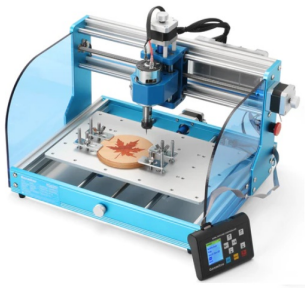
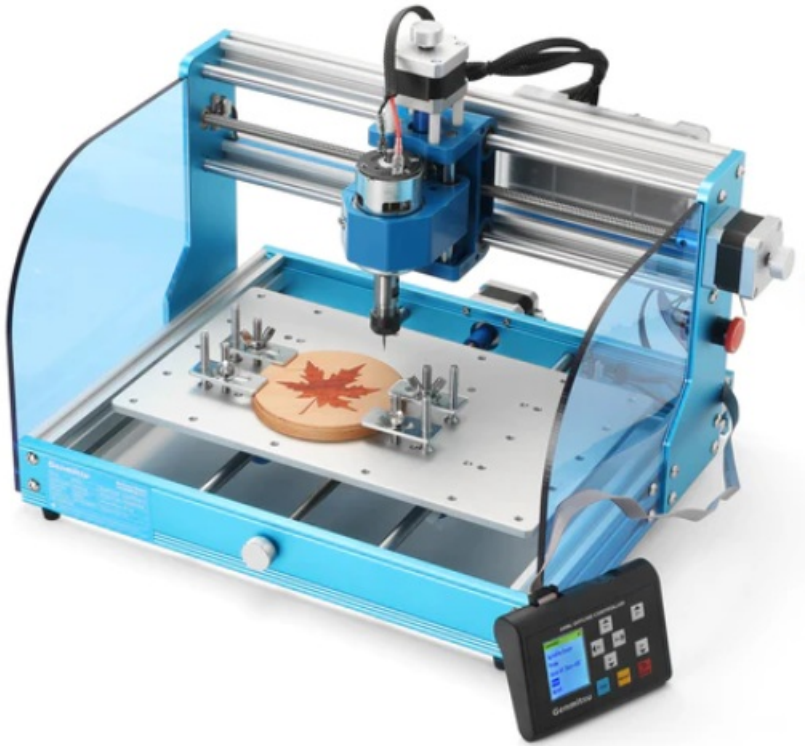


Genmitsu 3018-PROVer V2 Semi Assembled CNC Router Kit User Manual

Contents

Genmitsu

Genmitsu 3018-PROVer V2 Semi Assembled CNC Router Kit



Welcome
Thank you for purchasing the Genmitsu 3018-PROVer V2 CNC Machine from SainSmart.

Included in your package will be a USB Stick, you will find:

- PDF version of this manual
- Windows USB Driver
- GrblControl/Candle software for Windows
- Sample files

Please visit SainSmart Online Resource Center installing drivers and software for your CNC.
https://docs.sainsmart.com/3018-prover-v2

The driver and software can also be found on the included USB stick. For technical support, please email us at **support@sainsmart.com**

Help and support is also available from our Facebook group. (SainSmart Genmitsu CNC Users Group)

Scan QR code to join the group

Disclaimer

Please be careful when using your CNC machine. This machine is an electrical device with moving parts and dangerous areas.

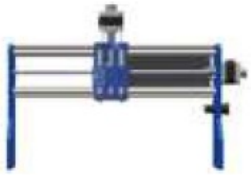
- Genmitsu CNC Machines are for indoor Use Only.
- You must be 18 years or older to operate this machine, unless supervised by a knowledgeable adult familiar with the machine.
- Wear the proper Personal Protection Equipment (Safety Glasses).
- Always place the CNC Machine on a stable surface.
- The SainSmart Genmitsu CNC Machine is supplied with Switchable Power Supply 230VAC or 115VAC. Never use a different power supply; it may cause malfunctions or damage to the machine.
- The 3018-PROVer V2 utilizes a high amp power it is recommended that you do not plug the CNC Router into an extension cord, or power strip as it may damage the machine.
- Ensure the Emergency stop button is easily accessible at all times.
- Never disassemble the Power Supply or Electrical This will VOID the warranty.
- DO NOT TOUCH the machine spindle, or place any body part near the working area when the machine is operating Serious injury may occur.
- DO NOT leave children unsupervised with the CNC Machine even when it’s not Injury may occur. DO NOT leave the machine unattended while it’s operating.
- Ensure your CNC Machine is in a well-ventilated Some Materials may discharge smoke or fumes during operation.

Specifications

Model Name	3018-PROVer V2
Work Area	11.18″ x 7.1″ x 1.6″ (284 x 180 x 40 mm)
Control Board Compatibility	GRBL 1.1h
Driver Chip	TB67S109
MCU	32 bit
Max Speed	2000 mm/min
CAM Software	Candle, Carveco Maker, Easel, UGS
Frame Material	All Aluminum
X-Z Axis Assembly Material	Plastic
Leadscrew	ACME TB (8mm), Pitch: 2mm, Lead: mm4
Control Software	GrblControl(Candle)
Motion System	Screw- Driven
Spindle Motor	775 motor, 12V~24V, 000 RPM
Stepper Motor	1.3 A, 12V, 0.25 Nm torque (2.2 in-lb)
Power Supply	24V/ A

Part 1- Unboxing & Checking Package Contents

1 Y-axis Base Assembly



2 X-Axis/ Z-Axis Gantry

3 Spindle

4 ER11 1/8 " Collet

5 (4) Rubber Foot

6 (2) Acrylic Baffle

7 Offline Controller

8 USB A-to-B Cable

9 Power Supply

10 Power Adapter Cable (US)

11 Power Adapter Cable (EU)

12 (2) Limit Switch

13 Offline Controller Cable

14 Work Clamp Set

15 Z-Probe Kit

16 20-degree V Bit

17 Cable Tie

18 Allen Wrench Set, 3mm, 5mm

19 Wrench

20 User Manual

21 MicroSD Card

22 MicroSD Card Reader

23 (2) M6*10mm Bolt

24 (9) M5*22mm Bolt

25 (9) M5*10mm Bolt

26 (9) 20M5 T-Slot Nut

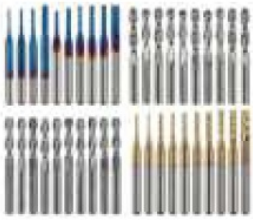
Optional Accessories (Not Included)

Consider following optional upgrades or accessories to make your CNC experience better!

You can find them on www.sainsmart.com. Save 10% with discount code PROVER10.

Compressed Spot Fixed Focus FAC Laser Module

Dust Shoe



MC40A, 1/8" Shank, CNC Cutter Milling Carving Bit Set, 40-PCS

KABA Desktop CNC Enclosure

Part 2- Mechanical Installation

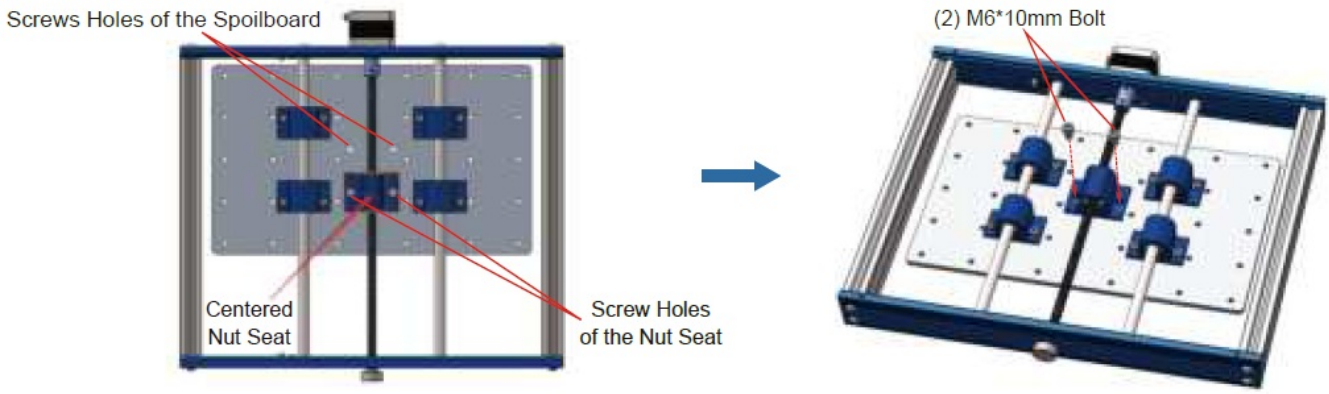
What you will need

1 Y-axis Base Assembly

18 Allen Wrench Set, 3mm, 5mm

23 (2) M6*10mm Bolt

Step 1: Flip the Y-Axis Base Assembly upside down and remove the cable ties from the bearing mount.
Step 2: Move the spoilboard to align the two screw holes of the spoilboard with the two screw holes of the centered nut seat as shown below.
Step 3: Lock them with two pieces of M6*10mm bolts.



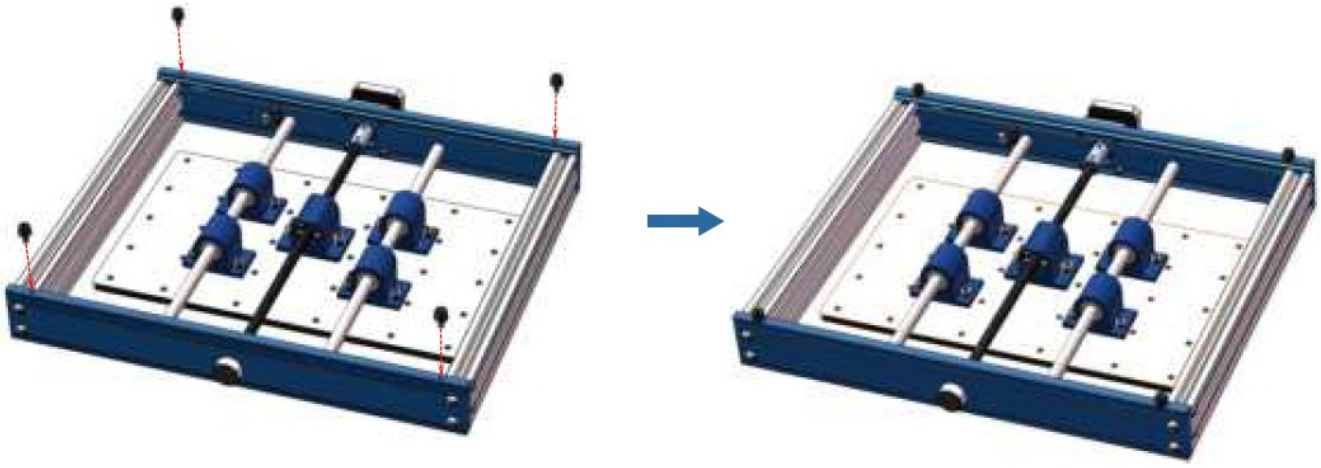
Installing Rubber Feet to Y-Axis Base Assembly

What you will need

5 (4) Rubber Foot

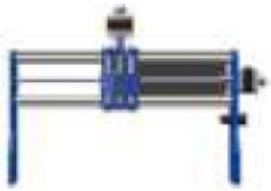
18 Allen Wrench Set, 3mm, 5mm

Step 1: Locate the pre-drilled holes and install the rubber feet onto each corner using the Allen wrench.



Install Y-Axis Base to X / Z Axis Gantry

What you will need



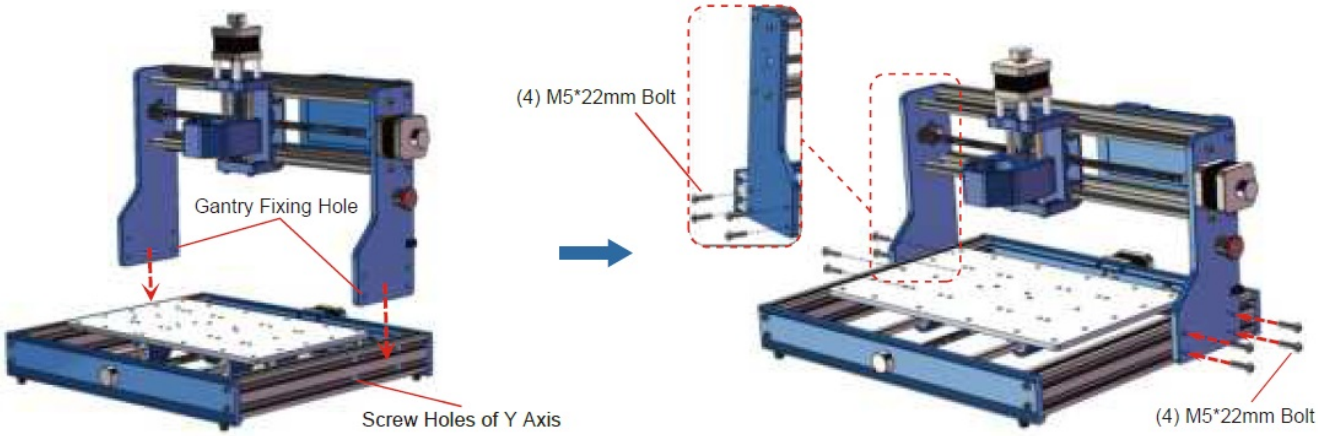
2 X-Axis/ Z-Axis Gantry

18 Allen Wrench Set, 3mm, 5mm

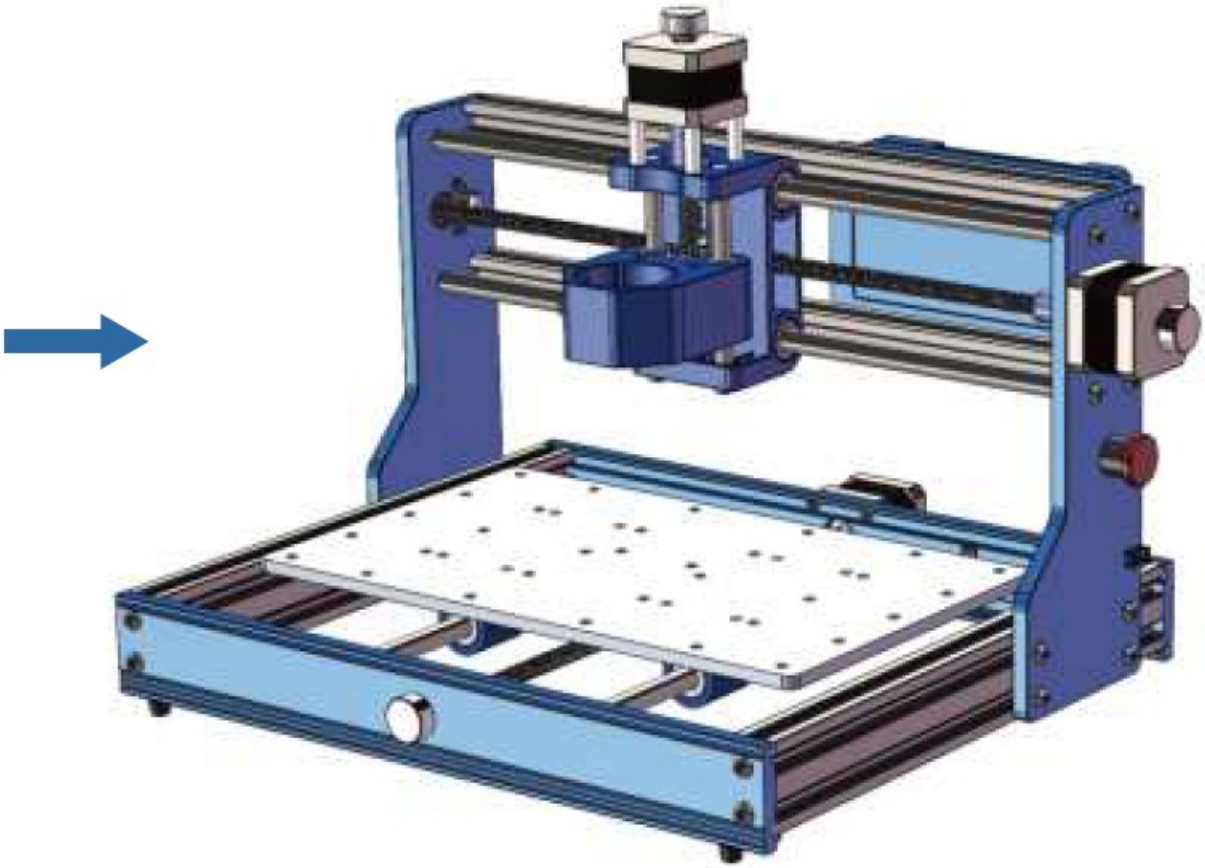
24 (8) M5*22mm Bolt

Step 1: Turn the Y-axis base assembly upside down and place it on a flat surface.

Step 2: Align the gantry fixing holes with the corresponding screw holes on the both sides of the Y-axis base assembly.

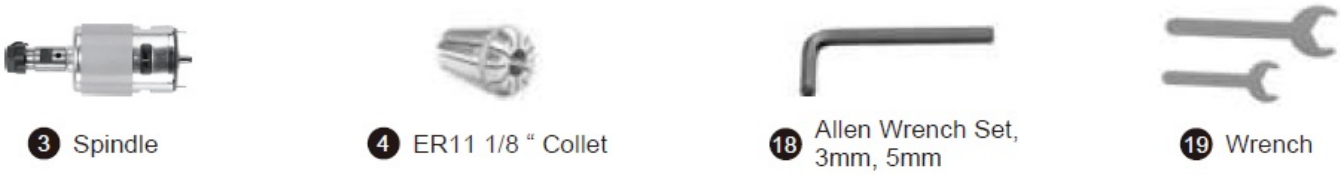


Step 3: Tighten the M5*22 bolts respectively through the fixing holes of the gantry and into the corresponding screw holes on the Y-axis base and secure it with the 3mm Allen Wrench.



Installing the Spindle

What you will need

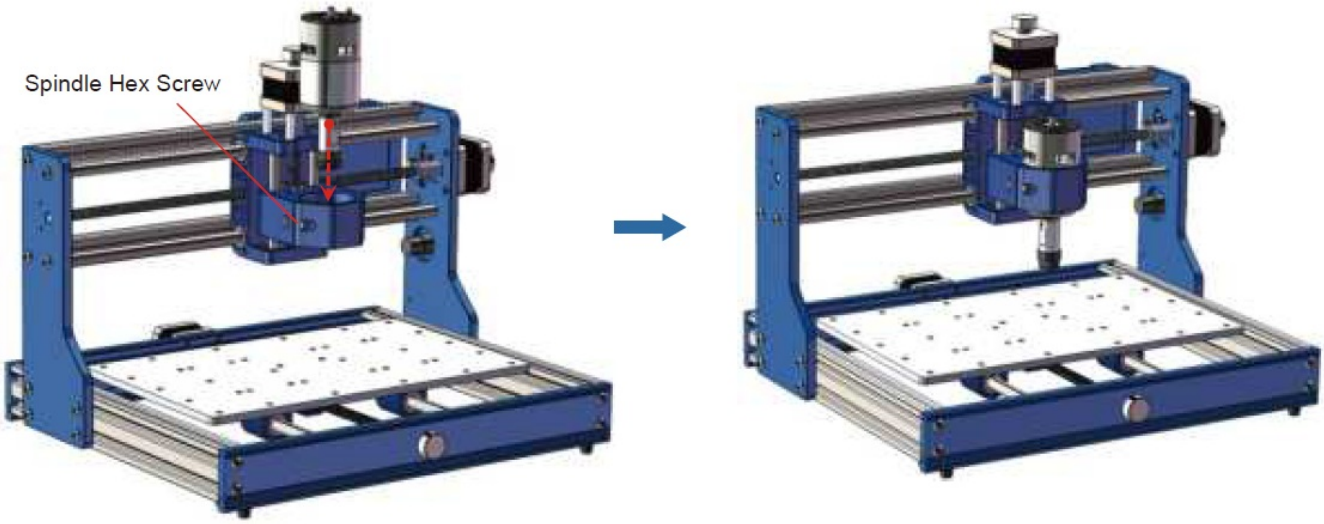


Step 1: Unscrew the black collar from the spindle and insert the collet. Make sure the collet is locked in place by pushing it till it “clicks”. Then screw the Collar and Collet back into the spindle.

Step 2: Loosen the Spindle Mount Hex Screw.

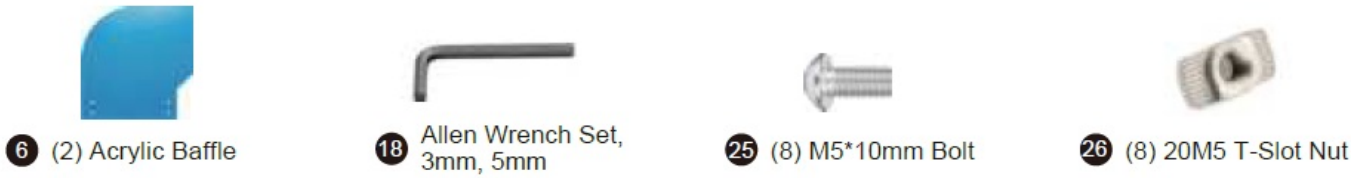
Step 3: Slide the spindle into the spindle mount until the external sleeve of the spindle is fully inserted

Step 4: Tighten the Hex screw to secure the Spindle. Do not over tighten the screw, as it can damage the mount.



Install the Acrylic Baffles

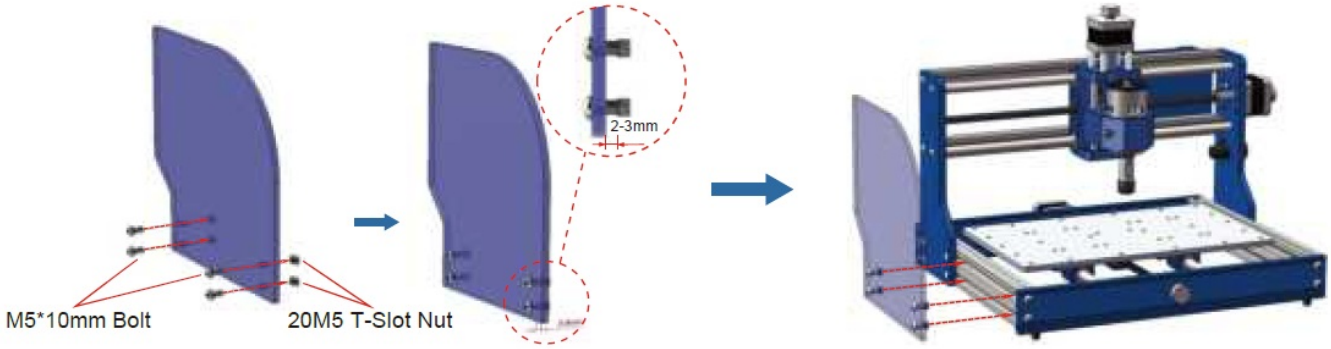
What you will need



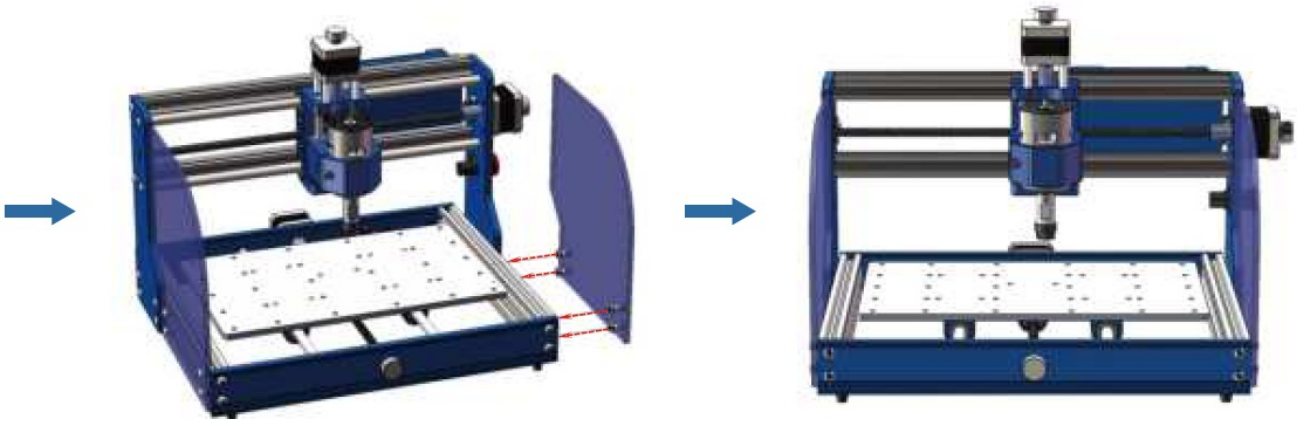
You first will need to identify the left baffle and the right baffle first, by placing the baffle along the aluminum frame as shown in the diagram below, each piece will fit the shape of the frame. Peel off the protective paper from the baffles.

Step 1: Insert the M5*10mm bolts from the outside of the baffle (For example, for the left-side baffle, the M5 bolt should insert from the left side). Then put the T-Slot nut onto the bolt from the other side using your hand. One turn only. Keep them loose for now. Orient the T-Slot nuts horizontally (Note that the distance between the T-nut and the acrylic shield should be 2-3mm after screwing in).

Step 2: Place T-Slot nuts into the side of the machine so that the baffle is aligned with the edge of the frame.



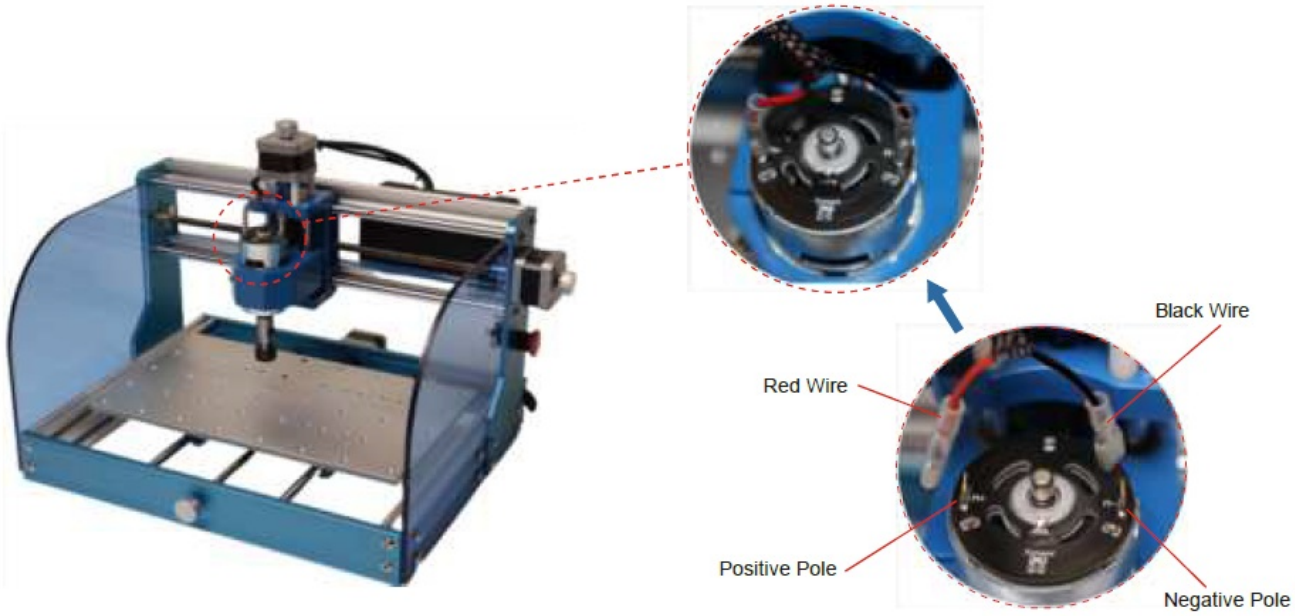
Step 3: Now tighten the M5 bolts to secure the baffle. Repeat the steps to install the other side.



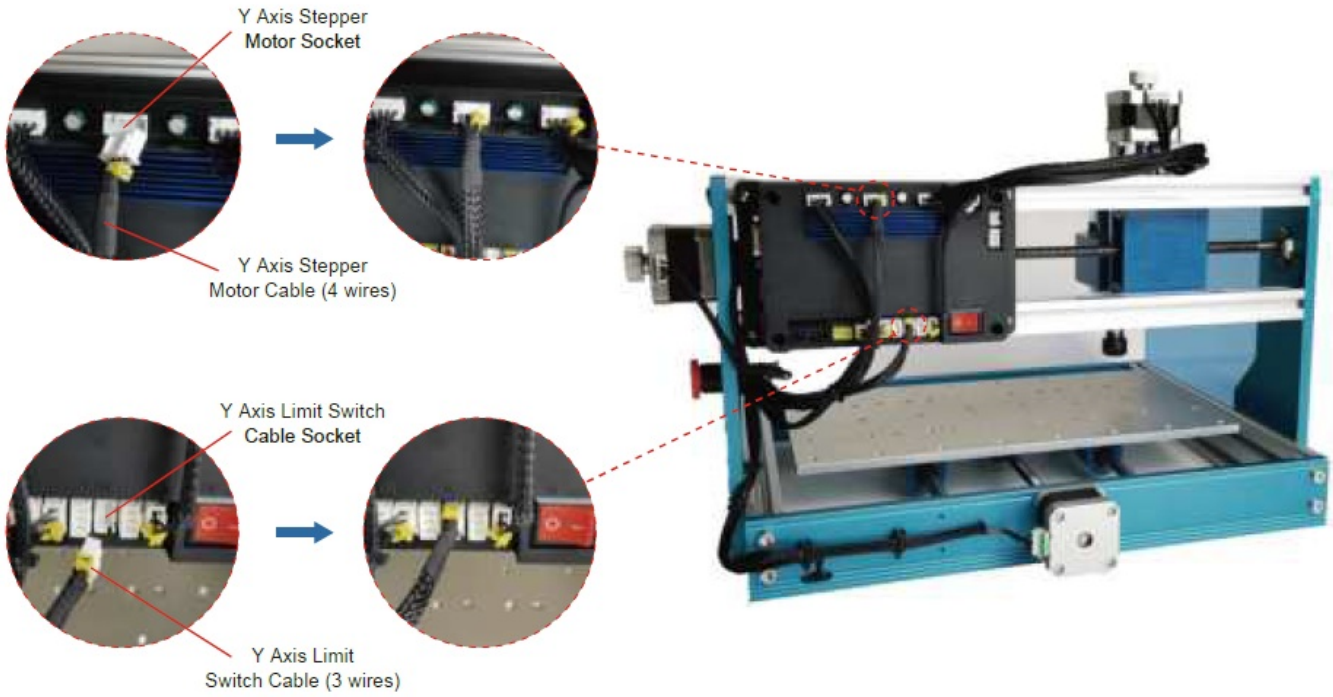
Congratulations! Now your machine frame is fully assembled! Now let's move on to wiring.

Part 3- Wiring

1. Following the Wiring Diagram Below to connect the spindle motor cables.
   The red wire is connected to the positive pole of the spindle motor, and the black wire is connected to the negative pole of the spindle motor.



2. Insert the Y-axis stepper motor cable and Y-axis limit switch cable into the corresponding control board interface a shown below.



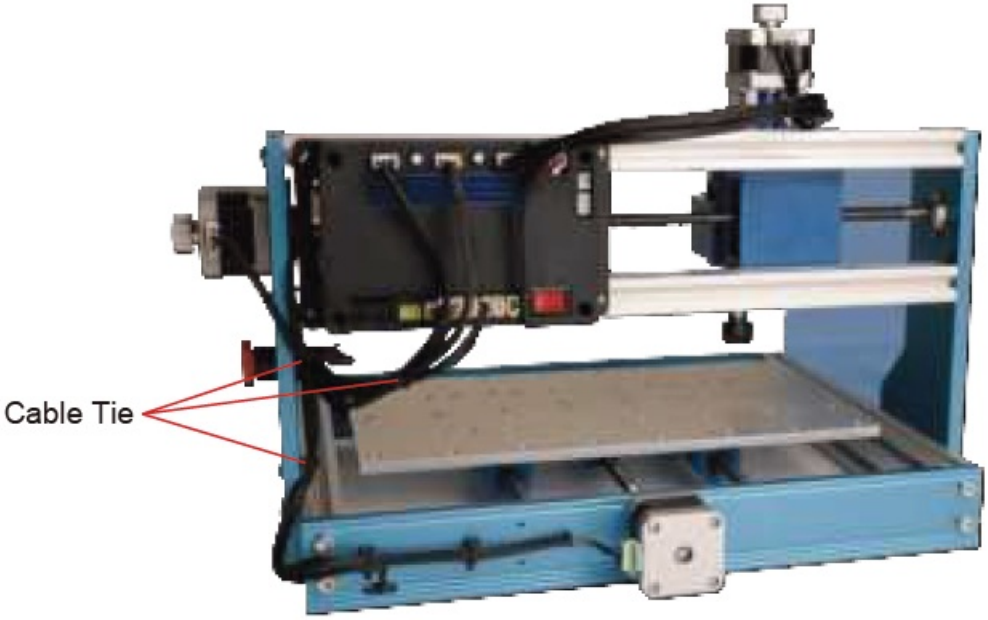
Cable Management

What you will need

Cable Tie

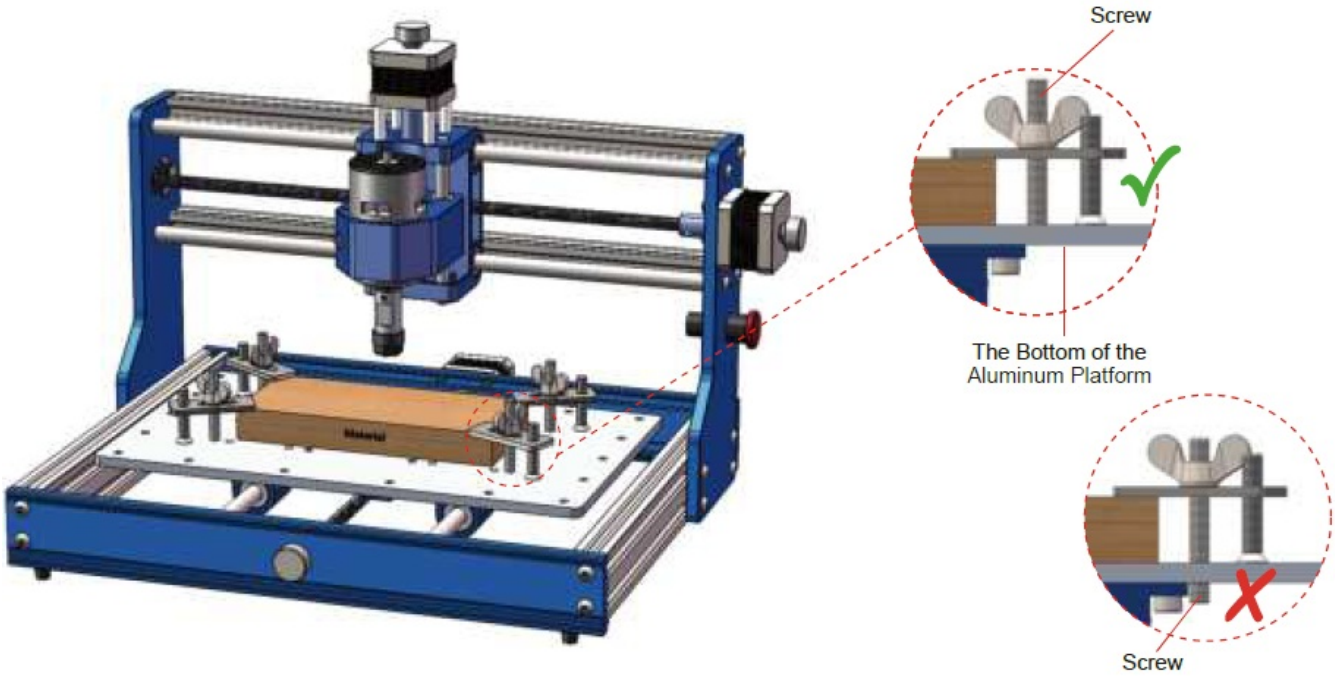
1. Use the cable ties to fix the cable management on the cable holder as shown
2. Use the manual jog wheels to move the X, Y, Z axis fully and make sure they could move freely and not

restricted by the cables.

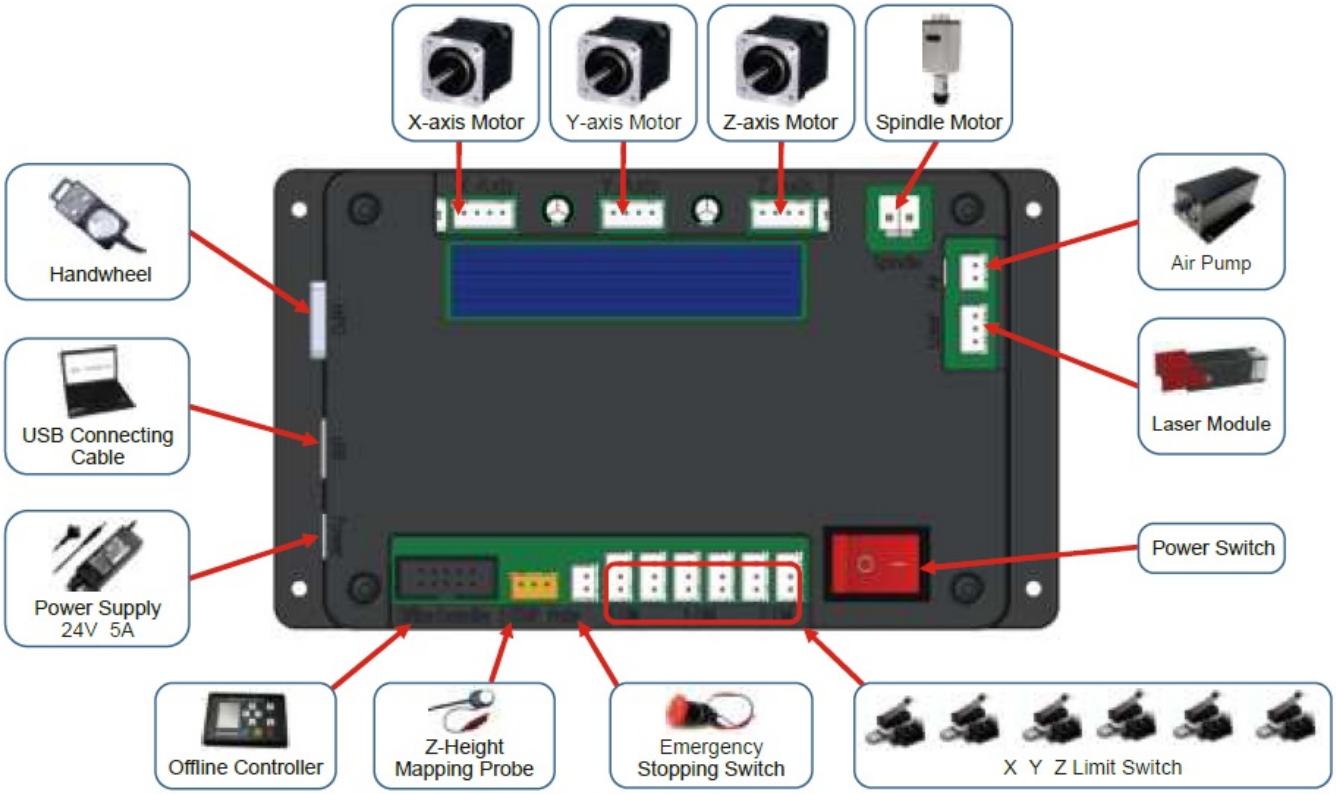


Tips for Installing the Clamps

Please refer to the below images to install the clamps.
Make sure that the screw screwing depth can not exceed the bottom of the aluminum platform, otherwise the screw will hit the frame of the machine.



Diagram



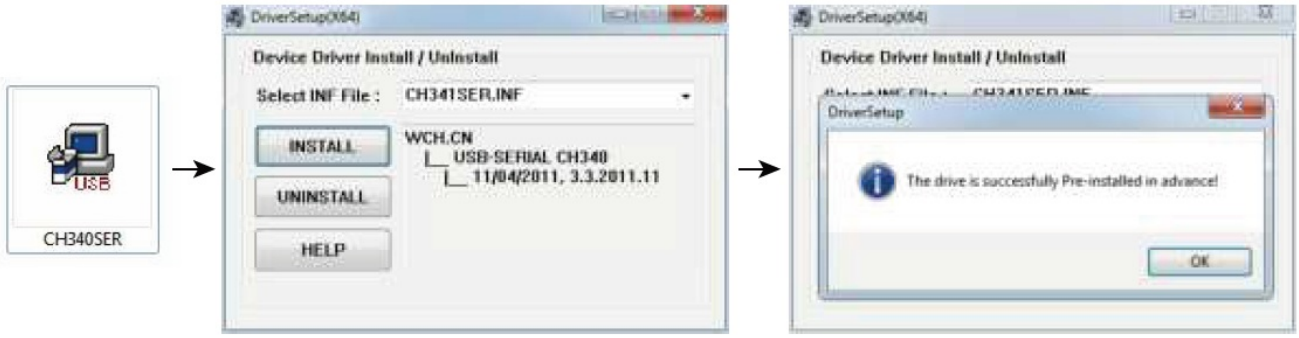
Label Description

Marker	**Instruction**
Power	24V Power Interface
USB	USB Interface
MPG	Hand Wheel interface
Offline controller	Offline Control Interface
E-STOP	Emergency Stop Switch interface
Probe	Z Axis Zero Tool interface
X-LIM	X-Axis imit Switch
Y- IM	Y-Axis imit Switch
Z-LIM	Z-Axis imit Switch
Laser	Laser Module Interface
Air	Air Pump interface
Spindle	Spindle Motor Interface
X Axis	X-Axis Stepper Motor interface
Y Axis	Y-Axis Stepper Motor interface
Z Axis	Z-Axis Stepper Motor interface

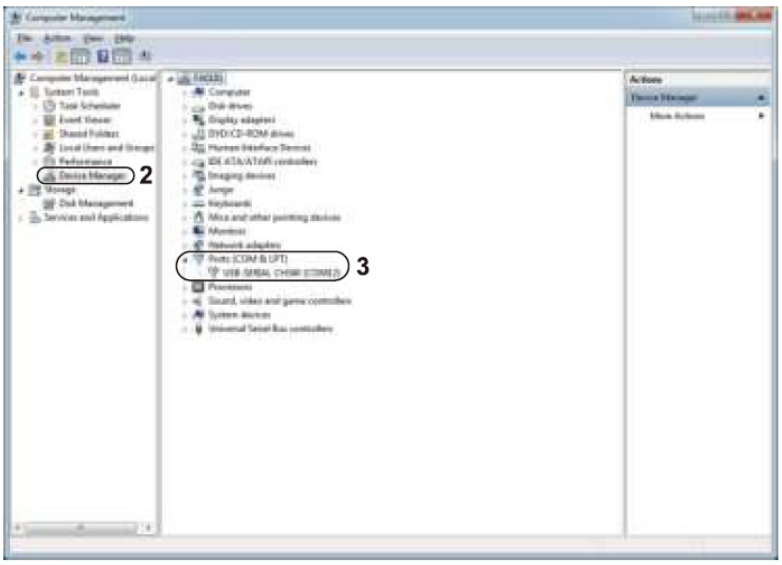
Part 4- Software Setup

1. Driver Installation

   Install the driver (software — Driver — CH3 0SER.exe)



2. **To Determine your Machine's COM port:**
   - **Windows XP:** Right click on "My Computer", select "Manage", select "Device Manager".
   - **Windows 7:** Click "Start" — Right click" Computer" — Select "Manage" — Select "Device Manager" from left
   - In the tree, expand "Ports (COM & PT)"
   - Your machine will be the USB Serial Port(COMX), where the "X" represents the COM number, for example
   - If there are multiple USB serial ports, right click each one and check the manufacturer, the machine will be "CH340".



3. **Grblcontrol (Candle) Connecting to the Controller**

   First time use will require you setup the appropriate COM PORT and Baud rate.

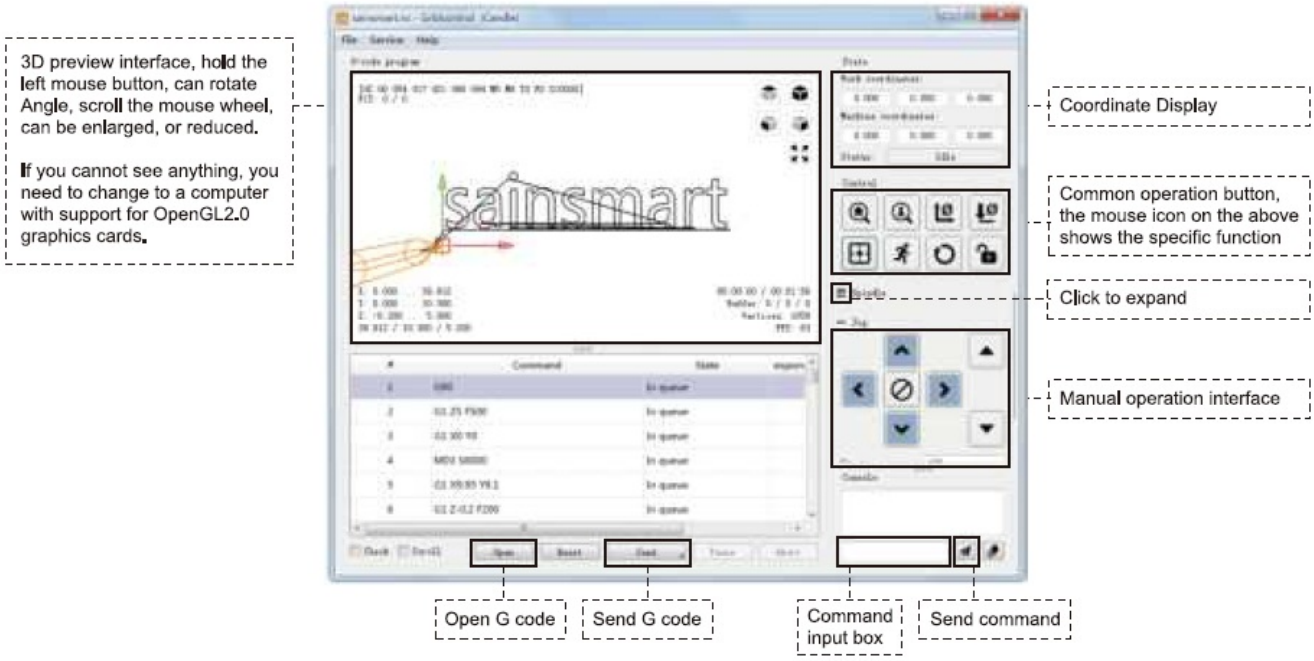
   Step 1: Software should automatically select the port number.

   Step 2: If it does not recognize automatically select the "Baud" drop down menu and select 115200.

   Step 3: Click "OK" to save

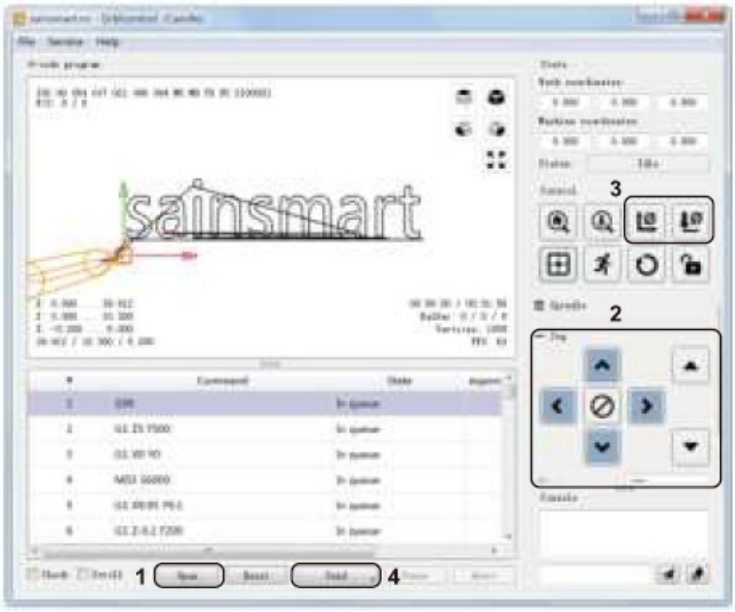
Part 5- Test Project

1. **Grblcontrol (Candle)**



2. **Run G code for processing**
    1. Click [open], Select the G code to
    2. Click on the manual operation panel, move the spindle to the starting point of the engraving, so that the tool and the workpiece just touch.
    3. Click [ZeroXY] [Zero Z] Clear the XYZ axis
    4. Click [Send] running G
3. **About firmware parameters**

    The parameters of the control board have been configured according to 3018-PROVer V2.



Part 6- Z Probe Setup

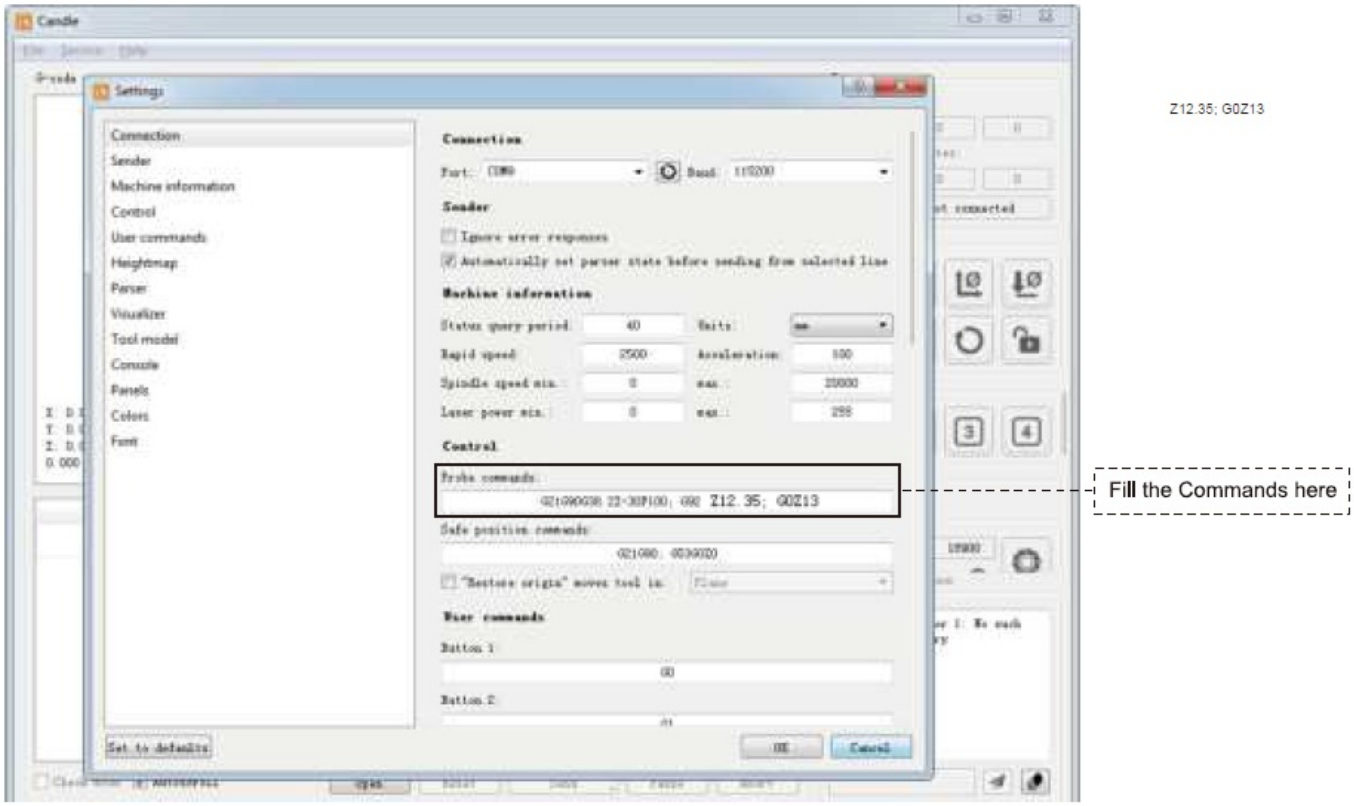
Probe Function Introduction

1. Grblcontrol (Candle) Probe operating instructions

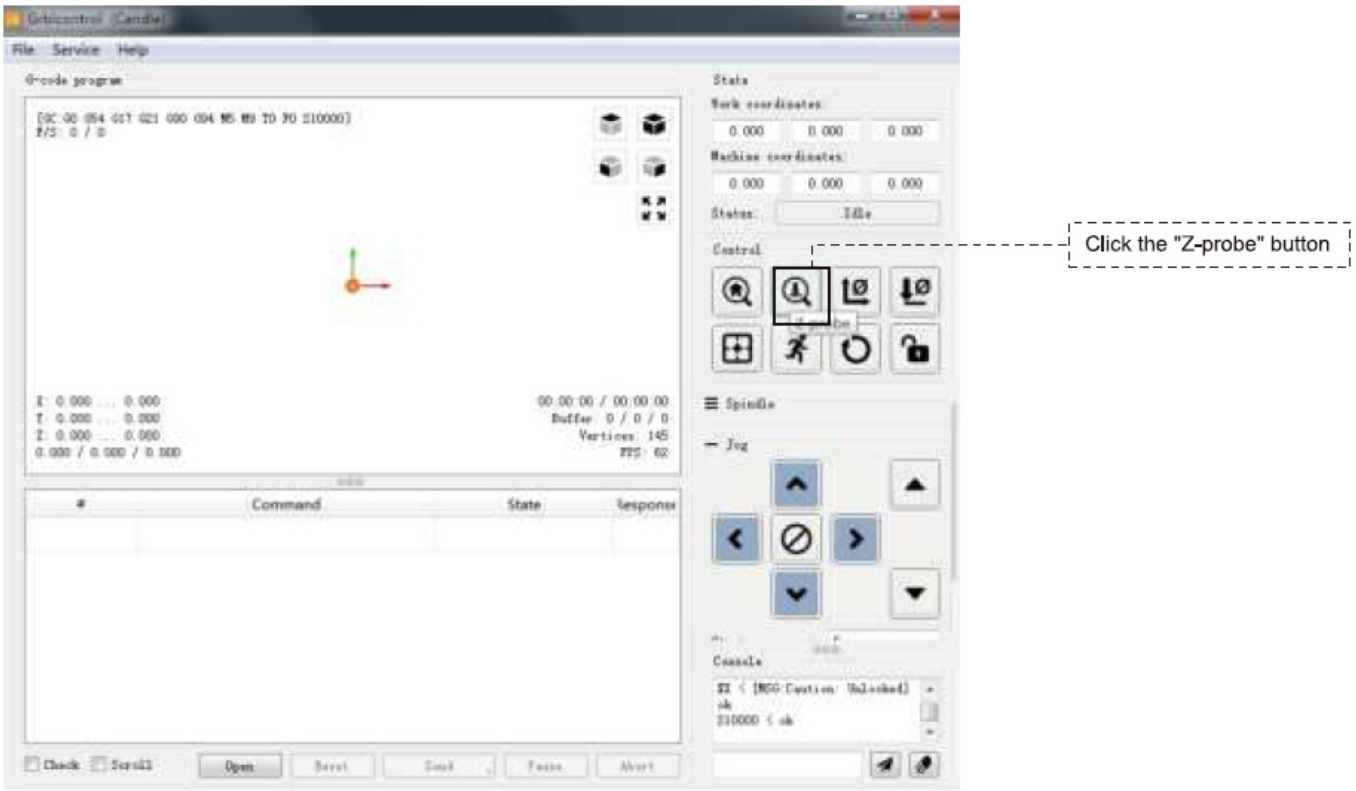
   Step 1: Probe commands editing Z1 is the height of the tool setting block, which requires actual measurement, and Z25 is the height of the tool lifting, which can be configured as required.

Probe G code	After editing	Probe Tool height
G90G21G38.2Z-50F100 G92 Z14 G0 Z25	G90G21G38.2Z-50F100 G92 Z12.35 G0 Z13	

Step 2: Probe commands filled in Grblcontrol (Candle)



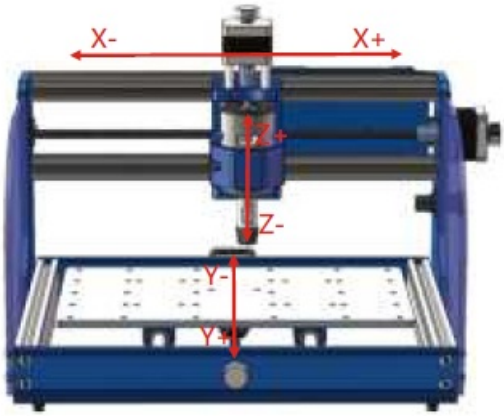
Step 3: Connect the probe tool to the controller probe interface.
Step 4: Click the “Z-probe” button, Z-axis automatic tool to zero.



Part 7- Offline Controller

The offline interface is designed according to our offline controller and does not match with other companies’ offline controllers. Do not connect other devices or controllers, or risk damaging the control board or other devices.

1. Button Functions Introduction



Marker	Instruction
STEP	Manual moving distance option (xC, x0.01, x0.1, x1) in xC mode, press the key to keep moving; x0 .01 means press the manual button once and the machine moves 0.01mm; x0.1means press the manual button once and the machine moves 0.1mm; x1 means press the button once and the mac hine moves 1mm;
Select	Move cursor
Enter	Save/confirm/pause/start/return to main interface (long press), release (long press) limit switch to t rigger alarm
X+	X+ move, parameter modification (in setting state)
X-	X-move, parameter modification (in setting state)
Y+	Y+ move, parameter modification (in setting state)
Y-	Y-move, parameter modification (in setting state)
Z+	Z+ move
Z-	Z-move

2. **Parameter Settings**

Select the “Settings” interface icon as shown in Figure 1, click the [Enter] button to enter the parameter setting interface, as shown in Figure 2.

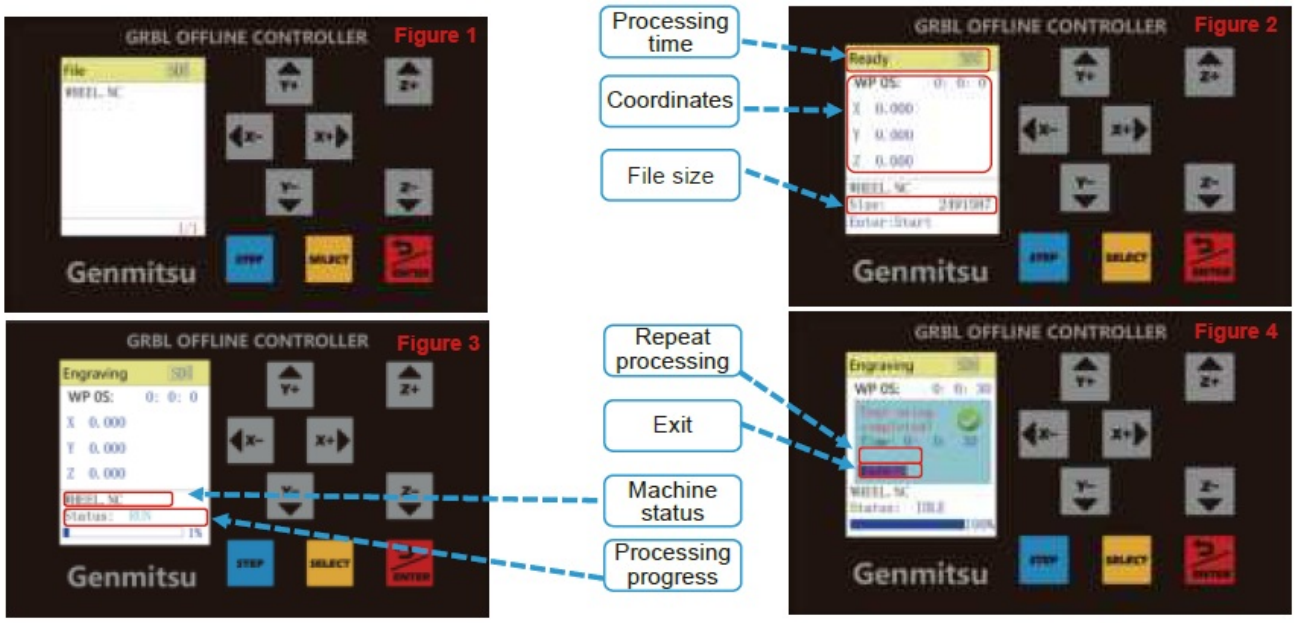
Function	Instruction
J0G Feed	X, Y, Z axis movement speed
Spindle RPM	Spindle speed
Probe Feed	Z Probe movement speed
Probe Tool Heigh t	Modify the height of Z Probe
Z Rise Height	Tool lifting height (this value must be greater than the counter block value)
Y+	Modify the X Y Z movement speed(click +10), modify the spindle speed (click +100), modify the Z axis moving speed during tool setting (click +1), modify the height of Z Probe (click +1) ,modify the tool lifting height (click +1)
Y-	Modify the X Y Z movement speed(click -10), modify the spindle speed (click -100), modify t he Z axis moving speed during tool setting (click -1), modify the height of Z Probe (click -1), modify the tool lifting height (click -1)
X+	Modify the height of the Z Probe (Click +1)
X-	Modify the height of the Z Probe (Click -1)
Select	Move the cursor
Enter	Save & Return

3. **Introduction of Control Functions**

Select the “Prepare” screen icon, as shown below:

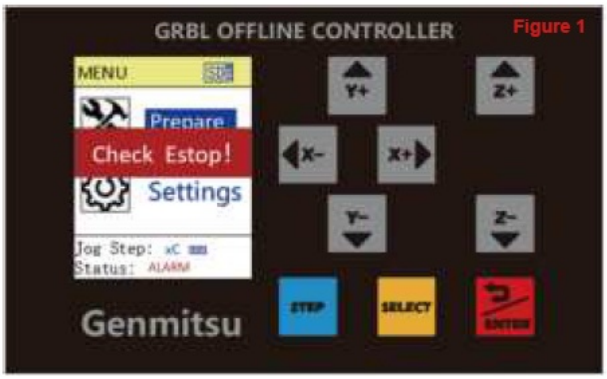
Function	Instruction
Spindle	Turn on/off spindle
Probe	Z-axis automatic tool setting
Home	Move the spindle to home position
Zero-XY	Set the X and Y work origin to the current XY bit position. Use this when using the Z-Probe to zero the Z axis.
Zero-XYZ	Set the X Y Z work origin to the current XY bit position. Use this if not using the Z-Probe.
Start Project	Select G code to start the engraving job
Reset	Reset the router
Jog Step: xC m m	Single step movement distance. Click STEP button to switch the distance parameter 0.01/0.0 1/1/XC (It will move continuously in XC mode. For example, if you long press the Y+ button, t he machine will keep moving in the Y+ direction, and stop moving when you release the butto n.)
Status ID E	Show the machine status. It will show A ARM when the limit switches or emergency stop butt on are triggered. You need to find the cause of the fault or reset the machine.

4. **Run the G-code program**
    1. Select the “Start project” and click the [Enter] button to enter the program selection interface, as shown in Figure 1.
    2. Click the [Select] button, select the program that needs to be processed, and click [Enter] to enter the preparation program interface, as shown in Figure 2.
    3. Click [Enter] button again to start running the program, as shown in Figure 3, click [Enter] could pause the processing, click [Enter] again to resume processing, long press [Enter] to return to the main interface. Click “Exit” to exit the program or click “Repeat” to run the program again after machining is completed as shown in Figure .



5. **Machine Alarm and Solutions**

1. Figure 1 shows the A ARM when the control board is not powered or the emergency stop button is pressed. Press the power switch to lift the alarm, if it still shows the same A ARM, please make sure that you have released the emergency stop button.
2. Figure 2 shows the A ARM when the limit switches are triggered. Long press the ENTER button until the status shows ID E.



Documents / Resources

	Genmitsu 3018-PROVer V2 Semi Assembled CNC Router Kit [pdf] User Manual 3018-PROVer V2, Semi Assembled CNC Router Kit, CNC Router Kit, Semi Assembled Router Kit, Router Kit

References

- SainSmart Japan
- SainSmart | Desktop CNC, 3D Printing & DIY Tools | Power to the Makers – SainSmart.com