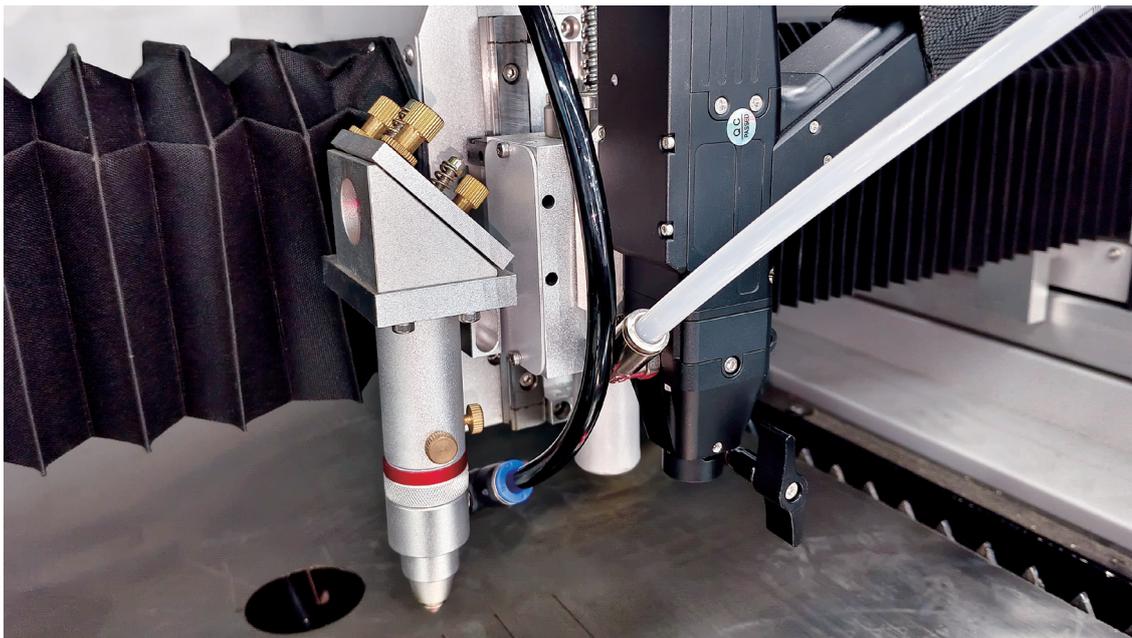
Step 7: Import the drawing and find the drawing that needs marking.



Step 8: Parameter settings, including fixed-height cutting, speed settings, air pressure and other parameters. The frequency and swing parameters are modified on the welding machine, and only the speed and power can be modified in the software.

The screenshot displays the 'Run Params' window with the 'Layer Parameters' tab selected. The 'Standard c...' radio button is chosen. Under 'Cutting', the 'perforation' sub-tab is active. The 'Cut Basic' section shows: Cut Height (mm) at 5.000, Cut Speed (m/min) at 400.000, Adv Fix Height, Cut Laser (Cut Power (%) at 25, Cut Freq (Hz) at 2000, Peak Current (%) at 30), Cut Gas (Gas Type at High N2, Gas Pressure (bar) at 0.850), Delay Parameters (Laser On Delay (ms) at 10, Before Laser Off D... at 0, After Laser Off Del... at 0), Adv Parameters (Up Height (mm) at 15.000), PreDrill Process, Start work Segment (Enable checkbox), and End work Segment. A graph on the right plots Power (P%) on the y-axis (0 to 100) against Velocity (V%) on the x-axis (0 to 100). A yellow curve starts at (0,0) and rises to 100% power at approximately 80% velocity, remaining at 100% until 100% velocity. Below the graph are checkboxes for 'Dynamic Power' (checked) and 'Dynamic Freq' (unchecked). At the bottom are buttons for 'Export technology', 'Copy', 'Paste', 'Import', 'Export', 'OK', and 'Cancel'.

Step 9: Run the border to check if the entire area can be engraved. Start the process after confirmation. (It is recommended that the air pressure be 0.3MPa)

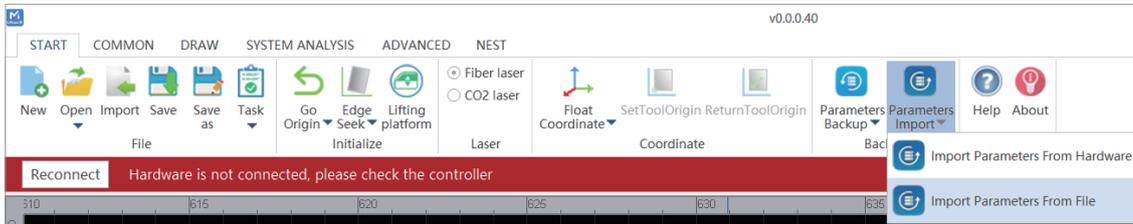


**Note:** Do not directly return to the origin after modification. It is recommended to first return the X-axis to the origin separately.

IMPORT

Parameters need to be re-imported, or the modified settings should be restored to the original ones.

START-PARAMETERS IMPORT

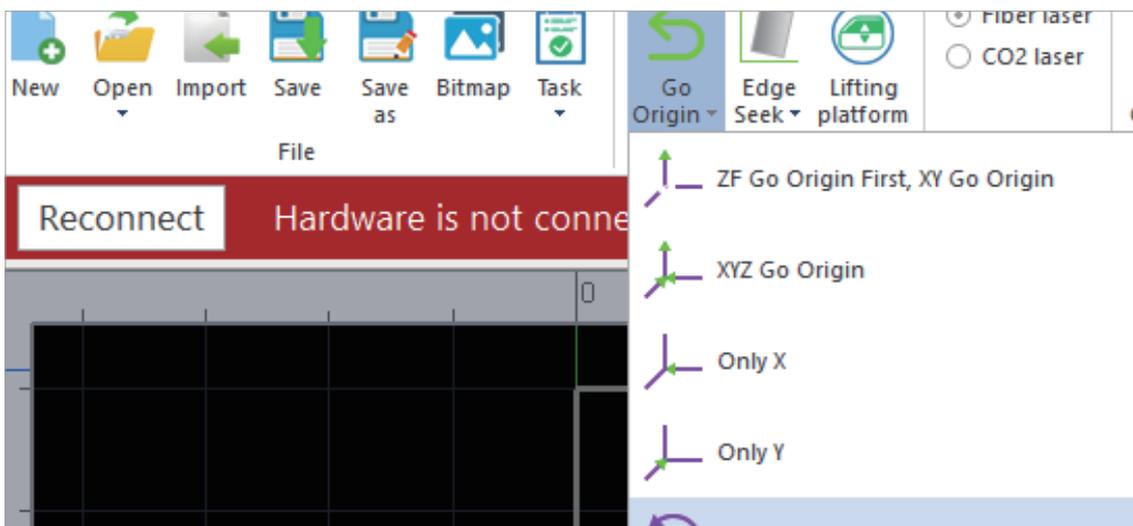


2. CO<sub>2</sub> Marking

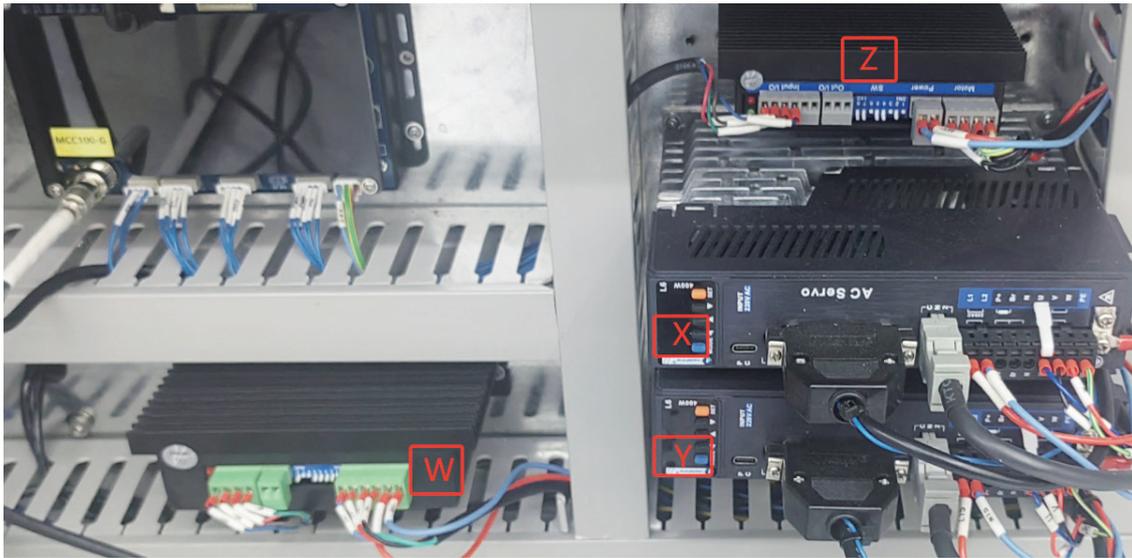
Step 1: Connect the signal line of the laser to the back of the machine bed. Use the chuck to manually secure the pipe.



Step 2: Return the laser cutting head to the origin.



Step 3: Locate the Y-axis driver



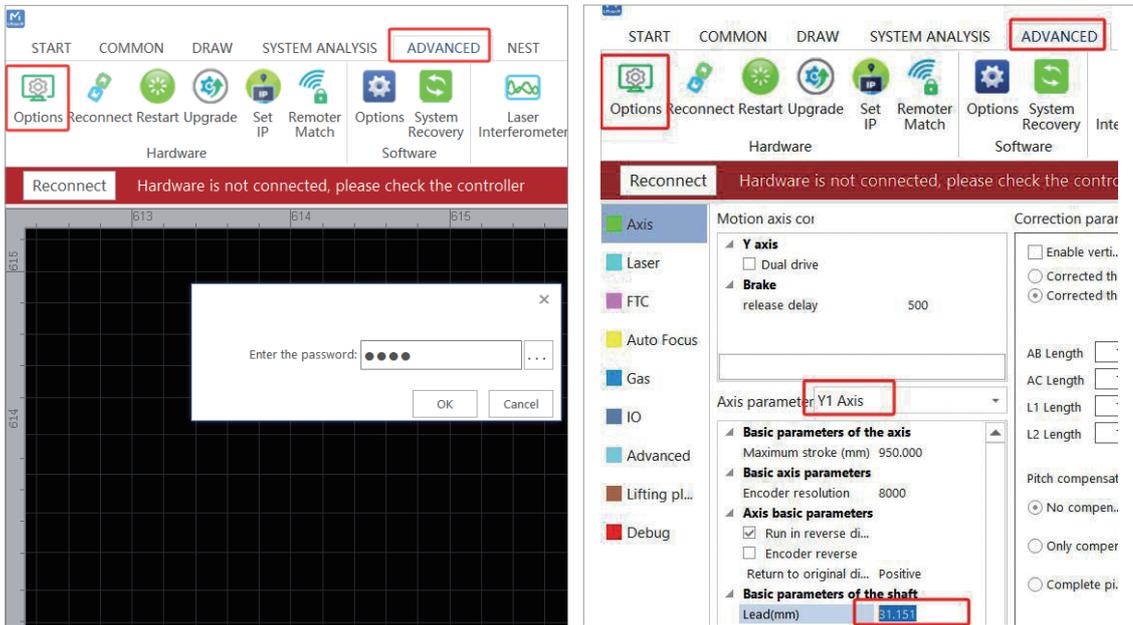
Step 4: Unplug the encoder cable and motor cable of the Y-axis, and install the encoder cable and motor cable of the rotary axis.



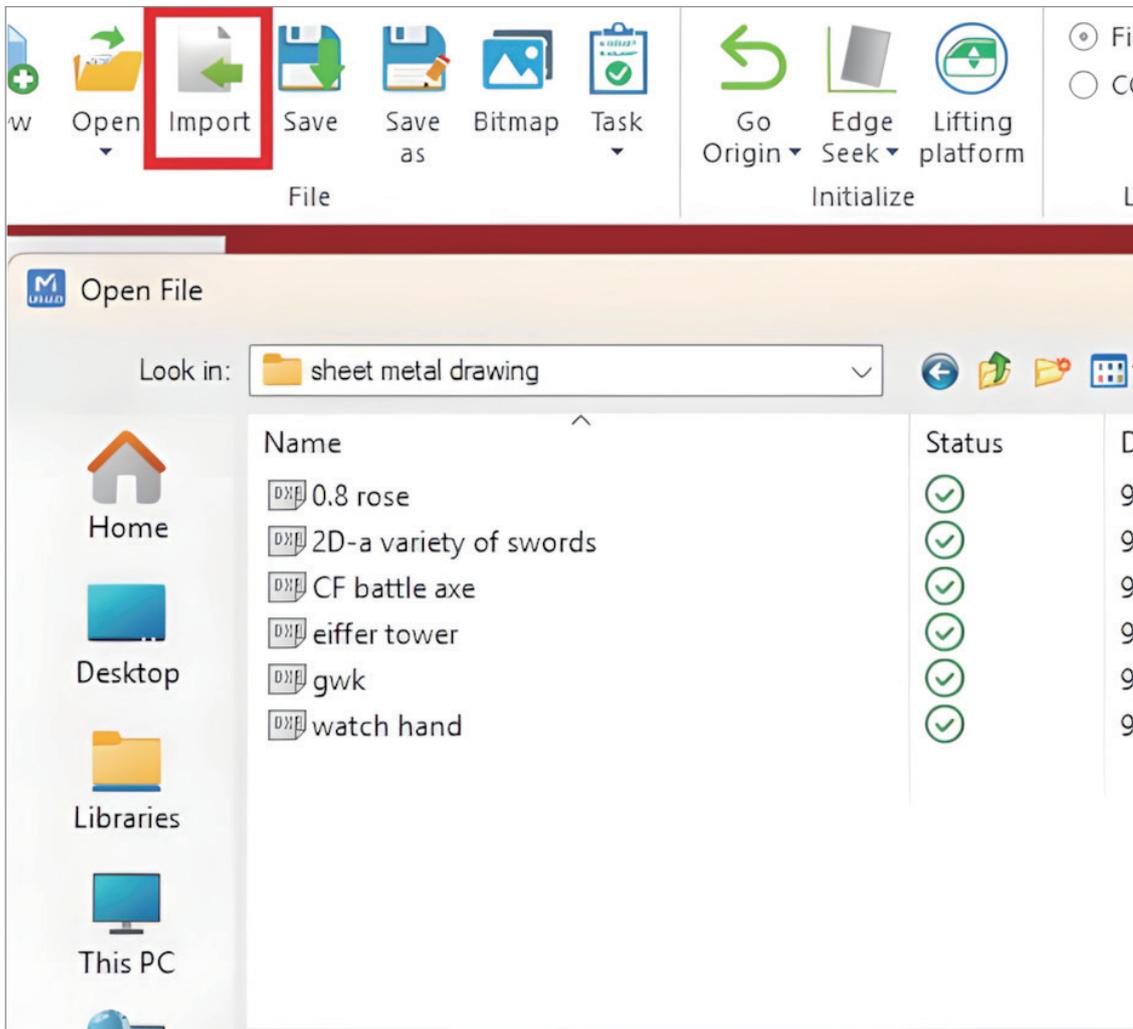
Step 5: Wire and place the rotary axis, with the rotary axis positioned parallel to the X-axis.



Step 6: Modify the lead, which is calculated as  $\pi \cdot D \cdot \text{gear ratio}$  (26/48, adjust according to actual conditions). Enter the platform configuration, modify the Y-axis lead based on the obtained value, and use the password 3721. Click confirm after the modification.



Step 7: Import the drawing and find the drawing that needs marking.



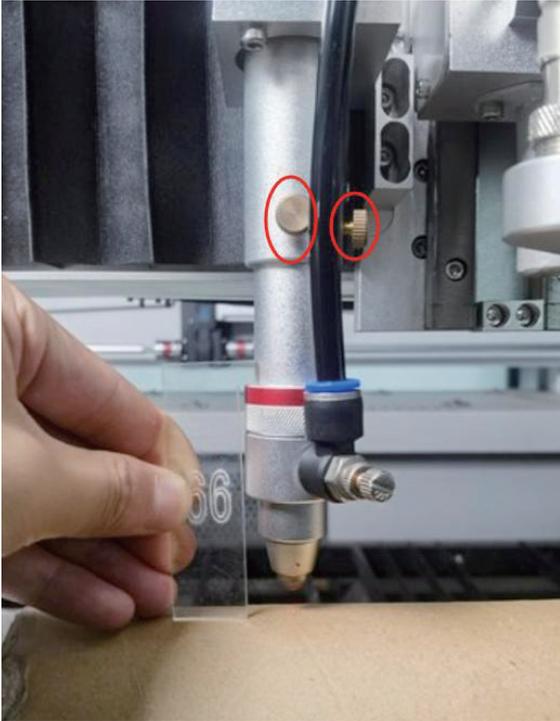
Turn on the water chiller and laser power buttons on the control panel.



Step 8: Select the CO<sub>2</sub> laser and modify the parameters.

The screenshot shows the software interface for a laser controller. At the top, there are tabs for 'CED' and 'NEST'. Below them are several icons: 'Fiber laser', 'CO2 laser' (highlighted with a red box), 'Float Coordinate', 'SetToolOrigin', 'ReturnToolOrigin', 'Parameters Backup', 'Parameters Import', 'Help', and 'About'. A red bar labeled 'controller' is below the icons. The main window is titled 'Layer1\_三合板3mm'. It has two tabs: 'Run Params' and 'Layer Parameters'. The 'Layer Parameters' tab is active, showing a list of parameters for 'Layer1' and 'Jog Lay...'. The 'Cut Laser' section is expanded, showing 'Cut Power (%)' set to 11. To the right of the parameters is a graph with 'Power (%)' on the y-axis and 'V(%)' on the x-axis. The graph shows a curve that starts at approximately (0, 60) and rises to 100% power at about 30% velocity, remaining at 100% power up to 100% velocity. There are three red dots on the curve at approximately (0, 60), (15, 85), and (30, 100).

Step 9: Locate the focal length ruler, loosen the screws, and manually adjust the focus of the CO<sub>2</sub> cutting head.



#### IMPORT

**Note:** Do not directly return to the origin after modification. It is recommended to first return the X-axis to the origin separately.