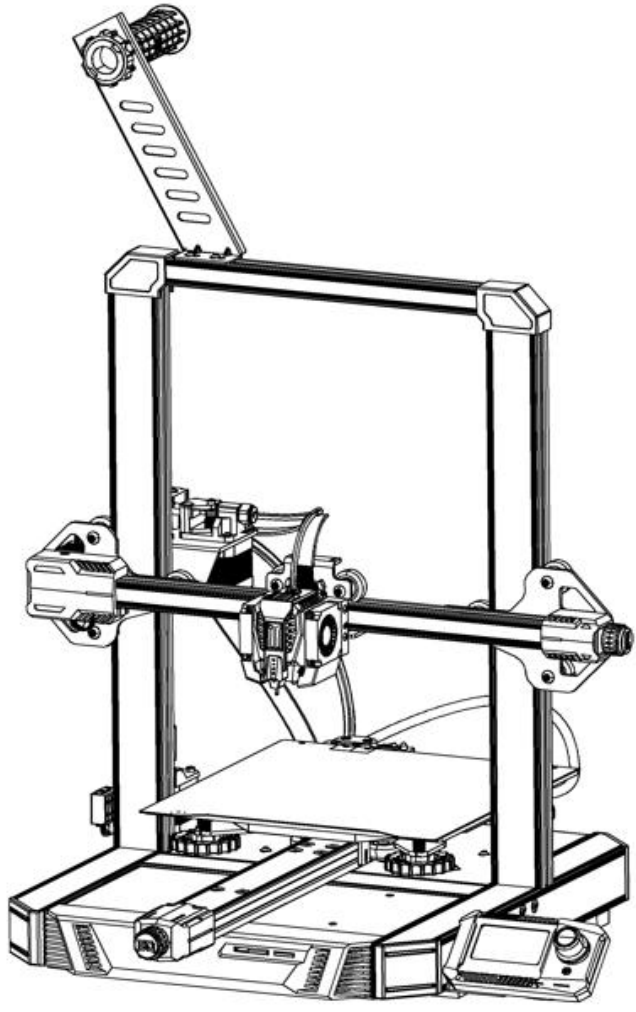
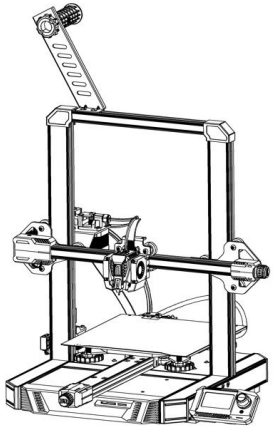
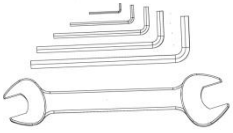
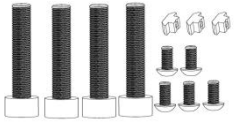
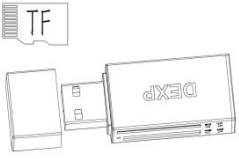
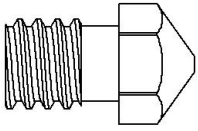
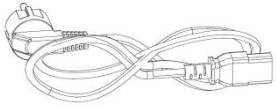
BIQU-Hurakan

User Manual V1.0



Contents

1 Packing List

		
	Tools (1set)	Screw Accessories (1set)
		
BIQU-Hurakan	TF Card + Card Reader(1set)	Nozzle (1pc)
		
Power Cord (1pc)	Filament for Test (50g)	Cable Ties (10pcs)

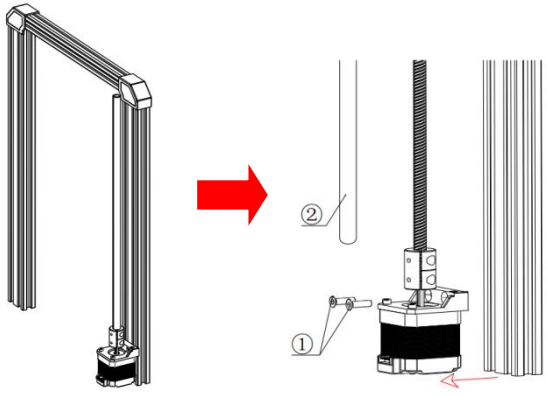
2 Specifications

Specifications	
3D Printer Name	BIQU-Hurakan
Printing Size	220 x 220 x 270mm
Nozzle	1
Layer Thickness	0.1mm - 0.3mm
Nozzle Diameter	Standard 0.4mm
Printing Accuracy	±0.05mm
Filament	PLA/ABS/PETG...(Any material with print temp lower than 260℃, including flexible filament with 95A stiffness.)
File Format	G-code
Firmware	Klipper
Printing Method	USB Drive / LAN Controlled
Slicing Software Compatibility	Cura / Repetier-Host / Simplify 3D...
Rated Voltage	100 - 120V / 200 - 240V 50 / 60 HZ
Output Voltage	24V
Rated Power	280W
Heated Bed Power	100W/240W
Maximum Temperature of Heated Bed	100℃
Maximum Temperature of Nozzle	260℃
Default Speed Limit(Firmware)	150mm/s
Suggested Printing Speed	60mm/s
Filament Runout Detection	Standard Feature

3 Installation

Step 1

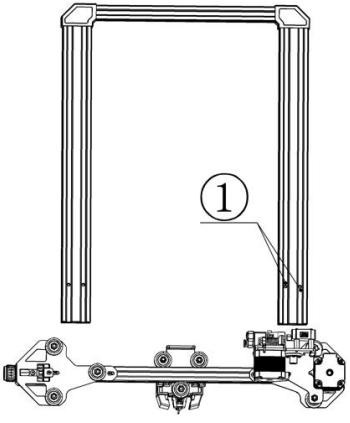
Remove the motor from the gantry:



①: M4X16 Countersunk Screw (2pcs)
②: Lead Screw Sleeve (1pc)

Step 2

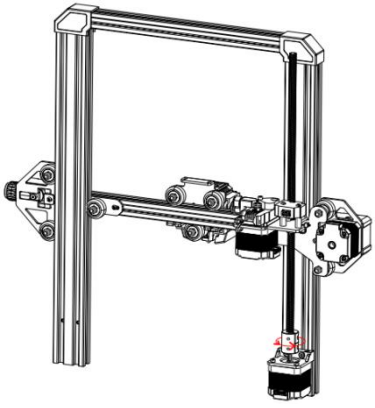
Put the X-axis module on the gantry:

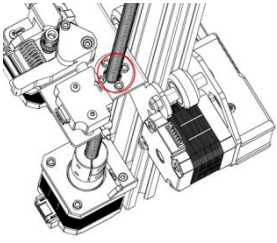


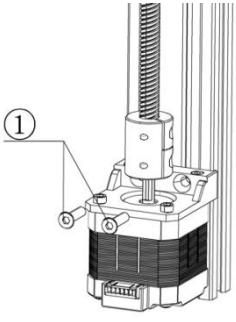
①: Pay attention to the direction, there are two M4 holes. The POM wheels on both sides are aligned with the Z-axis aluminum part. If it is too tight or too loose, the eccentric nut can be adjusted with a wrench so that the POM wheels on both sides of the Z-axis do not shake and are not too tight.

Step 3

Install the Z-axis motor to the gantry:



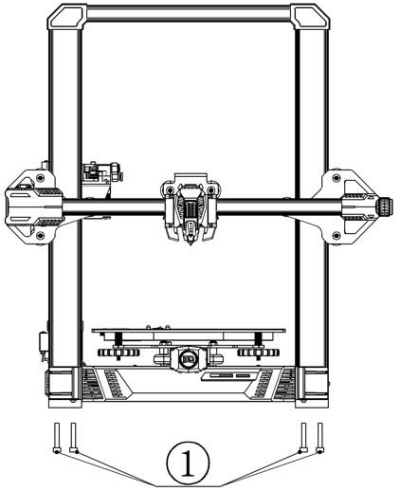




Note: Install the T8 lead screw into its copper nut.
①: M4X16 Countersunk Screw (2pcs)

Step 4

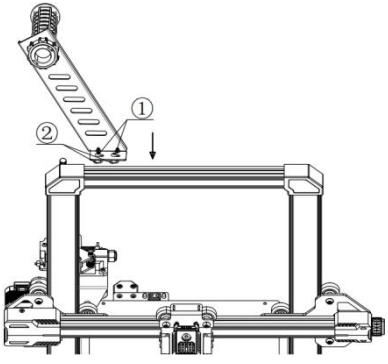
Mount the gantry on the machine base:



①: M5X40 Socket Head Screw(4pcs)

Step 5

Install the filament bracket:



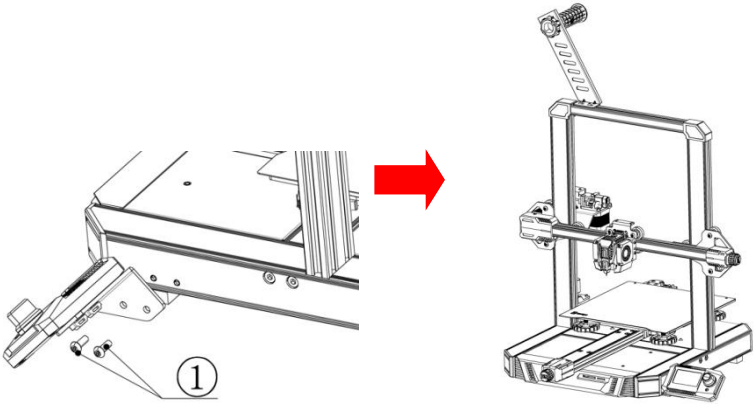
①: M4X8 Button Head Screw (2pcs)

②: M4 T-nut (2pcs)

Loosen the T-nut slightly, then place the filament bracket at the slot on the top, and finally tighten the screw with a screwdriver. The T-nut will rotate slightly during the tightening process to make itself stuck in the aluminum profile slot to fix the filament bracket.

Step 6

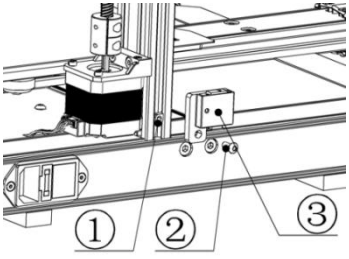
Install the screen:

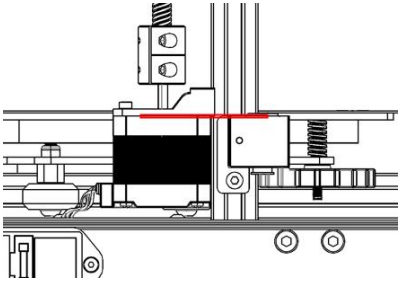


①M5X8 Button Head Screw (2pcs)

Step 7

Install the limit switch of the Z-axis:



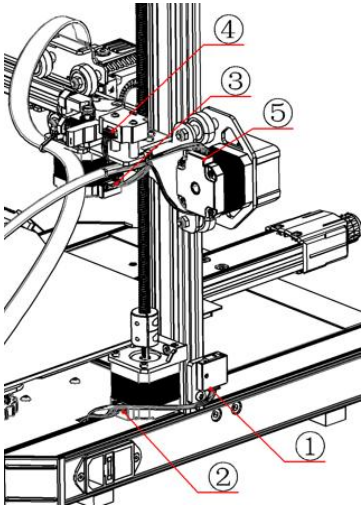


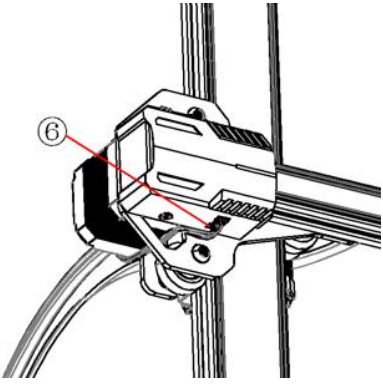
①: M4 T-nut (1pc)
②: M4X10 Button Head Screw (1pc)
③: Z-axis Limit Switch Module (1pc)

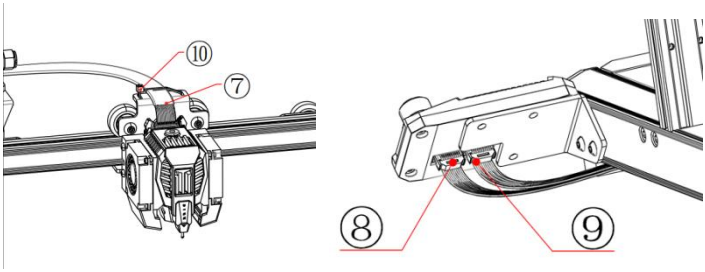
Note: The printer is equipped with a BIQU MicroProbe, thus, the Z limit switch shouldn't need to be installed, However, if you do wish to use the Z limit switch, it should be installed approximately at the same height as the motor, and adjust your bed height to match.

Step 8

Wire connection:







①: Z-axis Limit Switch Wire → 3P Terminal with "Z" Label

②: Z-axis Motor Connection Cable → 6P Terminal with "Z" Label

③: Extruder Motor Connecting Wire → 6P Terminal with "E" Label

④: Filament Runout Detection Module Cable → 3P Terminal with "E" Label

⑤: X-axis Motor Connection Cable → 6P Terminal with "X" Label

⑥: X-axis Limit Switch Wire → 3P Terminal with "X" Label

⑦: Prindhead Connection Cable → 14P Terminal with Box Header Connector

⑧: Screen Cable 1 → 10P Terminal with "EXP1" Label

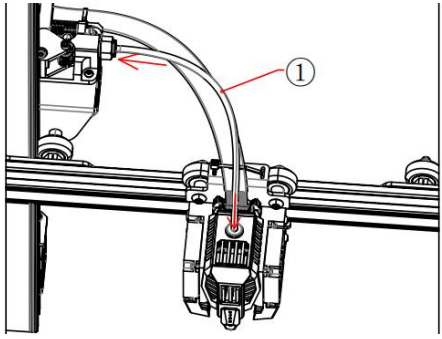
⑨: Screen Cable 2 → 10P Terminal with "EXP2" Label

⑩: Cable Ties for Cable Management

In the image above, install the terminal to the corresponding position.

Step 9

Install the PTFE tube:



①: PTFE Tube(1pc)

Push the PTFE tube in until it can no longer be inserted.

Note: Check whether the screws on the printer are installed correctly, and make sure they are tight.

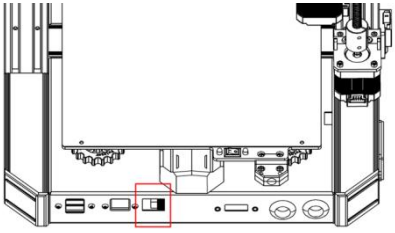
4 Tuning

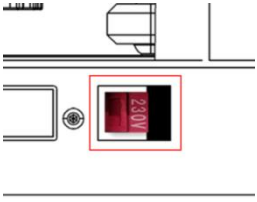
After assembly, the printer needs to be tuned.

4.1 Manual Leveling

Step 1

Check household voltage:





Voltage Mode: 115V, corresponding to Household Voltage: 100—120V;

Voltage Mode: 230V, corresponding to Household Voltage: 200—240V.

Before turning it on, check whether the voltage mode of the power supply matches your household voltage. If not, use a screwdriver to toggle the switch to select the mode that matches your household voltage.

Make sure that each terminal is fixed firmly and the wiring is correct, then power on the machine.

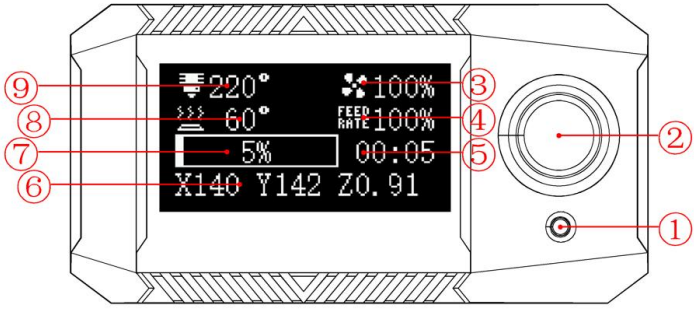
Step 2

Introduction of the main interface of the screen:

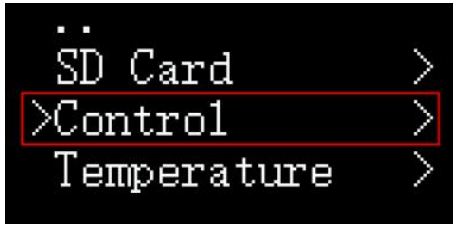
①: Reset Button: Reset button for the motherboard control system.

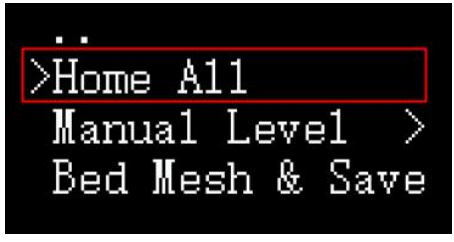
②: Control Knob: Enter and exit the control interface, Up and down selection.

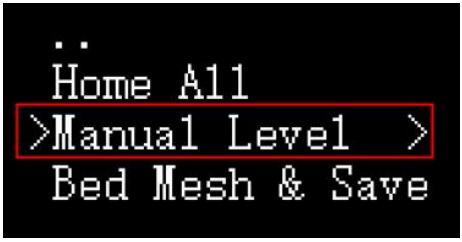
③: Cooling Fan Speed
④: Printing Speed
⑤: Printing Time
⑥: The Location of the Printhead
⑦: Progress Bar of the Printing Time
⑧: Heated Bed Temperature
⑨: Nozzle Temperature

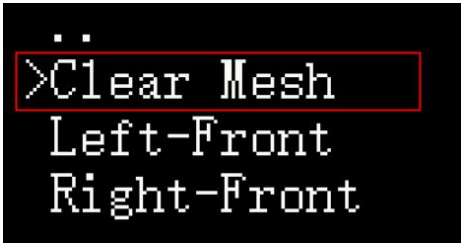


Tram the print bed with the following procedure:
Control——Home All——Manual Level——Clear Mesh



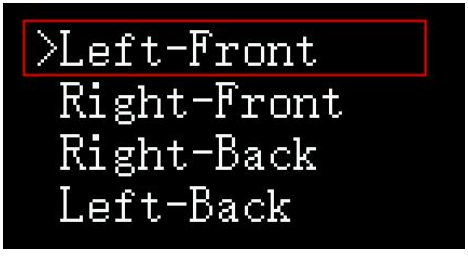


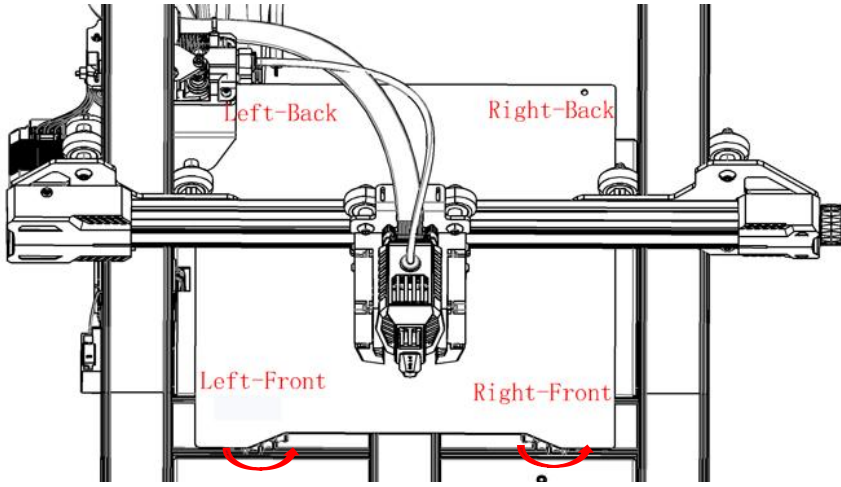




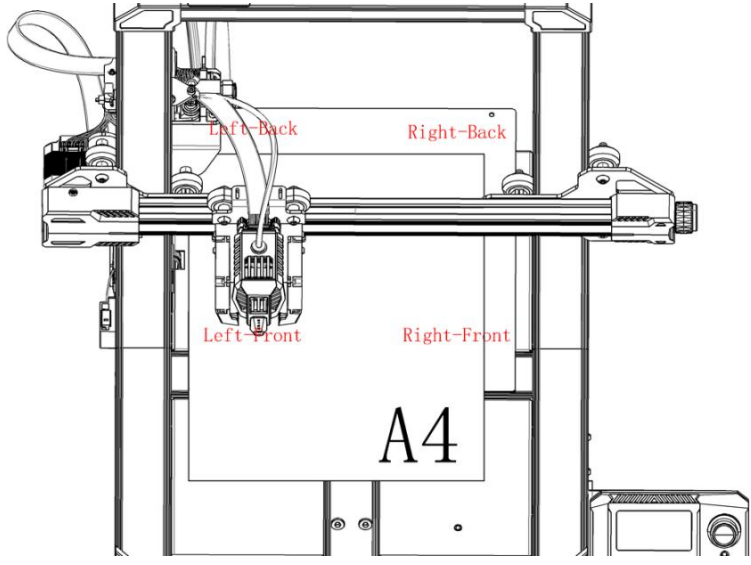
Step 3

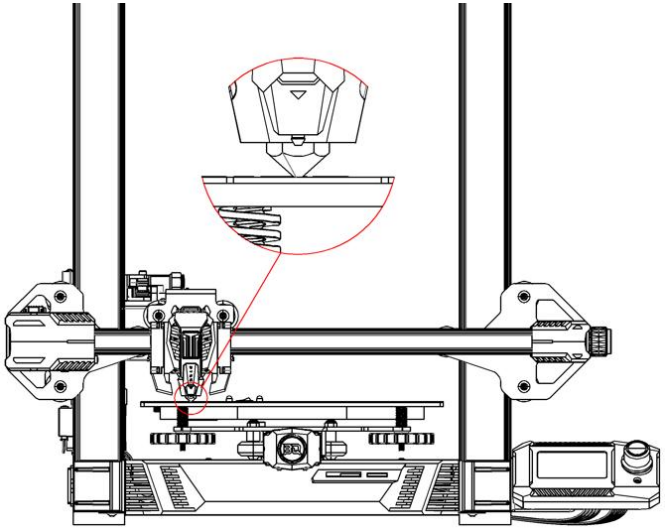
After Clear Mesh, we can start manual leveling, place a piece of A4 paper between the nozzle and print bed, adjust the bed height of each corner of the print bed with the thumbscrew until you can feel slight resistance when moving the A4 paper back and forth (**Note:** this is not to adjust the nozzle height, nozzle height will be adjusted via Z offset in your config):



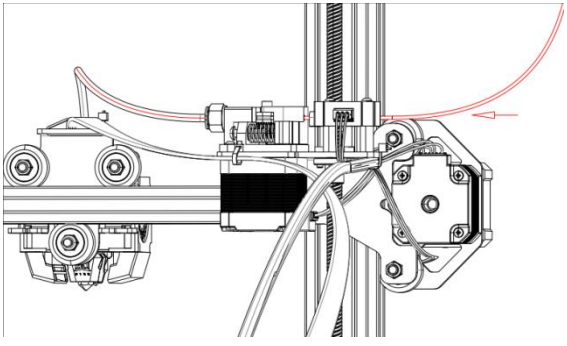


When the thumbscrew is turned clockwise, the bed will rise, and counterclockwise, the bed will descend.





4.2 Insert Filament

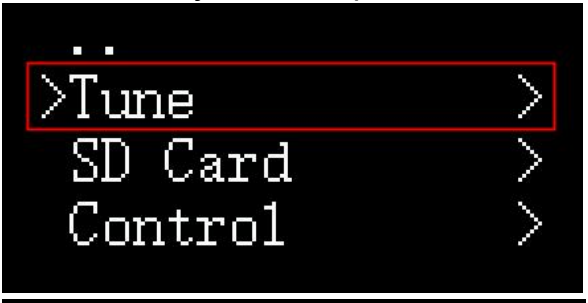


Cut the filament tip pointy, hold down the extruder handle, and push the filament into the extruder into the filament tube at the same time.

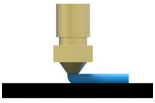
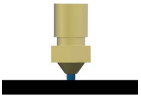
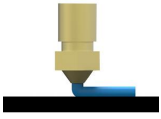
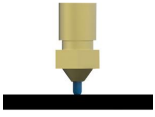
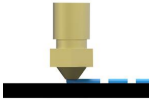
Note: Check whether the screws on the machine are installed correctly, and make sure they are tight.

4.3 Tuning of Nozzle Height

Enter the secondary interface during printing:
Tune——Offset Z:0.000
Adjust according to the height of the nozzle. When the nozzle is too high from the bed, Z is adjusted to a negative number, and when the nozzle is too low or presses to the bed, Z is adjusted to a positive number.



Offset: The right height of the nozzle:

			A right distance between the nozzle and the bed: the filament sticks sufficiently well to the bed.
			The nozzle is too high from the bed: filament curls and does not lay around the nozzle, and not stick sufficiently well to the bed.
			The nozzle is too close to the bed: The nozzle or bed may be damaged.

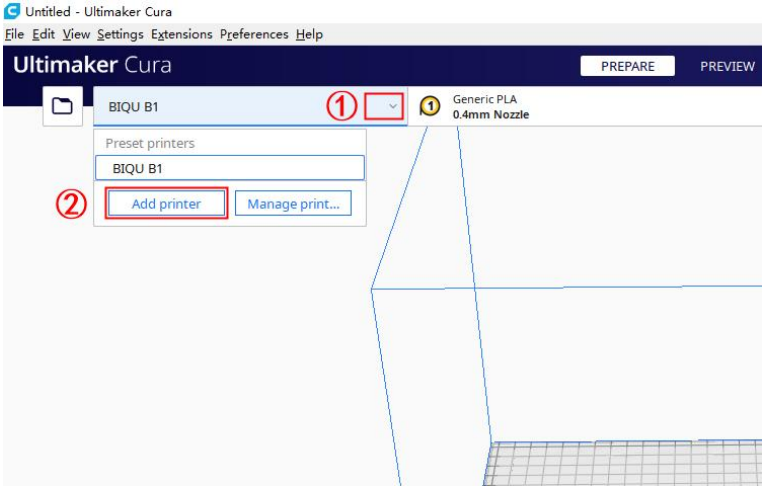
5 Printing Preparation

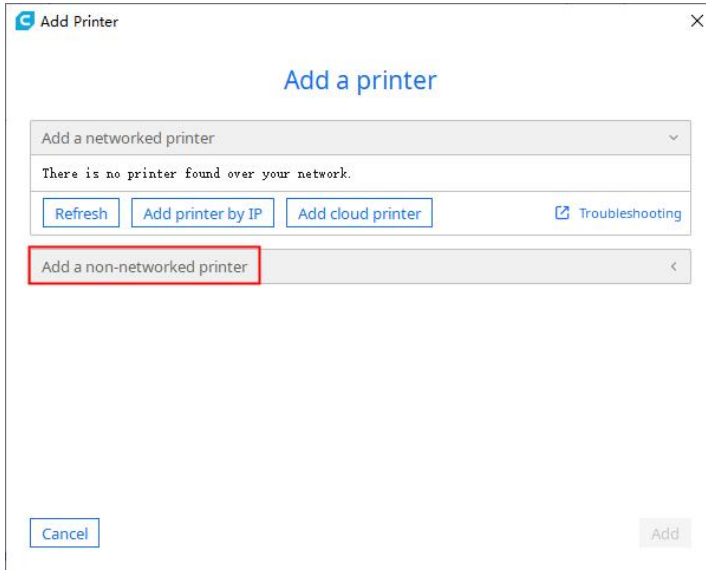
5.1 Cura Installation

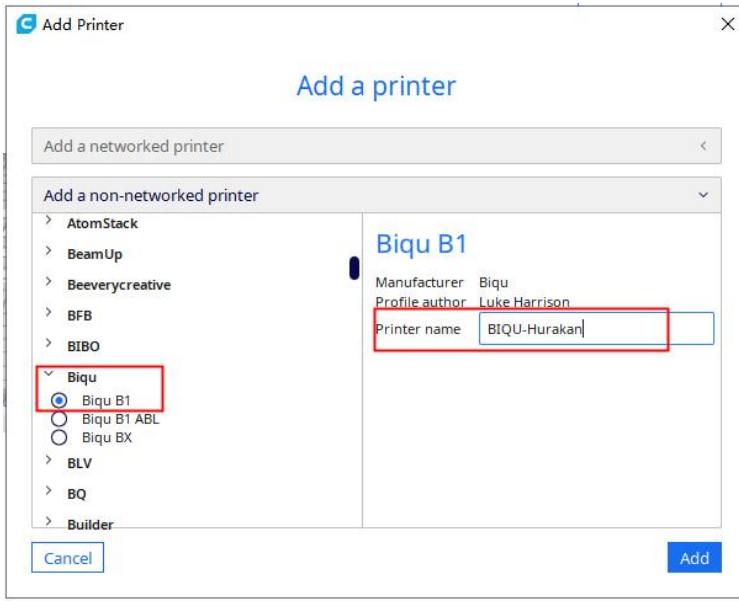
Link: https://ultimaker.com/software/ultimaker-cura
Download, install and open the latest version of Ultimaker Cura:

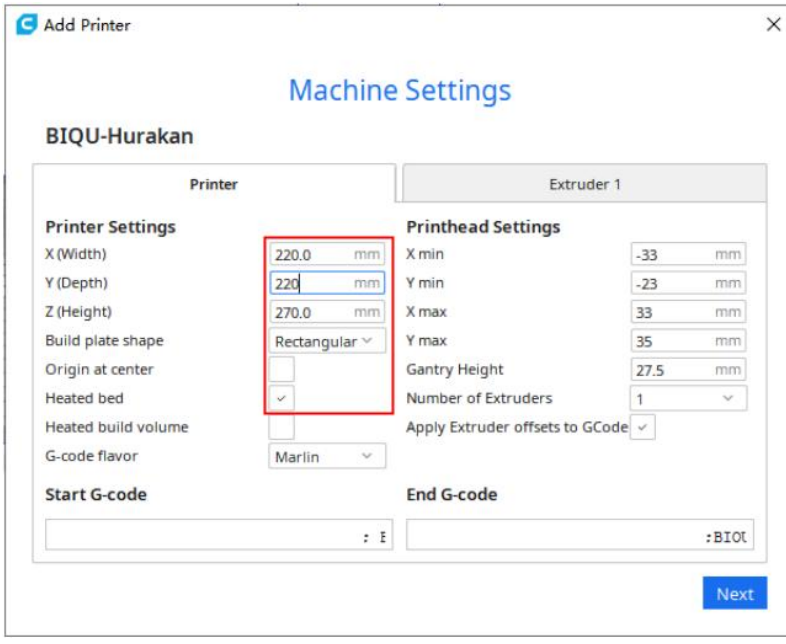
5.2 Cura Slicer Setting

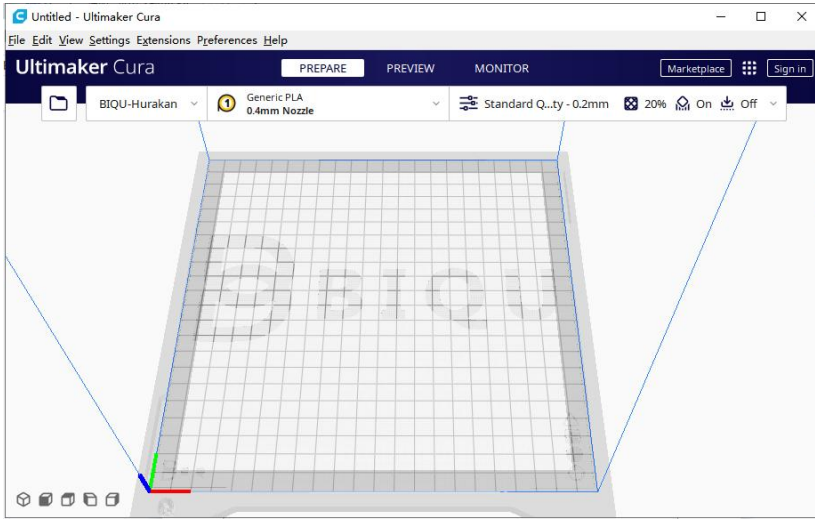
Setup the slicer according to the following steps:




Add Printer
Add a printer
Add a networked printer
There is no printer found over your network.
Refresh
Add printer by IP
Add cloud printer
Troubleshooting
Add a non-networked printer
Cancel
Add

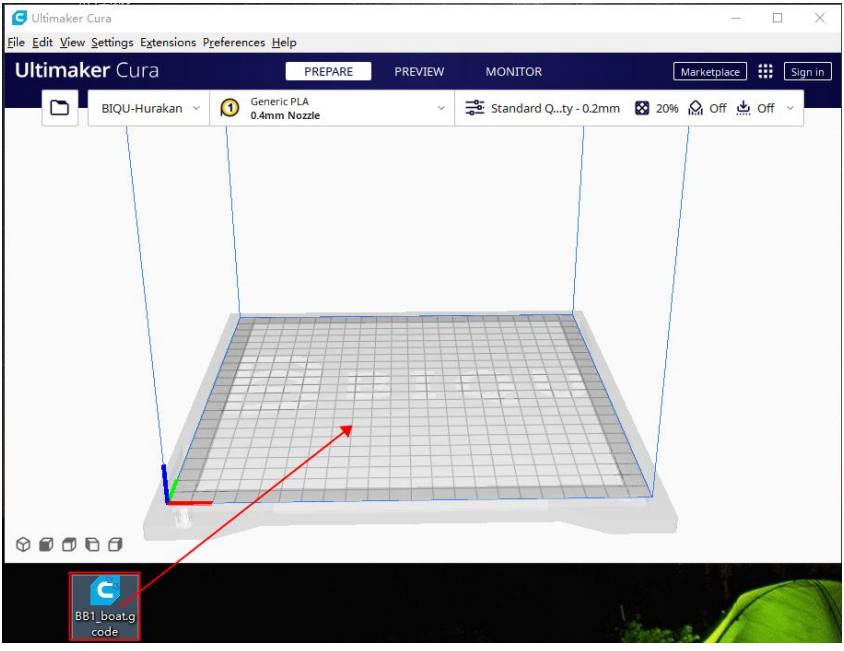

Add Printer
Add a printer
Add a networked printer
Add a non-networked printer
AtomStack
BeamUp
Beeverycreative
BFB
BIBO
Biqu
Biqu B1
Biqu B1 ABL
Biqu BX
BLV
BQ
Builder
Biqu B1
Manufacturer Biqu
Profile author Luke Harrison
Printer name BIQU-Hurakan
Cancel
Add


Add Printer
Machine Settings
BIQU-Hurakan
Printer
Extruder 1
Printer Settings
X (Width) 220.0 mm
Y (Depth) 220 mm
Z (Height) 270.0 mm
Build plate shape Rectangular
Origin at center
Heated bed
Heated build volume
G-code flavor Marlin
Printhead Settings
X min -33 mm
Y min -23 mm
X max 33 mm
Y max 35 mm
Gantry Height 27.5 mm
Number of Extruders 1
Apply Extruder offsets to GCode
Start G-code
End G-code
Next

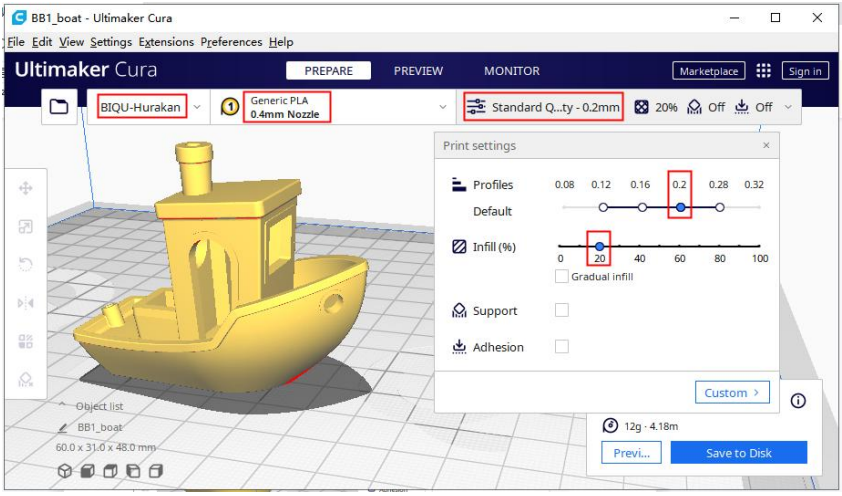

Untitled - Ultimaker Cura
File Edit View Settings Extensions Preferences Help
Ultimaker Cura
PREPARE
PREVIEW
MONITOR
Marketplace
Sign in
BIQU-Hurakan
Generic PLA
0.4mm Nozzle
Standard Q...ty - 0.2mm
20%
On
Off

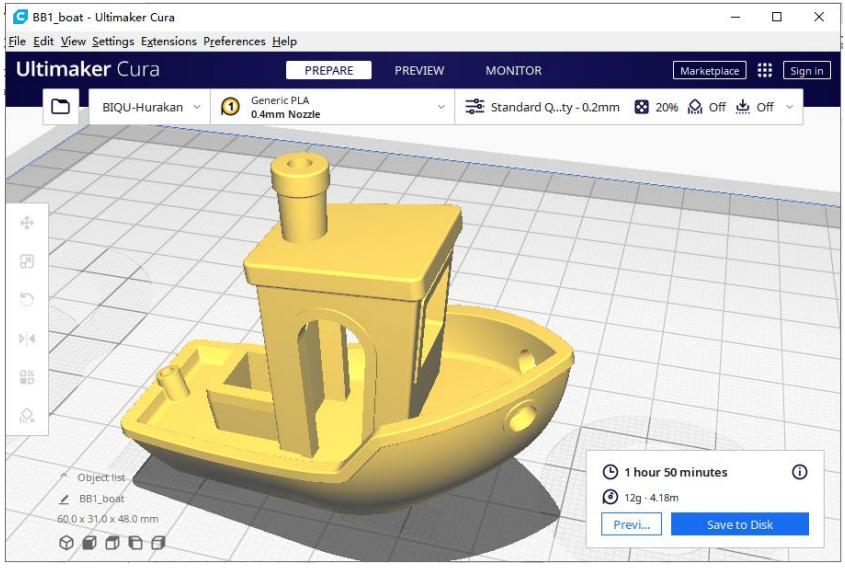
5.3 Cura Slicing

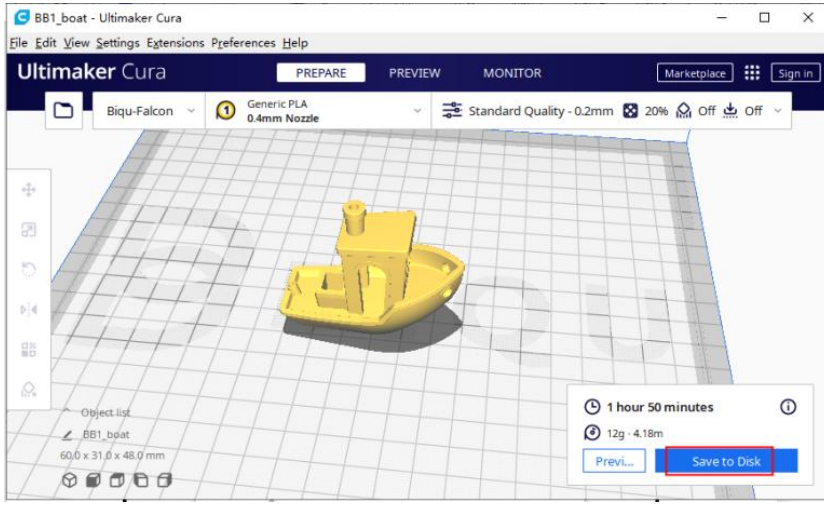
Drag and drop the model file you want to print into Cura:

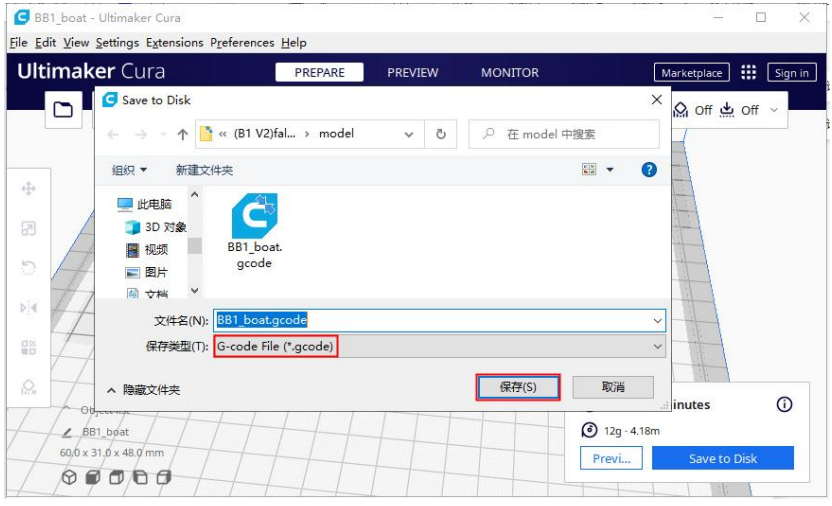


In the printer that you have set up, slice the model using the stock settings(or import your own settings if you are an advanced user), click slice and save to your desired folder.


BB1_boat - Ultimaker Cura
File Edit View Settings Extensions Preferences Help
Ultimaker Cura
PREPARE
PREVIEW
MONITOR
Marketplace
Sign in
BIQU-Hurakan
Generic PLA
0.4mm Nozzle
Standard Q...ty - 0.2mm
20%
Off
Off
Print settings
Profiles
Default
0.08
0.12
0.16
0.2
0.28
0.32
Infill (%)
0
20
40
60
80
100
Gradual infill
Support
Adhesion
Custom
Object list
BB1_boat
60.0 x 31.0 x 48.0 mm
12g · 4.18m
Previ...
Save to Disk


BB1_boat - Ultimaker Cura
File Edit View Settings Extensions Preferences Help
Ultimaker Cura
PREPARE
PREVIEW
MONITOR
Marketplace
Sign in
BIQU-Hurakan
Generic PLA
0.4mm Nozzle
Standard Q...ty - 0.2mm
20%
Off
Off
Object list
BB1_boat
60.0 x 31.0 x 48.0 mm
1 hour 50 minutes
12g · 4.18m
Previ...
Save to Disk


BB1_boat - Ultimaker Cura
File Edit View Settings Extensions Preferences Help
Ultimaker Cura
PREPARE
PREVIEW
MONITOR
Marketplace
Sign in
Biqu-Falcon
Generic PLA
0.4mm Nozzle
Standard Quality - 0.2mm
20%
Off
Off
Object list
BB1_boat
60.0 x 31.0 x 48.0 mm
1 hour 50 minutes
12g · 4.18m
Previ...
Save to Disk


BB1_boat - Ultimaker Cura
File Edit View Settings Extensions Preferences Help
Ultimaker Cura
PREPARE
PREVIEW
MONITOR
Marketplace
Sign in
Save to Disk
(B1 V2)fal... › model
在 model 中搜索
组织
新建文件夹
此电脑
3D 对象
视频
图片
文档
BB1_boat.gcode
文件名(N):
BB1_boat.gcode
保存类型(T):
G-code File (*.gcode)
隐藏文件夹
保存(S)
取消
BB1_boat
60.0 x 31.0 x 48.0 mm
12g · 4.18m
Previ...
Save to Disk

6 Printing

Note:

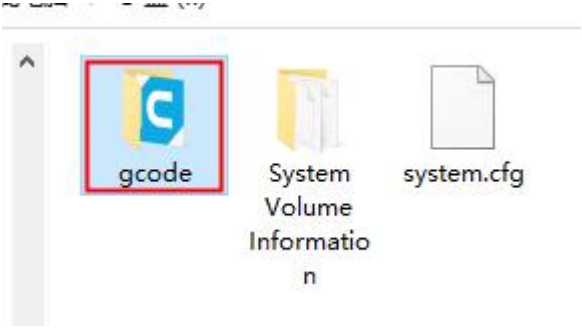
DO NOT remove the MicroSD card when the machine is powered on, the firmware is stored on the Micro SD card, if you remove the SD Card, the following can and will happen:

1. The machine will freeze immediately.
2. The installed OS on the MicroSD can be damaged and will need to be reflashed.
3. MicroSD can be damaged and you will need a brand new high quality MicroSD card.

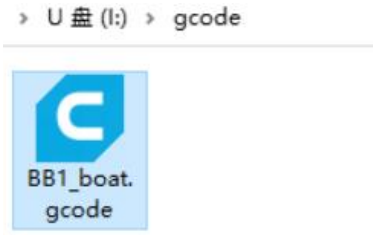
6.1 Print via a MicroSD Card

Step 1

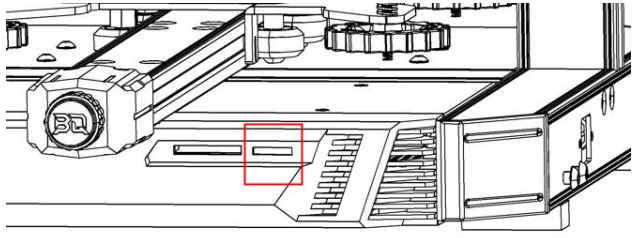
Power down the machine, transfer the gcode file into the MicroSD card folder, insert the MicroSD card back, power the printer on again and select your file to print.



Transfer the gcode into the gcode folder:



Step 2

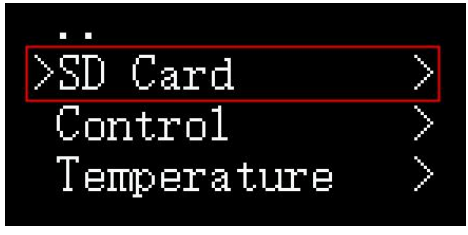


Insert Micro SD and power the machine on again.

Step 3

Select the gcode file.

SD Card——BB1_boat.gcode——Start Printing



The nozzle and the heated bed start to warm up, and when the temperature reaches the preset temperature, the machine starts printing.

The nozzle and heated bed will cool down after the print is finished, remove the print after the PEI spring steel sheet has cool down.

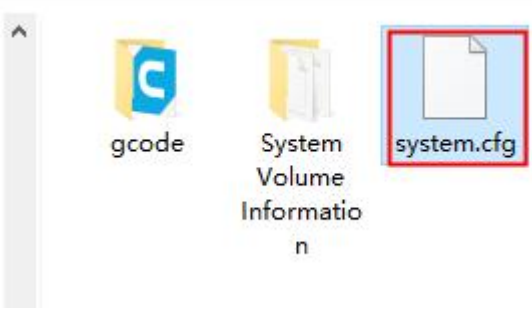
6.2 Print via WiFi

Control the printer using a web interface by connecting to the corresponding IP address.

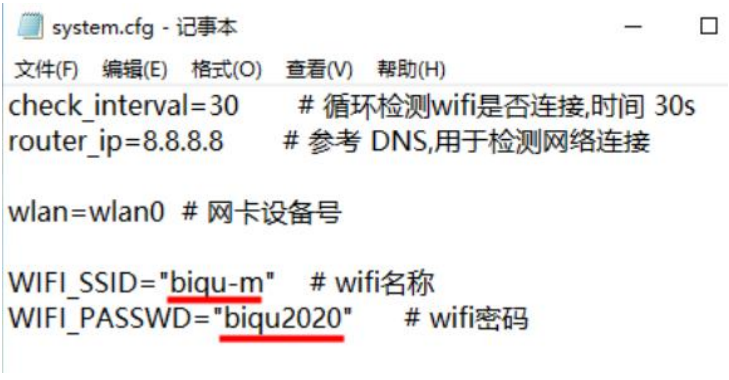
Step 1

Set the WIFI ssid and password. (**Note:** your control device and the printer need to be connected to the same WiFi).

Make sure the machine is powered down, remove the MicroSD card and modify the system.cfg file in your computer with the windows default notepad program:



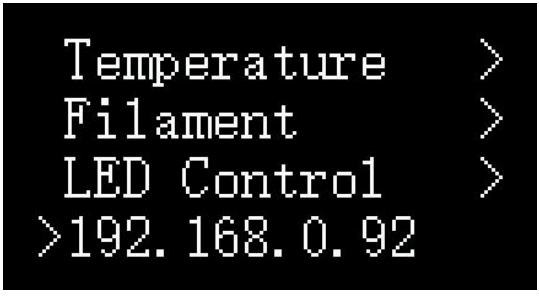
Set up the WiFi ssid and password:



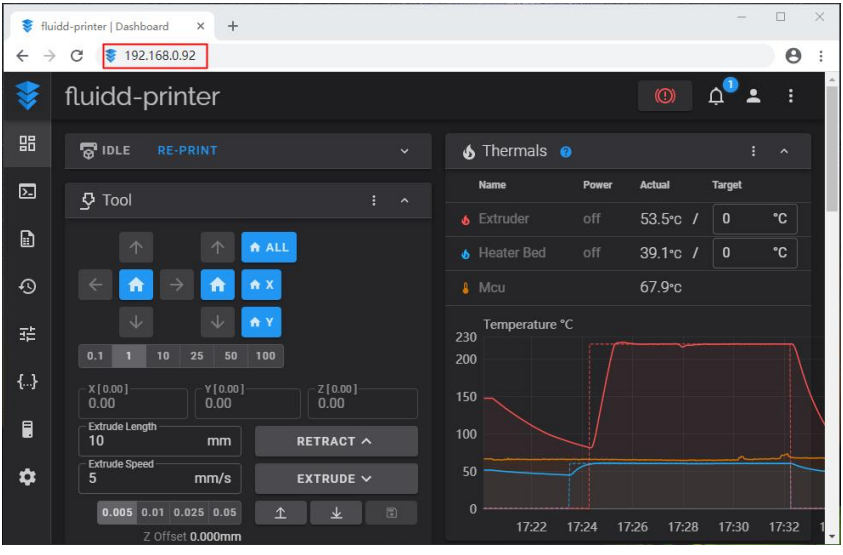
WIFI_SSID="WIFI name"

WIFI_PASSWD="WIFI password"
Save the file.
(**Note:** No setup is required if the printer is using a wired network)

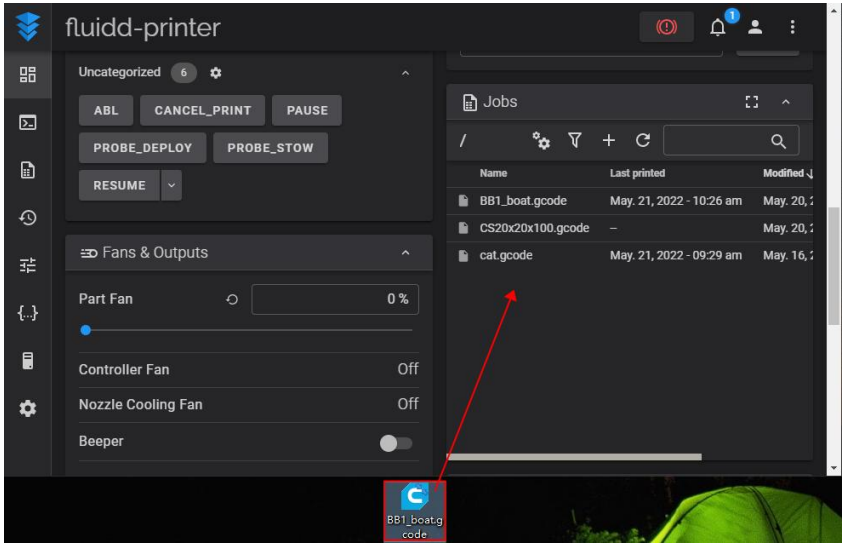
Step 2
Insert the MicroSD card and power on the machine.
Click the rotary knob and scroll to the bottom to check the IP address:



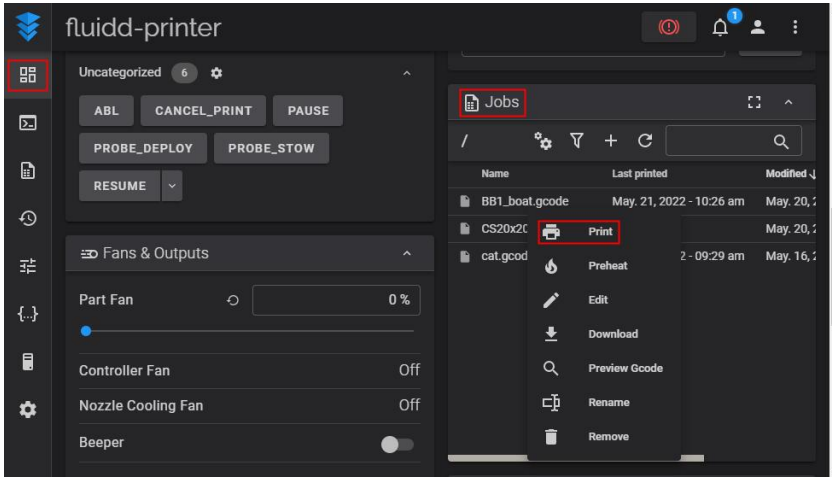
Enter the IP address in your browser: 192.168.0.92:

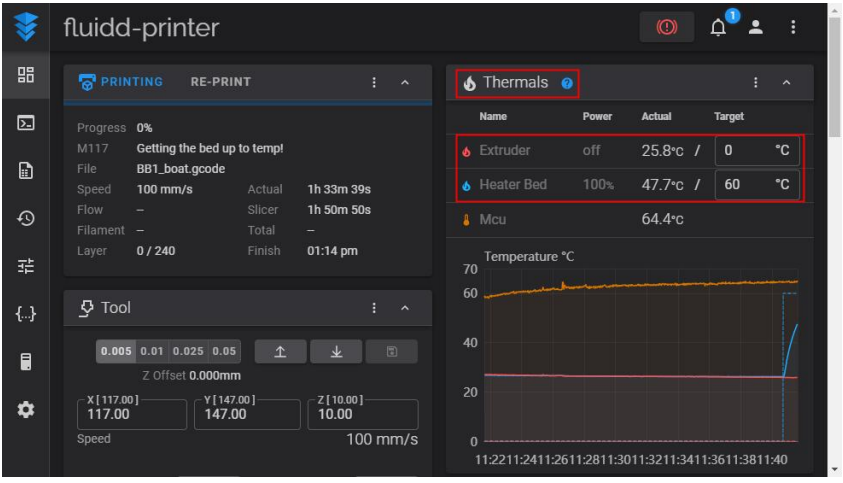


Upload the gcode file:



Select the file and click print:





The print will start after the components reached the printing temperature.

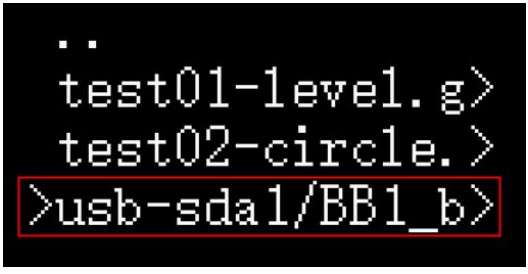
6.3 Print via a USB Drive

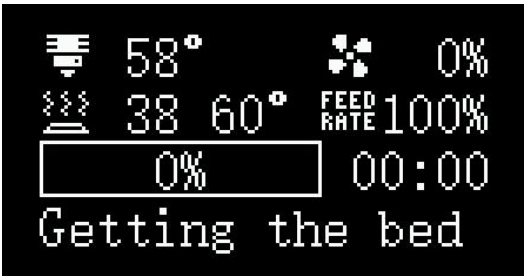
Transfer the gcode file into the USB Drive folder:

Plug the USB drive into the corresponding port of the printer.

Select the gcode file.

SD Card——usb-sda1/BB1_boat.gcode——Start Printing





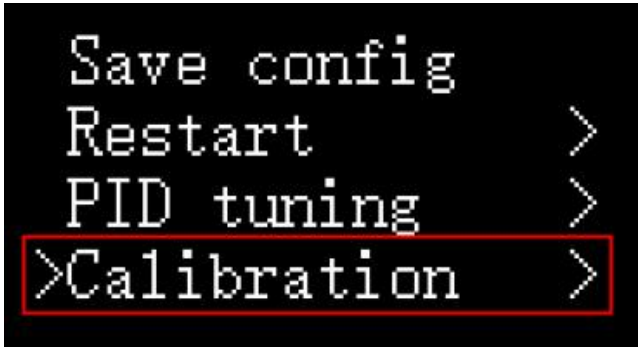
The print will start after the components reached the printing temperature.

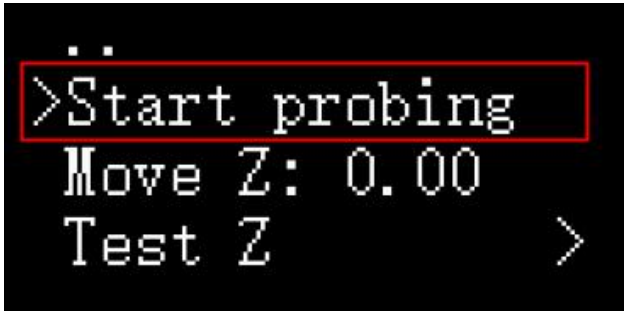
7 Other Function

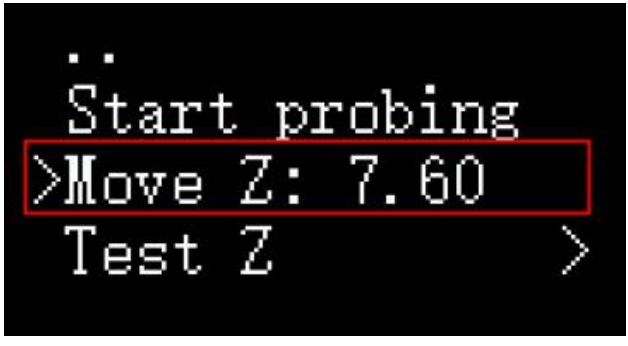
7.1 MicroProbe Calibration

If you find the MicroProbe factory offset is incorrect, or you have rewritten the system, the steps for calibration are as follows:

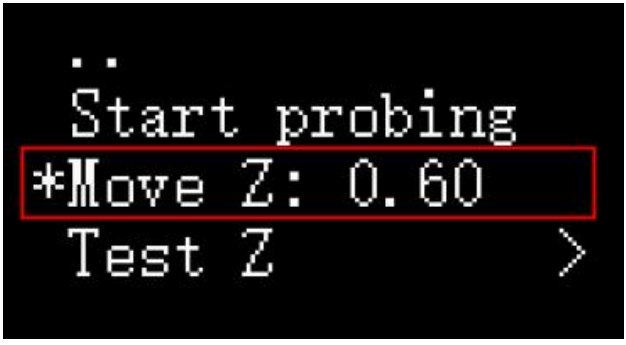
Setup—Calibration——Start Probing——Move Z(adjust the distance between the nozzle and bed: ± 1mm)——Test Z(adjust the distance between the nozzle and bed: -0.1mm to +0.1mm)——Accept & Save

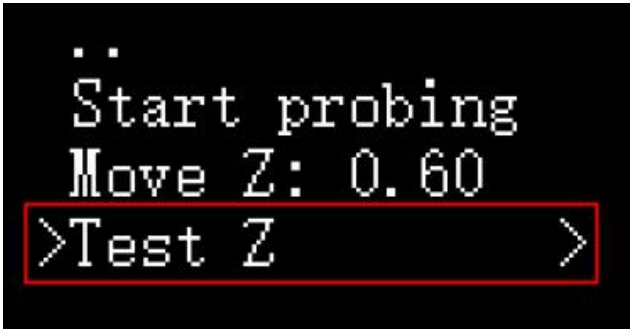


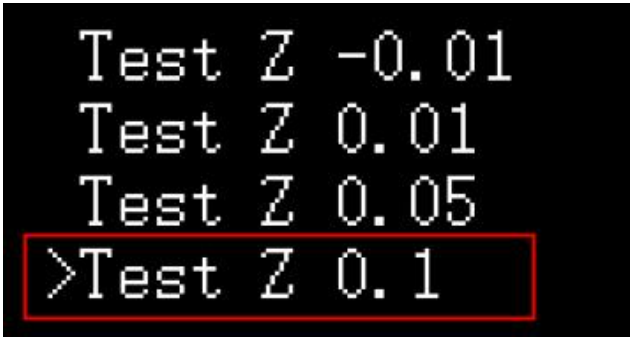




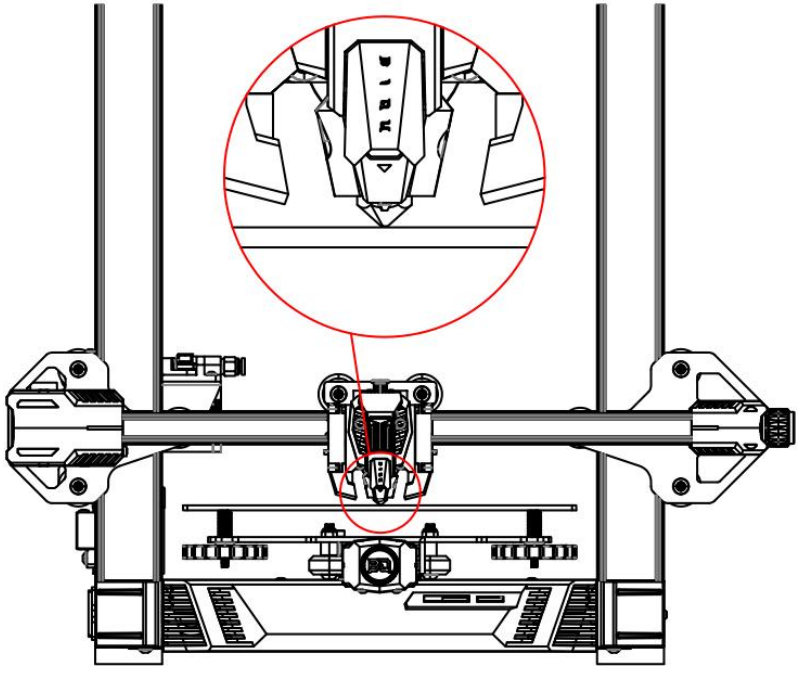
Make sure the distance between the bed and the nozzle is between 0 and 0.1mm.



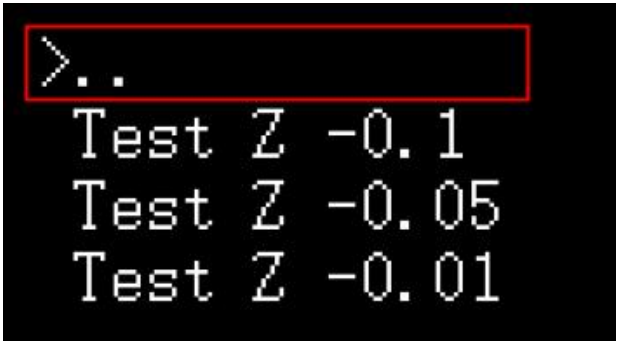




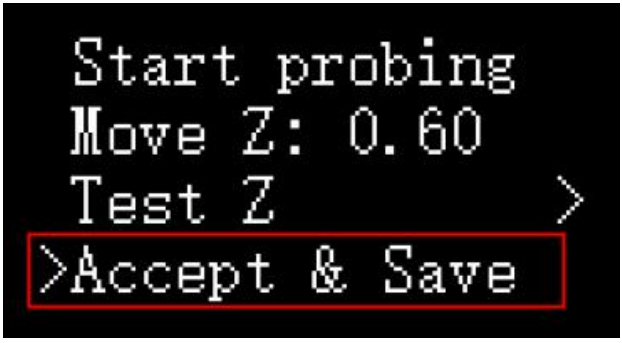
If **Move Z** cannot be adjusted, you can adjust **Test Z** for more precise fine-tuning.



Make sure the distance between the bed and the nozzle is between 0 and 0.1mm.



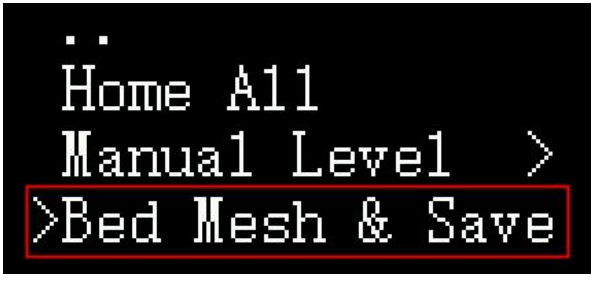
Back to previous interface.



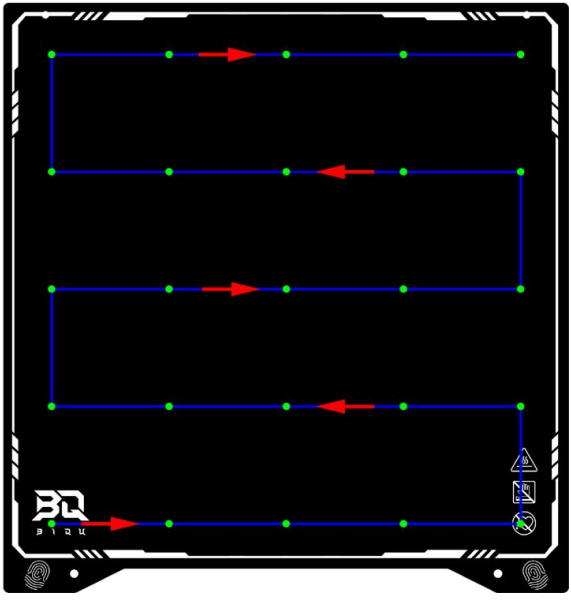
Accept & Save, then we can start auto leveling.

7.2 Auto Leveling

Control——Bed Mesh&Save

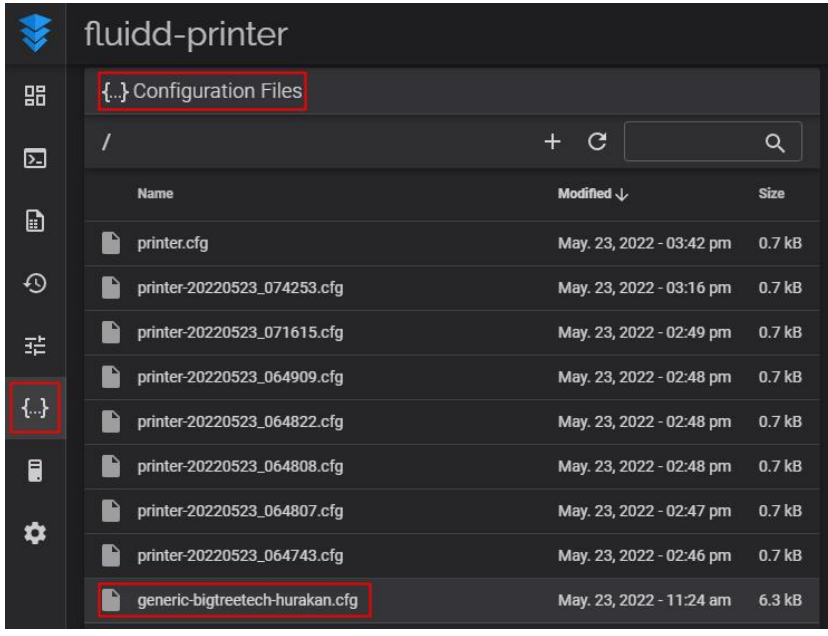


The running track of the printhead during bed mesh:



Wait for the finish, the printer will automatically save the config, and return to the main interface.

7.3 Z-axis Limit Selection (choose one of two options):



1. Use the MicroProbe to configure the z-axis limit (factory default setting).

generic-bigtreetech-hurakan.cfg

```
75
76  [safe_z_home]
77  home_xy_position: 117, 147
78  speed:100
79  z_hop:10
```

generic-bigtreetech-hurakan.cfg

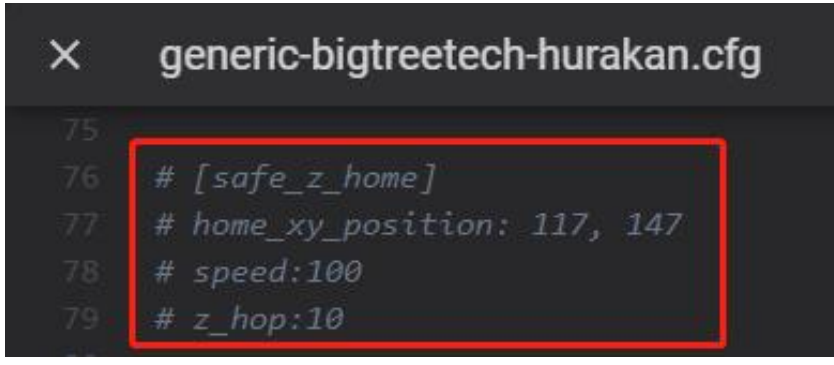
```
106 [stepper_z]
107 step_pin: PB0
108 dir_pin: !PC5
109 enable_pin: !PB1
110 microsteps: 16
111 rotation_distance: 8
112 # endstop_pin: ^PC2
113 # position_endstop: 0
114 endstop_pin: probe:z_virtual_endstop ;^PC2 ;probe:z_virtual_endstop
115 position_max: 270
116 position_min: -5
117 homing_speed: 8
118 second_homing_speed: 3
119 homing_retract_dist: 3
```

2. Use the configuration of the Z-axis limit module (the

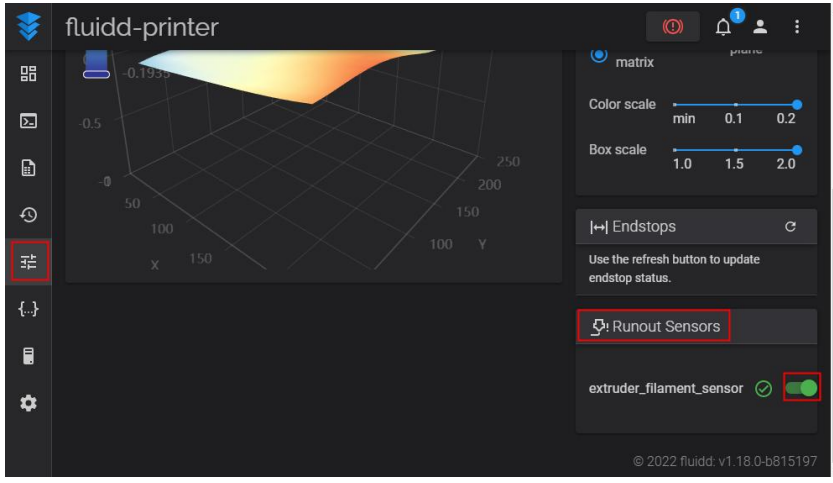
Z-axis limit module needs to be installed first, and the configuration file needs to be modified).

generic-bigtreetech-hurakan.cfg

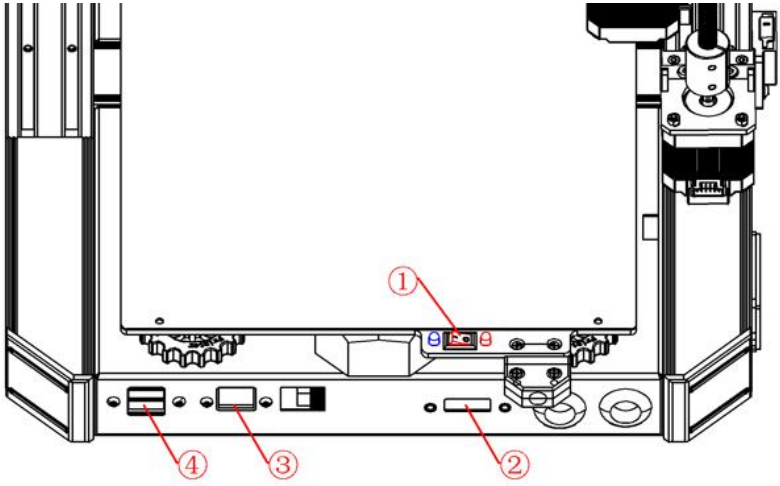
```
106 [stepper_z]
107 step_pin: PB0
108 dir_pin: !PC5
109 enable_pin: !PB1
110 microsteps: 16
111 rotation_distance: 8
112 endstop_pin: ^PC2
113 position_endstop: 0
114 #endstop_pin: probe:z_virtual_endstop ;^PC2 ;probe:z_virtual_endstop
115 position_max: 270
116 position_min: -5
117 homing_speed: 8
118 second_homing_speed: 3
119 homing_retract_dist: 3
```



7.4 ON/OFF of the Filament Runout Detection Module



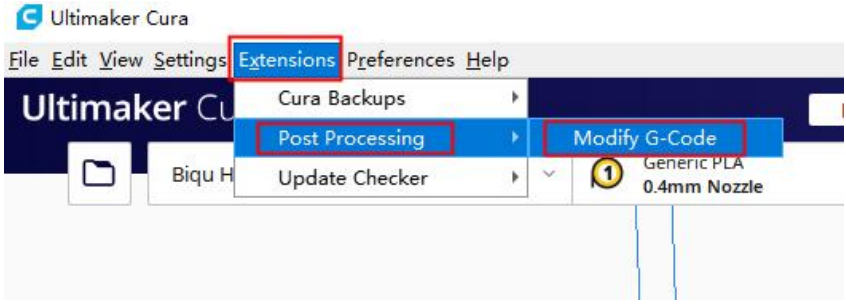
7.5 For Expansion Module

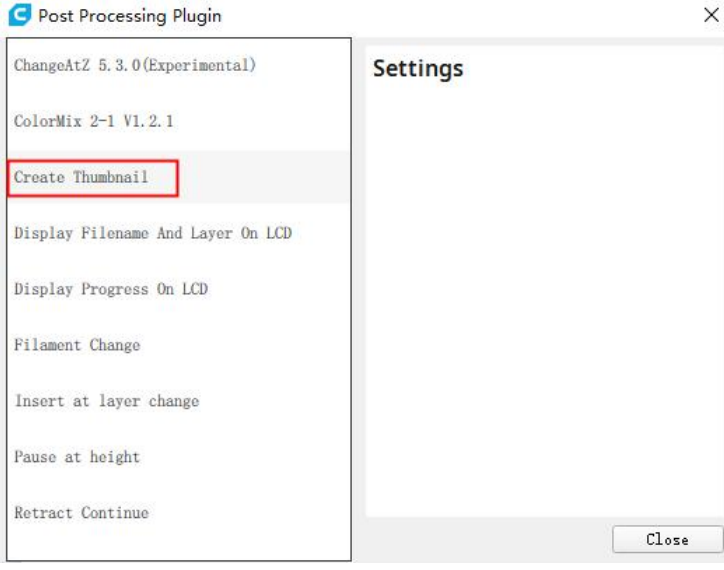


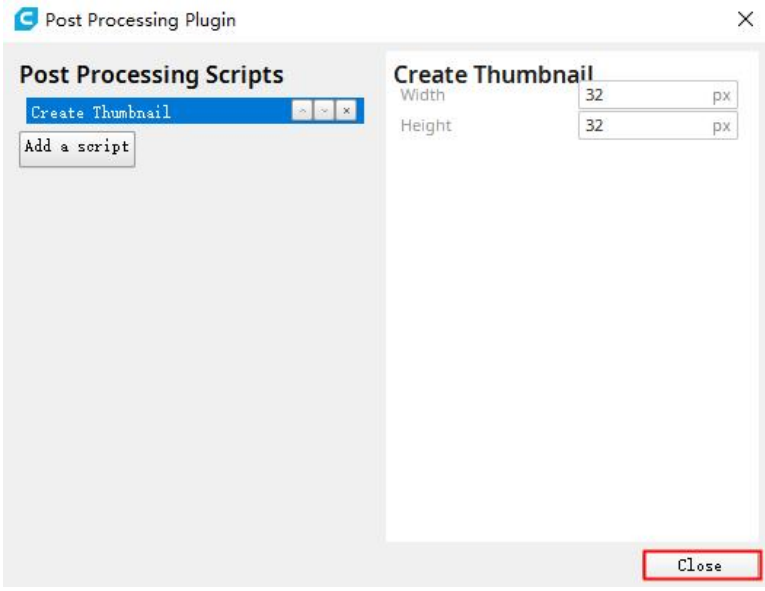
①: Power Selection for Heated Bed
The heated bed switch can switch between two heating powers. (The red light is on for 100W. Both the red and blue lights are on for 240W)
② ADXL345 Interface
③ RJ45 Interface
④ USB Interface(for USB Drive, USB camera, and other modules with USB interface).

7.6 Display Thumbnail of the Printing Model in Fluidd

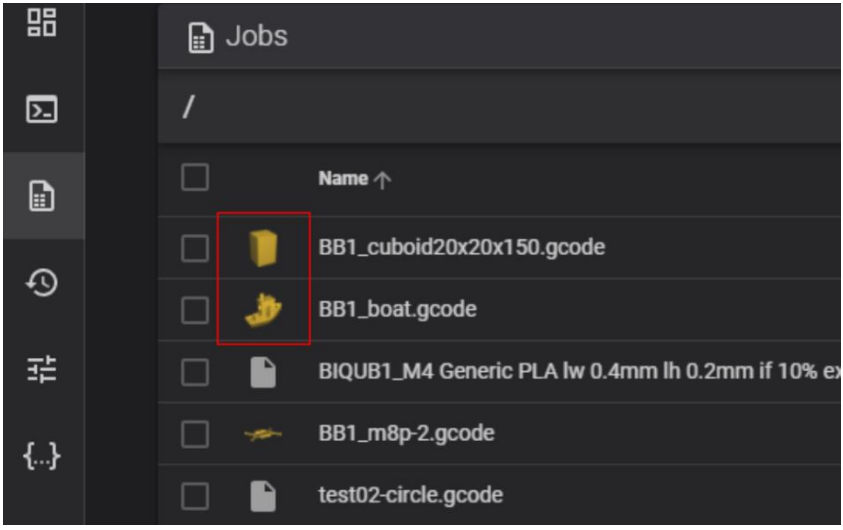
Turn on the Thumbnail Plug-in in Cura:
Extensions---Post Processing---Modify G-Code---Create Thumbnail


Ultimaker Cura
File Edit View Settings Extensions Preferences Help
Ultimaker Cu
Cura Backups
Post Processing
Update Checker
Modify G-Code
Biqu H
Generic PLA
0.4mm Nozzle


Post Processing Plugin
ChangeAtZ 5.3.0(Experimental)
ColorMix 2-1 V1.2.1
Create Thumbnail
Display Filename And Layer On LCD
Display Progress On LCD
Filament Change
Insert at layer change
Pause at height
Retract Continue
Settings
Close



It is not necessary to set any settings since Fluidd can detect all resolutions.
Then use Cura to slice and upload to Fluidd.



8 FAQ

Question 1	**Print offset in some places:**
Answer 1	Printing too fast. Recommended speed: 60~80mm/s.
	The timing belt/timing pulley may be loose, please re-tighten it.
	Synchronous motor lost steps. The current for the motor is not high enough and the output torque of the motor is insufficient. The

	static reference power supply of the stepper motor can be adjusted appropriately to adjust the output current.
	Overheating of the motor, motor driver or power supply indirectly affects the movement of the nozzle.

Question 2	**Filament leakage:**
Answer 2	A loose nozzle. Firstly, heat the nozzle, wait for the filament to liquefy, wipe off the outflowing filament, and finally use pliers to tighten the nozzle. **Note:** Do not touch the hot nozzle directly with your hands.

Question 3	**Filament is a bit hard to insert:**
Answer 3	Straighten the curled filament by hand, and use the pliers to make the filament tip pointy.
	The filament drive gear is too tight, adjust it to make an appropriate tightness.
	There is residue in the heat break. Please preheat it to 230℃, then push and squeeze out the residue manually.

Question 4	**Warping:**
Answer 4	The distance between the nozzle and the bed is too far, adjust the distance.
	The cooling of the nozzle outlet is insufficient, please make sure that the fan is working properly.
	Provide a closed environment to keep the temperature stable.
	Reduce the printing speed to offer enough time to adjust for temperature changes.
	Increase the filament extrusion amount of the bottom layer.
	Add Brim support.

Question 5	**Pits and hollows in the top layer:**
Answer 5	Make sure the fans are up to speed and position.
	The top surface isn't thick enough. Increase the top layer thickness.

Question 6	Crack:

Answer 6	Insufficient supply. Check the machine to make sure there are no loose parts.
	The diameter of the filament changes, resulting in insufficient supply.
	Make sure the machine is running smoothly, some lubricant may be applied.

Question 7	The extruder makes an abnormal sound of "Ka Ka Ka" during printing:
Answer 7	It may be that the nozzle is blocked, use a needle to unclog it.
	The quality of the filament is not high, you can try another filament.
	The temperature of the printing head is too high, and the filament is carbonized into small black particles. Turn down the printing temperature a bit.
	The torque of the feeding part needs to be adjusted.

Question 8	**The extruded filaments look uneven or have different thicknesses:**
Answer 8	Check if the filament is jammed or tangled.
	Check whether the nozzle is blocked.
	Wrong settings on the layer height or on the filament width.
	Filaments are of poor quality.

Question 9	**Stringing:**
Answer 9	Try increasing the retraction distance by 1mm and test again to see if the performance improves.
	Check the retraction speed. Retraction works best between 20 and 100mm/s. In order to set the most ideal value, it is necessary to set different speeds through experiments to observe whether the stringing phenomenon is reduced.
	Adjust the extruder temperature. Try decreasing your extruder temperature by 5℃ each time to get the best value.
	Reduce the floating movement distance. That is to say, when printing multiple models, the distance between models can be shortened appropriately.

9 Caution

1. Do not touch the printhead and the heated bed when the printer is working to avoid burns.
2. Do not touch the spring steel plate when the printer is working to avoid burns.
3. Do not place the printer in a place with great vibrations, which will affect the quality of the prints.
4. Do not put your hand into the machine when the printer is working to avoid being pinched.
5. The machine must not be used for more than 100 hours for a long time to avoid damage to the parts due to overheating.
6. Minors should not use this printer without any adult supervision.
7. Keep the machine away from flammable items, please place it in a ventilated, less dusty, cool place.
8. Please follow the instructions in the user manual to use this product. The risk caused by any unauthorized disassembly or modification shall be borne by the customer.