SOVOL

User Manual

SV07 PLUS

Dear customer,

Thanks for choosing the Sovol printer! Sovol is committed to providing excellent machines for 3D printing enthusiasts all over the world. This manual is specially made for SV07 Plus users to start their SV07 Plus printing journey. Even if you are very familiar with 3D printing technology, we still recommend you to read this manual carefully. There are lots of important information about the SV07 Plus in this manual to help you to understand how to get better printing experience. You can also find many helpful tutorials on the official website and user groups. Please Scan the QR code below to enter the website or user group.

Sovol Support Group

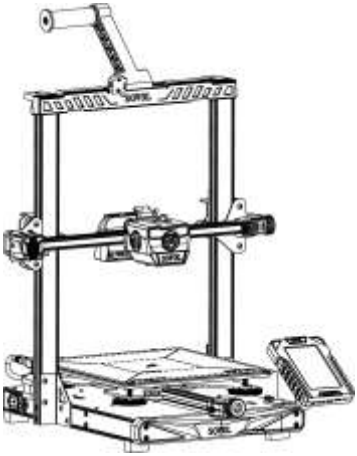
sovol3d.com

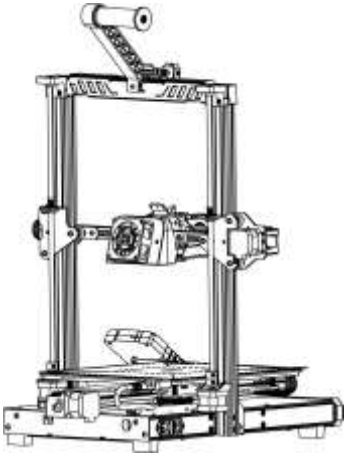
Content:

Note

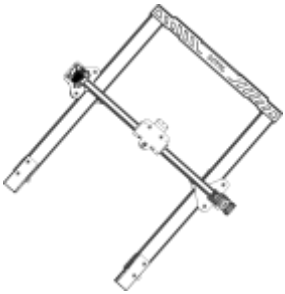
- Do not use the printer any way other than described here in order to avoid personal injury or property damage.
- Do not place the printer in the environment with large vibration or other instability.
- The shaking of the machine will affect the printing quality of the printer.
- Please do not place the machine near inflammable and explosive materials or near highheat source.
- Please place the machine in a ventilated, cool and dust free environment.
- It is recommended to use the material recommended by the manufacturer to avoid machine damage.
- Do not use any other power cable except the one supplied. Always use a grounded three-prong power outlet.
- Do not wear cotton gloves when operating the printer. Such cloths may become tangled in the printers moving parts leading to burns, possible bodily injury, or printer damage.
- Please wait a moment to remove the print after the print is finished.
- It's not recommended to use the third party firmware or mainboard etc, or the warranty will be void.
- Clean the printer frequently. Always turn the power off when cleaning, and wipe with a dry cloth to remove dust, adhered printing plastics or any other material off the frame, guide rails, or wheels. Use glass cleaner or isopropyl alcohol to clean the print surface.
- Children under 10 years should not use the printer without supervision.
- Do not manually move the extruder and printing platform while printing.
- Users should comply with the laws and regulations of the corresponding countries and regions where the equipment is located (used), abide by professional ethics, pay attention to safety obligations, and strictly prohibit the use of our products or equipment for any illegal purposes. Sovol will not be responsible for any violators' legal liability under any circustance.

Parameters

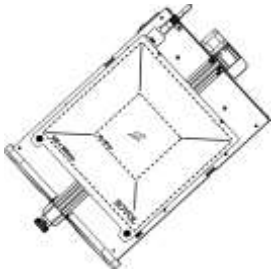




Model	SV07 Plus
Software Language	English
Print Method	USB flash drive, Wifi connection
Molding	FDM
Nozzle Quantity	1
Build Volume	300*300*350mm
Recommend Printing Speed	≤250mm/s
Printing Accuracy	±0.1mm
Nozzle Diameter	0.4mm (Replaceable)
Nozzle Temperature	≤300℃
Hotbed Temperature	≤100℃
Supporting Materials	PLA/ABS/PETG/TPU/WOOD
Material Diameter	1.75mm
Support File Format	G-code
Voltage	Input:115/230V 50/60HZ Output:24V
Operation System	Windows,Linux,Mac
Power	MW 600W/24V

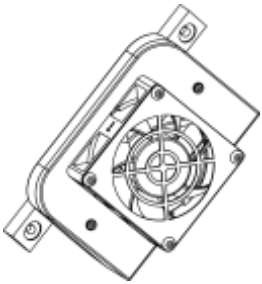


Gantry



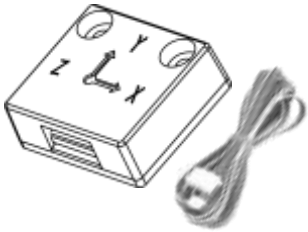
Base

Extruder Kit

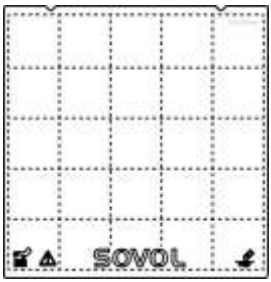


Fan kit

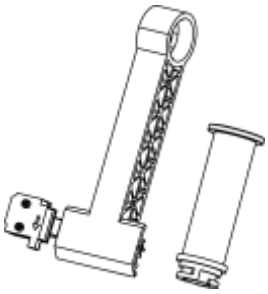
Touchscreen



Accelerometer



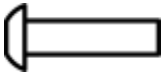
PC sticker



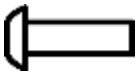
Filament Holder

Power Cable

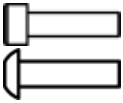
M5X45*4



M4X16*4



M3X10*4



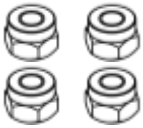
2 pcs

4 pcs

M5X20*6

M3X16*1

Zip Tie*10

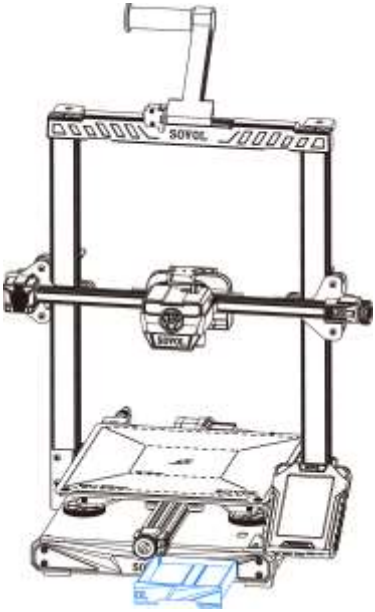


M4 Locknut*4

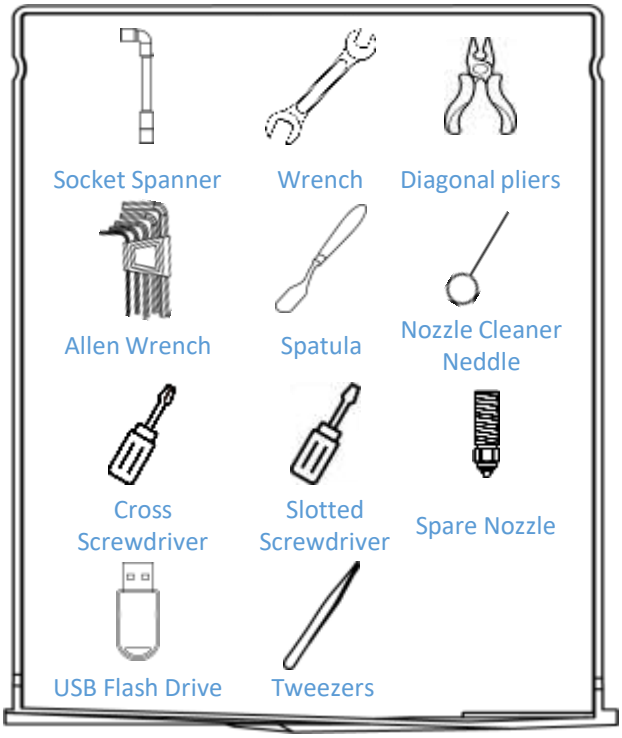
Spacer*4

M4X30*4

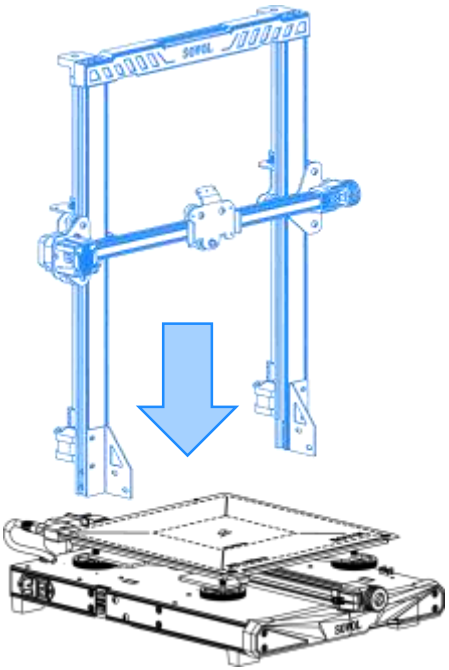
Leveling spare parts

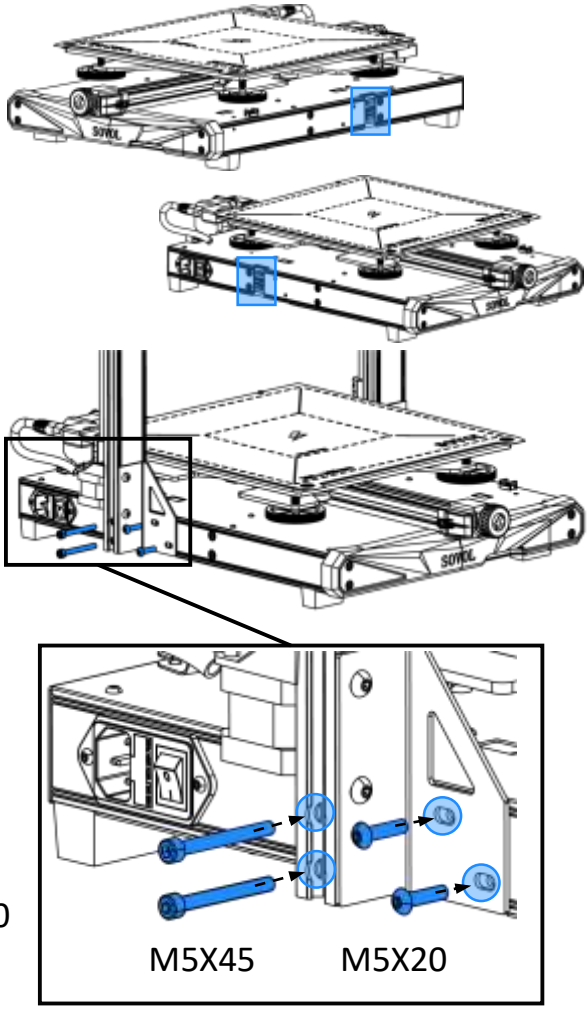


PULL



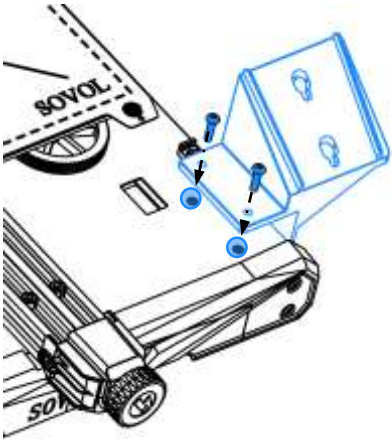
1 Install the gantry frame on the blue marked area of the base, lock two M5X45 screws and two M5X20 screws from the right side and left side of the base.

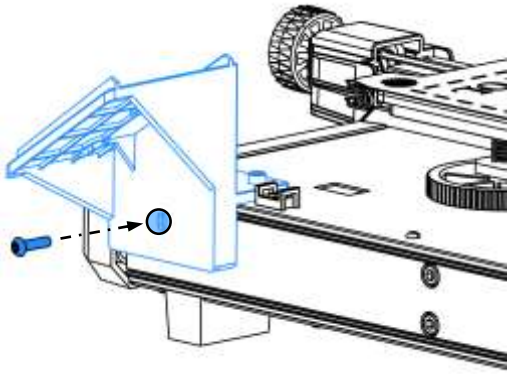




Please use this screw head type for M5X20 screws here

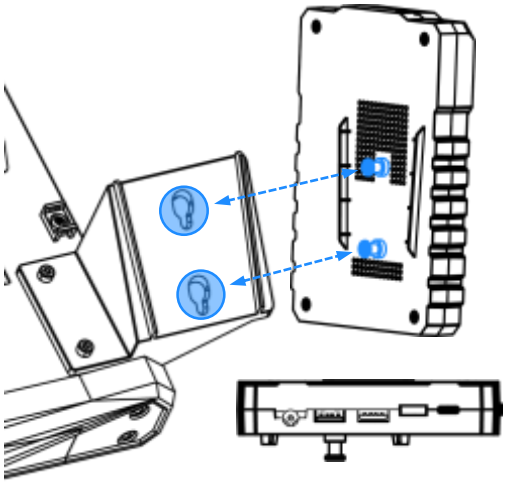
★ Be careful when installing the gantry to not crush the wires near the installation area.



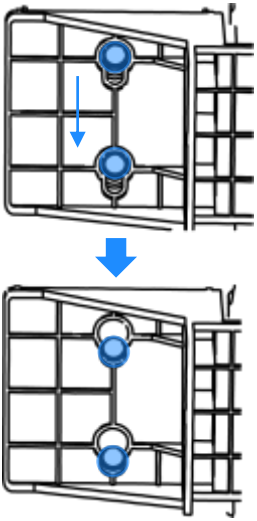


1 Secure the screen bracket on the right of the base with two M4x16 screws.

2 Use another M4X16 screw to fix the side of the bracket.

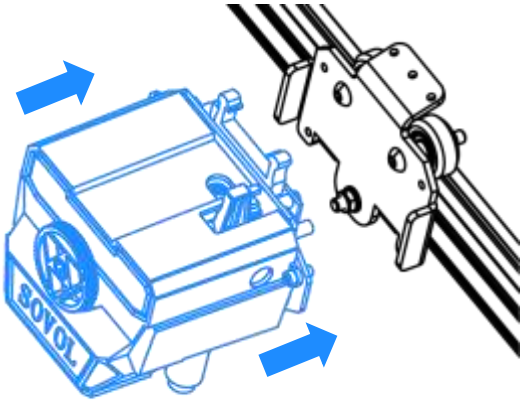


The ports are on the bottom



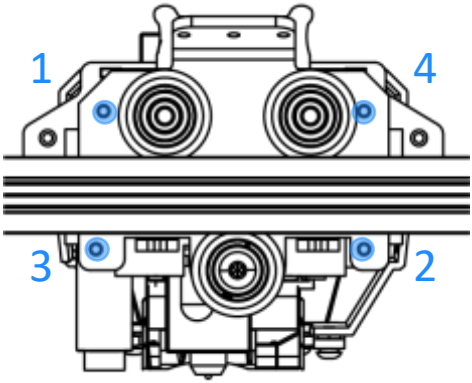
3 Install the touchscreen on the bracket.

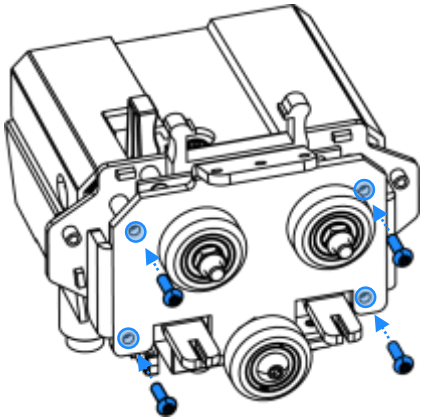
4 Slide the touchscreen downwards to attach it to the bracket.



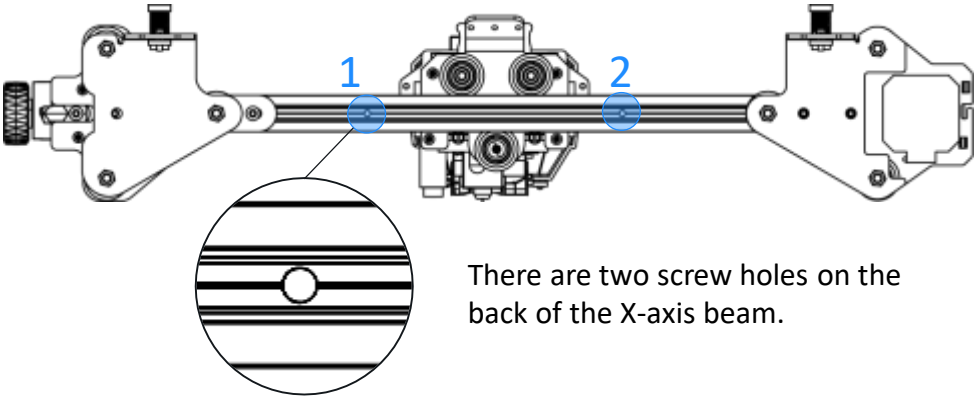
1 Intall the extruder kit on the backplane.

Please hold the extruder kits while installing it, in case loosing the parts or break the extruder.

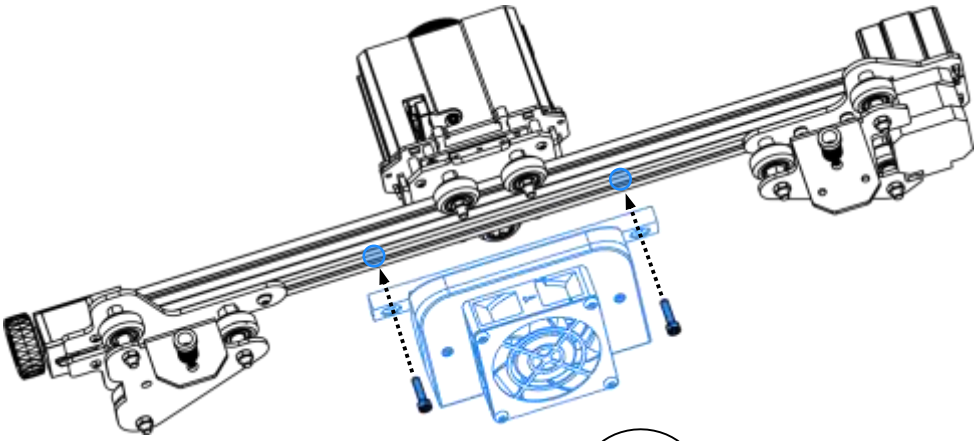




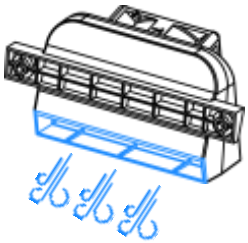
2 Screw in four M3X10 screws from the back of the back plate to fix the nozzle kit on the extrusion back plate.



There are two screw holes on the back of the X-axis beam.

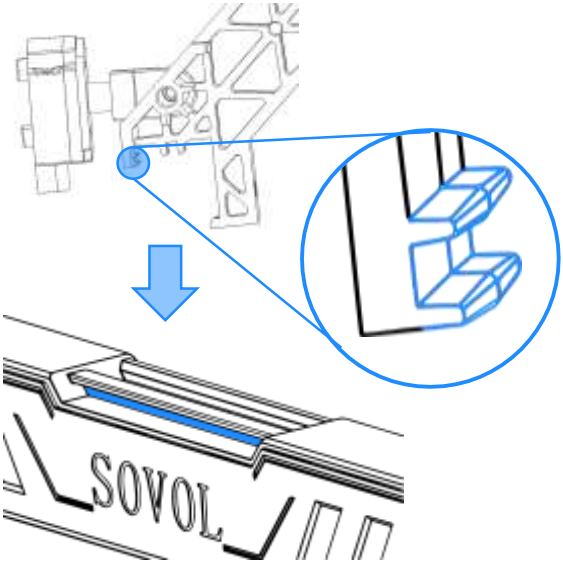


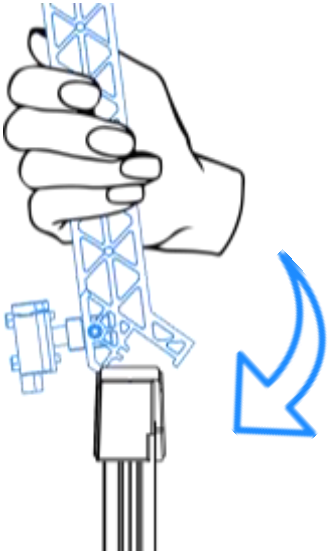
Please use this screw head type for M5X20 screws here



★ When installing, the air outlet should be located at the lower end and blow to the nozzle.

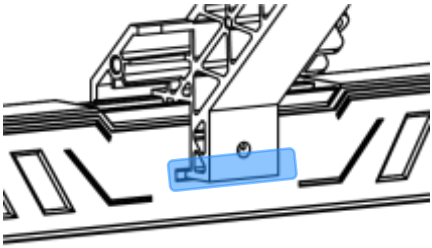
1 Use two M5X20 screws to install the fan kits on the back of the X-axis beam.

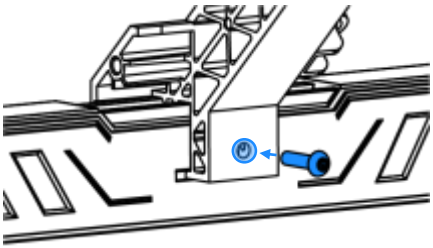




1 Snap the front buckle of the filament holder to the front of the top profile Groove.

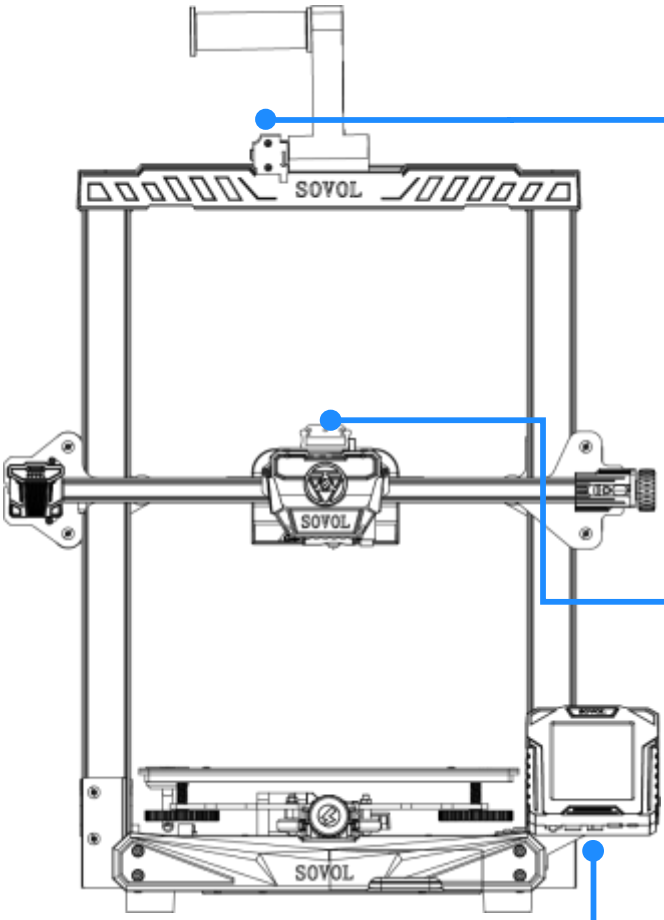
2 Push the filament holder back.

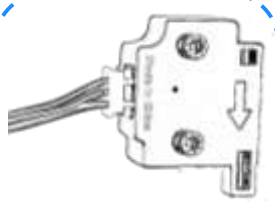




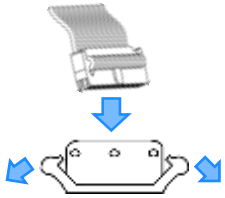
3 As shown in the above figure, place the lower tab of the filament holder into the groove at the rear of the top profile.

4 Insert an M4 X 16 screw and tighten to fix it on the top profile.

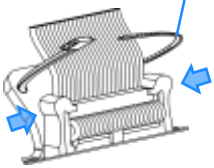




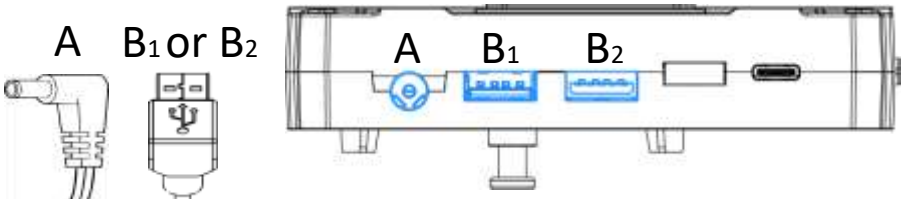
Filament Sensor(1)



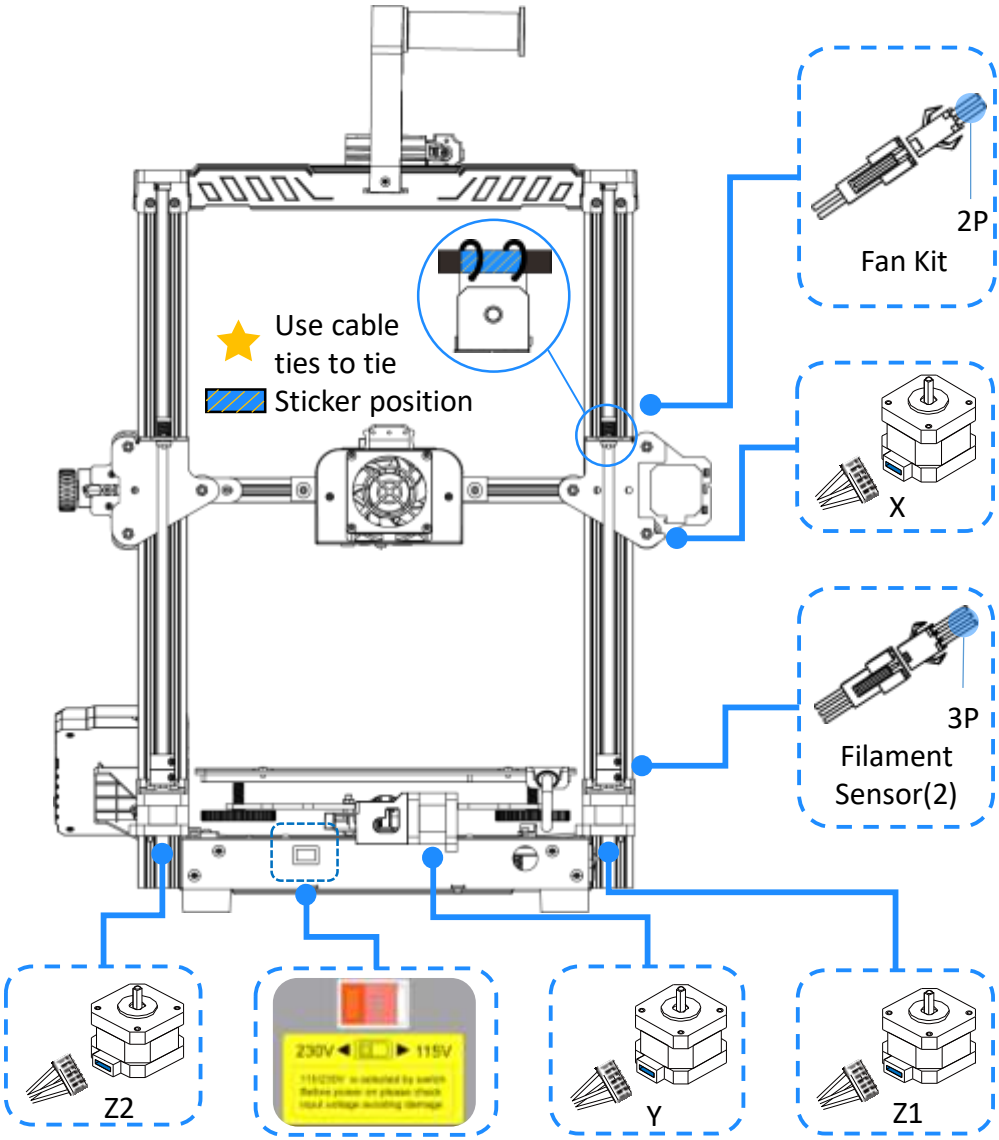
Use cable ties to tie



Extruder Kit



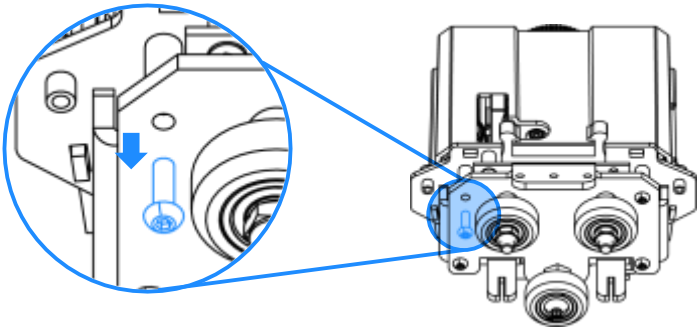
Touch Screen



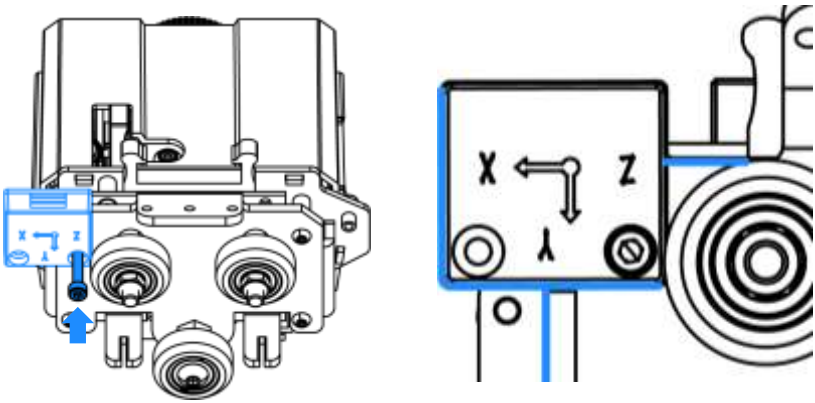
Please select the correct input voltage to match your local mains（230V or 115V).

★ The accelerometer is an optional module, you can choose whether to install it according to your needs.

To measure the X-axis acceleration, the following is the installation position of the accelerometer.



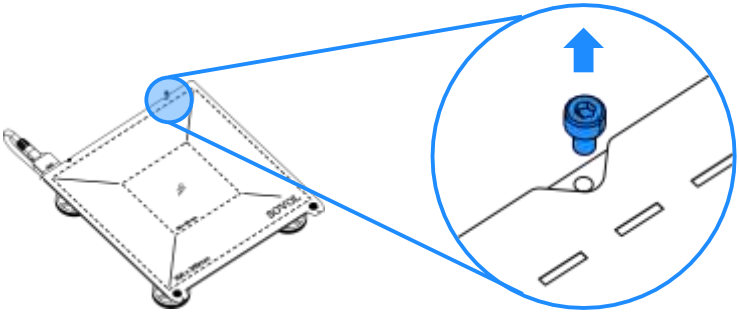
1 Unscrew the screw on the upper left corner of the back of the spray head kit.



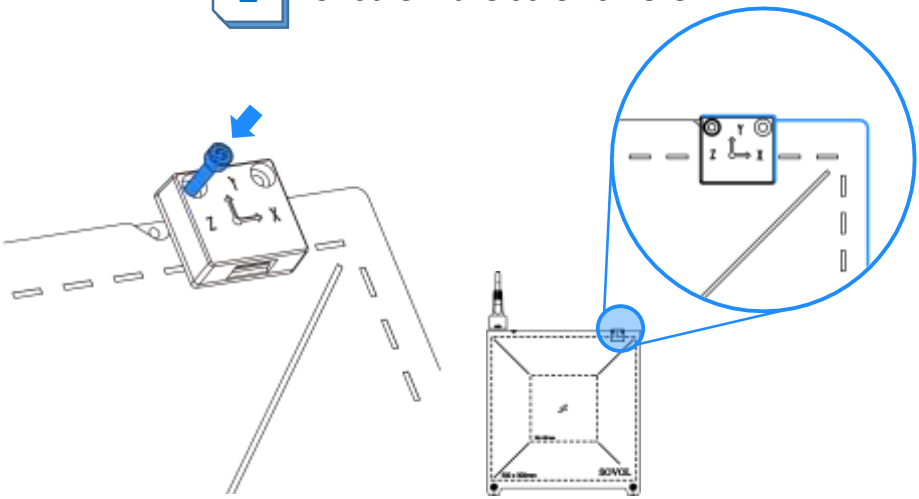
2 Mount the accelerometer using a M3X16 screws as shown.

★ Please note that the direction of the acceleration should not be reversed. Refer to the direction indicated by the XY coordinate axis as shown. The accelerometer should be installed squarely, flush with the sides of the nozzle, not skewed.

To measure the Y-axis acceleration, the following is the installation position of the accelerometer.

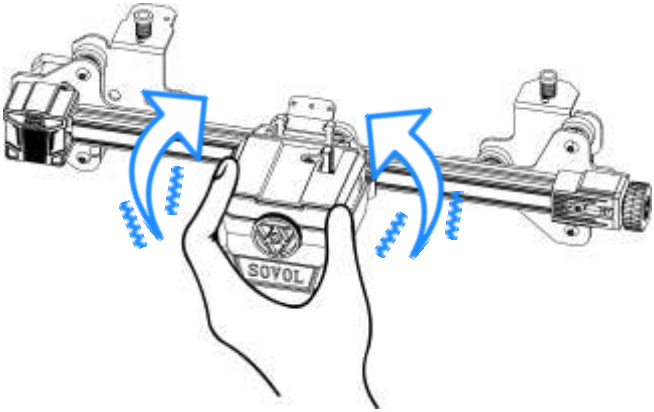


1 Unscrew the screws here.

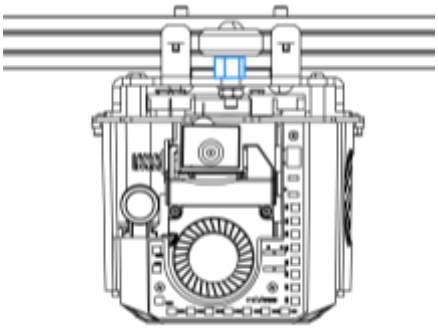


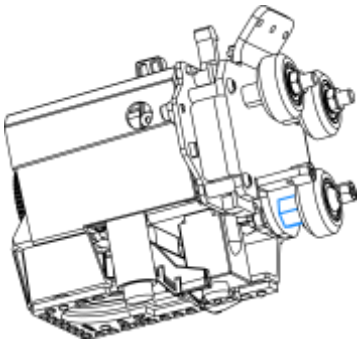
2 Mount the accelerometer using a M3X16 screws as shown.

★ Please note that the direction of the acceleration should not be reversed. Refer to the direction indicated by the XY coordinate axis as shown. The accelerometer should be installed squarely, flush with the sides of the hotbed, not skewed.

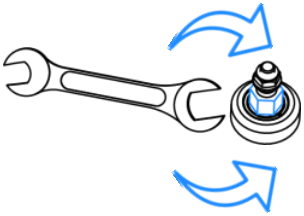


1 Hold the whole extruder, and shake it to check out if it is stable, if it is loose, please adjust by following the steps below.



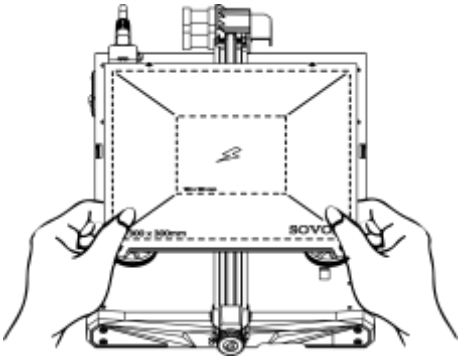


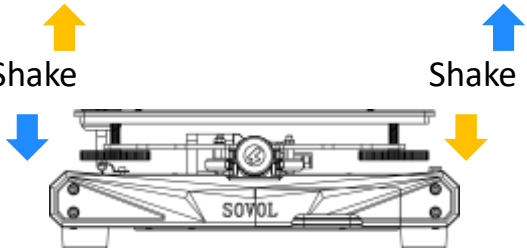
Eccentric nut (Blue mark)



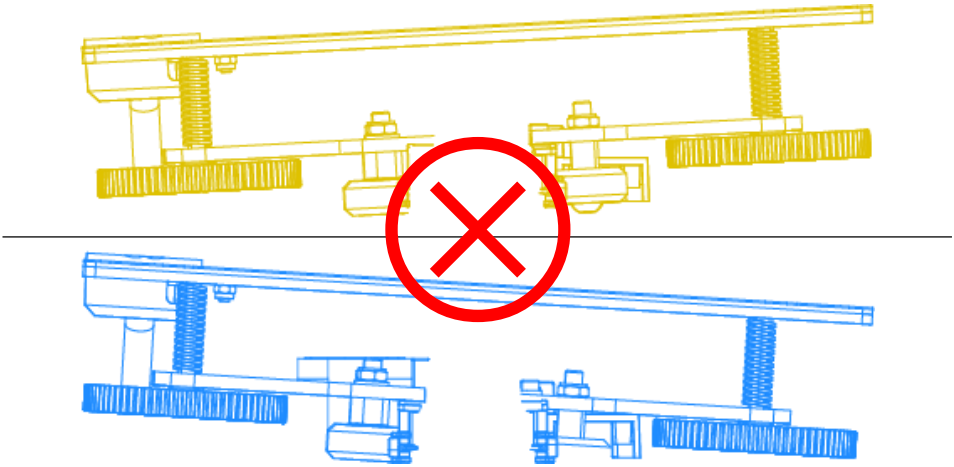
★ If the extruder is loose or shake in the future, you can also adjust your extruder by this way.

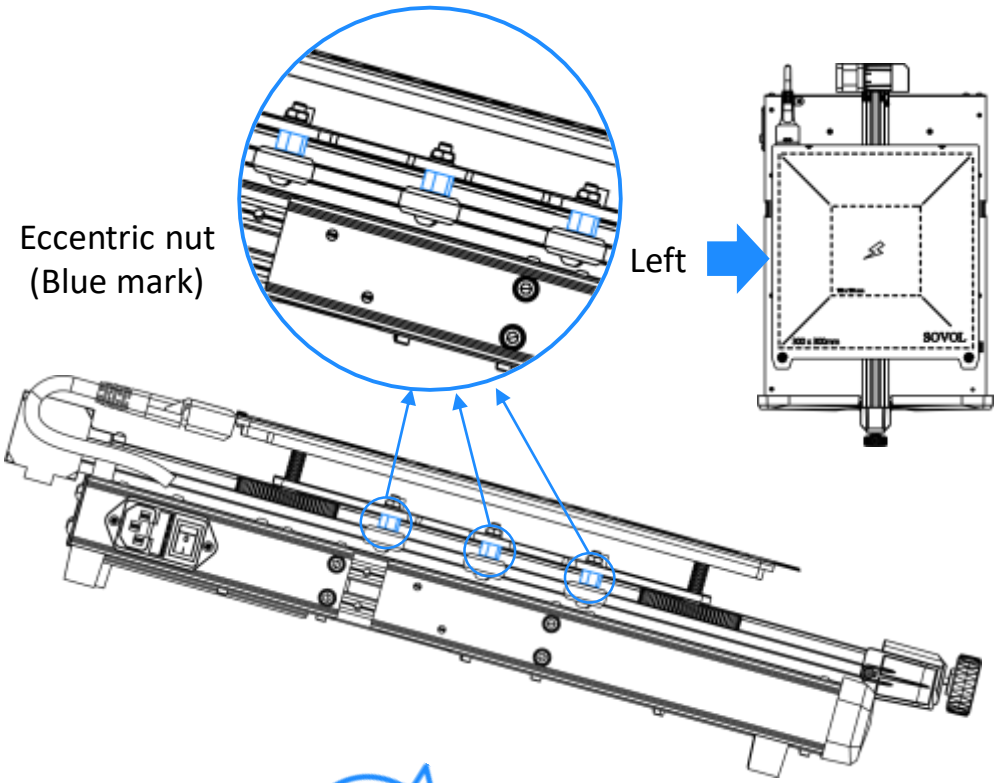
2 Turn the eccentric nut with wrench to adjust the tightness of the extruder until when the X axis move, the extruder won't shake too much.

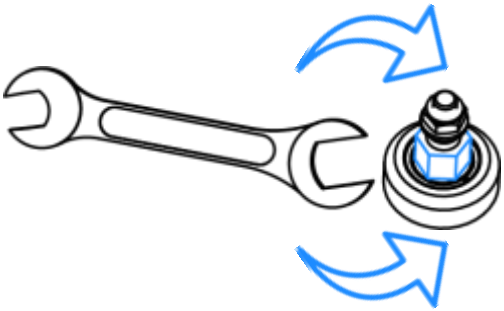




1 Hold the left and right of the hotbed with your hands, shake the hotbed repeatedly, while raising one side, press another side to check out the stability of the hotbed. If the hotbed is too shaken or tilted too much, please adjust it according to the method on the next page.

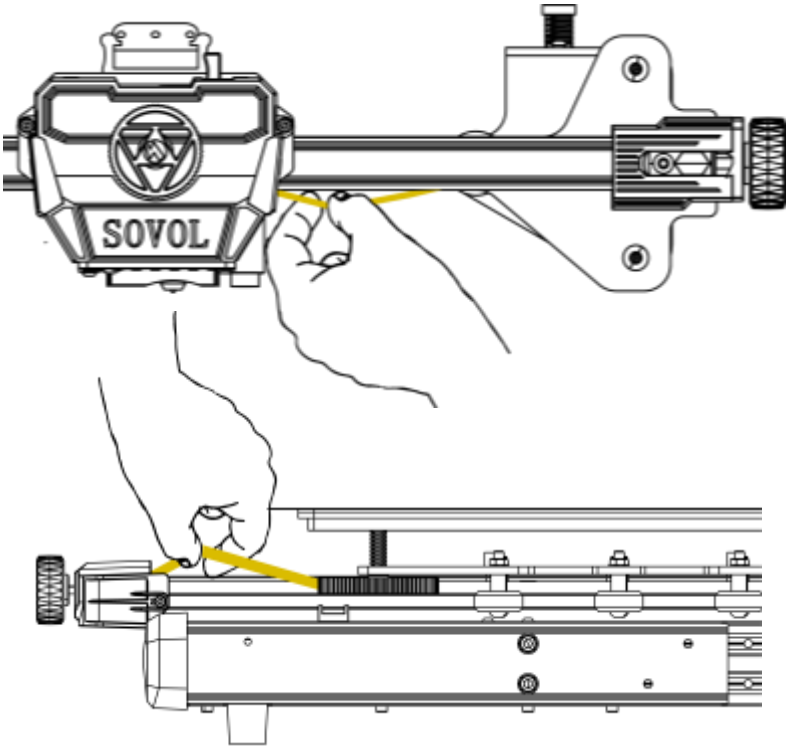




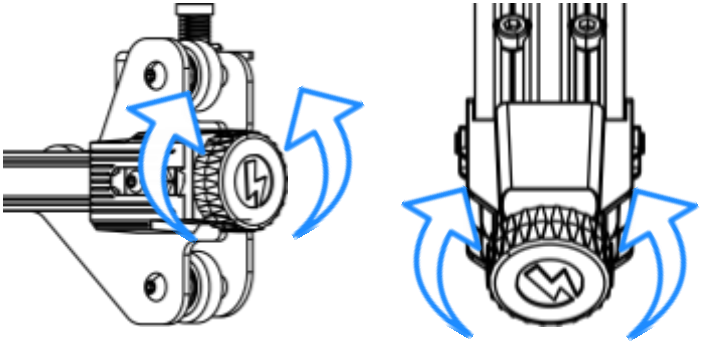


★ If the hotbed is loose or shake in the future, you can also adjust your hotbed by this way.

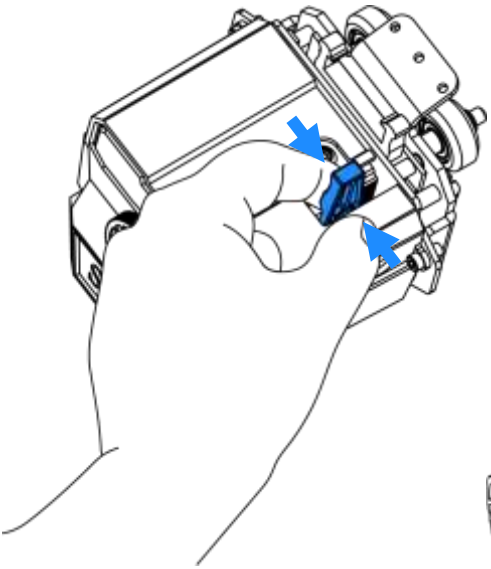
2 Turn the eccentric nut with wrench to adjust the tightness of the hotbed until when the Y axis move, the left and right of the hotbed won't shake too much.



1 Pull the XY-axis synchronous belt to check the tightness, if it is too loose or too tight, please adjust it to the appropriate tightness by turning the belt tensioner.

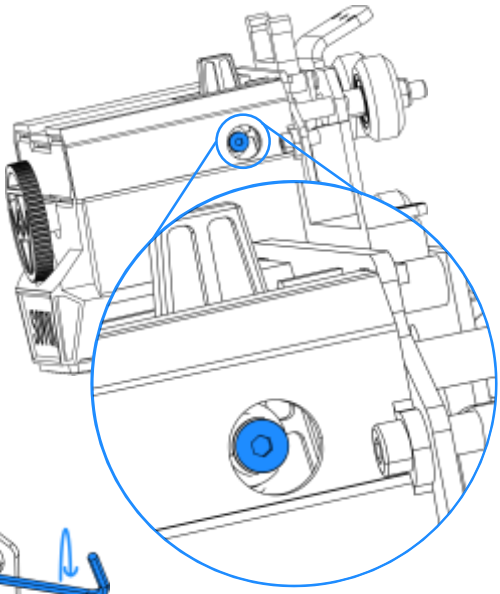


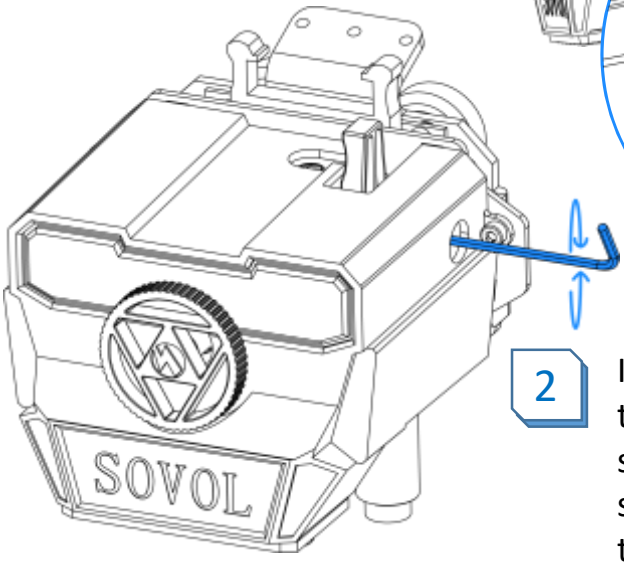
X Y



1

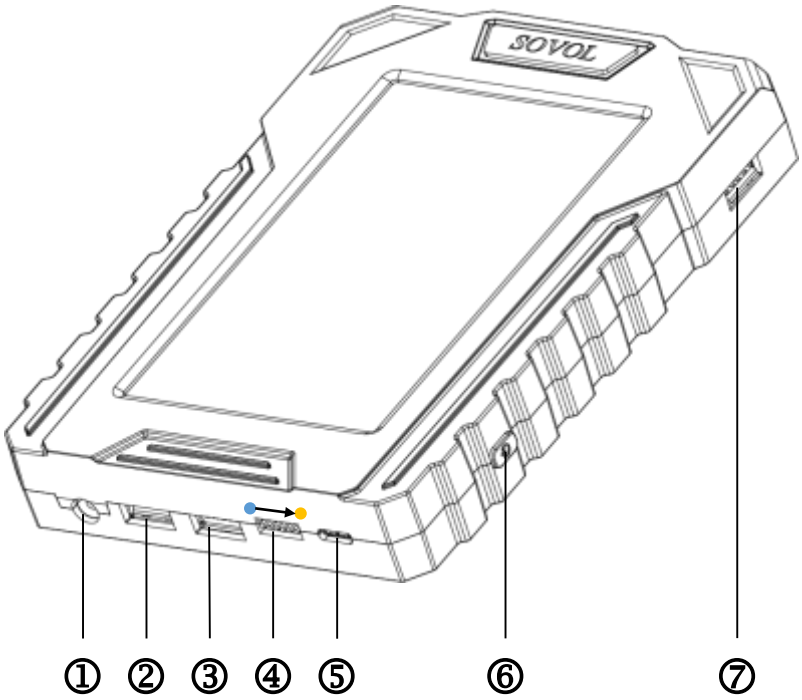
Please press the extrusion arm several times to check out its tightness





2

If it too loose or too tight, you can use the screwdriver to turn the screw here to adjust its tightness.



①	DC12~24V	②	USB2.0	③	USB3.0
④	Accelerometer	⑤	Type-C	⑥	Power
⑦	USB2.0				

Accelerometer pin definition:

⑥ Power:

- Press the Power button for more than 5s at power on status, the klipper system will closed.
- Press the Power button for 1s at power off status, it will power on.

★ After closing the klipper system, the printing will be stopped, even though you didn't turn off the machine's power.

Nozzle, hot bed Real-time temperature preview

Model | Current Menu

Time

④ Nozzle Temp ： Click number to adjust nozzle temp

⑤ Hotbed Temp ： Click number to adjust hotbed temp

⑥ Temperature curve ： Click on the names of "Extruder" and "Heater Bed" above to turn on and off their temperature curves

⑦ Main menu ： Please read the following introduction.

⑧ Print

⑨ Bottom option

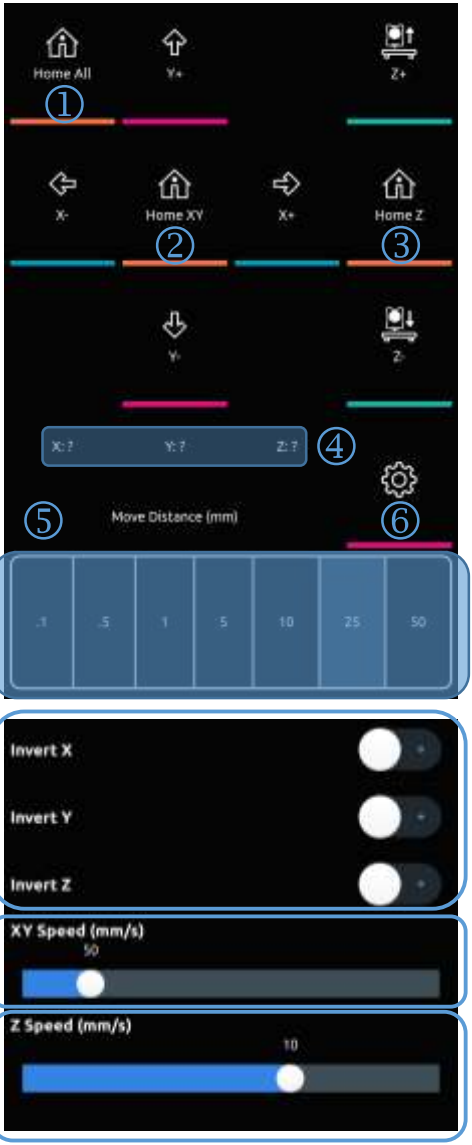
Emergency stop


Macros


Homing


Back

Homing



Settings

X+:Move X axis to right

X-: Move X axis to left

Y+: Move Y axis forward

Y-: Move Y axis backward

Z+:Move Z axis up

Z-:Move Z axis down

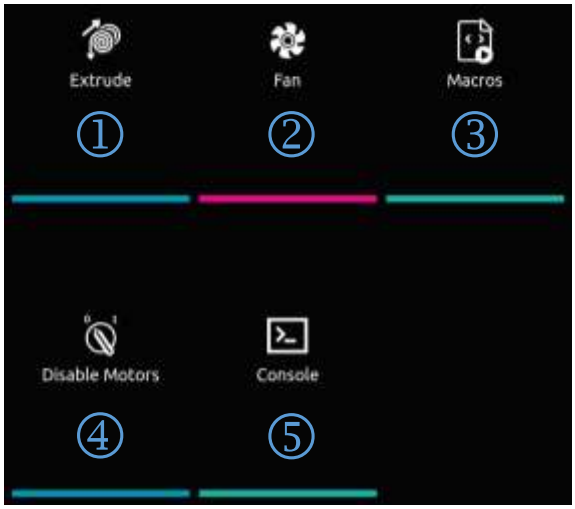
1. X/Y/Z axis all auto home
2. X/Y axis auto home
3. Z axis auto home
4. X/Y/Z axis's current coordinates
5. The number of steps per move
6. Settings
7. Reverse the movement direction
8. Adjust the speed of moving X/Y axis
9. Adjust the speed of moving Z axis

Temperature

1. Cancel heating for all
2. Adjust temperature
3. Preheat PLA（210/50）
4. Preheat ABS（260/80）

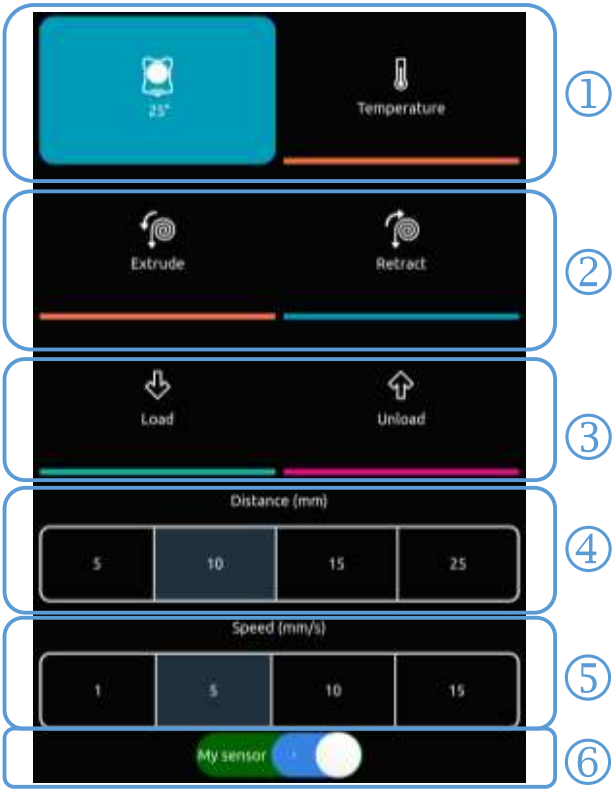
③ ④

Actions



1. Read more details on page 23.
2. Open/Close cooling fan.
3. Check out the macro command.
4. Disable motor (If you need to manually move the XYZE axis, you can use this operation).
5. Open Console to check out or input the command.

Extrude



★ When temp is not enough, it is not allowed to have related operation about the extruder.

1. Nozzle real-time temperature, click*Temperature* to adjust temperature.
2. Extrude: extrusion filament
   Retract: retract filament
3. Load: Execute a macro command to load filament.
   Unload: Execute a macro command to withdraw the filament
4. Distance: The extrusion distance/ retraction distance.
5. Speed: The extrusion speed/ retraction speed.
6. Filament Sensor On/Off

Configuration

1. Limits
2. Network
3. System
4. Save configuration
5. Settings
6. Input Shaper

Machine Leveling

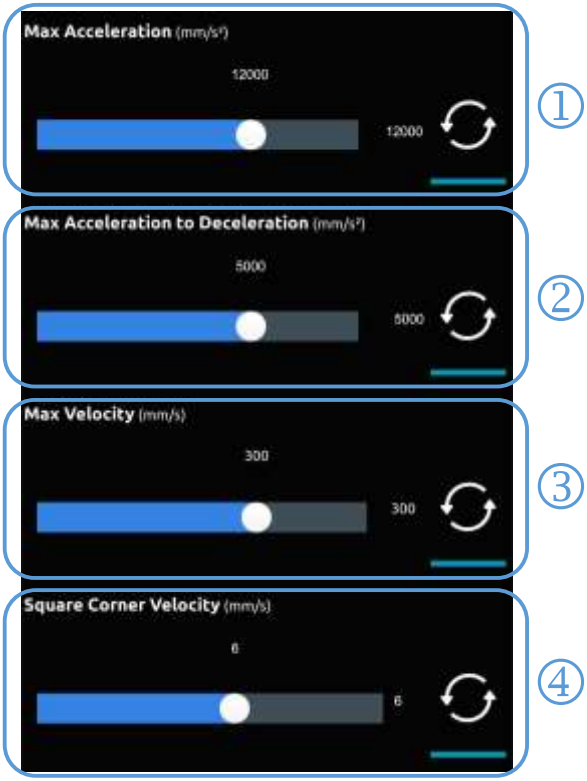
1. Z Calibrate
2. Bed level
3. Z Tilt
4. Bed Mesh

Led

1. LED Off
2. LED On

★ You can change the value by dragging the progress bar to change the brightness of the LED

Limtis



1. Max Acceleration
2. Max Deceleration
3. Max Speed
4. Square Corner Velocity

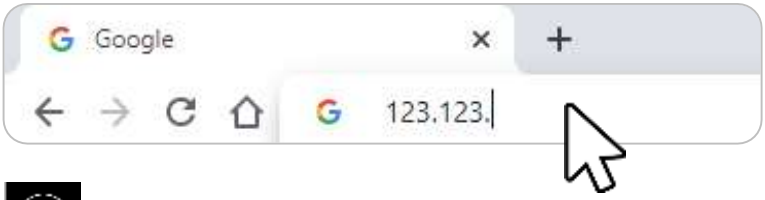
★ Click the number on the right side of the value bar to enter the value manually

★ We have adjusted to the best settings for you out of the factory, if you do not know these parameters very well, please do not change the parameters arbitrarily, in case cause the printing failure.

Network

You can choose your wifi to connection, After connecting to Wifi, you can check the IP address of this machine here. Enter this IP address in the website address column of the brower to enter the printing page.

★ The network PC/mobile /tablet needs to be under the same router as the network of printer, so that they are able to connected remotely.



System

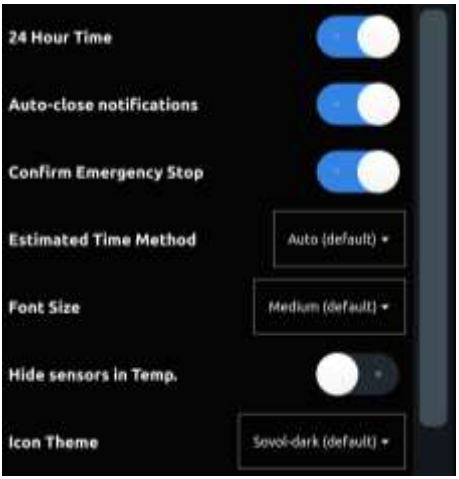
① ② ③ ④

1.Update 2. Restore factory 3. Reboot 4.Shutdown

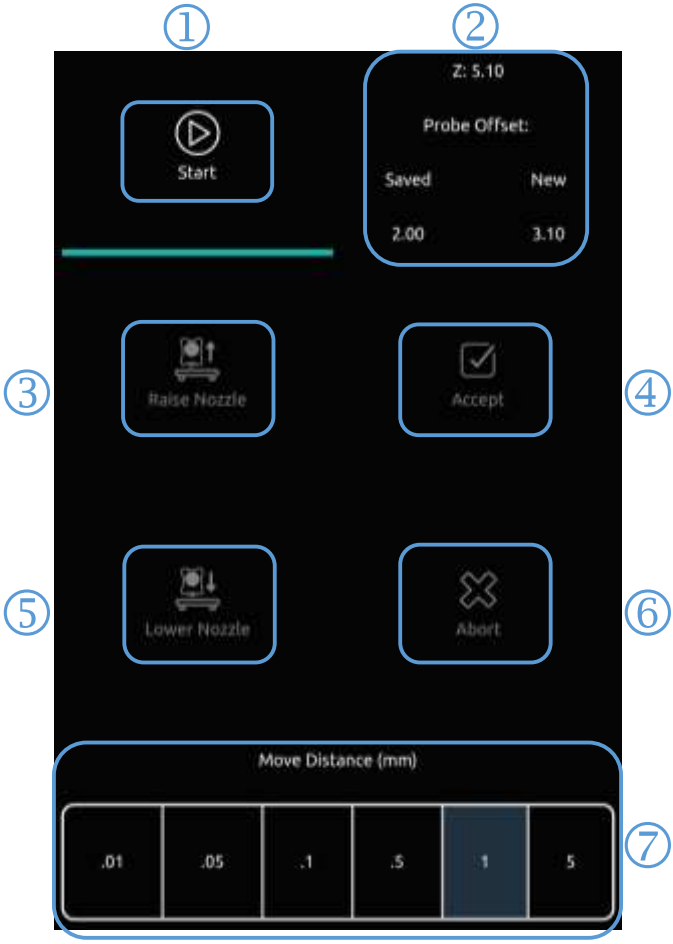
Save config

Save the current configuration, the system will restart.

Settings

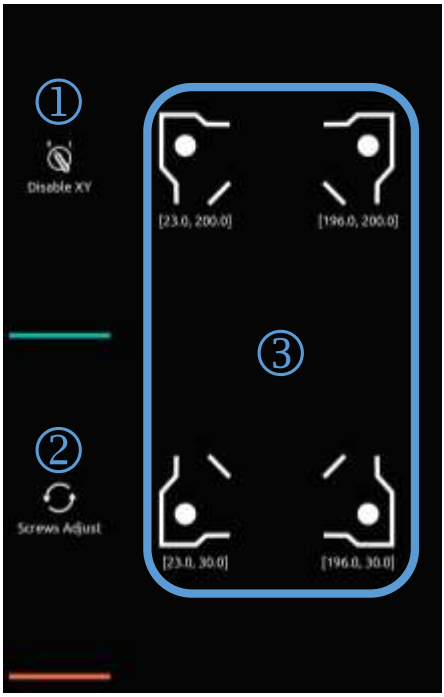


Z Calibrate



1. Start Z calibrate
2. The value of Z calibrate
3. Raise nozzle according to the setted height
4. Apply the settings (Saving settings requires a system restart)
5. Lower nozzle according to the setted height
6. Abort Z calibrate
7. Set the distance of per movement

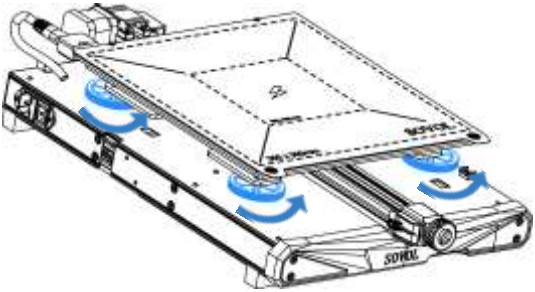
Bed Level



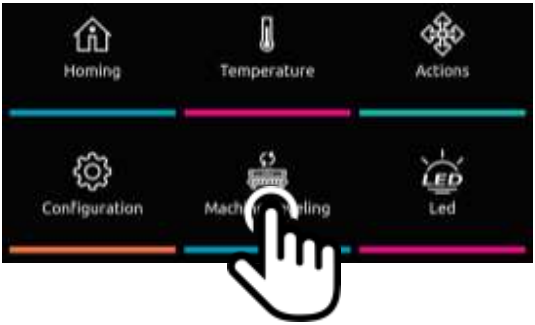
1. Only disable XY axis motors
2. Start leveling the corners
3. Corners leveling data

Bed Mesh

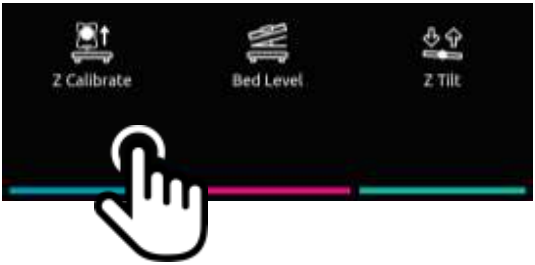
1. Add profile
2. Clear the saved leveling data in current profile
3. Start calibrate
4. Leveling data preview
5. Current profile name
6. Delete current profile



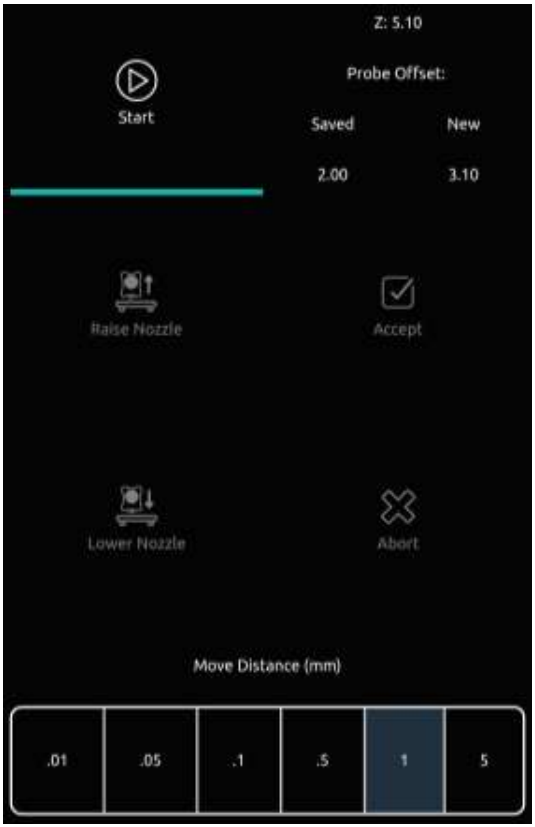
1. Tighten the all leveling nut counterclockwise until it is as tight as possible,Then turn clockwise to loosen two turn.



2. After finish adjustment, Click *Machine leveling* on the home page.

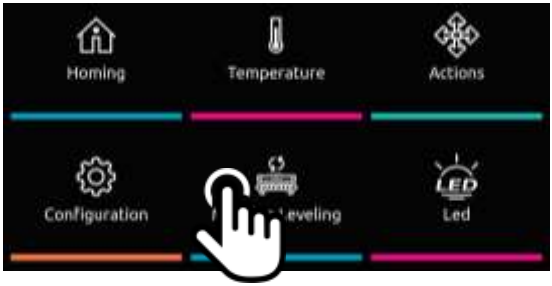


3. Click * Z calibrate*.

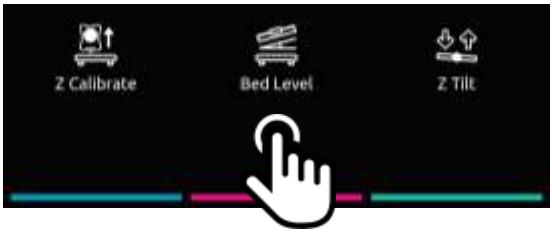


Please do not move a large distance at one time to avoid the nozzle hitting the hotbed.

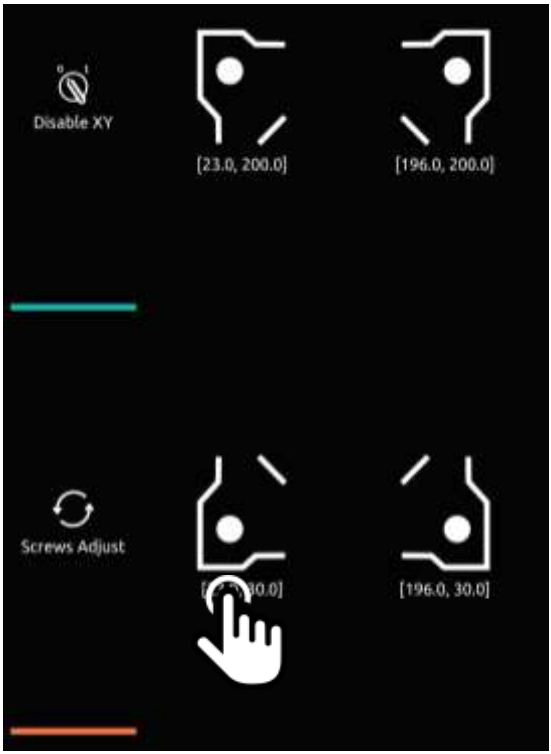
1. Click *start*, the printer will auto home first.
2. After the printer auto home, the nozzle will slowly move to the center of the bed,put a piece of A4 paper between the nozzle and the hotbed.
3. Select the suitable move distance then click *raise nozzle * or * lower nozzle *, to adjust the distance between the nozzle and the hotbed.
4. Adjust the distance between the nozzle and the hotbed (please keep pulling the paper during the period, when you feel resistance to pulling the paper and the nozzle does not completely press the paper, the distance is appropriate.
5. Click *accept* to apply the values, then confirm and restart the system.

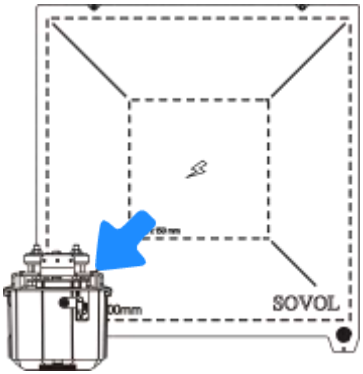


1. After finish adjustment, Click *Machine Leveling* on the home page.

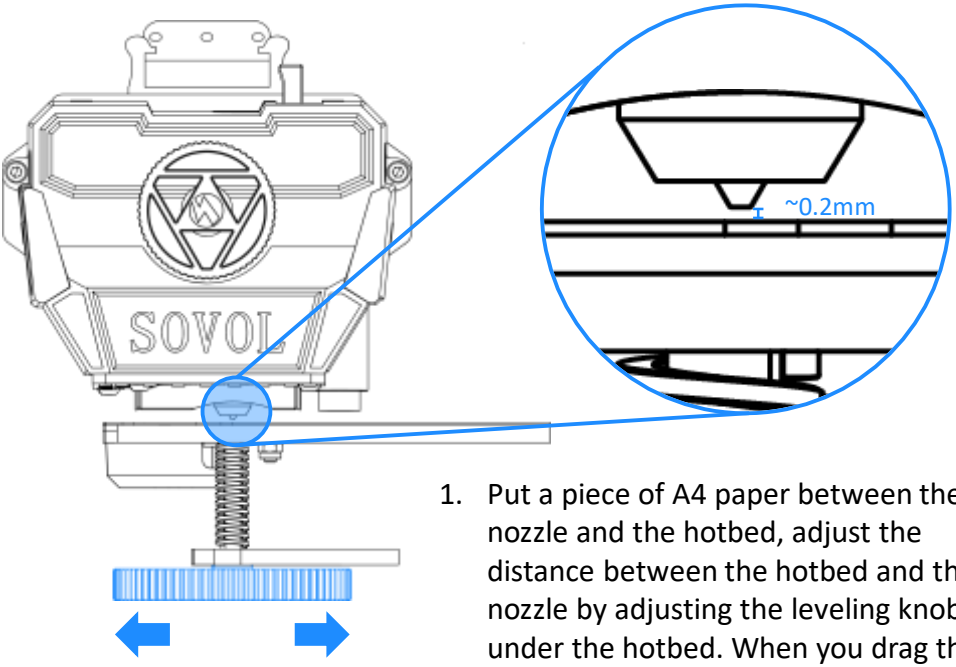


2. Click *Bed Level*.

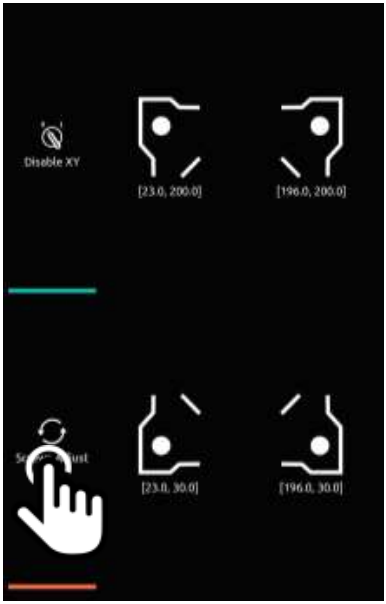


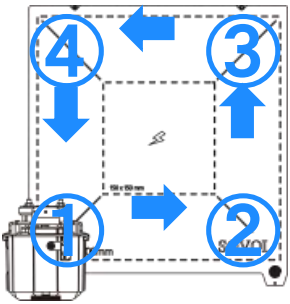


3. Click lower left corner area, Let the Nozzle move to the lower left corner.



1. Put a piece of A4 paper between the nozzle and the hotbed, adjust the distance between the hotbed and the nozzle by adjusting the leveling knob under the hotbed. When you drag the paper between the nozzle and the hotbed, if the nozzle can scratch on the paper slightly, that means the distance between the nozzle and the hotbed is suitable.





2. Click*Screws Adjust*, the printer starts to detect the four corners.

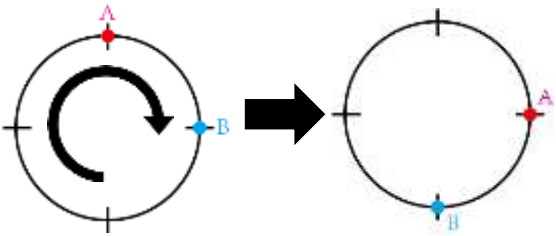
1. You can see your detection results in the blue box mark in the picture, the letter at the beginning means you need to adjust the orientation, The lower left corner is the reference corner, and the other corners are based on this corner.

CW: Need to turn clockwise
CCW: Need to turn counterclockwise

The time after means how many turns you need to rotate.

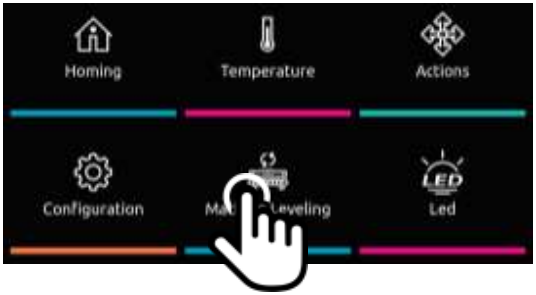
60 minutes for a lap

Tips: Please click "Screws Adjust" several times to adjust, just adjust the value of each corner within 00:10.

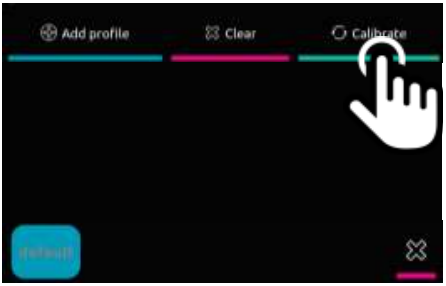


For example:
When one of your corners is shown as**"CW 00:15",** then you need to turn the knob clockwise about $(\frac{15}{60} * 360)$ degrees as shown in the image on the left.

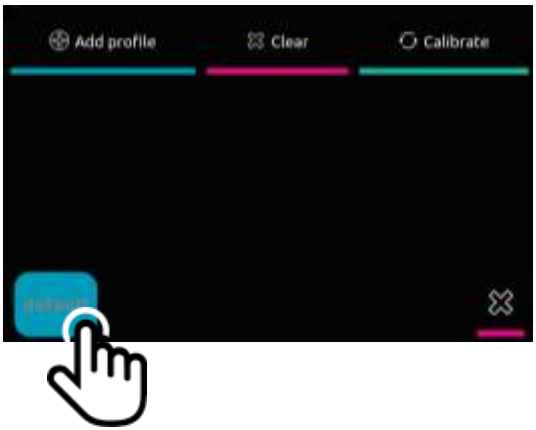
2. After adjusting the four corner, please click to "Disable XY" or click again to "Homing"



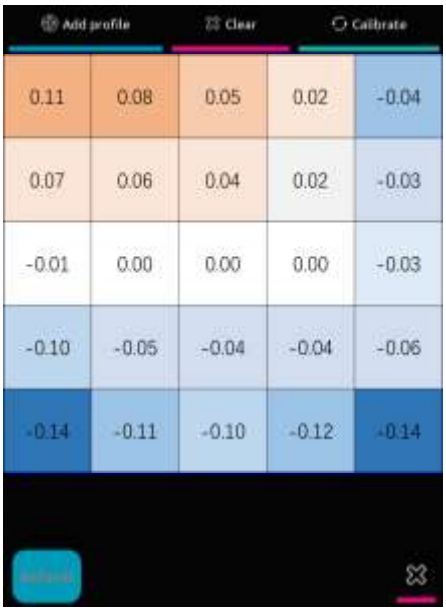
1. Click * Machine Leveling *.



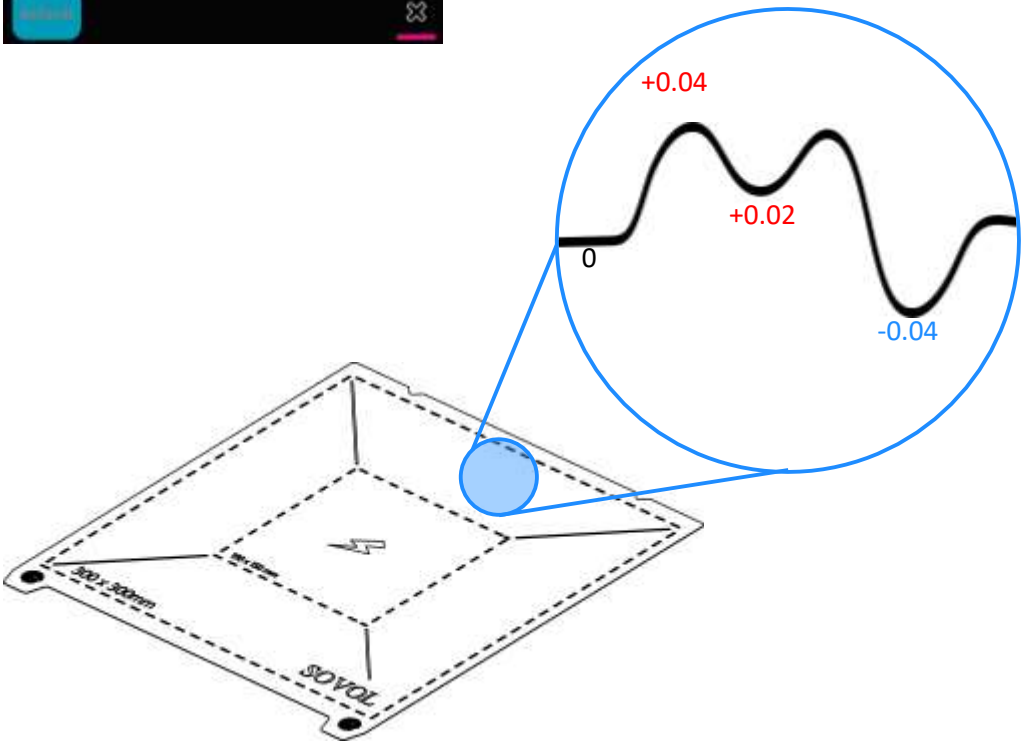
2. Click *Bed Mesh*, then click *Calibrate* after the detection is complete, restart the system, Leveling complete.

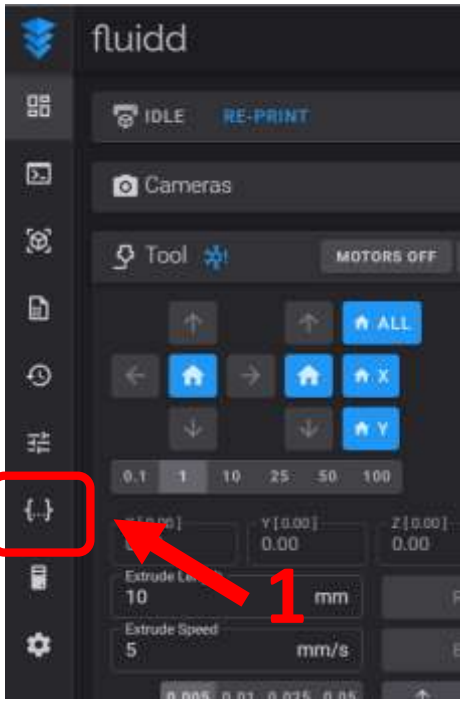


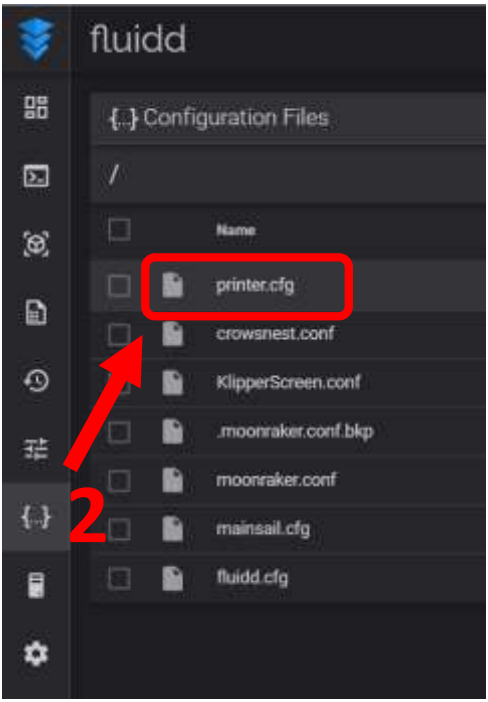
★ If you want to view the bed mesh data later, please return to this interface and click the current configuration name "default“ to view

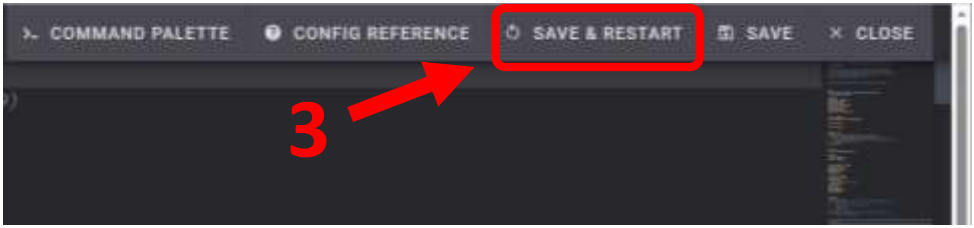


1. The bed mesh data reflects the concave and convex of the hotbed. The detection data divides the hotbed into 25 small areas to detect the concave and convex. When 0 means flat, the positive value means relatively high, and the negative value means equivalent low. Which can reflect the levele of the hot bed, The subsequent printer will adjust the offset value between the nozzle and the hot bed based on these data to compensate



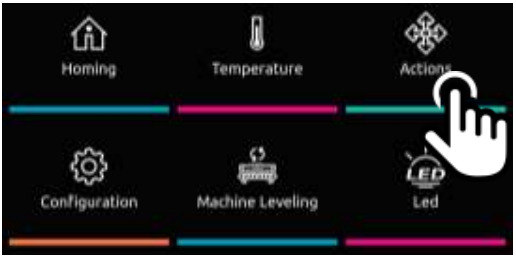


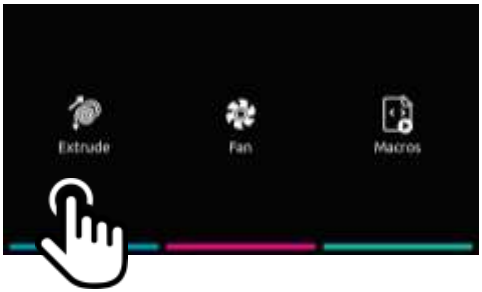




1. If you want to change the printer configuration, after entering the web page by IP, click the “configuration” option on the left menu bar
2. Click the "Printer.cfg" file to configure
3. After the configuration is complete, click the "SAVE & RESTART" option (the klipper system will restart)

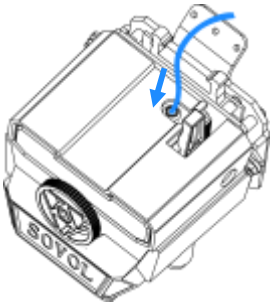
Load/unload filament





1. Click * Actions* on the home page.

2. Click* Extrude*.



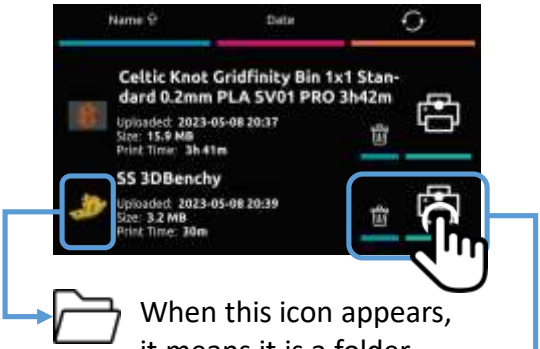
3. Then insert the filament in to the extruder, click * load*, the extruder will load the filament automatically, if you need custom adjustment. click * Extrude* , *Retract* , *Distance* or * Speed* to adjust.

★ Each machine has been tested before leaving the factory, and it is normal to have residual filament in the nozzle.

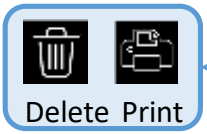
★ When the nozzle temp is so low, it is not allowed to have related operation about the extruder. Please pre-heat nozzle first.

Print

1. You can remotely upload files on the web page and print, or directly insert a U disk into the USB port on the display to print. It takes about 3~5S to read the U disk, please wait patiently

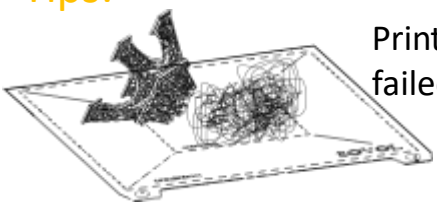


2. Click "Print" on the main interface. Then click the print icon or the STL thumbnail to print.

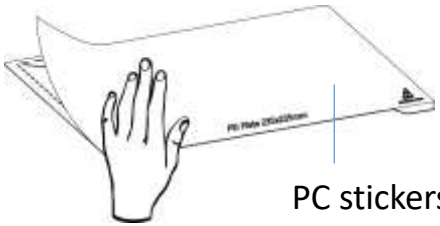


★ It is recommended that you fine-tune the Z offset value again according to the actual situation when printing

Tips:



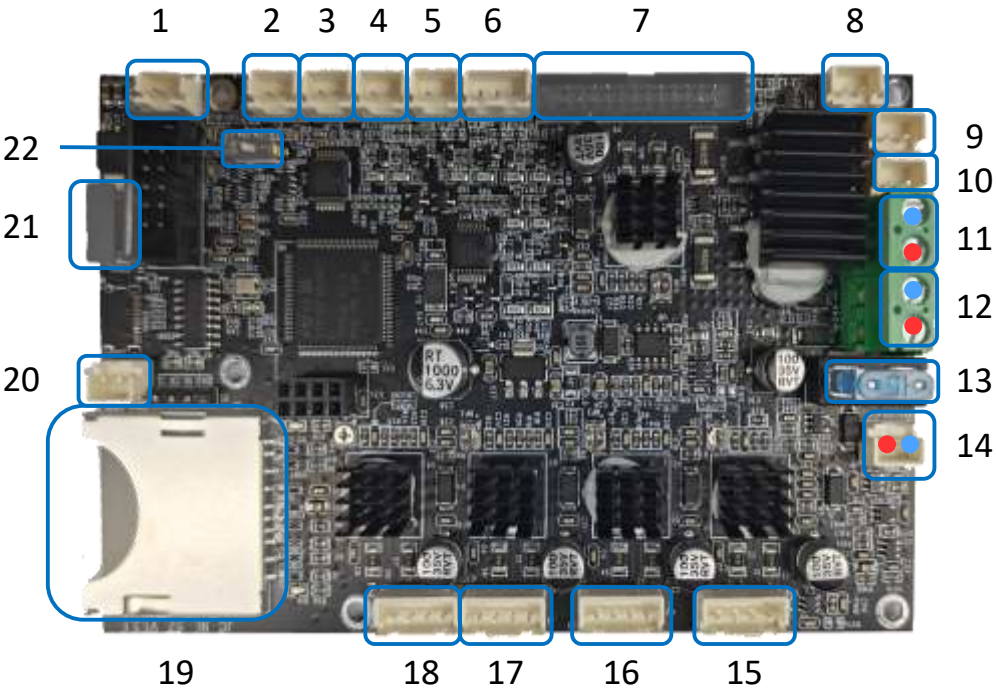
Print failed!



PC stickers

When you often fail to print the model because the hotbed is non-stick, you can try to paste PC stickers on the PEI plate to use

Main board



1: Z Limit 2:Y Limit 3: X Limit 4: Hotbed thermistor

5: Chamber thermistor 6: Filamnet runout sensor

7: Extruder kit cable 8: LED 9: Case fan(24V)

10: 7025 fan(24V) 11: Hotbed Power 12:Power(24V)

13: Fuse 14: Screen Power(24V) 15: X Motor 16: Y Motor

17: Z2 Motor 18: Z1 Motor 19: SD card 20: Shutdown module

21: Type-C 22: No Limit/Limit Switch

NOTE: 5,8,20 are reserved ports, and they are not connected to any parts out of factory.

Sovol Support Group

sovol3d.com

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