LUNYEE

4040 Titan
User Manual

Thank you for choosing LUNYEE.
Please read this manual carefully before use.

Precision Engraving | Sturdy Structure | Easy Assembly | Large Working Area | Reliable Performance

Precise & Powerful & Reliable

Designed for Makers, Built to Inspire

Customer Installation Manual

Applicable Machine Model: 4040Titan

1.Safety Guidelines (Must Read)

1.Mandatory Safety Requirements: Failure to comply may result in equipment damage or personal injury.

2.Only personnel aged 18 or above are permitted to operate the machine. Minors must use the machine under the continuous supervision of an adult who is familiar with the equipment.

3.Gloves must be worn during installation, and safety goggles must be worn during operation to prevent injury from metal shavings or laser radiation.

4.This machine is for indoor use only. It must be placed on a level, stable workbench (with a load capacity of 50kg), and kept away from flammable and explosive materials.

5.The power supply can be switched to 220VAC or 110VAC. It is strictly prohibited to use a power supply with an unspecified voltage or modify the circuit.

6.It is recommended to plug the machine directly into a wall outlet. The use of extension cords or power hubs is not recommended (high current may cause equipment failure; final confirmation should be obtained from the manufacturer).

7.The emergency stop button (E-stop) must always be within easy reach. It should be pressed immediately in the event of an emergency.

Prohibited Actions:

1.Do not touch the spindle, work area, or moving components while the machine is in operation, to avoid pinching or scalding injuries.

2.Do not disassemble the power supply or electrical components; doing so will void the warranty.

3.Do not leave the machine unattended during operation. Children must be kept away from the equipment at all times (climbing is prohibited, even when the power is turned off).

4.Ensure the installation environment is well-ventilated. Some materials may produce fumes during the engraving process, so the use of fume extraction equipment is recommended.

2.Basic Product Information

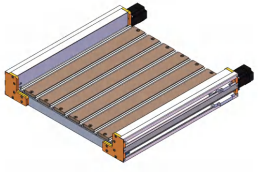
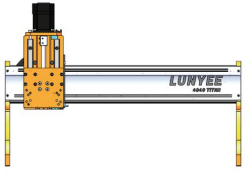
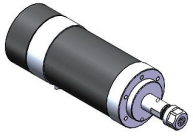
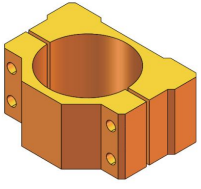
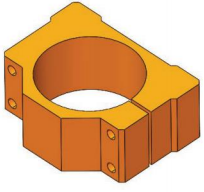
2.1Core Specification Parameters

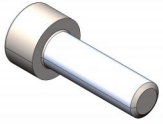
Item	Specification
Working Area	400*400*100mm
Transmission Method	XYZ 3-axis EGH15 linear guide + 1204 ball screw
Control Board	GRBL 32BIT-F1.1
Motor Type	NEMA23 57-76 closed-loop stepper motor
Spindle Parameters	500W Brushless; 12000 r/min (No-load); 48V
Power Supply	Dual power supply, input 110V/220V, output 24V, 500W, wide voltage 110V~220V, 48V, 350W
Engraving Speed	X,Y-axis：2000mm/min
	Z-axis：600mm/min

Engraving Accuracy	±0.05mm
Limit Switch	Hall Effect Proximity Switch
Emergency Stop (E-stop) Button	Mechanical Push-type Switch
Laser Function	Supports 10W Optical Power
Machine Dimensions	624*645*446mm
Electrical Control Box Dimensions	320*130*230mm
Machine Weight	41kg(90.4 lb)
Maximum carving speed	5000mm/min
Compatible with computer systems	Windows XP/7/8/10/11, Linux, Mac OS
Adaptation software	GRBL Firmware, e.g. Easel, Candle,UGS, Fusion360, LaserGRBL, LightBurn

2.2 Packing List (Packaging Component List)

√ Please inspect all components before installation; if any parts are missing, contact after-sales support.

 Y-axis Platform Module	 X-axis + Z-axis Module	 Brushless Spindle	 55 Spindle Fixture	 65 Spindle Clamp
 Electrical Control Box	 Wrench Kit	 Tool Setter Block + Tool Setting Cable	 3-inch Flat-head Screwdriver	 Steel Ruler

 Lubricating Grease	 Card Reader	 128MB TF Card	 ϕ3.175mm Combination Cutting Tools	 ϕ55 Spindle Brush
 Clamping Plate*4	 Antenna	 USB Data Cable	 er11-1/8"Collet	 power cord
 M5×16*8Hexagon Socket Head Cap Screw	 M6x60*4Hexagon Socket Head Cap Screw	 USB driver 1pc		

3. Installation Preparation

3.1 Installation Environment Requirements

1.Space: The overall dimensions of the machine are approximately 624×645×446mm. A heat dissipation space of ≥100 mm must be reserved around the machine (especially near the control box and spindle). Do not place the machine flush against walls or block the air vents.
2.Workbench: Select a level, stable workbench with a load capacity of ≥50 kg (such as a metal workbench or a thick solid wood table) to avoid vibration affecting engraving accuracy.
3.Power Supply: Ensure the wall outlet is reliably grounded, and the voltage matches the machine's power switch setting (220VAC or 110VAC).
4.Auxiliary Tools: Prepare a spirit level (for calibrating workbench levelness) and a marking pen (for marking component orientation); gloves are optional (to prevent scratches).

3.2 Simple Pre-assembly Tools (To be Prepared Separately)

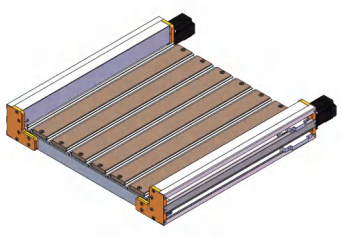
Name	Specification/Usage	Remarks
Hex Wrench Set	Includes M3/M5/M6 sizes	No need to purchase; included in the kit
Spirit Level	Compact spirit level (accuracy: 0.02mm)	Used for leveling the workbench and machine
Marker Pen	Fine-tip, black	Used to mark component directions to avoid incorrect installation
Cleaning Cloth	Lint-free/non-shedding fabric	Used to remove oil stains or dust from component surfaces

4. Step-by-Step Installation Tutorial

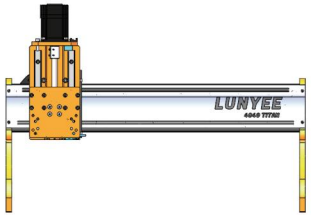
4.1 Install the X-axis Module

4.1.1 Component Preparation

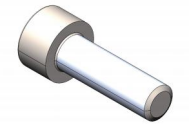
Step 1: Take the Y-axis module platform out of the packaging box,place it flat on the table with the motor facing back-ward.
Step 2: Take the X-axis module out of the packaging box and place it flat on the table.
Step 3: Take 8 pieces of M5x16 hexagon socket head cap screws out of the packaging box and place them on the table.
Step 4: Take a #4 hexagon wrench out of the screw box and place it on the table.



Y-axis Module Platform



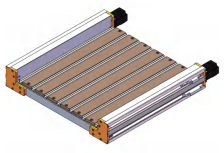
X-axis + Z-axis Module



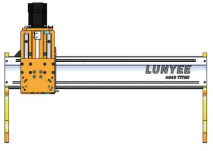
M5×16*8Hexagon Socket Head Cap Screw

#4 Hexagon Wrench

4.1.2 Position the X-axis Module

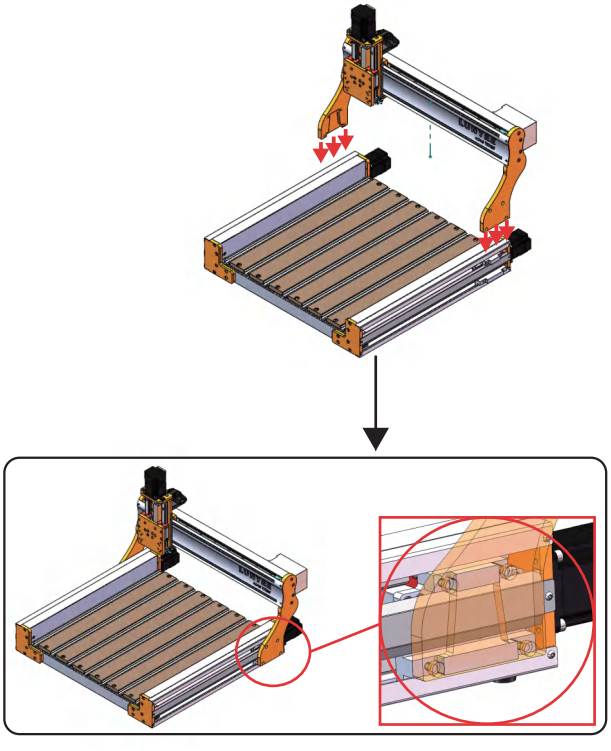


Y-axis Module Platform

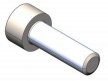


X-axis + Z-axis Module

Stand the X-axis module upright, insert it into the slots on both sides of the Y-axis module platform, ensuring both left and right sides are fully inserted.
Note: Hold the X-axis module steady after insertion to prevent it from falling off if not fully locked in place.



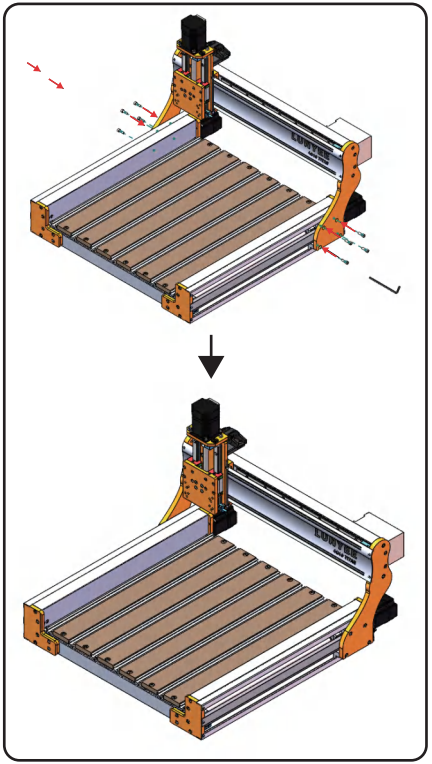
4.1.3 Secure the X-axis Module



M5x16*8Hexagon Socket Head Cap Screw

4#Hexagon Wrench

Use the #4 hexagon wrench to screw 8 pieces of M5×16 hexagon socket head cap screws into the side holes and tighten them securely.
Note: After installation, gently shake the X-axis to check for excessive play or wobble.



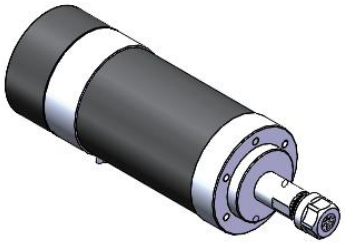
4.2 Spindle Tool Installation

4.2.1 Component Preparation

Step 1: Take the spindle out of the packaging box and place it flat on the table.

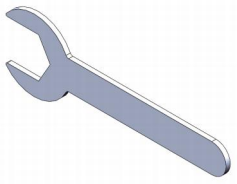
Step 2: Take the cutting tool out of the packaging box and place it flat on the table.

Step 3: Take the 14# and 17# open-end wrenches out of the packaging box and place them on the table.

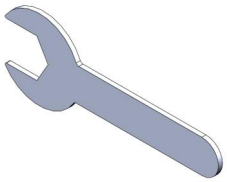


Spindle

Cutting Tool



14# Open-end Wrench

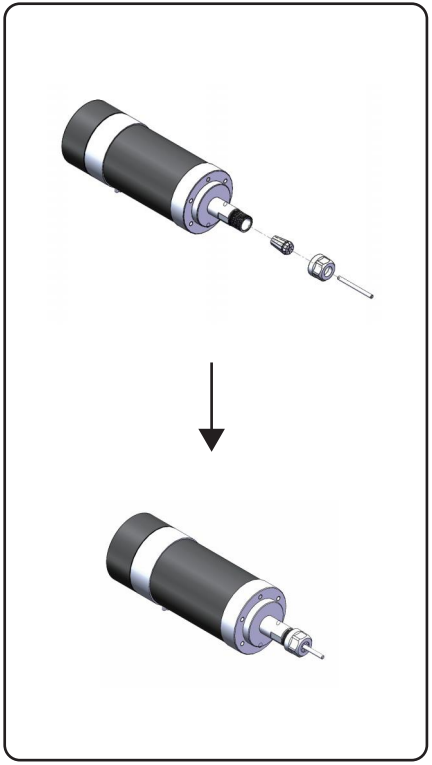


17# Open-end Wrench

4.2.2 Install the Spindle Tool

Use the 14# and 17# open-end wrenches to install the cutting tool in the position shown in the diagram.
Installing and replacing tools also uses 14-inch and 17-inch open-end wrenches; turning them in opposite directions tightens the tool.

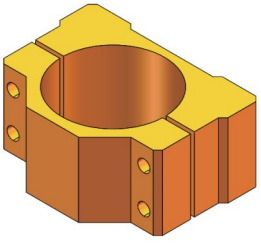
Important Note: After installation, the nut must be tightened securely. Failure to do so may cause the tool to fall off during engraving, resulting in a safety hazard.



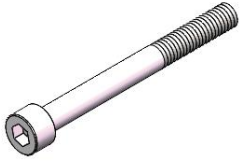
4.3 Install the Spindle Clamp

4.3.1 Component Preparation

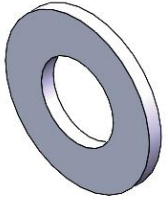
Step 1: Take the ϕ55 clamp out of the packaging box and place it flat on the table.
Step 2: Take 4 pieces of M6×60 hexagon socket head cap screws out of the packaging box and place them flat on the table.
Step 3: Take 4 pieces of M6 flat washers out of the packaging box and place them on the table.
Step 4: Place the installed spindle and cutting tool on the table.



ϕ55 Clamp



M6x60*4Hexagon Socket Head Cap Screw



M6*4Flat Washer

#5 Hexagon Wrench

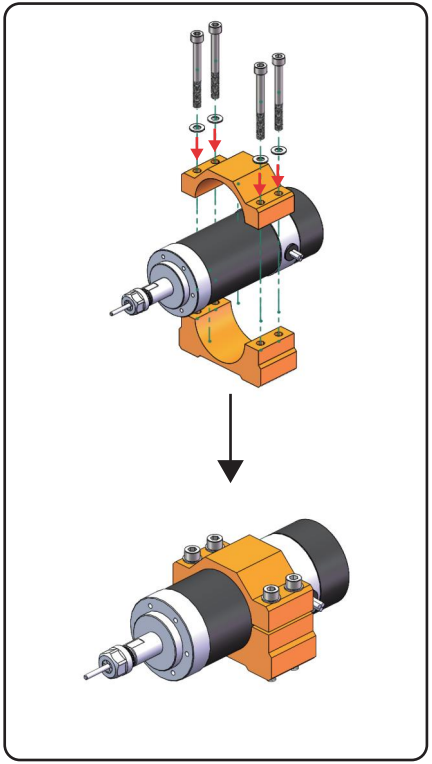
4.3.2 Install the Spindle

ϕ55 Clamp

M6x60 *4Hexagon Socket Head Cap Screw

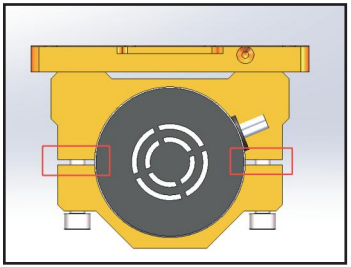
M6*4Flat Washer

Assemble the prepared clamp, screws, washers, and spindle in the orientation shown in the diagram.

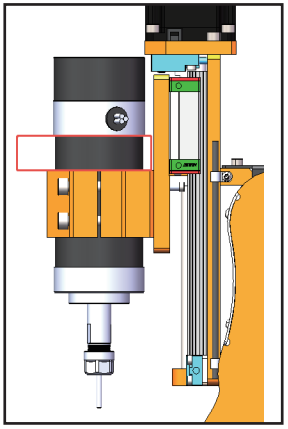


4.3.3 Install the Spindle

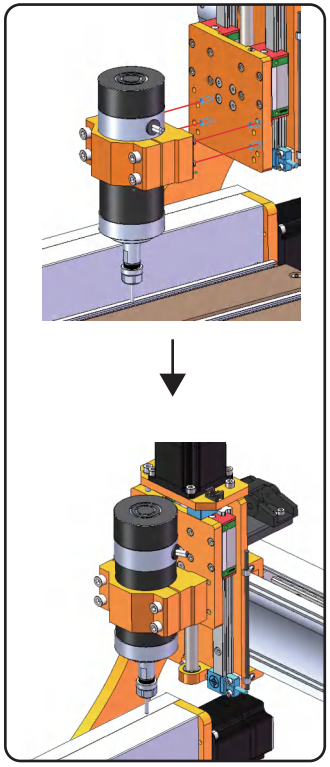
Take out the #5 hexagon wrench, and screw the screws of the assembled component from the previous step into the highlighted threaded holes shown in the diagram.



Note 1: Before tightening the screws, check that the gaps on the left and right sides of the clamp are approximately equal.



Note 2: For the spindle installation position, the height of the red frame shall not exceed 20mm.



4.3.4 Install the Clamping Plates

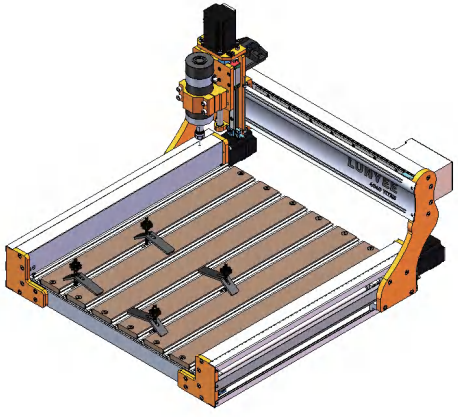
Clamping Plate*4

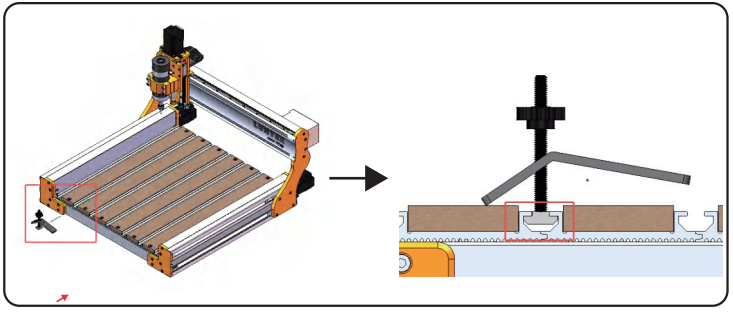
Step 1:

Take out the clamping plates, 4 sets in total.

Step 2:

Insert them into the grooves on the base plate in the position shown in the diagram.

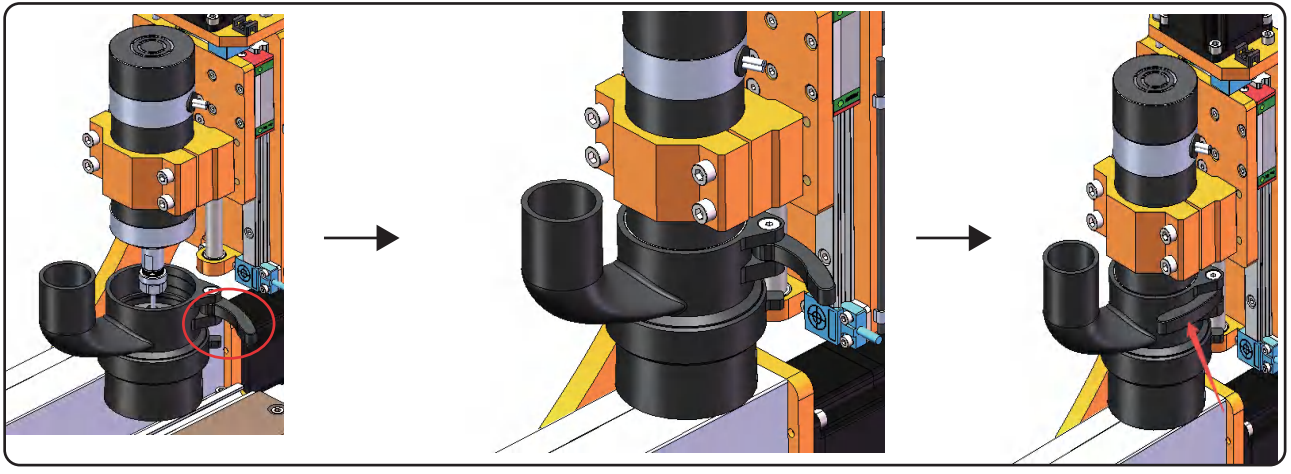




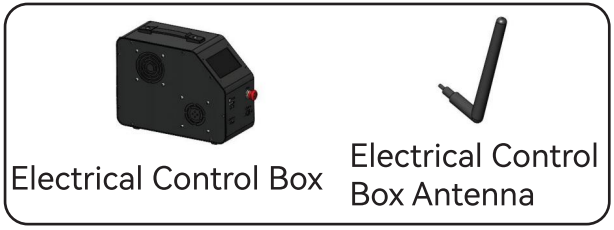
4.4 Install the Spindle Dust Shoe

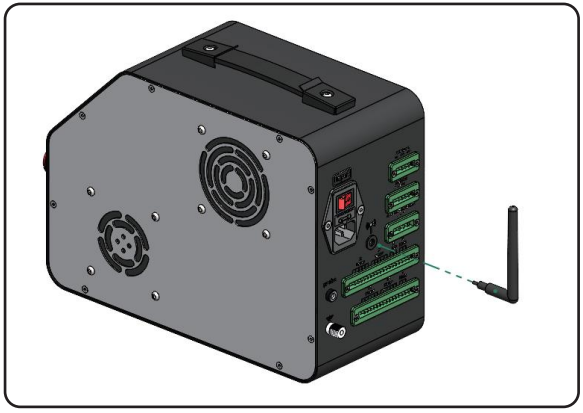
Spindle Dust Shoe

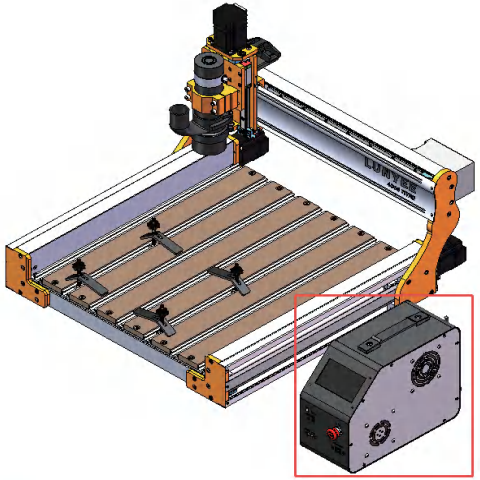
Step 1:
Open the handle of the spindle dust shoe, and fit it onto the end of the spindle in the direction shown in the diagram.
Step 2:
After fitting, press the handle tightly to complete the installation of the spindle dust shoe.



4.5 Install the Electrical Control Box Antenna



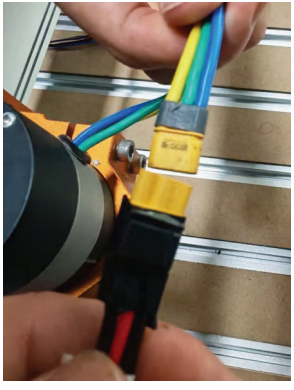




Step 1:
Install the antenna on the electrical control box in the position shown in the left diagram.
Step 2:
Place the electrical control box on the right side of the machine and connect the corresponding wires.

4.6 Wiring and Securing Cables

Main power supply

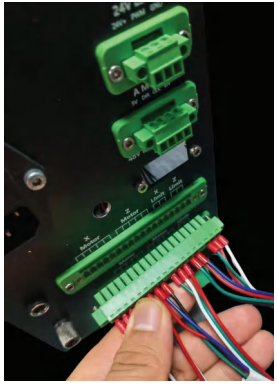


spindle inter-locking

spindle plug

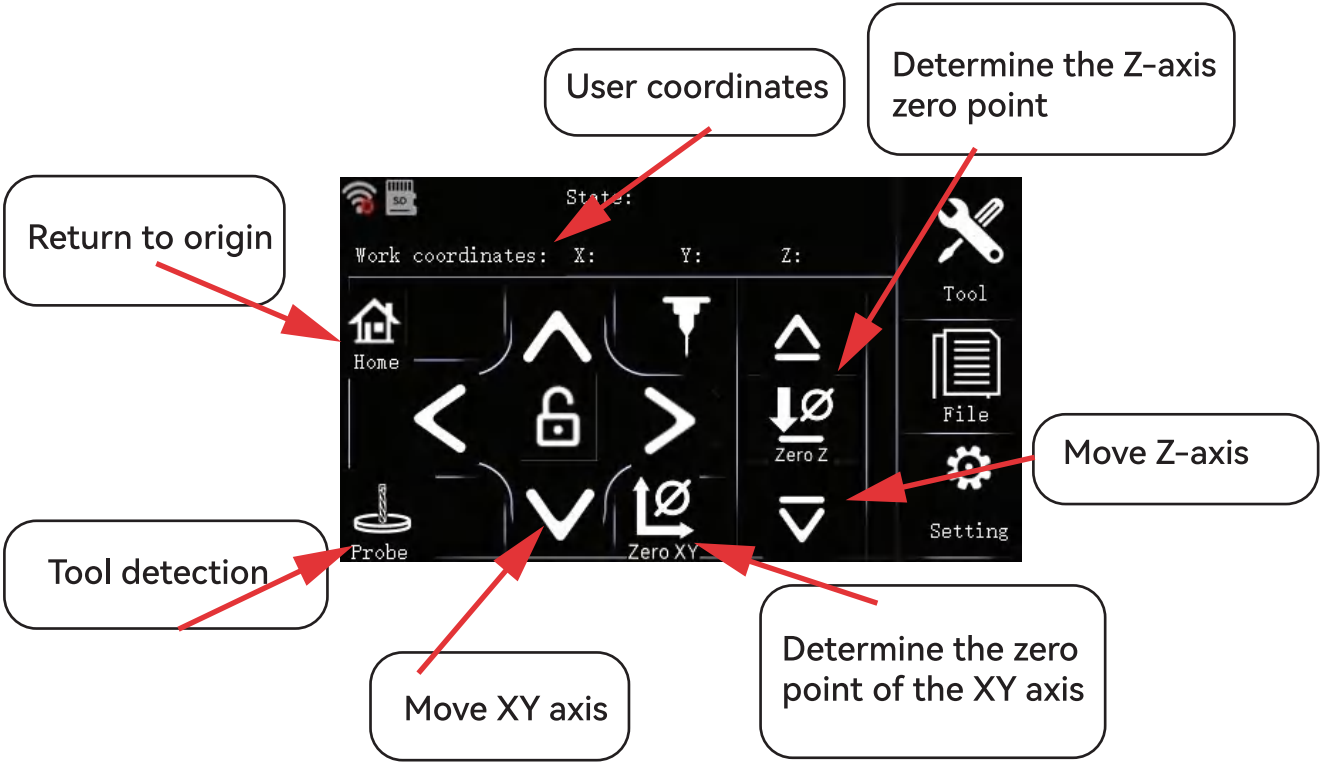
Tool setting line

Insert the short wire harness into the lower terminal.

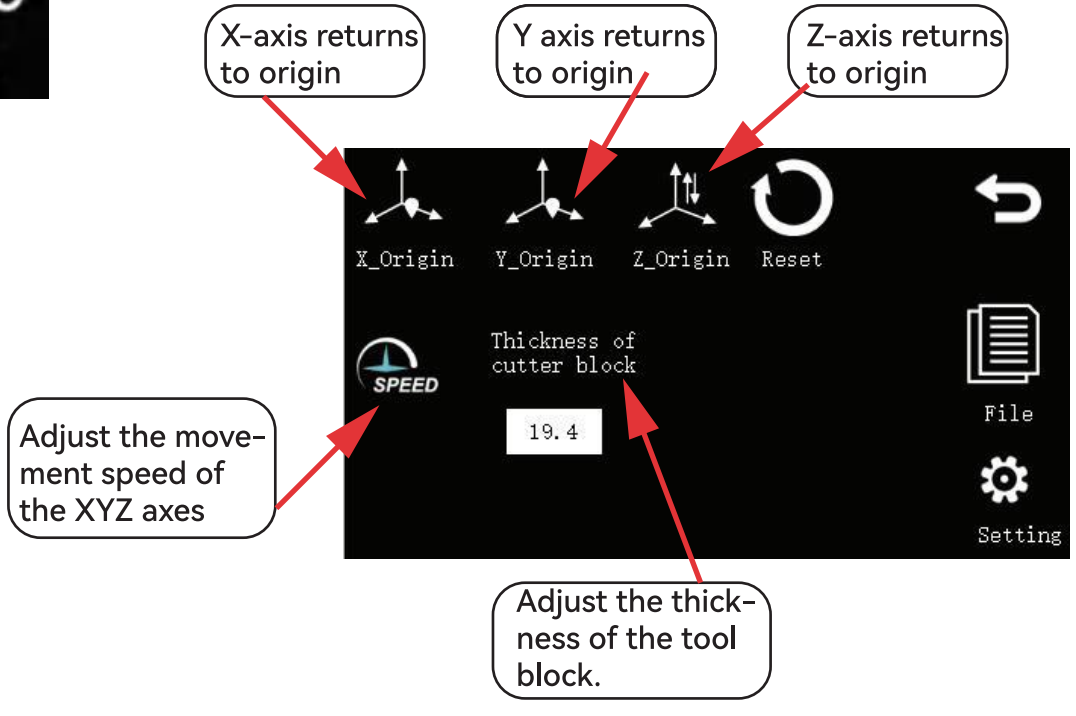


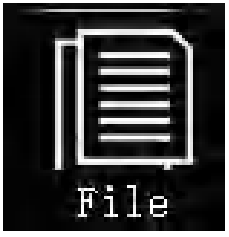
Insert the long wire harness into the upper terminal.

4.7 Offline Display User Guide



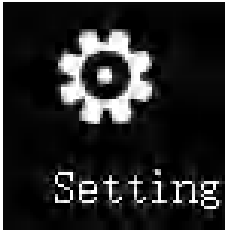
Tool Content





Open the imported file

The engraving file can be imported via a card reader, enabling start, pause, and stop functions.



Signal control machine

Click "WIFI" to automatically update the connection to the device via signal strength, eliminating the need for a signal cable control.

5. Electrical Connection Tutorial

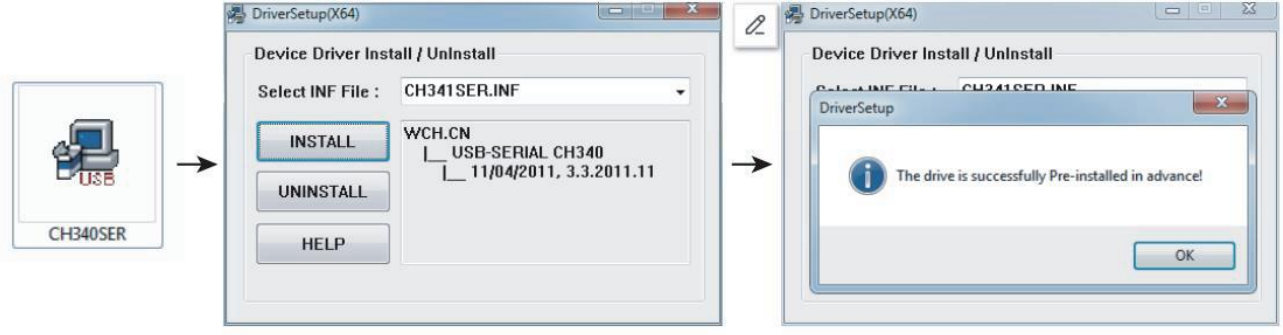
5.1Driver Installation (Windows/Mac)

Purpose: Install the CH340 driver to ensure stable USB communication between the computer and the device.

5.1.1 Windows

1.Obtain the driver:

·Method 1: Insert the USB drive included with the machine, locate the “CH340SER” folder, and double-click “Driver Setup(X54).exe”.

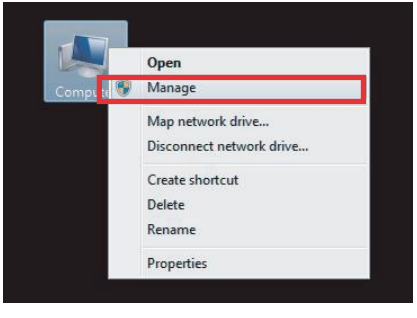


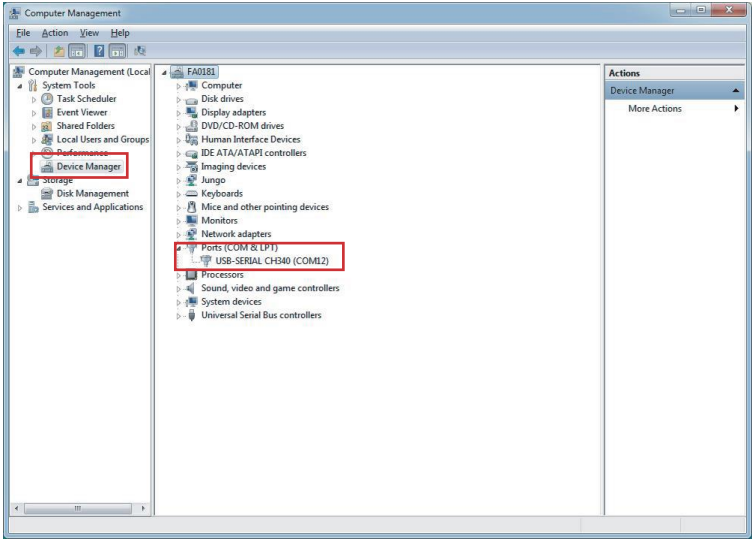
·Method 2: If the driver USB drive is lost, download the driver from: http://lunyeecnc.com
(If the link is invalid, please contact the dealer's after-sales support to obtain the latest link).

·Installation steps:

·Double-click the installer, select "INSTALL", and wait for the process to complete (about 1–2 minutes).

·If a message indicates "Driver installation failed", click "Uninstall" to remove the old driver first, then restart the computer and reinstall the driver.





·Verification: After the installation is complete, right-click “This PC” and select “Manage” → “Device Manager”. Check whether “USB-Serial CH340” appears under Ports (COM & LPT). If there is no yellow warning icon, the installation has been completed successfully.

5.1.2 Mac

·macOS Mojave (10.14) and later: No driver installation is required. The system includes CH340 support, so you can connect the device directly.

·macOS Sierra (10.12) / High Sierra (10.13): Please contact the manufacturer’s technical support (support@lunyeecnc.com) to obtain the dedicated driver. Do not use the Windows driver.

5.2 Finding the Machine’s COM Port in Windows

Prerequisite: First, connect the device to the computer via a USB cable and turn on the device power (set the control box switch to “ON”).

Procedure:

1.Windows XP: Right-click “My Computer” → “Manage” → “Device Manager” → expand Ports (COM & LPT).

2.Windows 7: Click “Start” on the taskbar → right-click “Computer” → “Manage” → “ Device Manager” → Ports (COM & LPT).

3.Windows 10: Type “Device Manager” in the taskbar search box, open it, and expand Ports (COM & LPT).

Identify the COM port:

· Locate the entry labeled “USB Serial Port (COMX)” (X is a number, e.g., COM3)—this is the machine’s COM port.

· If multiple USB serial ports are listed, right-click each one and select Properties → Details → Hardware Ids, then identify the port that contains “CH340”—that one is the machine’s COM port.

Note: If you change the USB port, the COM port number may change. Please re-check it after switching ports.

6. UGS Software User Guide

6.1Connect to UGS

1.Connect the USB cable and power on the machine.

2.Copy the UGS installer from the USB drive, or download UGS from:

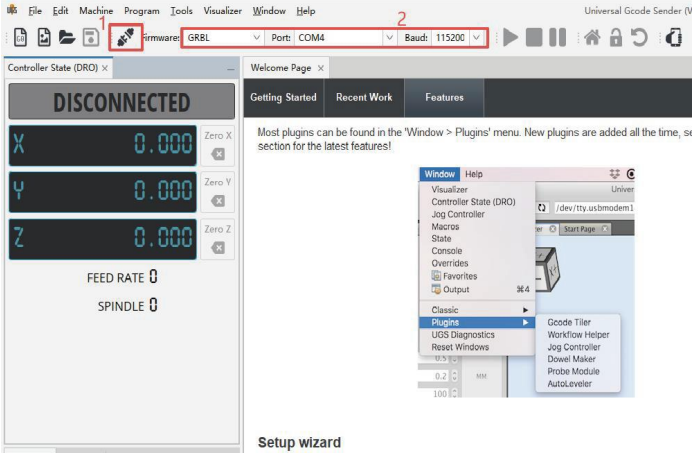
https://winder.github.io/ugs_website/download/

UGS Platform

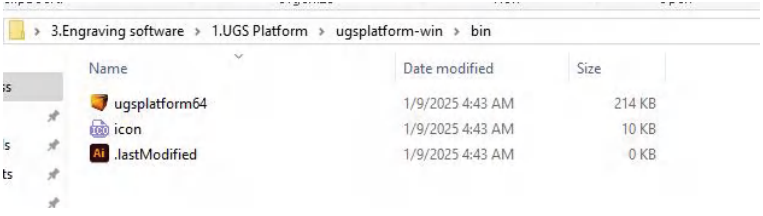
The next generation platform-based interface.

Version 2.0.14	Version 2.0.13	Description
Windows x64	Windows x64	Windows 64-bit version with bundled Java
Windows	Windows	Windows version with bundled Java
MacOSX	MacOSX	MacOSX version with bundled Java
Linux	Linux	Linux version with bundled Java
Linux ARM	Linux ARM	Linux ARM version with bundled Java. Can be used with RaspberryPi
All platforms	All platforms	A generic package without Java which needs to be installed separately

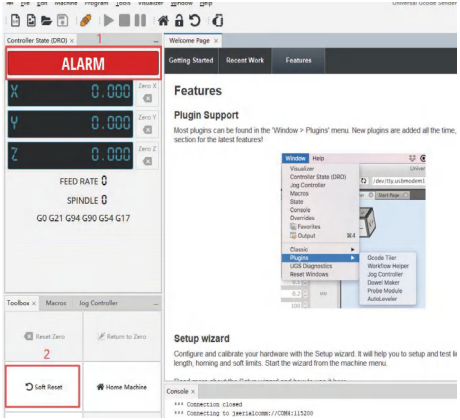
4.Connect the machine to the computer via a USB cable. In UGS, select Firmware → GRBL, choose the correct COM port, set the baud rate to 115200, and then click Connect.



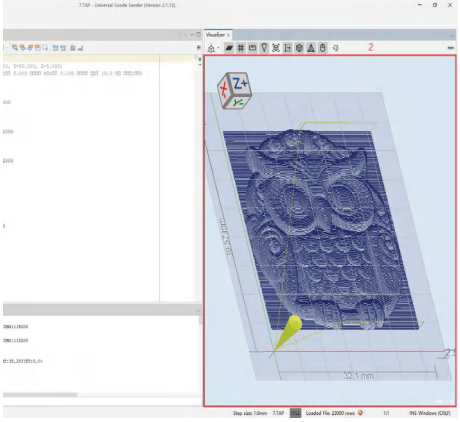
3.Unzip the files, locate “bin-ugsplatform64.exe”, and double-click to launch the software.



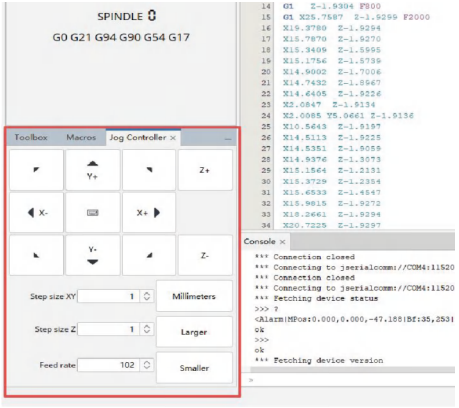
5.The status will change to ALARM. Click Unlock to change the status to IDLE.



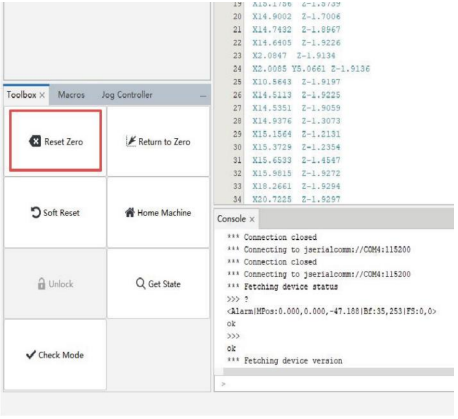
6.Open a G-code file and preview the toolpath in the visualizer.



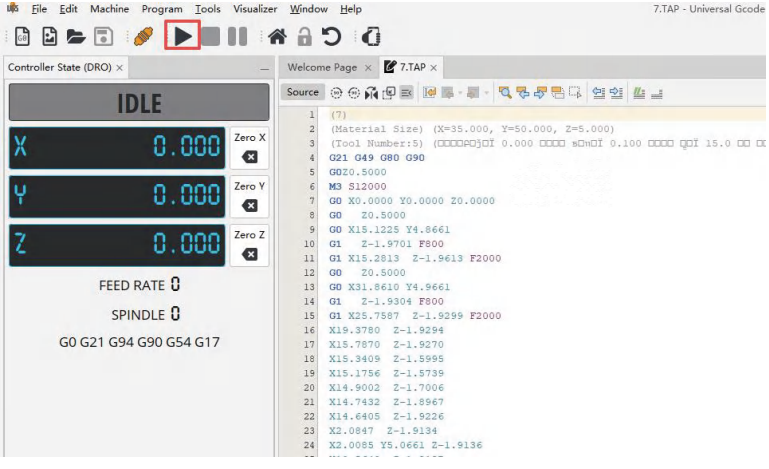
7.Click Jog to move the tool to the workpiece origin. Keep a proper clearance between the bit and the workpiece surface—just enough for a sheet of A4 paper to pass through.



8.In the Tool window, click Reset Zero.



9.Then click Send to start engraving.



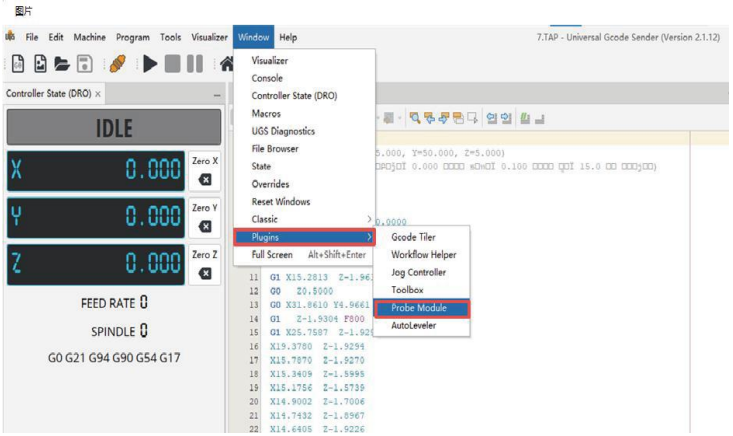
Engraving completed.

6.2 Z-Probe Operation

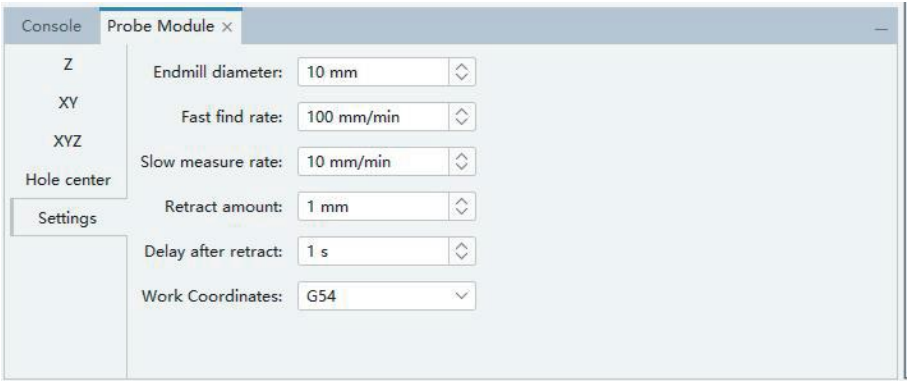
1.Measure the thickness of the Z-probe.

Thickness: 19.26 mm

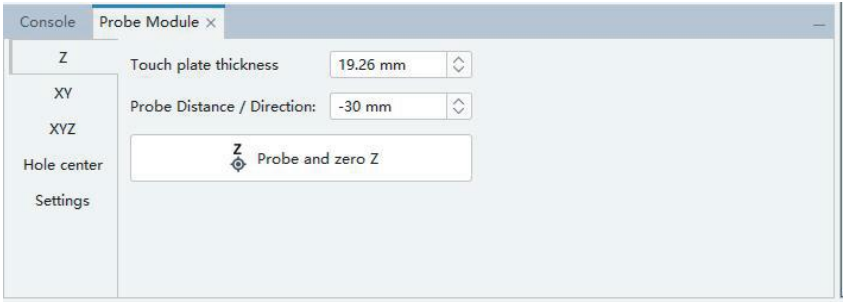
2.Click Window → Plugins → Probe Module.



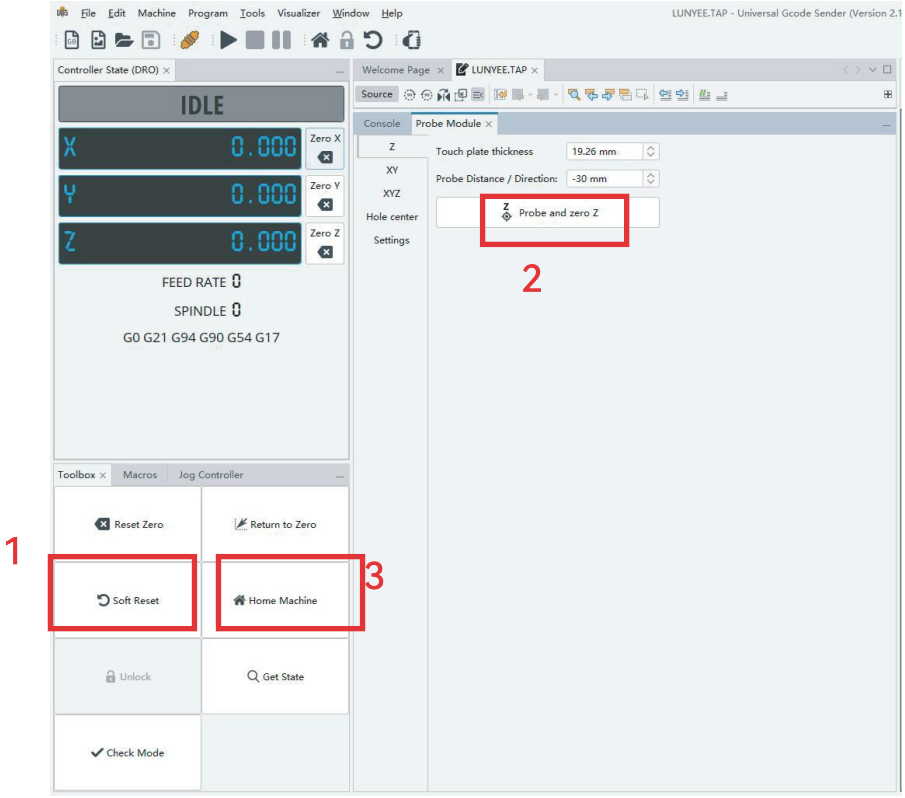
3.Settings: Configure the parameters as shown below. The Z-probe will run twice—once in Fast mode and once in Slow mode—to obtain an accurate result. A higher value results in a faster probing speed.



Click “2” and enter the measured Z-probe thickness in “Plate Thickness”.Probe Distance/Direction: Set to -30 (this means the Z-axis will move downward by up to 30 mm).If the bit still cannot contact the Z-probe after moving 30 mm, an error alarm will appear. When the status changes to “ALARM”, click “Unlock”.



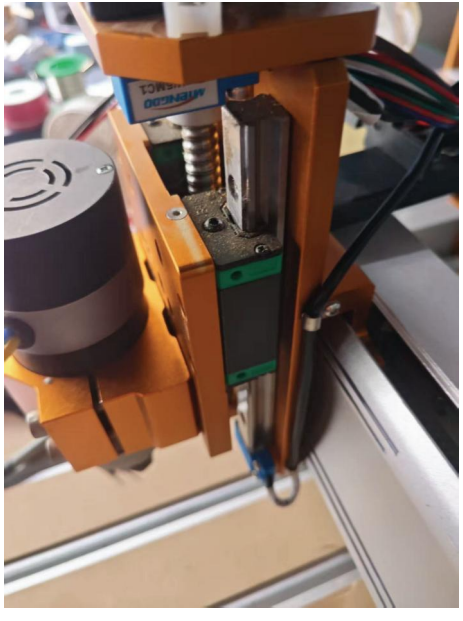
4.Click “Reset Zero”, then click “Probe” and select the Z-axis. Click “Return to Zero” to open the file, then click Send to start engraving.

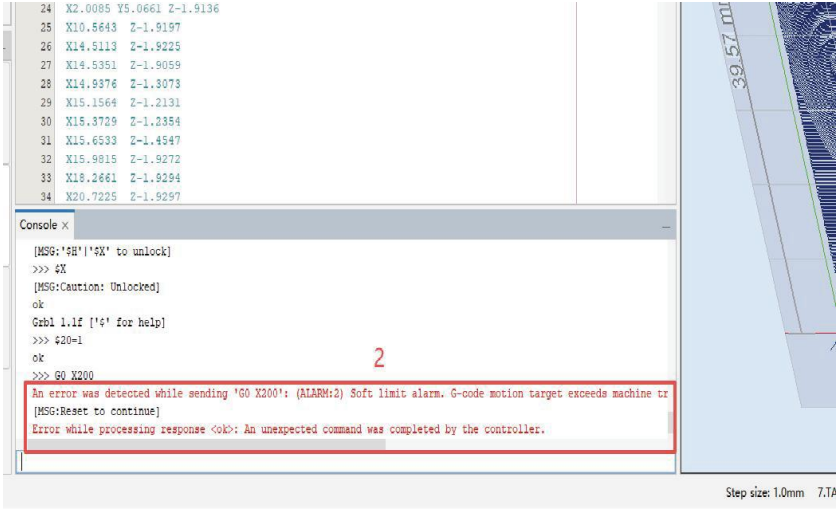


6.3 Releasing the Limit Switch

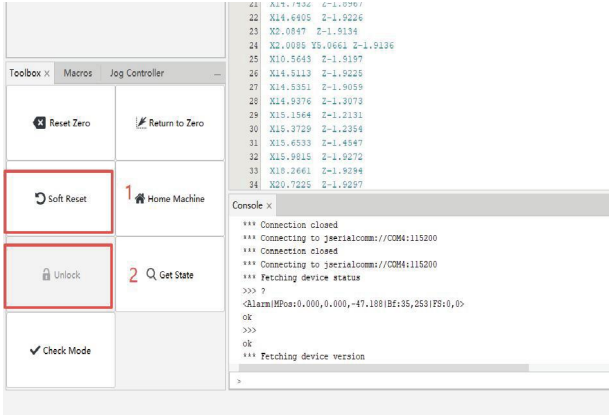
When a limit switch is triggered, the machine will enter the “ALARM” state. The control window will display an error message similar to the following:ALARM: 1 — A hard limit has been triggered. The machine position may be lost due to an unexpected stop.

It is strongly recommended to re-home the machine.[Message: Reset to continue]

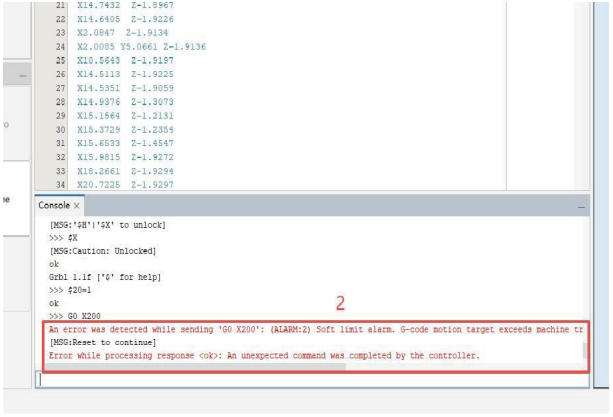


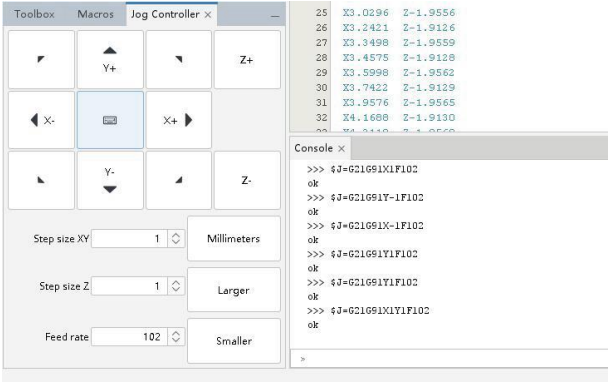


2.Click Soft Reset → Unlock, then jog the spindle in the opposite direction of the limit switch.



3.If the equipment displays "ALARM" and an error message again, please repeat this step. Click the reset to release, then limit switch to completely release the lock.





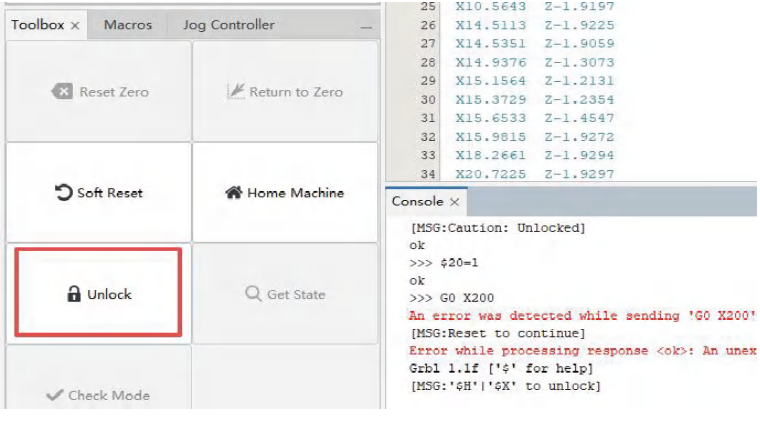
4.Jog the axis to the opposite direction. The machinecan run normally.

6.4 How to Use the Emergency Stop Button

1.In an emergency, press the Emergency Stop button to stop the machine.

2.To restore normal operation, rotate the button clockwise to release/reset it.

3.Reset in the software:The status will change to “ALARM”. Click “Unlock” to return to normal operation.



7.Common Troubleshooting

Issue	Possible Cause	Solution
Driver installation failed(Windows)	1.Conflict with an existing (old) driver 2.Insufficient system permissions	1.Uninstall the old driver first (click “UNIN STALL”), then restart the computer.。 2.Right-click the installer and select “Run as administrator”.
Software cannot connect to the machine	1.Incorrect COM port selected 2.Emergency Stop is not reset 3.Limit switch triggered	1.Re-check the COM port (see Section 5.2). 2.Turn the Emergency Stop button clockwise to reset it. 3.Release the limit switch as described in Section 7.1.
Spindle does not rotate	1.The spindle power cable is not fully plugged in 2.The fuse in the control box is blown	1.Check the cable connection between the spindle and the control box, then unplug and reconnect it securely. 2.Contact after-sales support to replace the fuse (do not disassemble the control box yourself).

Issue	Possible Cause	Solution
Poor engraving accuracy (misalignment/offset)	1.Loose screws/fasteners 2.Workpiece not securely clamped 3.Limits not calibrated	1.Check all module screws and retighten them. 2.Secure the workpiece with a press plate to prevent movement during engraving. 3.Perform the zeroing procedure again.
Limit switch alarm (ALARM: 1)	1.Machine over-travel 2.Limit switch triggered	To clear the alarm, follow these steps: 1.Click Reset. 2.Use the directional buttons to jog the spindle away from the limit position (if the machine is over-traveled, click X-, for example). 3.Click Unlock.

8.After-Sales Support

8.1Warranty Information

Main unit (control box, motor, spindle): 1 year； Consumable parts (screws, press plates, USB cable): 3 months

Warranty coverage:Covers non-human-caused damage only (e.g., motor failure or control box failure that occurs during normal use). Damage caused by user disassembly, dropping/impact, or incorrect power supply voltage is not covered.

8.2 Contact Information

Technical Support Email: support@lunyeecnc.com (reply within 24 hours; we recommend attaching photos of the issue and the machine serial number).

Official Website Resources: www.lunyeecnc.com(latest drivers, software, and video installation tutorials are available for download).

Welcome to the CNC Community!

Save Contact

Support@lunyeecnc.com

Installation Video Tutorial

Official Website: lunyeecnc.com
Technical Support:support@lunyeecnc.com