SOVOL Zero 3D Printer User Manual

Contents

1 SOVOL Zero 3D Printer
2 Specifications
3 Unboxing
4 Material Breakage Detection
5 WiFi Antennas Installation
6 Glass Cover Installation
7 Equipment Parameters
8 Package List
9 Tool Box
10 Unboxing
11 Function List
12 Knob Screen
13 Start-up
14 Enable camera
15 Enable camera
16 Fill Filament
17 Slicing Software
18 Factory Settings
19 Air Filter
20 Obico
21 Motherboard
22 Nozzle adapter
23 FCC Statement
24 FAQs
25 Documents / Resources
25.1 References

SOVOL Zero 3D Printer

Specifications

- Model: [Model Name]
- Software language: [Language]
- Print method: [Method]
- Type: [Type]
- Number of nozzles: [Number]
- Print size: [Size]
- Recommended printing speed: [Speed]
- Printing accuracy: [Accuracy]
- Nozzle diameter: [Diameter]
- Nozzle temperature: [Temperature]
- Hot bed temperature: [Temperature]
- Applicable filament: [Filament Type]
- Diameter of filament: [Diameter]
- File format supported: [Formats]
- Voltage: [Voltage]
- Operation system: [OS]
- Power supply: [Power Supply]

Unboxing

1. Unpack the outer package and remove the printer from the box.
2. Place the printer on a flat surface.
3. Remove all foam and set aside the accessories.

Screen Installation:

- Insert screen cables into the corresponding holes below the machine.
- Snap the screen into the designated slots at the bottom.

Rack Installation:

- Insert M3X16 screws into the lower left corner holes and tighten them.

Material Breakage Detection

- Thread the PTFE tube out of the fixed bracket and insert it into the material-breaking detection.
- Secure with M3x30 screw in the pre-lock hole.

WiFi Antennas Installation

- Insert the upper half of the WiFi antenna into the corresponding hole and tighten it clockwise.

Glass Cover Installation

- Turn the top corner of the machine outward to install the glass cover.
- Place the PEI plate on the hot bed after installation.

Dear customers:
Thank you for choosing Sovol printers! Sovol is committed to providing excellent machines to 3D printing enthusiasts all over the world. This manual is designed for SOVOL ZERO owners to start their SOVOL ZERO printing journey. We still recommend all the SOVOL ZERO owners to read the manual carefully even if you are familiar with the 3D Printing technology, as there is lots of important information about the SOVOL ZERO for you to learn and help you get better printing experienceIn this manual, there are some tutorials that can be found on the official website and group; you can scan the QR-codes.

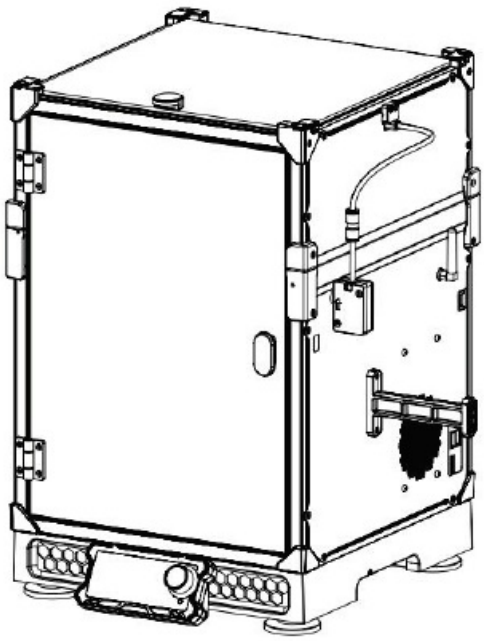
sovol support group

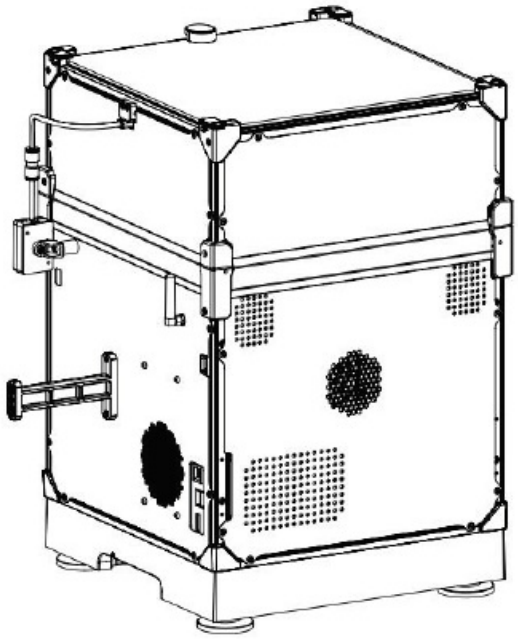
sovol official website

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 an environment with large vibrations or other instability. The shaking of the machine will affect the printing quality of the printer.
- Please do not place the machine in inflammable and explosive materials or near high heat sources.
- 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.
- Please do not open the plastic cover during usage, otherwise, the printing will be interrupted.
- 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 old should not use the printer without supervision.
- This machine is equipped with a security protection mechanism. Do not manually move the nozzle and printing platform mechanism while booting up,ot herwise the device will automatically power off for safety.
- 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 violator’s legal liability under any circumstance.
- Regularly clean the rails and leadscrews and apply grease for maintenance.

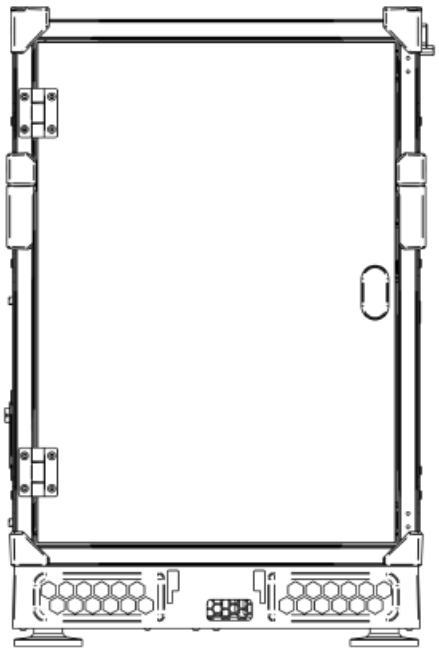
Equipment Parameters



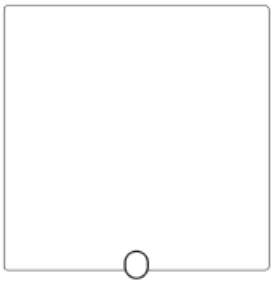


Model	SOVOL ZERO
Software language	English
Print method	Network interface USB cord and WIFI
Type	FDM
Number of nozzles	1
Print size	152.4*152.4*152.4mm
Recommend Printing speed	≤500mm/s
Printing accuracy	±0.1mm
Nozzle diameter	0.4mm (Replaceable)
Nozzle temperature	≤350℃
Hot bed temperature	≤120℃
Applicable filament	PLA/ABS/PETG/TPU
Diameter of filament	1.75mm
File format supported	G-code
Voltage	AC 100~240V, 50/60Hz,
Operation system	Windows, Mac
Power supply	150W/24V

Package List



Printer

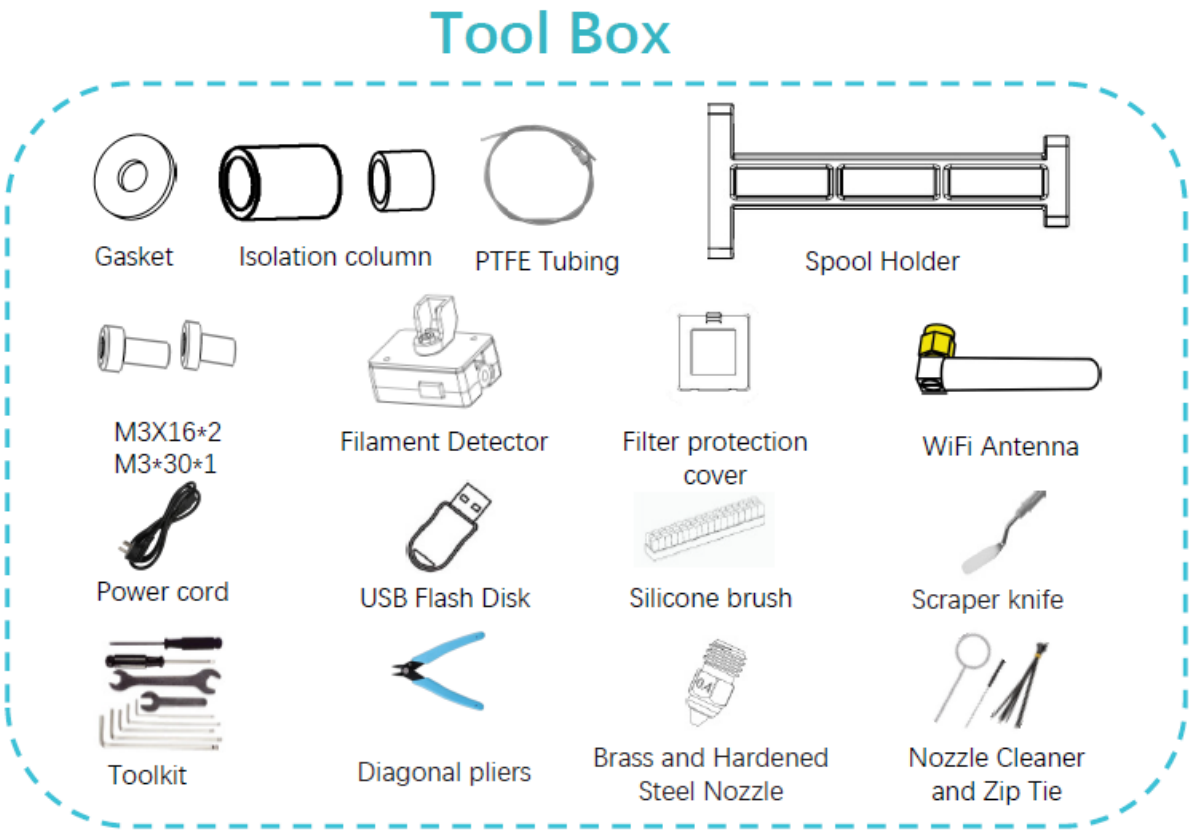


Top Glass Cover

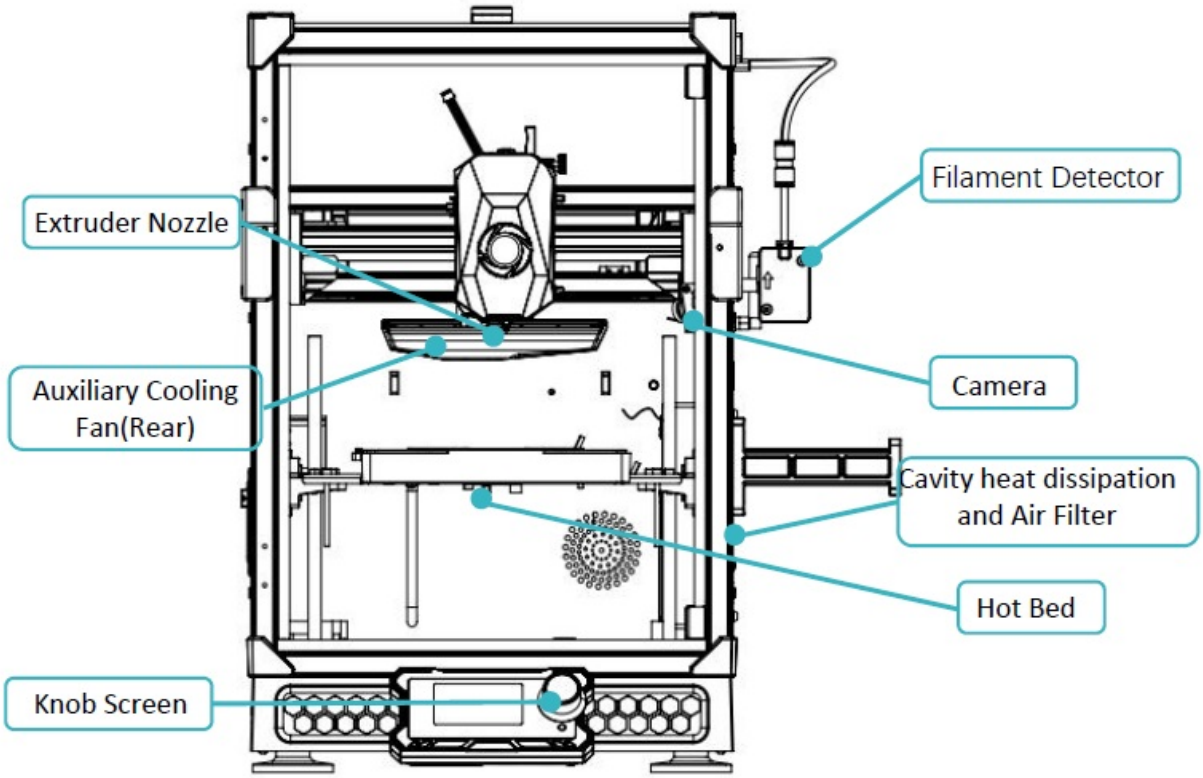
PEI Plate

Knob Screen

Tool Box



Unboxing



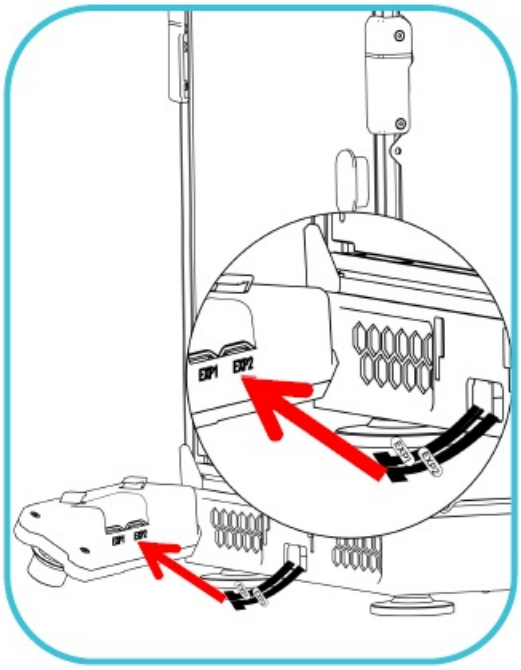
Unpack the outer package, take the printer out of the box, and place it on the desk. After removing all the foam, put the other accessories aside and follow the steps below for installation.

STEPS

1. **Screen Installation:**

There are two screen cables directly below the machine. Insert each cable into its corresponding hole in sequence, then snap the screen into the designated slots at the bottom.

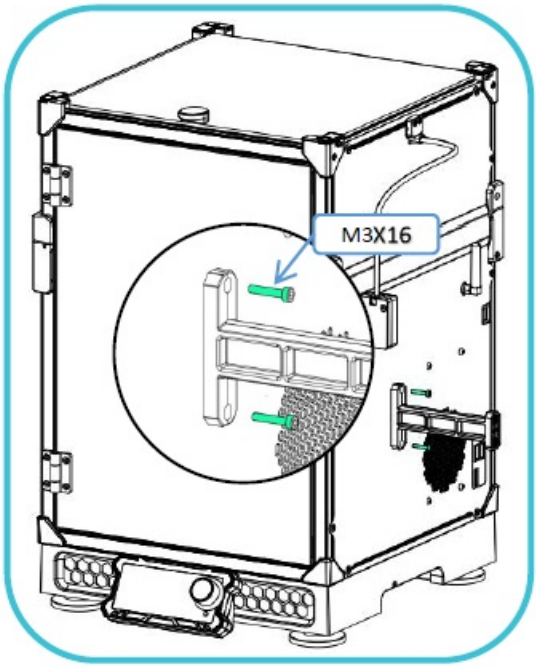
2.



Installation of the rack:

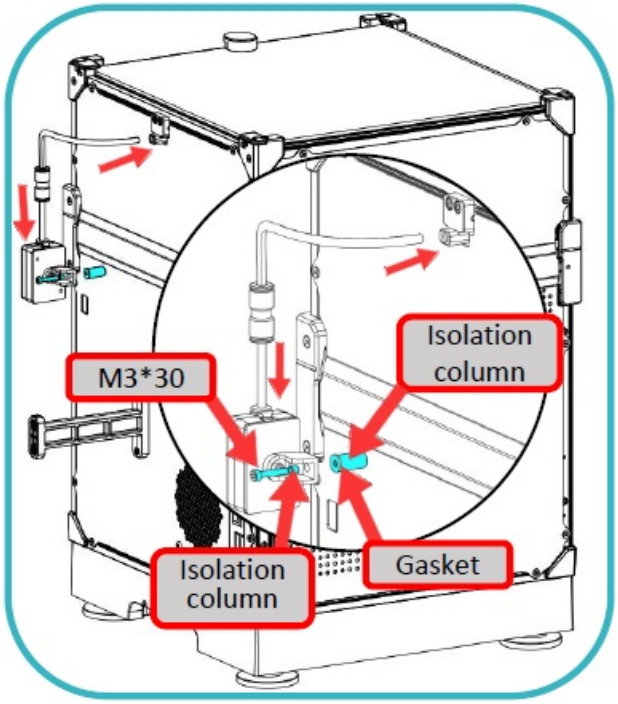
First, insert two M3X16 screws into the corresponding holes at the lower left corner and tighten them.

3.



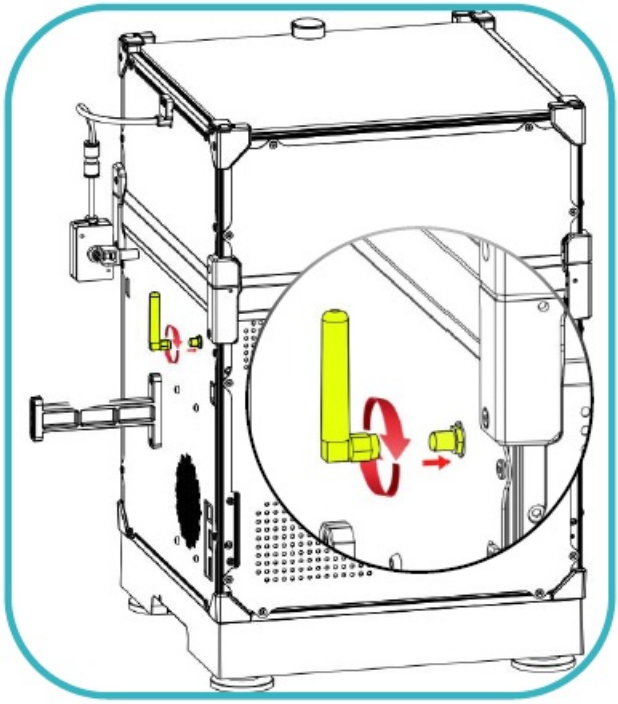
Material breakage detection

First, the PTFE tube on the extrusion nozzle should be threaded out of the fixed bracket (as shown), inserted into the material breaking detection, and then the M3x30 screw in the kit should be put into the pre-lock hole and locked.



4. **Installation of WiFi antennas**

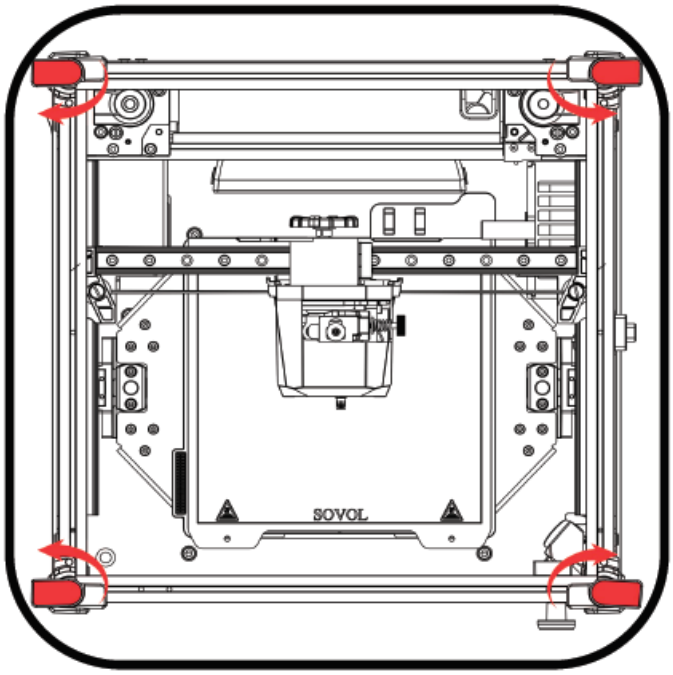
   Take out the upper half of the WiFi antenna, insert the corresponding hole, and tighten it in a clockwise direction.

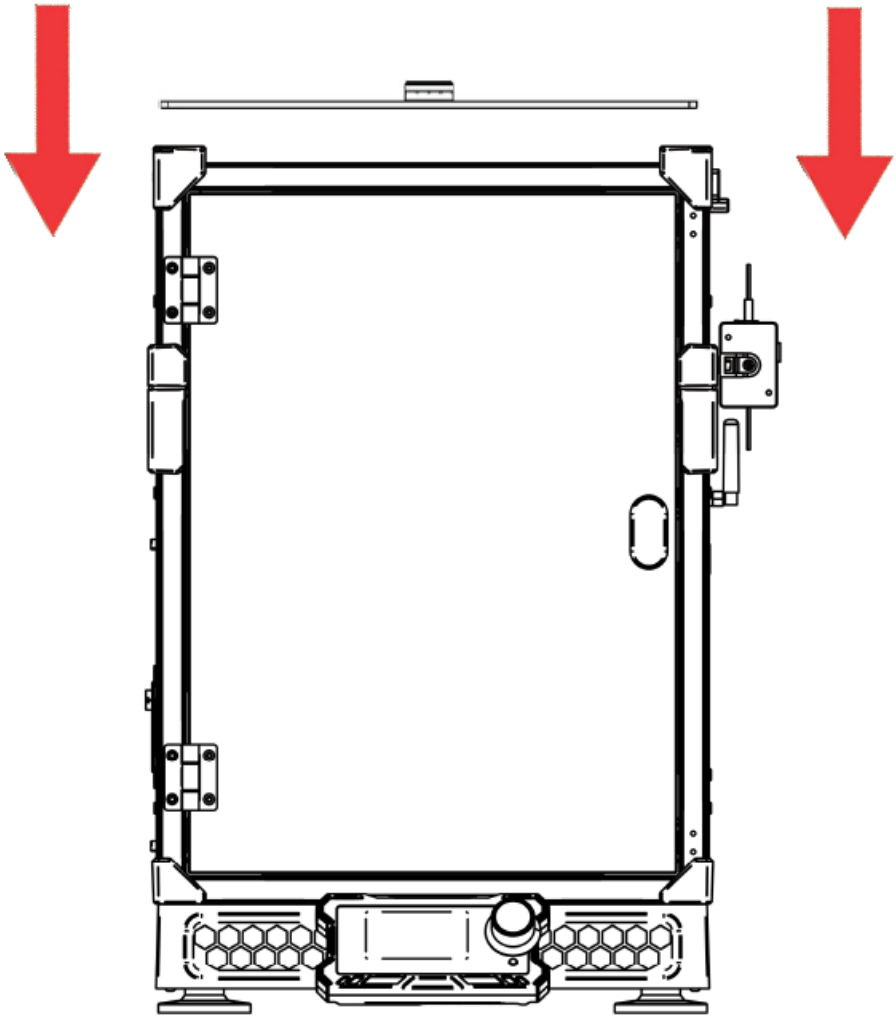


5. **Installation of glass cover**

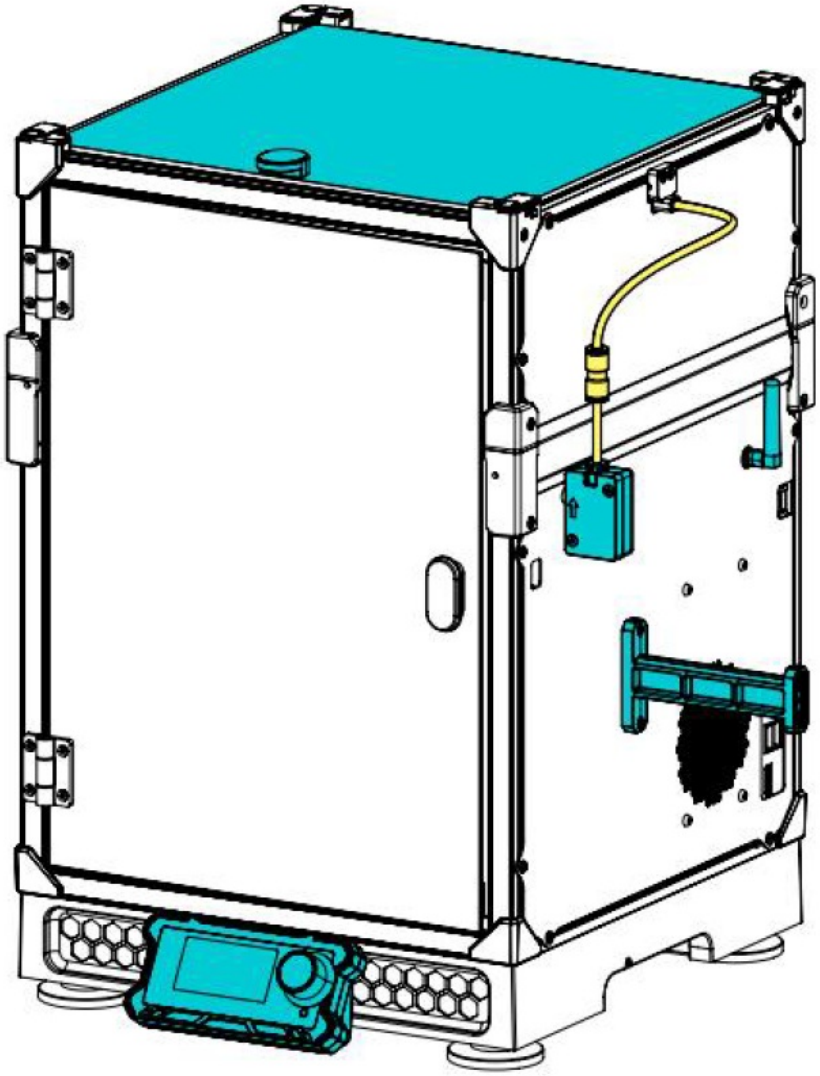
   We turn the top corner of the machine, turn it outward (as shown), cover the glass cover, and turn it back to complete the installation.

   Finally, the PEI plate needs to be placed on the hot bed first.

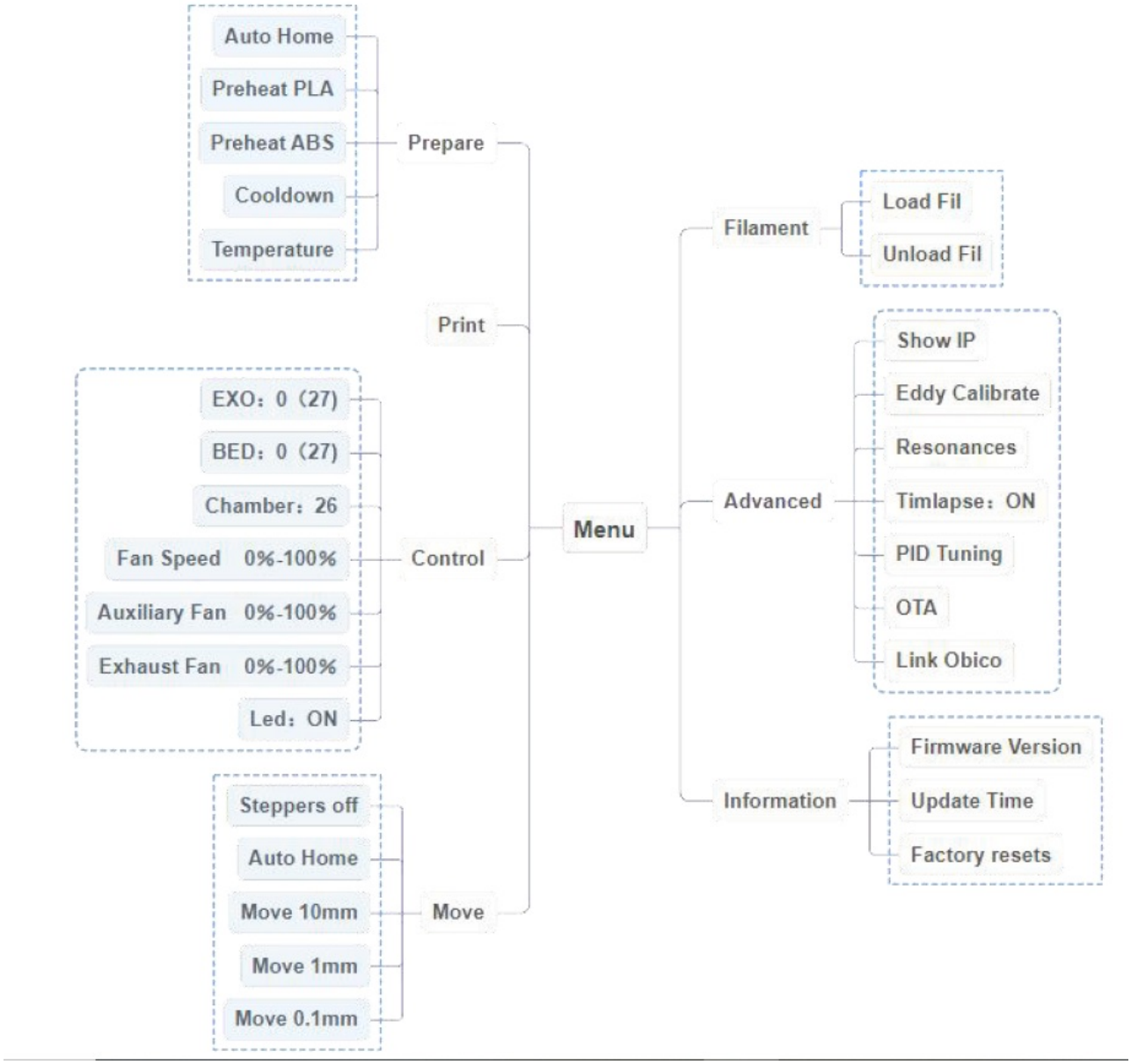




PEI plates need to be cleaned regularly to ensure that the surface is grease-free.

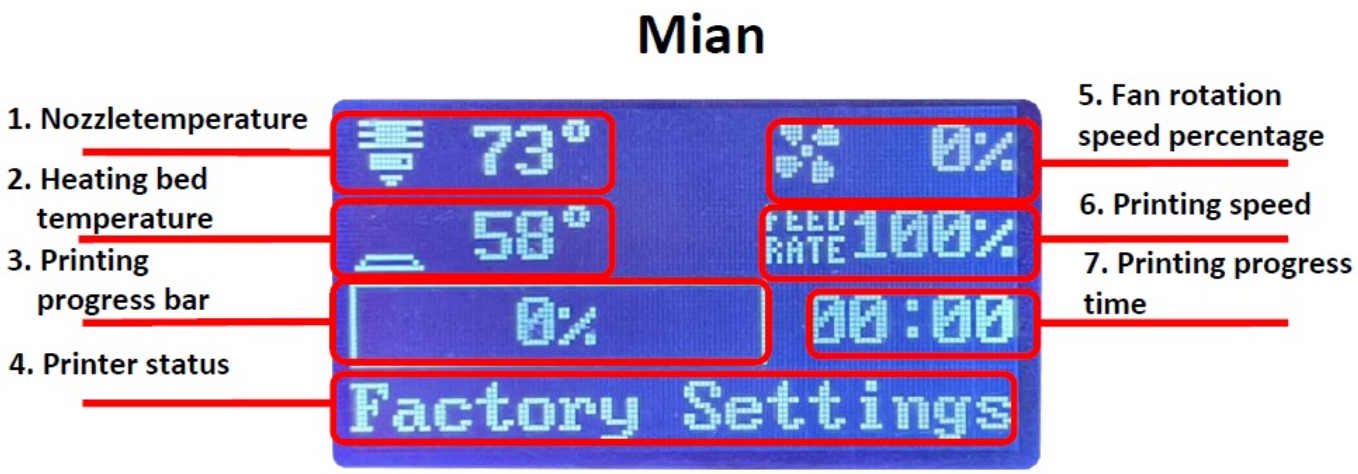


Function List



Updates may differ; please refer to the latest firmware version. If you have any questions during use, please contact us, and we will respond as soon as possible.

Knob Screen

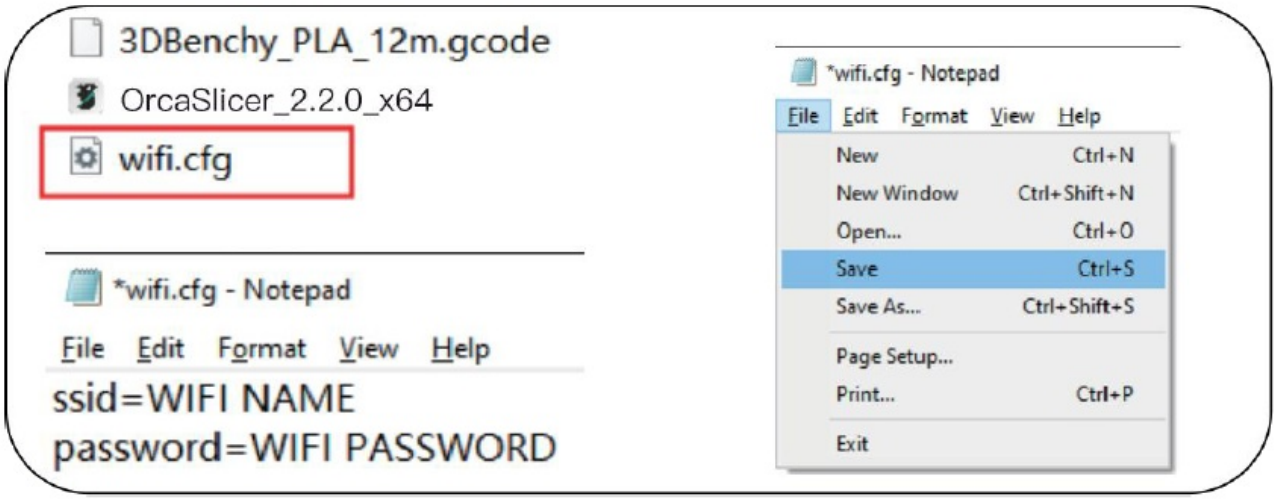


Note: The current interface is for reference only, due to the continuous upgrading of functions, the actual latest software/firmware UI on the official website shall prevail.

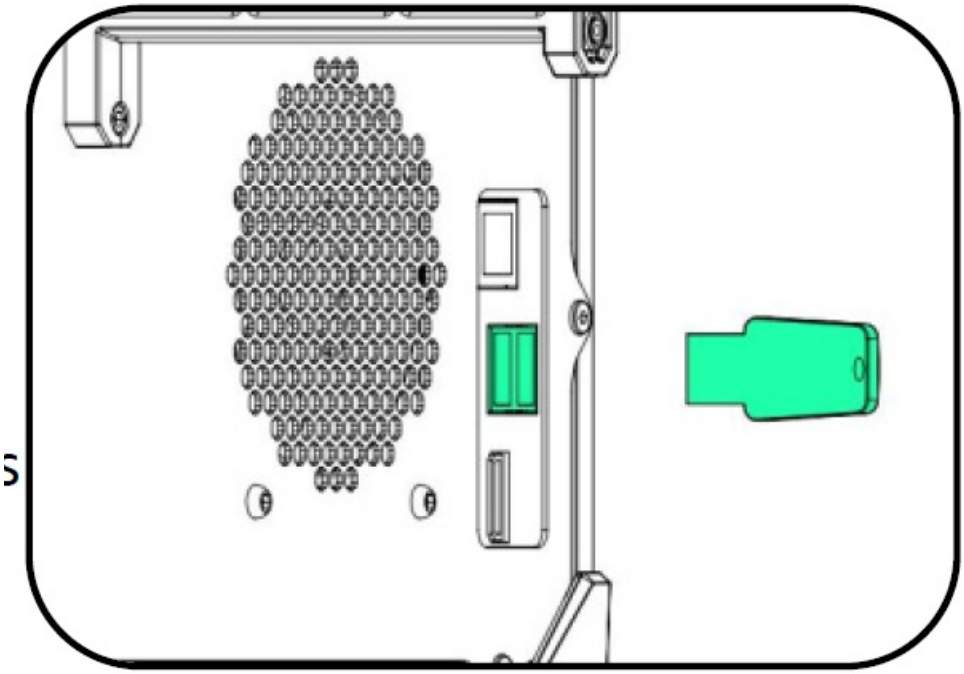
1. Nozzle temperature: Displays the current temperature/preset value temperature of the nozzle
2. Heating bed temperature: Displays the current temperature/preset value temperature of the heating bed
3. Printing progress bar: displays the printing progress percentage, starting printing 0% – printing completed 100%
4. Printer status: There will be four states appearing at this time.
    1. Ready : The machine is ready
    2. Power Recovery: Power-resume print function
    3. Factory Settings: Factory reset
    4. TiP code: Knob screen code
5. Fan rotation speed percentage: displays the cooling fan rotation speed percentage, 0%-100%
6. Printing speed: displays the current printing speed. Printing speed can be adjusted with the knob.
7. Print progress time: This shows how long the print model has been completed.

Start-up

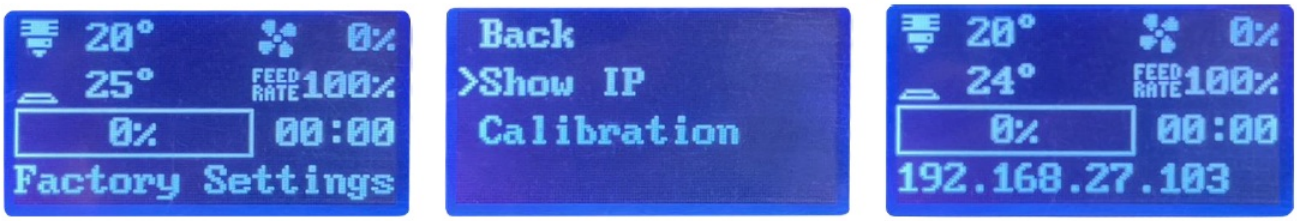
1. Use the USB flash drive included in the machine's accessory package and insert it into your computer to access its contents. Search for the file named "wifi.cfg" within the drive.
2. Open the "wifi.cfg" file using Notepad; this action resembles the example displayed on the right. Enter your WiFI network name (SSID) and password in the following format:
   ssid=your_WiFi_network_name
   password=your_WiFi_password
   Example:
   ssid= WiFi NAME
   password= WiFi Password



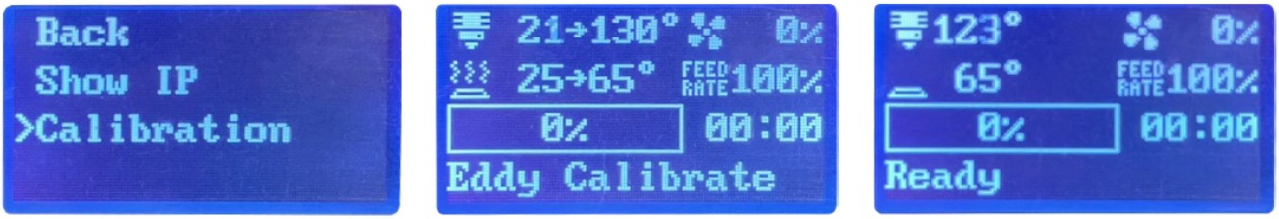
3. After entering your WiFi info, save the "wifi.cfg" file, ensuring it remains in the USB's root directory. Please make sure you type in the correct WiFi info.



4. Power on the machine, enter the system, and then plug the USB port into one of the two USB ports on the right side of the machine.Once inserted, pause for 15-20 seconds before continuing.
5. Press the knob to select ‘Show IP” and wait for 5-10s. The IP address of your home network will appear. If 127.0.0.1 appears, we need to check if the Wi-Fi account and password in the USB drive’s files are correct or if the USB drive is properly inserted, and then restart the machine to perform the above actions again.



6. After the machine is connected to Wi-Fi, press the knob again to select the auto-calibration function, the machine will automatically calibrate and then restart.



Enable camera

Attentions:

1. WIFI must use a 2.4G band signal.
2. Pay attention to the strength of the WIFI. The router connected without obstacles in a. The straight-line distance from the machine should not exceed 10m,
3. Make sure the wifi name and password are correct.
4. computer or cell phone must be used the printer is the same network wif
5. If the printer display does not show the IP address or shows the IP address “172.0.0. , please rechæk the wifi. Please check the name and password in the wifi.cfg file to make sure they are correct. Try “show IP” several

times.

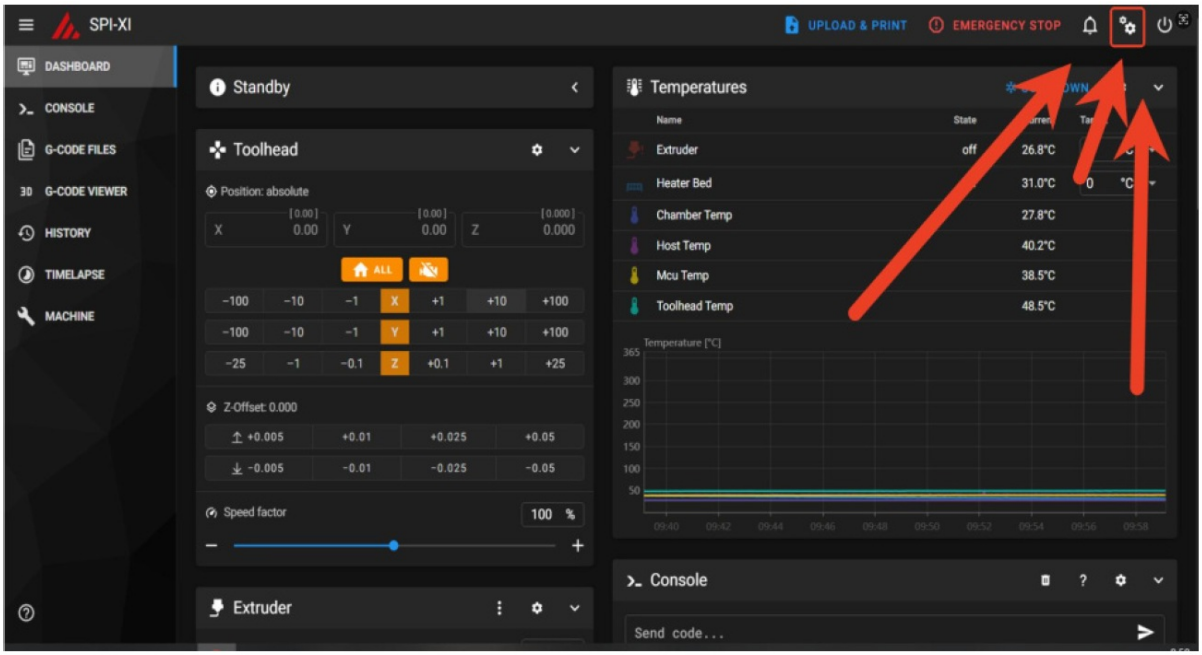
6. If you want to change the WiFi network, please re—enter the name and password of the WiFi network you want to connect to in the wifi-cfg file. If you want to change the WiFi network, please re—enter the name and password in the wifucfg file.

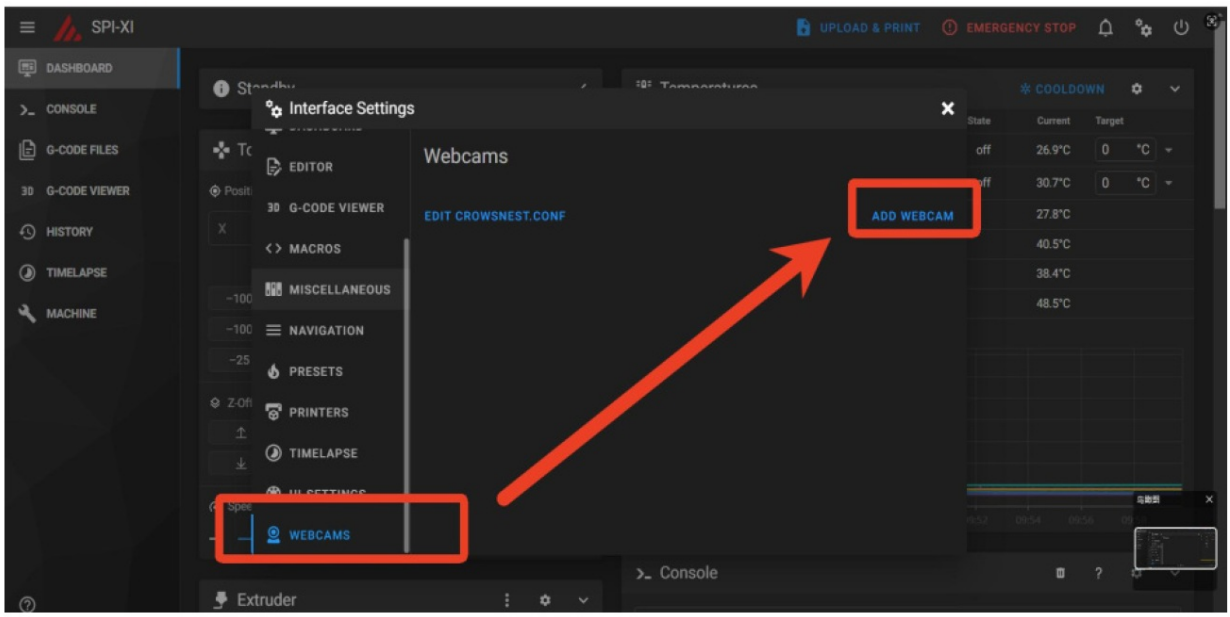
In the event of a missing configuration file, follow these quick steps to create a new one:

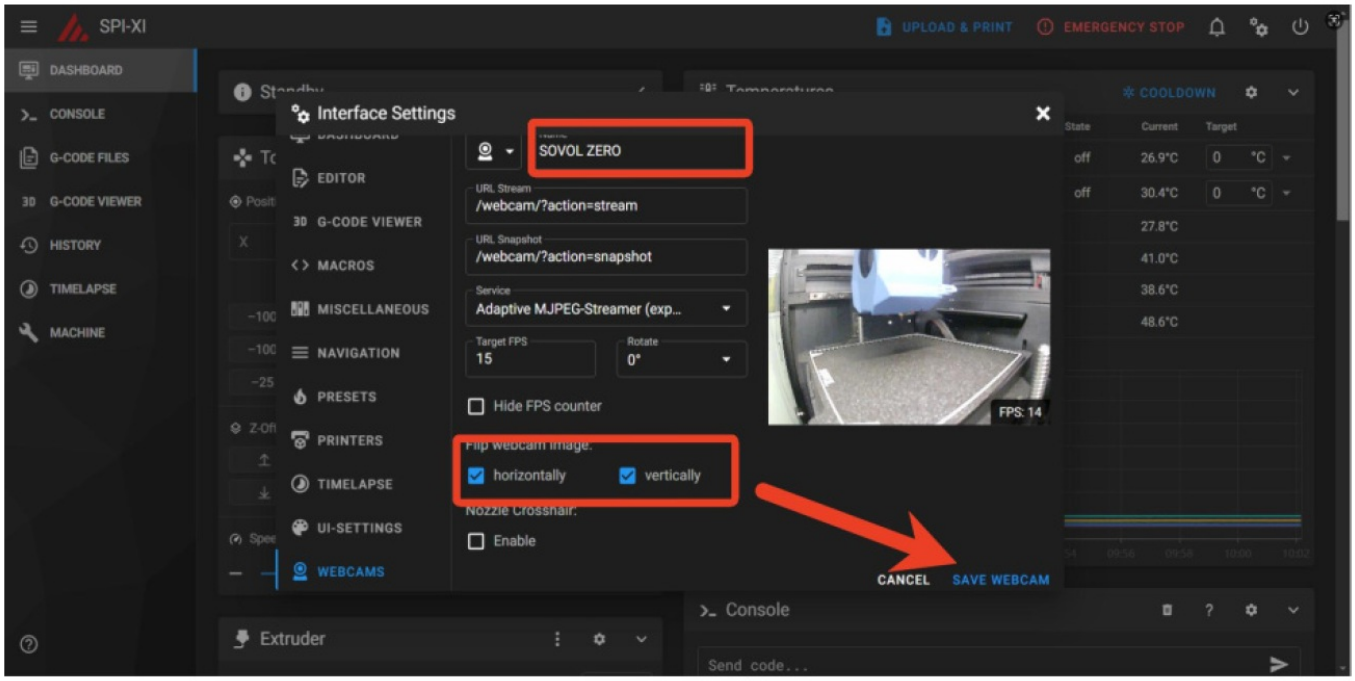
1. Right—click on your desktop and select “New” > “Text Document” to create a new TXT fib.
2. Rename this file to “wifi.cfg” with a lower-base “cfg” extension.
3. Confirm the file extension change by clicking “Yes” when prompted, effectively creating your new .cfg file.

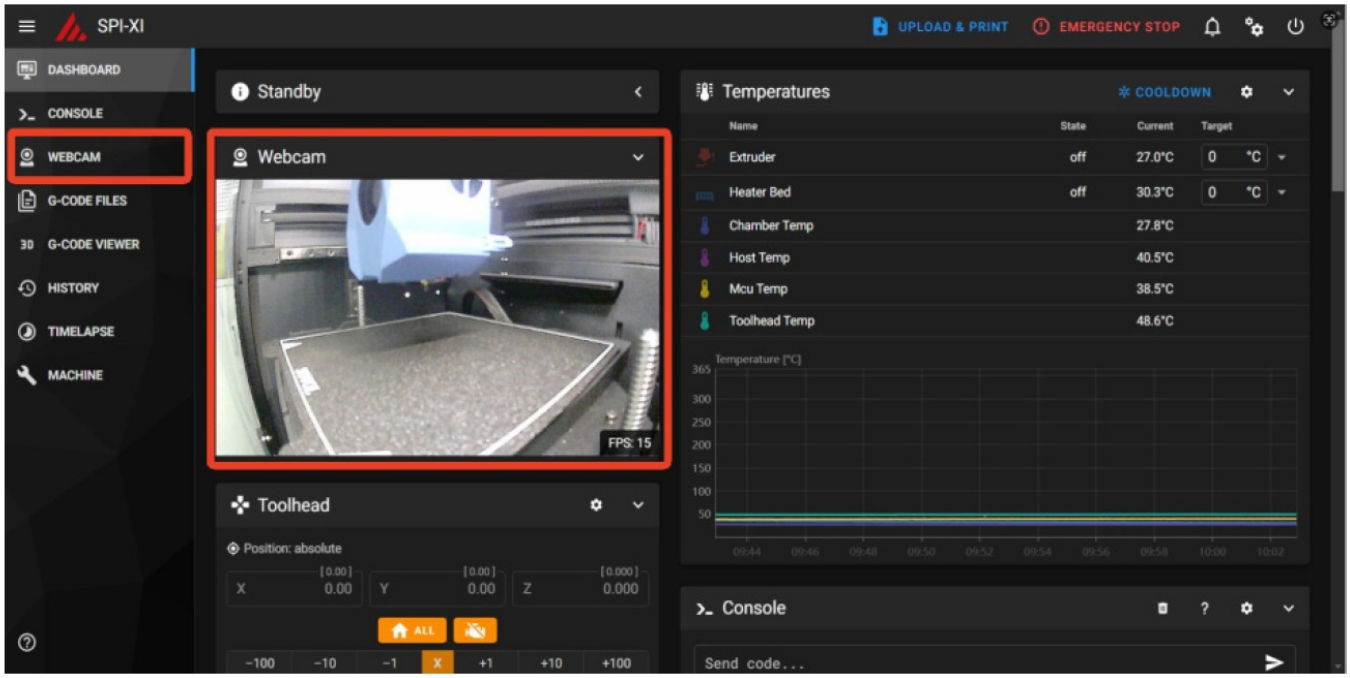
Enable camera

After the machine successfully connects to the network, operate “Show IP” on the screen to obtain the machine’s network IP. We need to enter the IP address in the web interface within the same LAN to log into Mainsail. (accessible from both mobile devices and computers). Please follow the steps below to enable the camera.


SPI-XI
UPLOAD & PRINT
EMERGENCY STOP
DASHBOARD
CONSOLE
G-CODE FILES
G-CODE VIEWER
HISTORY
TIMELAPSE
MACHINE
Standby
Toolhead
Position: absolute
Z-Offset: 0.000
Speed factor
100 %
Extruder
Temperatures
Name
State
Extruder
off
26.8°C
Heater Bed
31.0°C
Chamber Temp
27.8°C
Host Temp
40.2°C
Mcu Temp
38.5°C
Toolhead Temp
48.5°C
Temperature [°C]
Console
Send code...

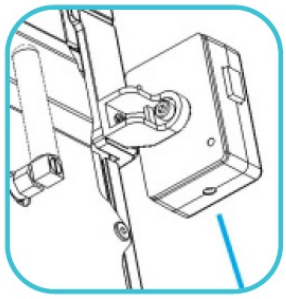

SPI-XI
UPLOAD & PRINT
EMERGENCY STOP
DASHBOARD
CONSOLE
G-CODE FILES
G-CODE VIEWER
HISTORY
TIMELAPSE
MACHINE
Interface Settings
EDITOR
G-CODE VIEWER
MACROS
MISCELLANEOUS
NAVIGATION
PRESETS
PRINTERS
TIMELAPSE
WEBCAMS
Webcams
EDIT CROWSNEST.CONF
ADD WEBCAM
COOLDOWN
Console
Extruder


SPI-XI
UPLOAD & PRINT
EMERGENCY STOP
DASHBOARD
CONSOLE
G-CODE FILES
G-CODE VIEWER
HISTORY
TIMELAPSE
MACHINE
Interface Settings
SOVOL ZERO
EDITOR
G-CODE VIEWER
MACROS
MISCELLANEOUS
NAVIGATION
PRESETS
PRINTERS
TIMELAPSE
UI-SETTINGS
WEBCAMS
URL Stream
/webcam/?action=stream
URL Snapshot
/webcam/?action=snapshot
Service
Adaptive MJPEG-Streamer (exp...
Target FPS
15
Rotate
0°
Hide FPS counter
Flip webcam image:
horizontally
vertically
Nozzle Crosshair:
Enable
FPS: 14
CANCEL
SAVE WEBCAM
COOLDOWN
Console
Extruder
Send code...

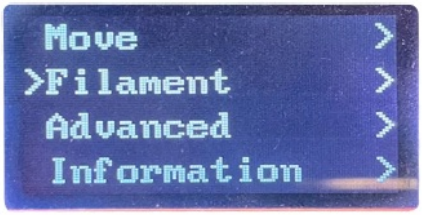


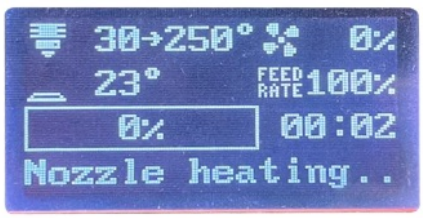
Fill Filament

-

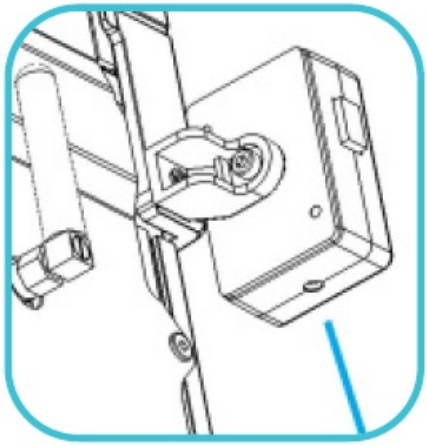
Use the scissors in the accessory kit to cut off the end of the filament at a 45° angle.
- 
Steps to insert the filament: Insert the filament into the hole of the filament runout sensor until it reaches the end. When the consumables cannot be inserted any further, complete the step of inserting the filament.

Make sure the filaments are loaded correctly & are engaged with the extruder gears.

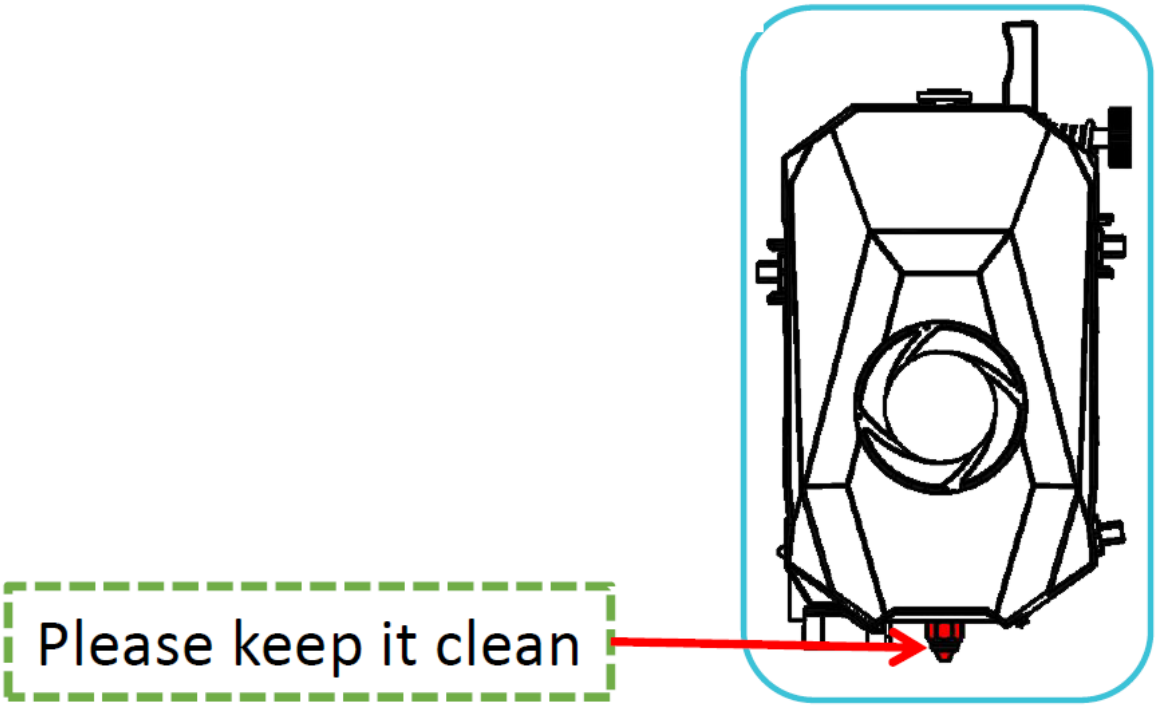




- Select the “Load File” function. The heating block will heat up, reach the specified temperature value, the E-axis extrusion motor will start to rotate, and the E-axis motor rotation process can check whether the consumables have been loaded, confirm the extrusion normal, and the loading of consumables step is completed.



- After completing the consumables procedure, if no consumables appear in the nozzle, repeat the preceding operations.
- After the nozzle is loaded with the required
  filament, it is essential to check if there is any leftover filament on the nozzle. If there is leftover filament on the nozzle, the return to zero reset will be inaccurate, and the nozzle will scratch the PEI plate, which damages both the nozzle and the PEI plate, significantly reducing print quality and performance.

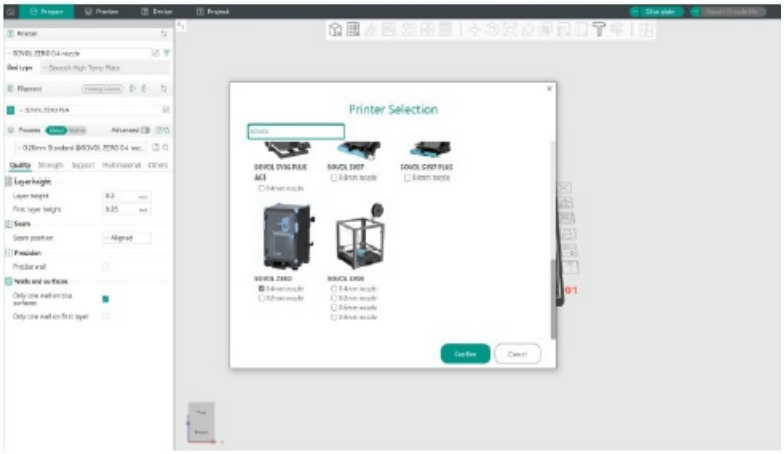


Slicing Software

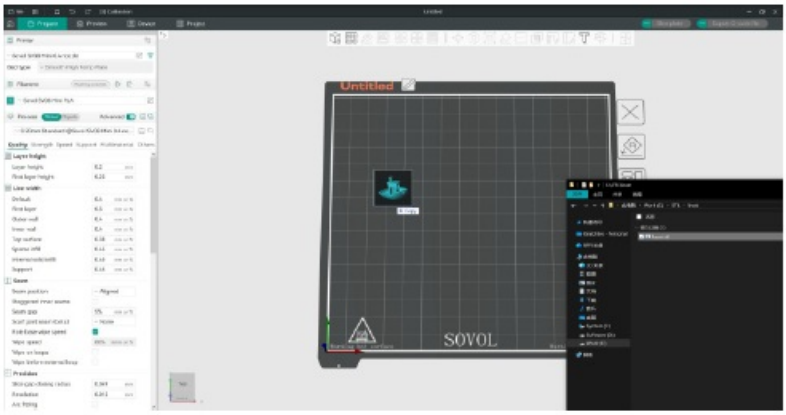
The latest version on the official website shall prevail

OrcaSlicer_2.2.0_x64

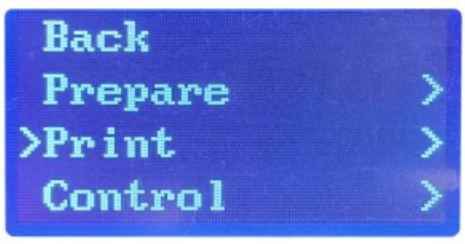
1. Files installed in the USB “OrcaSlicer”.

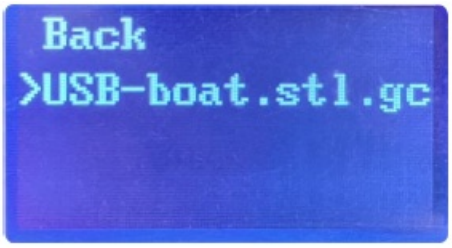


2. Select “SOVOL ZERO”



3. Select and add the model you want to print.



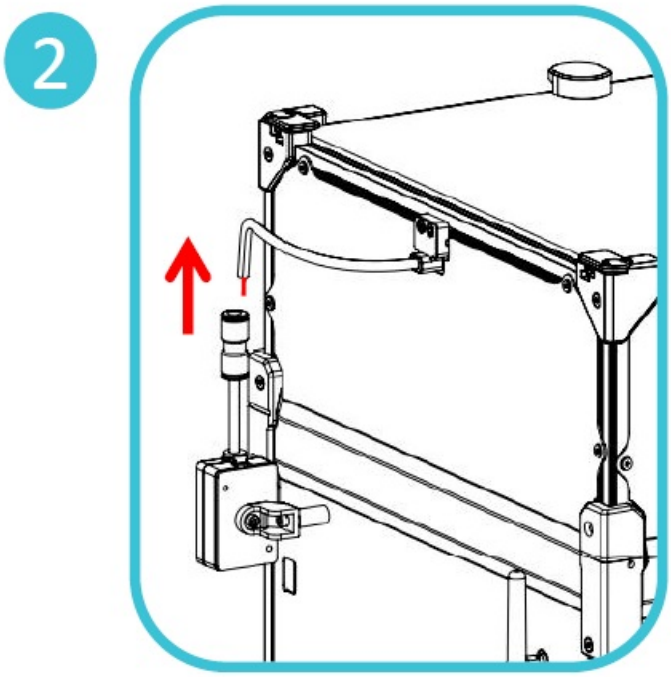


You can view the Show IP during printing

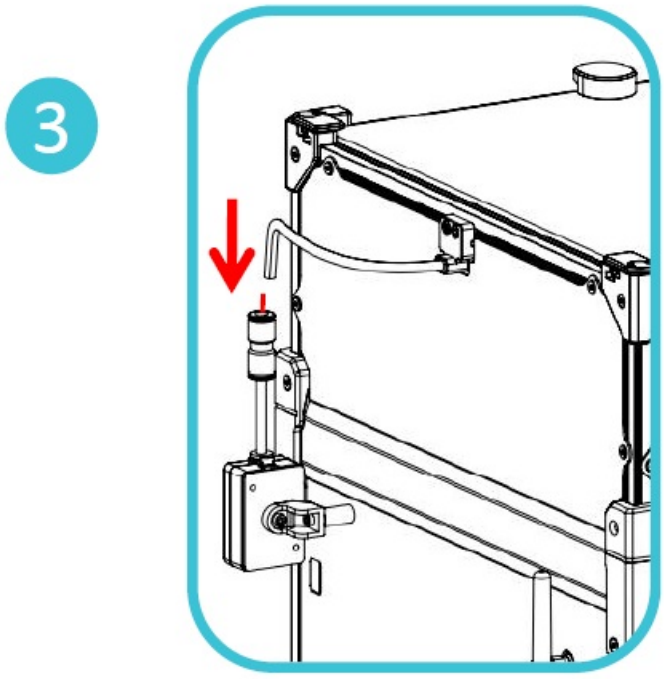
Factory Settings

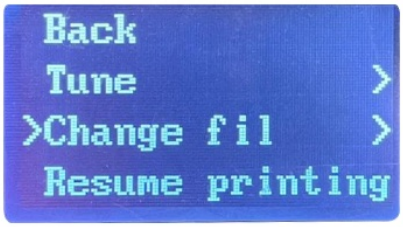
1. During the 3D printing process, if the filament runs out, the machine will trigger the material break detection warning, and we need to unload the residual filament.

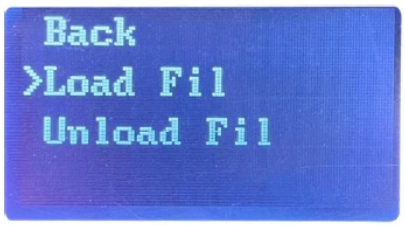
2. During the unloading process, the air tube connector on the front end needs to be removed, and the remaining filaments should be taken out.

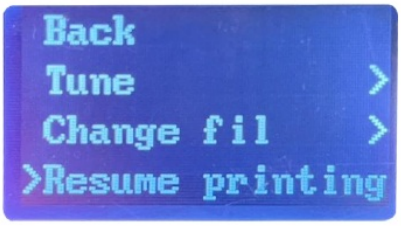


When loading new filaments, you need to feed the filaments through the material breaking detection to the extrusion wheel of the nozzle, then select to load the filament. Once the filament is extruded from the nozzle, select to continue printing; if the filament fails to extrude, release the extruder handle, remove the filament, and repeat the above steps.





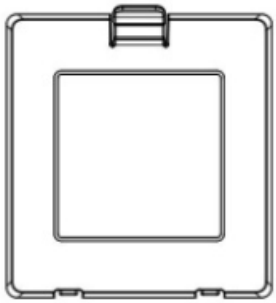




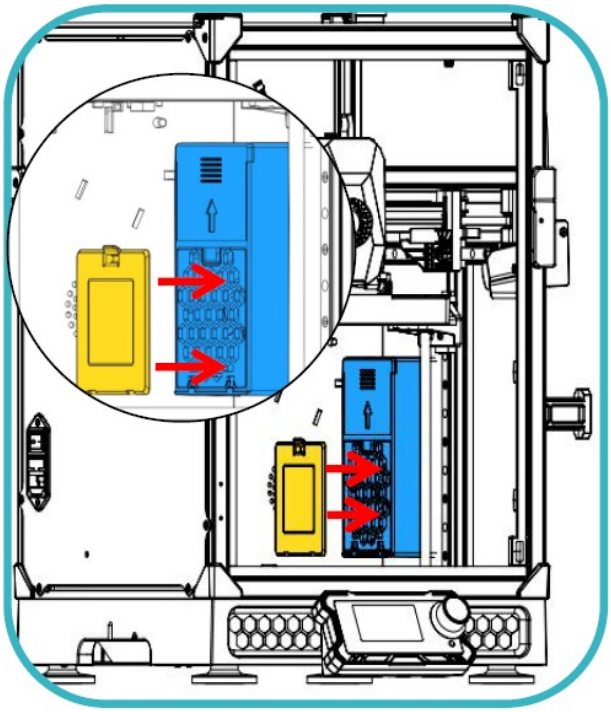
Air Filter

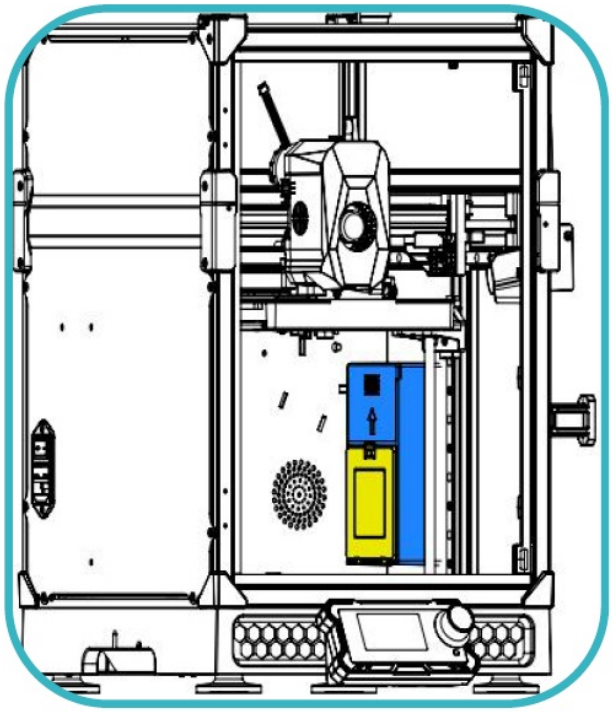
Air filtration system installation

When you need to print high-temperature filaments such as ABS, PC, CF,nylon,etc., you need to take out the filter protection cover in the accessery pack, align the hole on the air filter and install it As shown in the following picture to start printing.



Filter protection cover

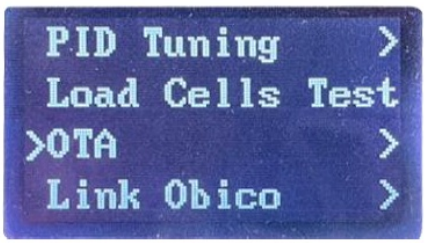




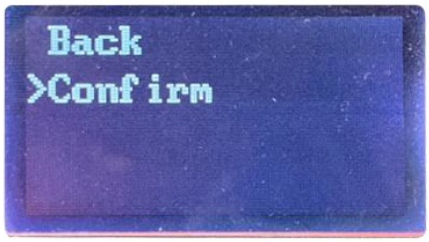
OTA upgrade

When our firmware version is at a lower version, please update the firmware version promptly. This update can be completed by operating on the device itself.

①.Click on 'Advanced'

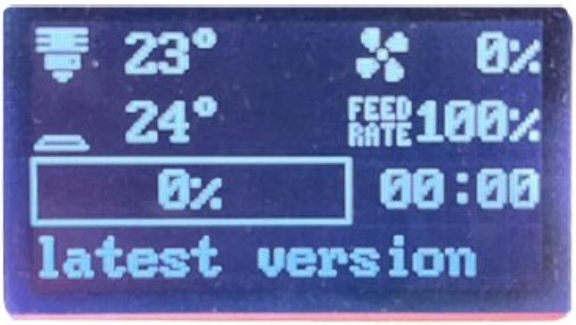


②.Click on 'OTA'



③.Click

1. The system will check for updates, wait for the updates to complete, and the machine will automatically restart. After the update, please power off and restart.



2. During system checks, if it is already the latest version, "latest version" will be displayed.

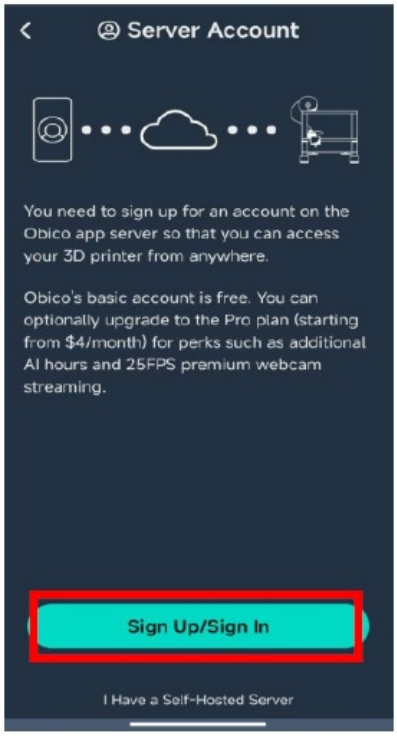
Obico

Obico Download

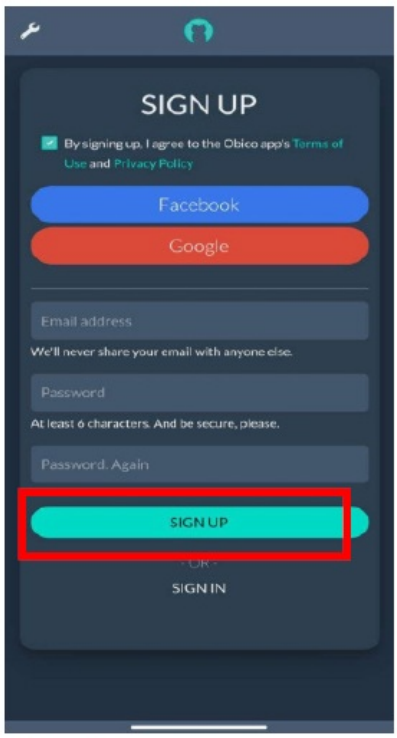
- a. For Android users: visit the Google Play store, search for"Obico" and select install app.
- b. For iOS users: Visit the Apple APP Store, search for "Obico", and then select Install APP.
- c. Via Web interface: If you want to access via Web interface **https://obico.io**

1. Start the Obico operating interface of the printer and follow the steps below.
2. Connect the Obico software on your phone. Open Obico, downloaded from the above website

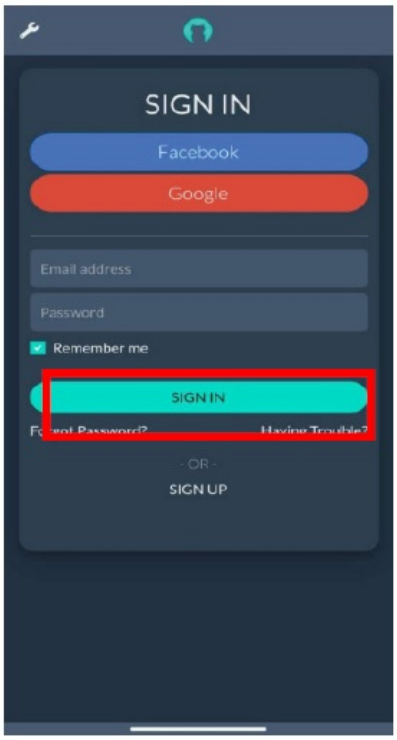
①.Click on 'SKIP'



②.Click on 'Sign Up/Sign in'

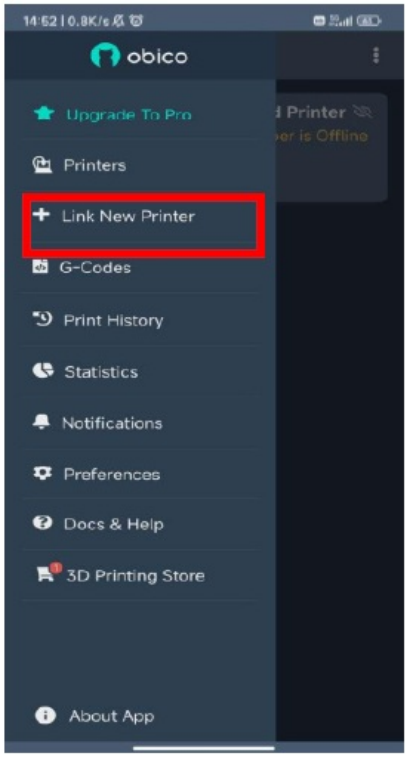


③.Register an account, enter the information, and click on 'SIGN UP'

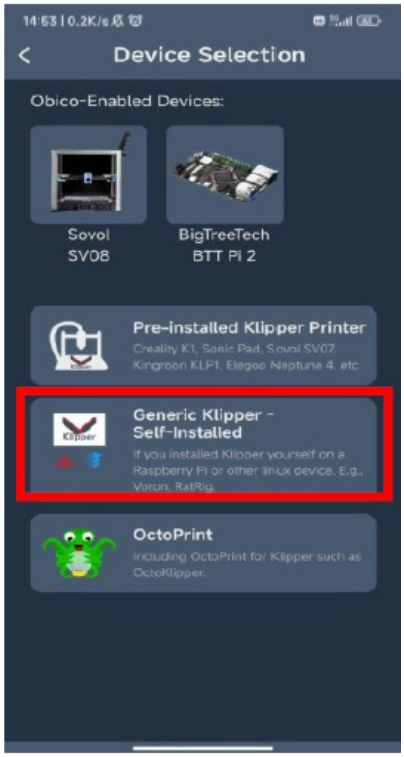


④.Enter the account information and click on 'SIGN IN'

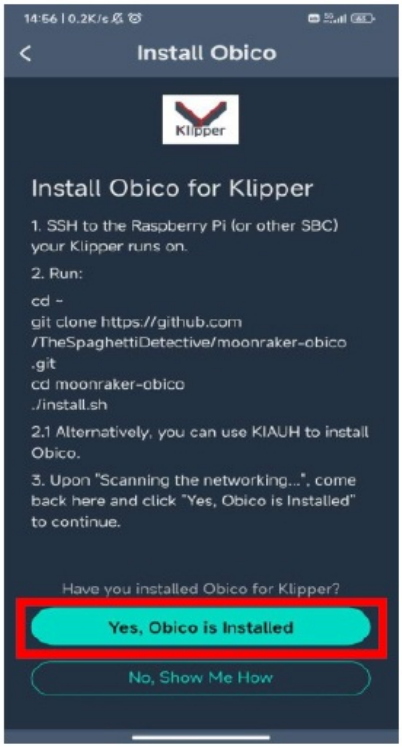
⑤.Click on the menu page



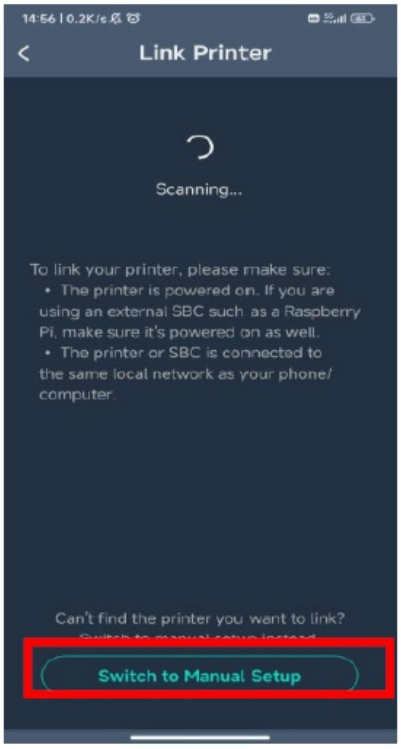
⑥.Link New Printer



⑦.Click



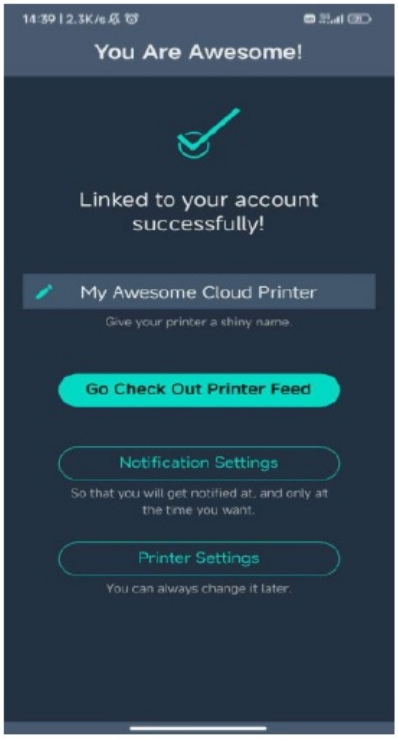
⑧.Click



⑨.Click

⑩.Click

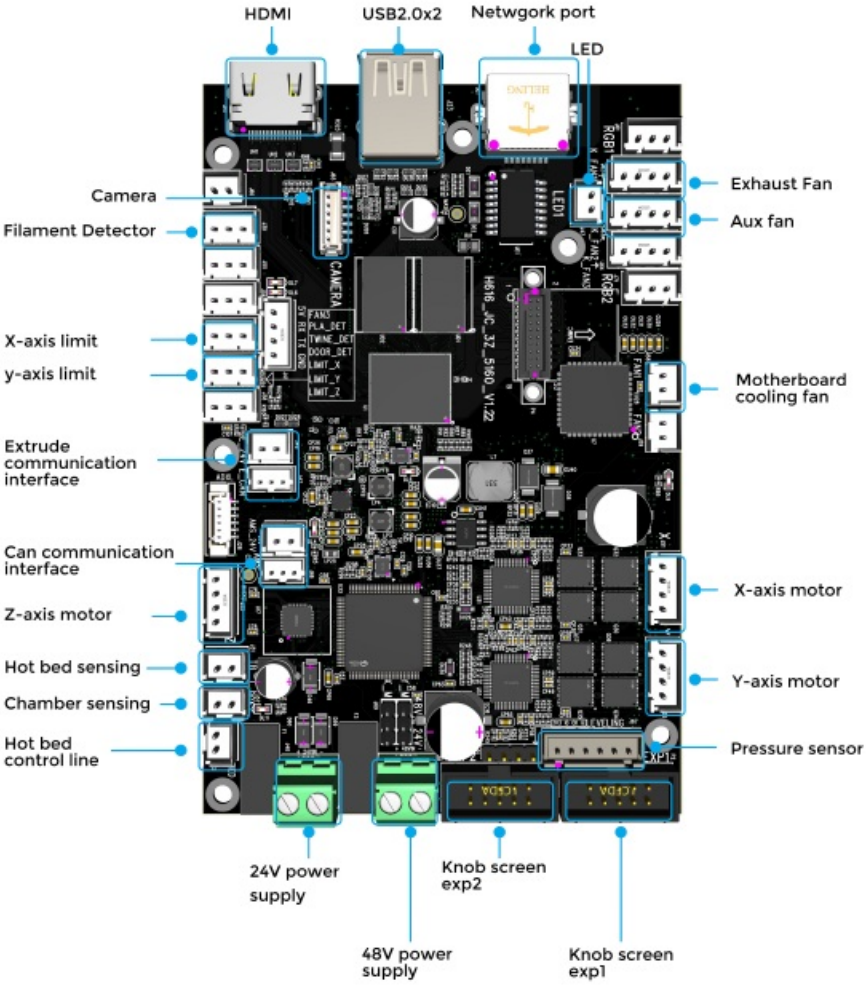
Select the obico function on the machine, and a 5-digit verification code will appear.



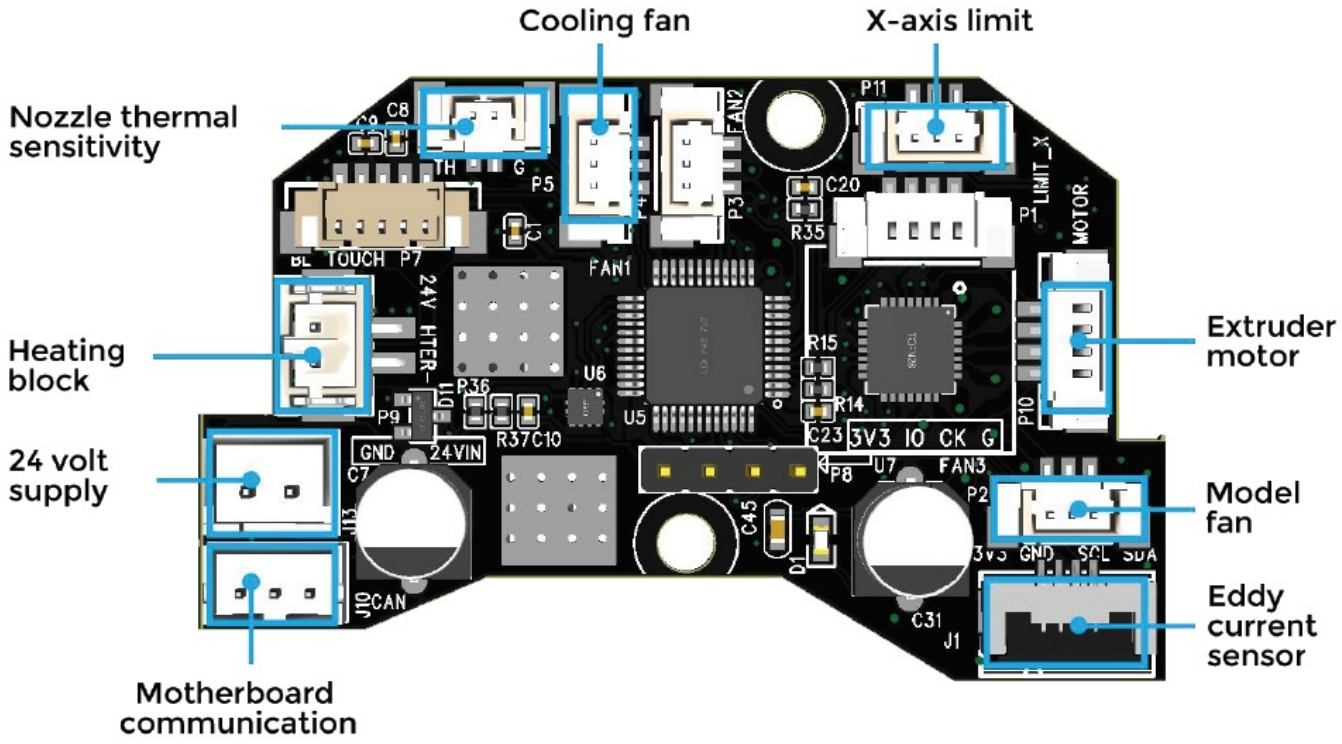
⑪ Printer connected successfully

Updates may differ; please refer to the latest firmware version. If you have any questions during use, please contact us, and we will respond as soon as possible.

Motherboard



Nozzle adapter



FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, under part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used according to instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications to this device not explicitly approved by the manufacturer could void your authority to operate this equipment.
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.

RF Exposure Information
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body.

sovol support group

sovol official website

SHENZHEN Liandianchuang Technology CO., LTD. Official Website: sovol3d.com E-mail: info@sovol3d.com

FAQs

- **Q: How do I update the firmware?**
  A: Firmware update instructions can be found on the official website. Follow the provided guidelines for a successful update.
- **Q: What should I do if the nozzle gets clogged?**
  A: Refer to the user manual for nozzle-cleaning instructions. Use the provided tools to clear any blockages carefully.

Documents / Resources

	SOVOL Zero 3D Printer [pdf] User Manual Zero 3D Printer, 3D Printer, Printer

References

- SOVOL: The Best Budget Open Source 3D Printer Brand
- Innovative Smart 3D Printing Platform for Makers | Obico
- User Manual

Manuals+, Privacy Policy

This website is an independent publication and is neither affiliated with nor endorsed by any of the trademark owners. The "Bluetooth®" word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. The "Wi-Fi®" word mark and logos are registered trademarks owned by the Wi-Fi Alliance. Any use of these marks on this website does not imply any affiliation with or endorsement.