BIQU-Hurakan

User Manual V1.0

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Contents

1 Packing List

	Tools (1set)	Screw Accessories (1set)
	TF Card + Card Reader(1set)	Nozzle (1pc)
BIQU-Hurakan		
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
Print Head	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 Supported	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)	180mm/s
Suggested Printing Speed	60mm/s
Filament Runout Detection	Standard Feature

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3 Installation

Step 1

Remove the motor from the gantry:
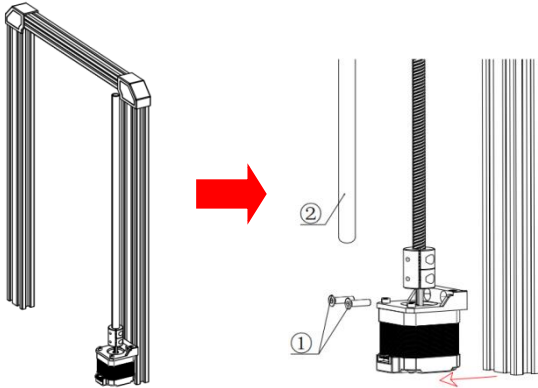
①: M4X16 Flat Head Countersunk Screw (2pcs)
②: Lead Screw Sleeve (1pc)

Step 2

Put the X-axis module on the gantry:

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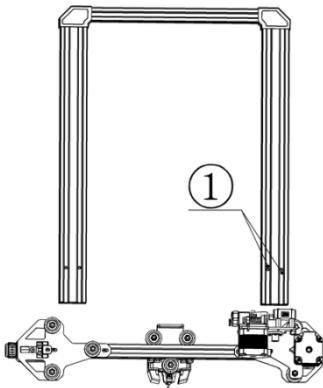
①: Pay attention to the direction, there are two M4 holes. The POM wheels on both sides are aligned with the Z-axis aluminum part. If it is too tight or too loose, the eccentric nut can be adjusted with a wrench so that the POM wheels on both sides of the Z-axis do not shake and are not too tight.

Step 3

Install the Z-axis motor to the gantry:
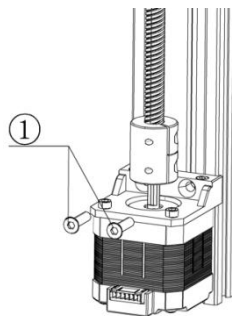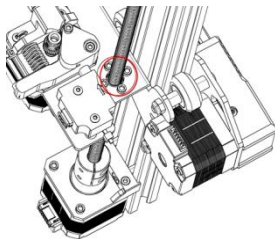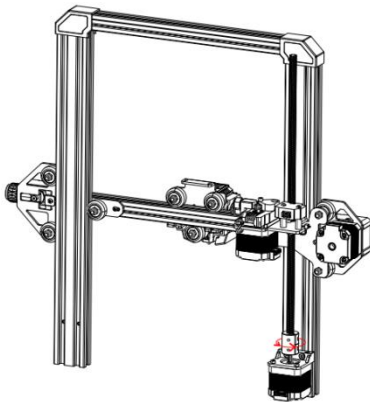
Note: Install the T8 lead screw into its copper nut.
①: M4X16 Flat Head Countersunk Screw (2pcs)

Step 4

Mount the gantry on the machine base:
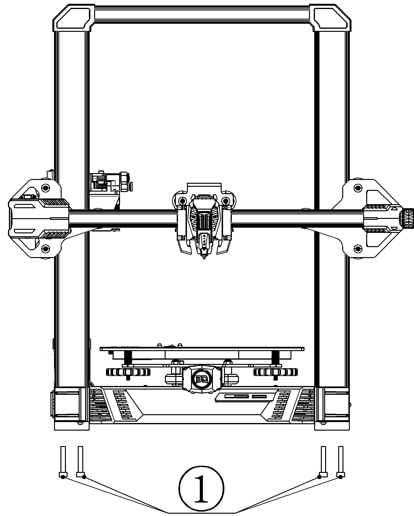
①: M5X40 Socket Head Cap Screw (4pcs)

Step 5

Install the filament bracket:
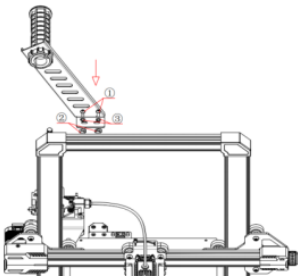
①: M4X8 Button Head Cap Screw (2pcs)
②: M4 T-nut (2pcs)
③: M4 Washer (2pcs)

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:
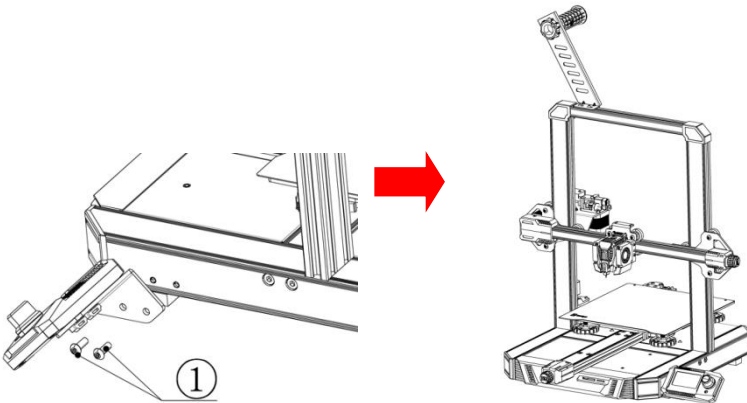
①M5X8 Button Head Cap Screw (2pcs)

Step 7

Wiring:
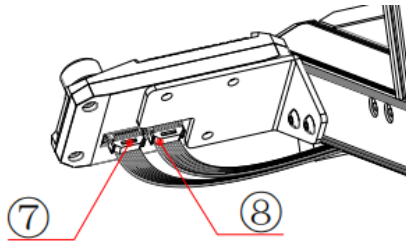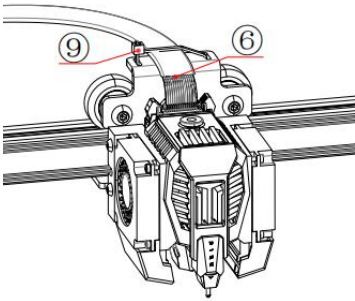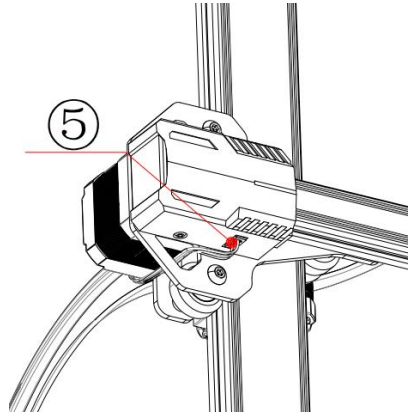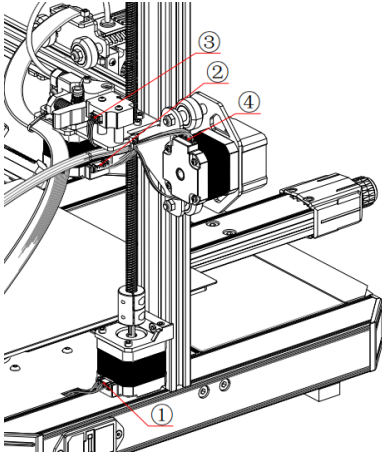
①: Z-axis Motor Cable → 6P Terminal with "Z" Label

②: Extruder Motor Cable → 6P Terminal with "E" Label

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

④: X-axis Motor Cable → 6P Terminal with "X" Label

⑤: X-axis Limit Switch Cable → 3P Terminal with "X" Label

⑥: Print Head Cable → 14P Terminal with Box Header Connector

⑦: Screen Cable 1 → 10P Terminal with "EXP1" Label
⑧: Screen Cable 2 → 10P Terminal with "EXP2" Label
⑨: Cable Ties for Cable Management

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

Step 8

Install the PTFE tube:
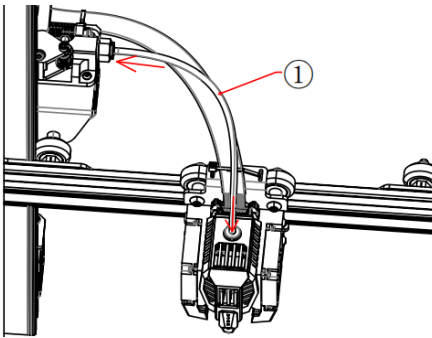
①: PTFE Tube (1pc)

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

4.1 Adjust the Eccentric Nut

If it is found that the machine is too tight or too loose (there is a shaking phenomenon) during the movement, you can adjust its tightness by adjusting the eccentric nuts of X, Y, and Z with a wrench.
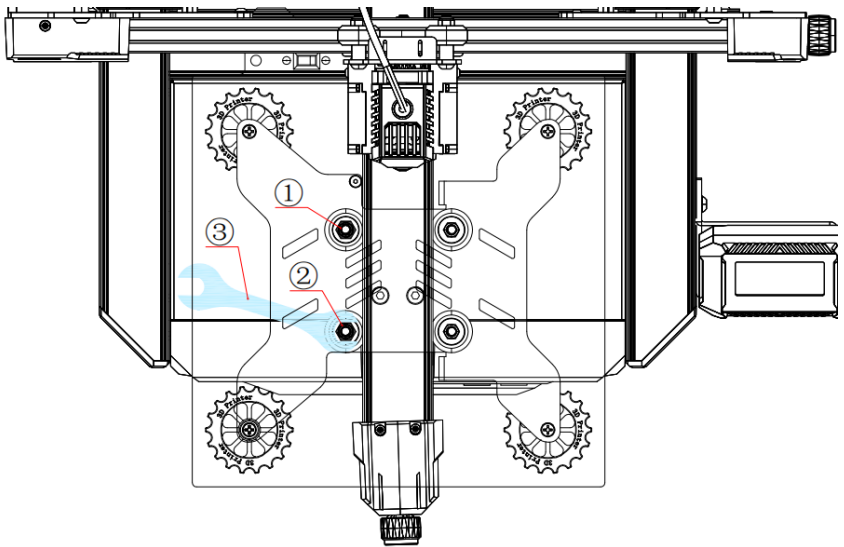
①, ②Y-axis Eccentric Nut (2pcs)
③ Wrench (1pc)
④, ⑤ Z-axis Eccentric Nut (2pcs)
⑥X-axis Eccentric Nut (1pc)
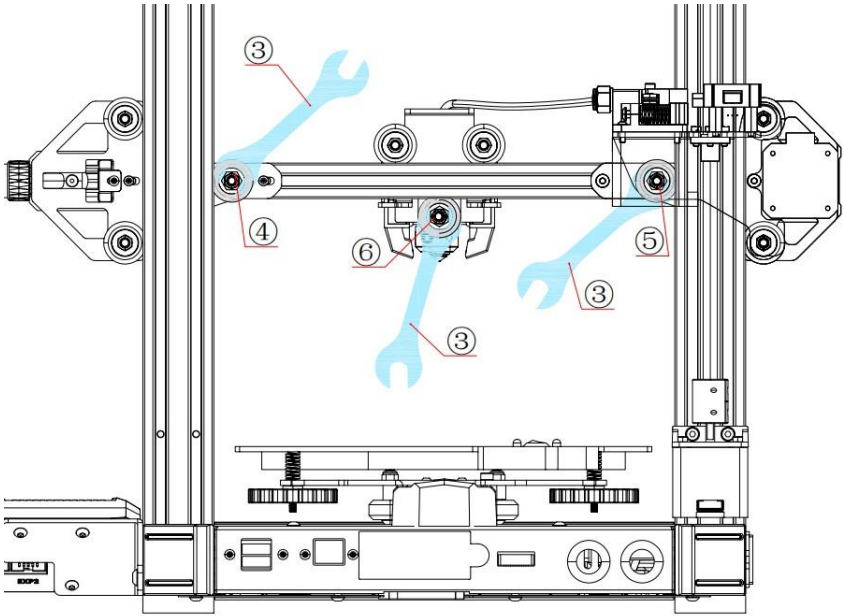
4.2 Check Household Voltage
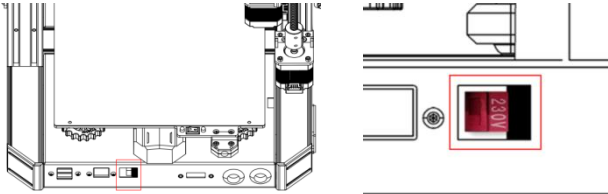
Voltage Mode: 115V(Switch to right, you will see 115V marked on the switch), corresponding to Household Voltage: 100—120V;

Voltage Mode: 230V(Switch to left, you will see 230V marked on the switch), 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

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

4.3 Screen Introduction

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 Print Head

⑦: Progress Bar of the Printing Time

⑧: Heated Bed Temperature

⑨: Nozzle Temperature
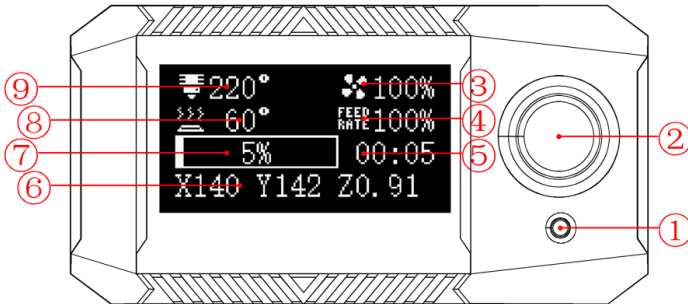
4.4 Platform Leveling

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After the installation of the BIQU-Hurakan is completed, a platform leveling is required.

Tram the print bed with the following procedure:

Control——Home All——Manual Level——Clear Mesh

```
. .
SD Card        >
>Control        >
 Temperature   >
```

```
. .
>Home All
 Manual Level  >
 Bed Mesh & Save
```

```
. .
 Home All
>Manual Level  >
 Bed Mesh & Save
```

```
. .
>Clear Mesh
 Left-Front
 Right-Front
```

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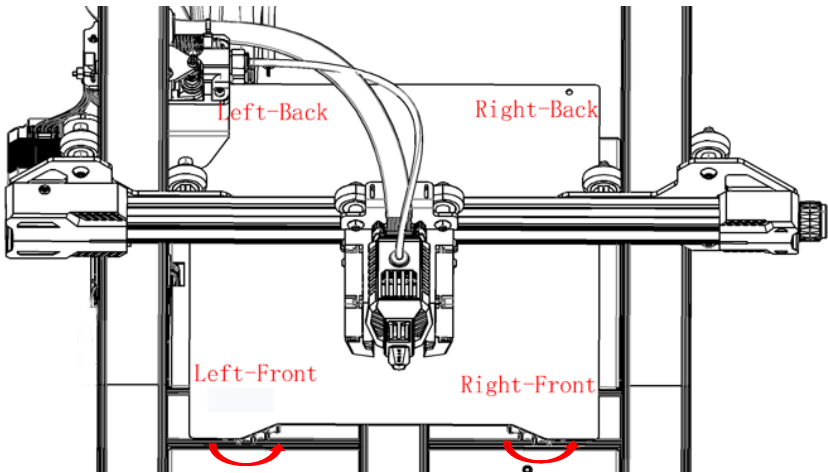
When the thumbscrew is turned clockwise, the bed will rise, and counterclockwise, the bed will descend.

Left-Back   Right-Back

Left-Front   Right-Front

A4

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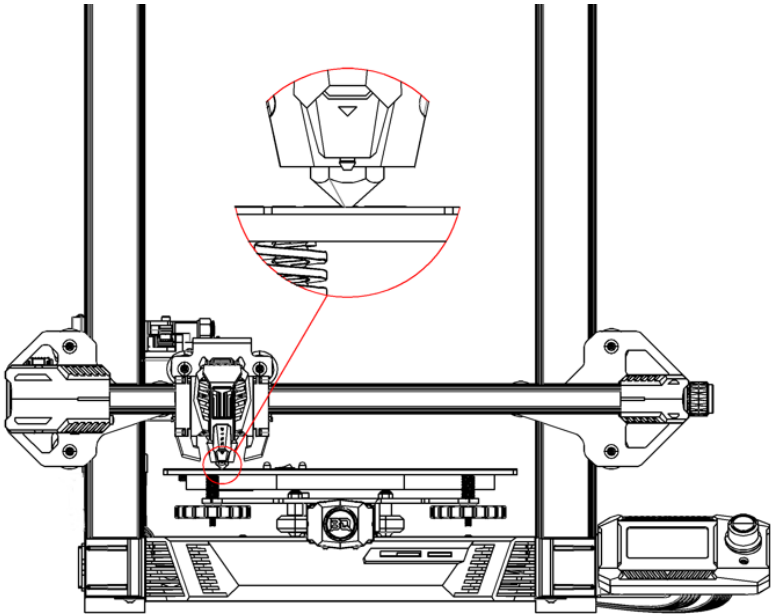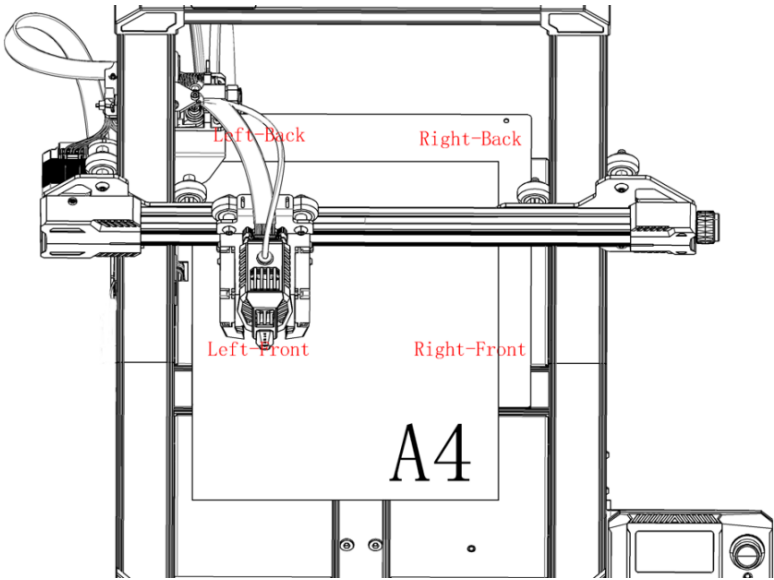
4.5 Insert Filament
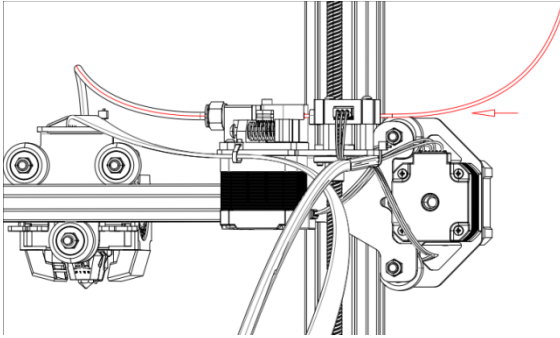
Cut the filament tip pointy, hold down the extruder handle, and push the filament into the extruder into the filament tube at the same time.

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

4.6 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.

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```
..
>Tune              >
 SD Card           >
 Control           >
```

```
..
 Speed: 100%
 Flow: 100%
>Offset Z:0.000
```

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.

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			The nozzle is too close to the bed: The nozzle or bed may be damaged.
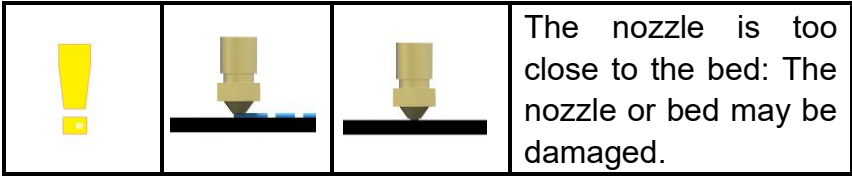
5 Printing Preparation

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:

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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

: E

End G-code

:BIO

Next

5.3 Cura Slicing

Drag and drop the model file you want to print into Cura:
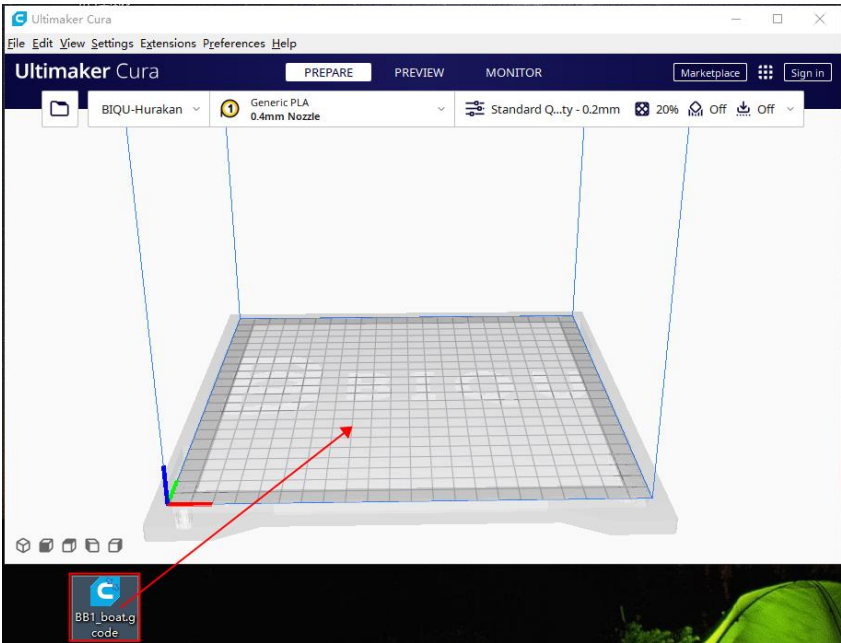
In the printer that you have set up, slice the model using the stock settings(or import your own settings if you are an advanced user), click slice and save to your desired folder.
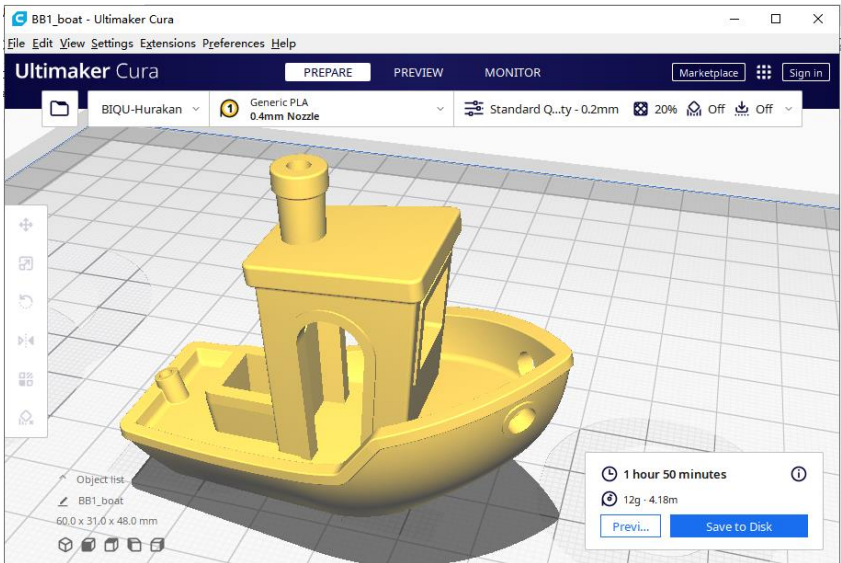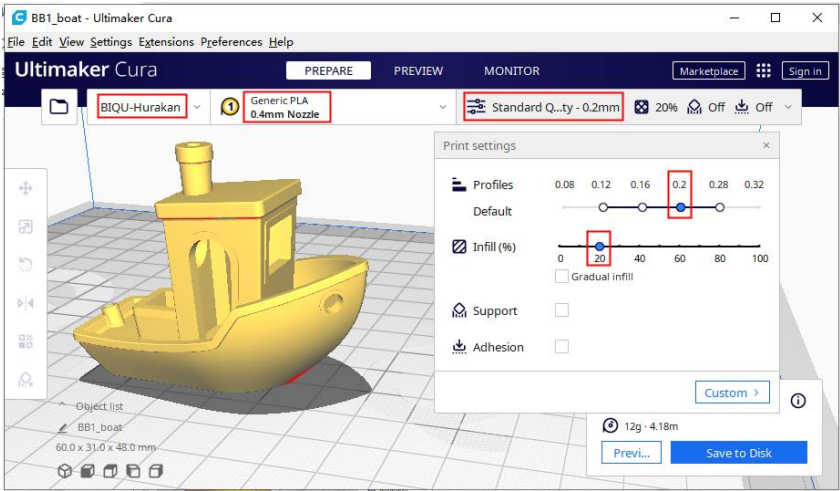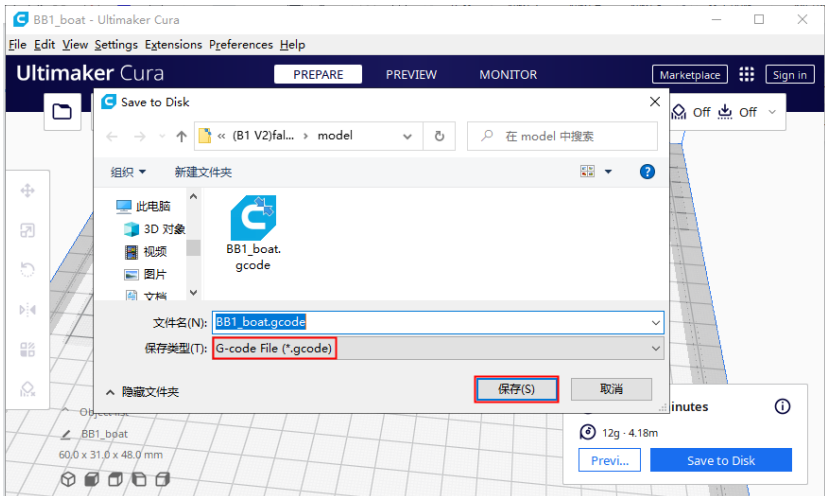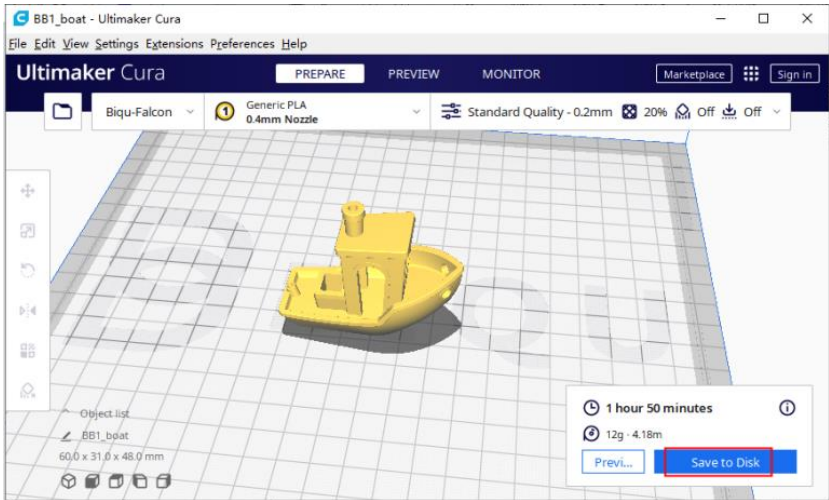
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6 Printing

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.
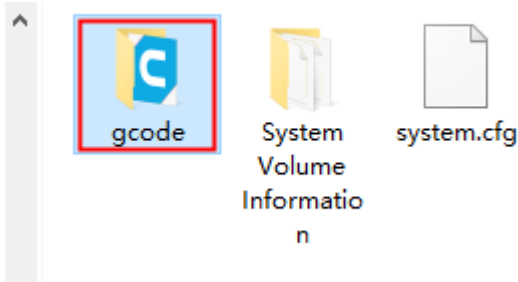
Transfer the gcode into the gcode folder:

> U 盘 (I:) > gcode
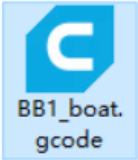
BB1_boat.
gcode

Step 2
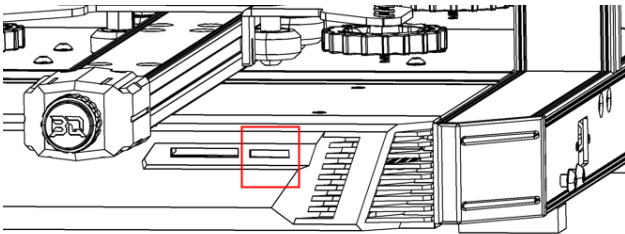
Insert Micro SD and power the machine on again.

Step 3
Select the gcode file.
SD Card——BB1_boat.gcode——Start Printing

```
..
>SD Card          >
 Control          >
 Temperature      >
```
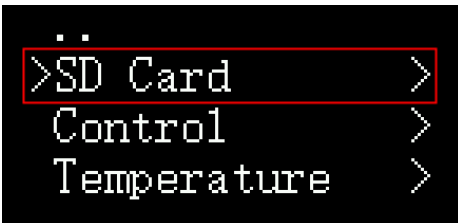
```
 . .
>BB1_boat.gcode
 cat.gcode
 CS20x20x100.gco
```

```
 . .
 BB1_boat.gcode
>Start Printing
```

```
 58°        0%
 38 60°  FEED RATE 100%
     0%    00:00
Getting the bed
```

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 Network

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:

gcode   System   system.cfg
Volume
Informatio
n
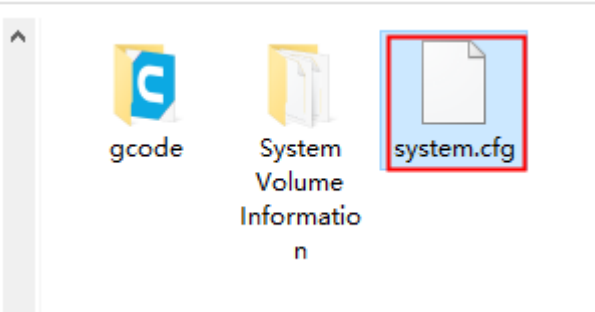
Set up the WiFi ssid and password:

```
system.cfg - Notepad                    —    □
File  Edit  Format  View  Help
check_interval=30
router_ip=8.8.8.8

wlan=wlan0

WIFI_SSID="biqu-m"
WIFI_PASSWD="biqu2020"
```

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:
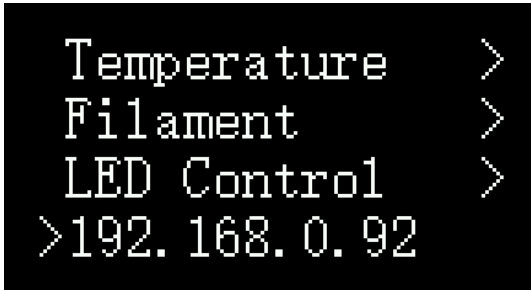
Enter the IP address in your browser: 192.168.0.92:

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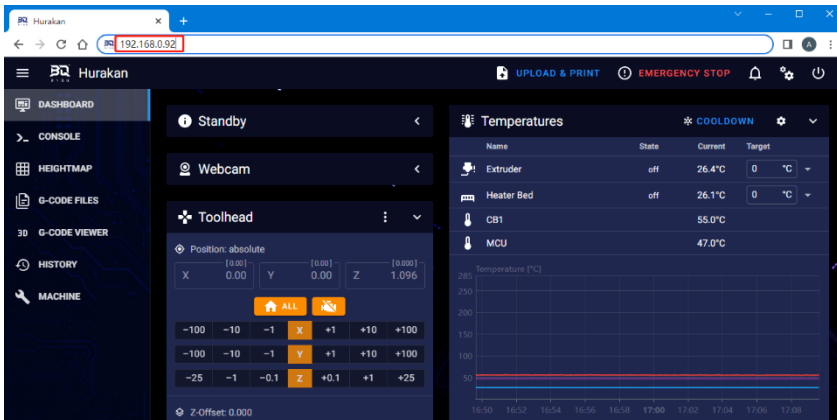
Upload the gcode file:
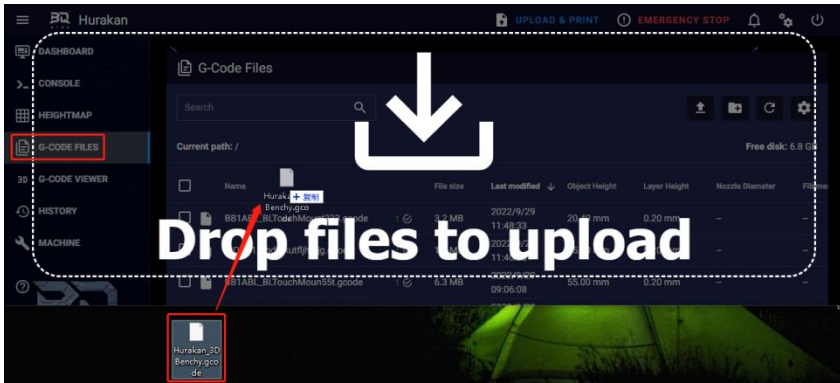
Select the file and click print:

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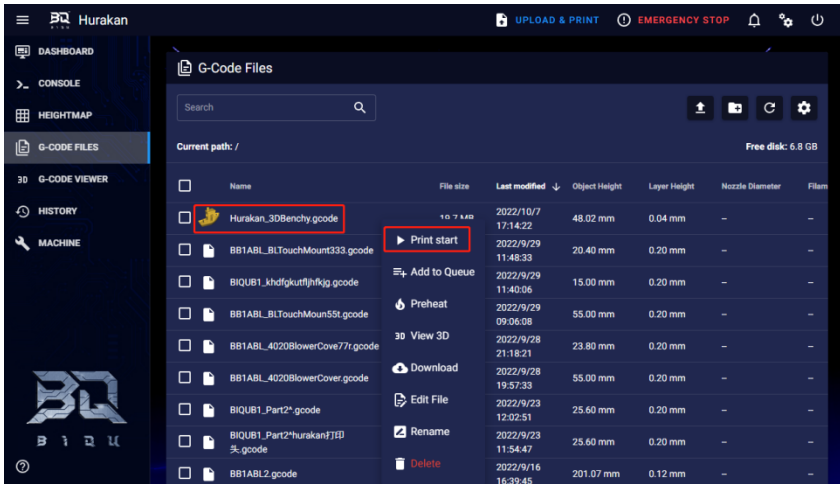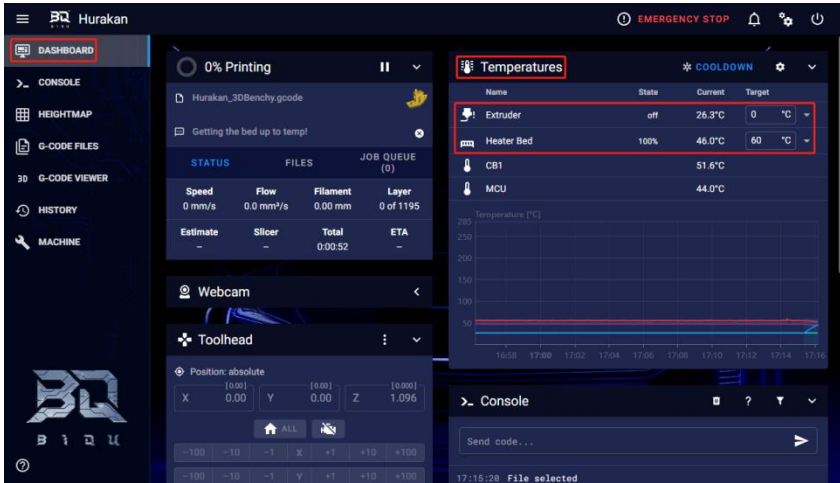
The print will start after the components reached the printing temperature.

6.3 Print via a USB Drive

Transfer the gcode file into the USB Drive folder:
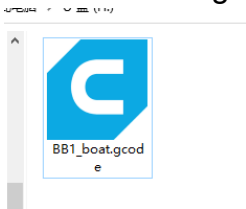
Plug the USB drive into the corresponding port of the printer.

Select the gcode file.

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

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```
 . .
>SD Card          >
 Control          >
 Temperature      >
```

```
 . .
 test01-level.g>
 test02-circle.>
>usb-sda1/BB1_b>
```

```
 . .
 usb-sda1/BB1_bo
>Start Printing
```

```
  58°      0%
  38 60° FEED100%
       0%    00:00
Getting the bed
```

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.

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If **Move Z** cannot be adjusted, you can adjust **Test Z** for more precise fine-tuning.
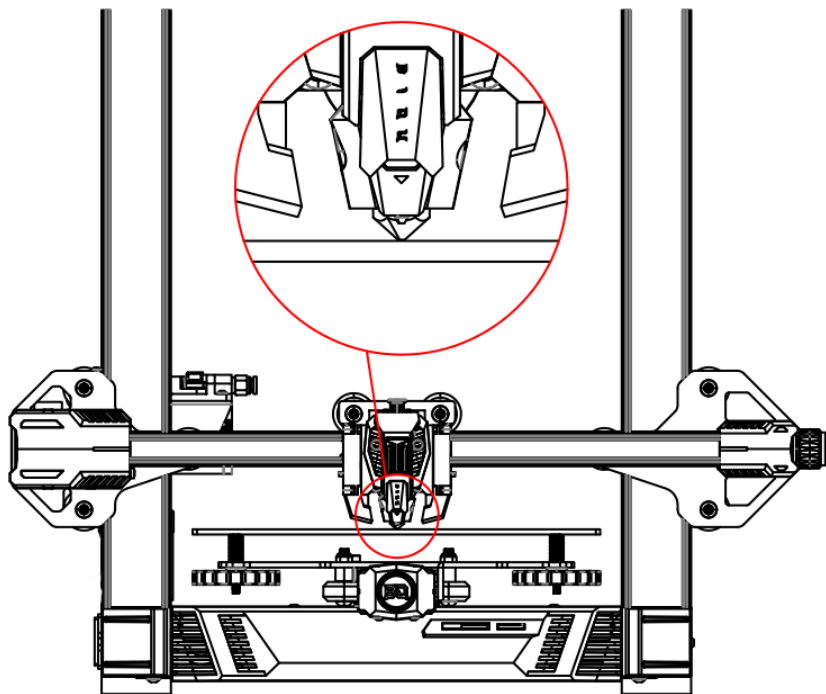
Make sure the distance between the bed and the nozzle is between 0 and 0.1mm.


```
>..
Test Z -0.1
Test Z -0.05
Test Z -0.01
```

Back to previous interface.

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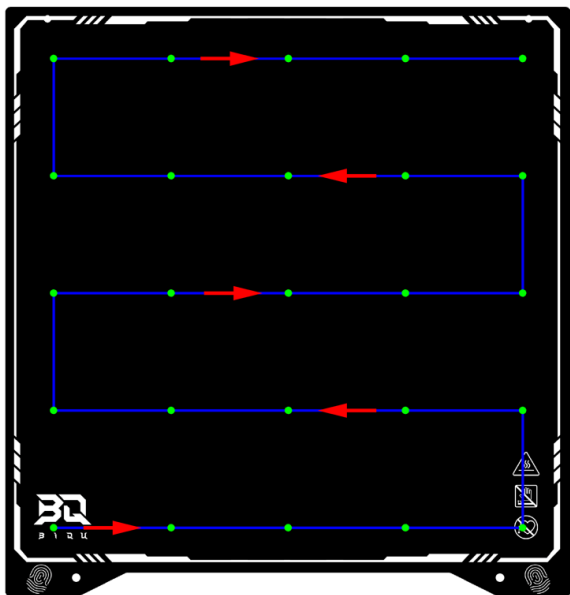
Wait for the finish, the printer will automatically save the config, and return to the main interface.

7.3 ON/OFF of the Filament Runout Detection Module
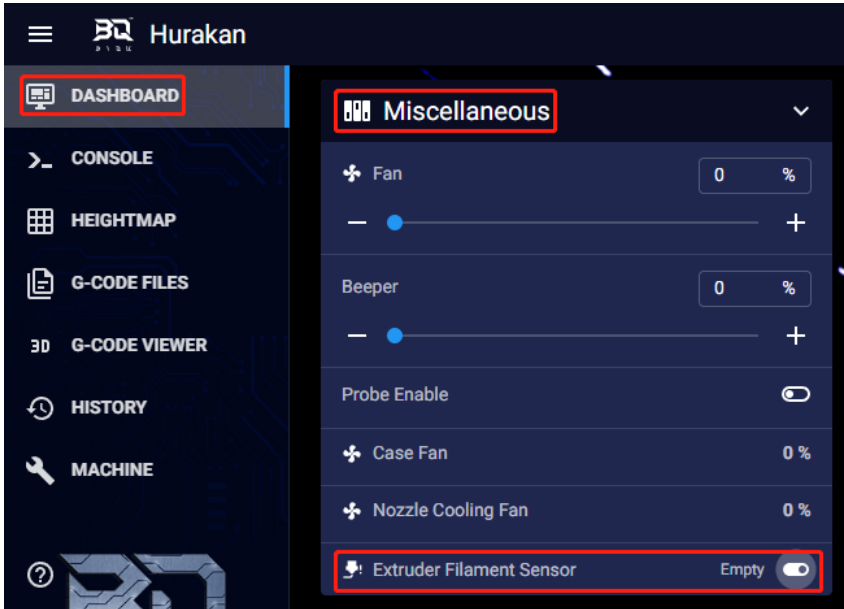
7.4 For Expansion Module
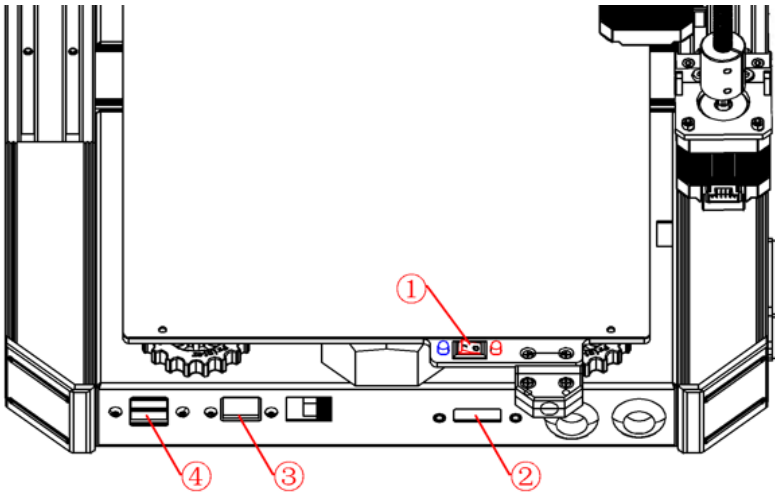
①: Power Selection for Heated Bed

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).

7.5 Display Model Thumbnail

Extensions---Post Processing---Modify G-Code---Create Thumbnail

Ultimaker Cura

File Edit View Settings Extensions Preferences Help

Ultimaker Cu

Cura Backups

Post Processing ▶ Modify G-Code

Biqu H Update Checker ▶ ∨ ① 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

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The default resolution of CURA is 32*32 (you can adjust it according to the display effect).

Then use Cura to slice and upload to the web.

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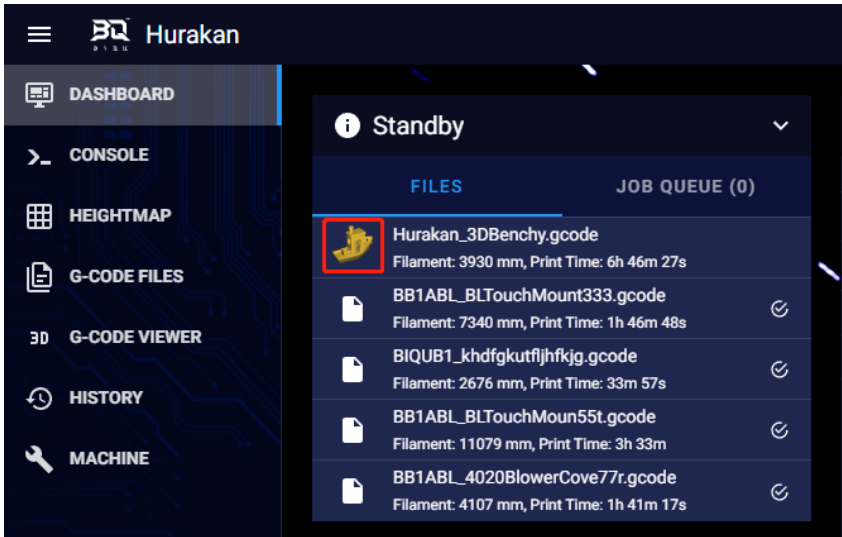
7.6 ADXL345 Resonance Compensation Calibration

Install on X Axis Printhead

Loosen the screw M3x6 securing the lower right corner of the printhead.
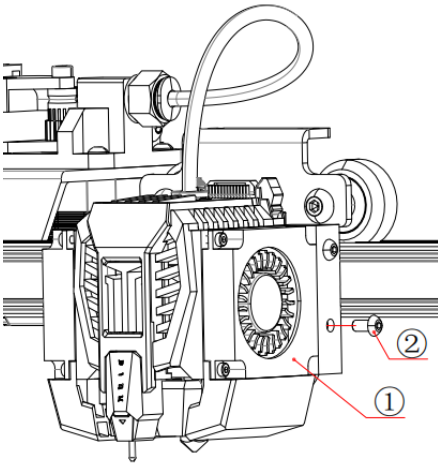
①: Printhead (1Pc)
②: Button Head Cap Screw M3x6 (1Pc)
③: ADXL345 Module (1Pc)
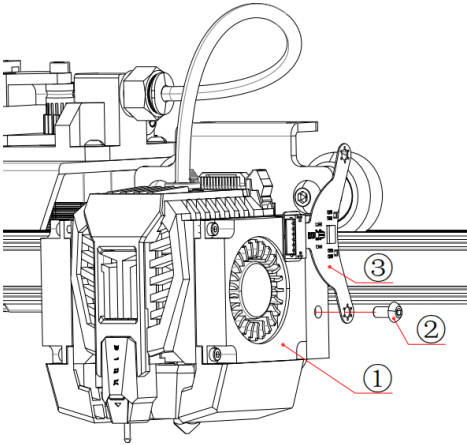
Install the fixing hole of the lower end of the ADXL345 module in the position where the screw was just removed.
Note: the centerline of the two fixing holes of the ADXL345 module should be perpendicular to the heated bed

platform.

④: Centerline of the Two Fixed Holes of the ADXL345 Module
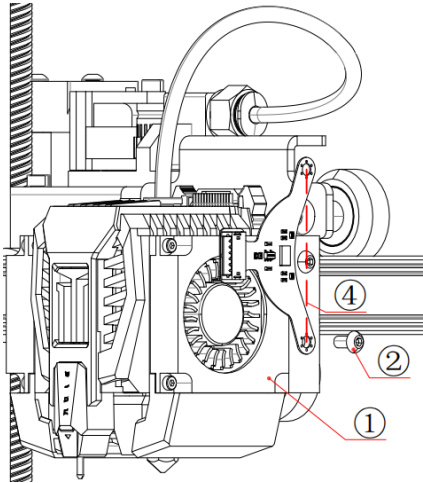
Adjust the position and fix it with M3x6 screws.
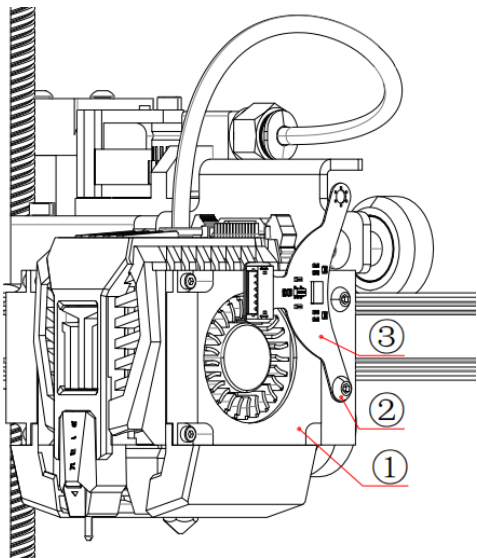
Wiring

①: ADXL345 Cable (1Pc)

②: ADXL345 Module Interface

③: ADXL345 Interface on Printer

Connect the ADXL345 Module with the printer with the ADXL345 Cable.

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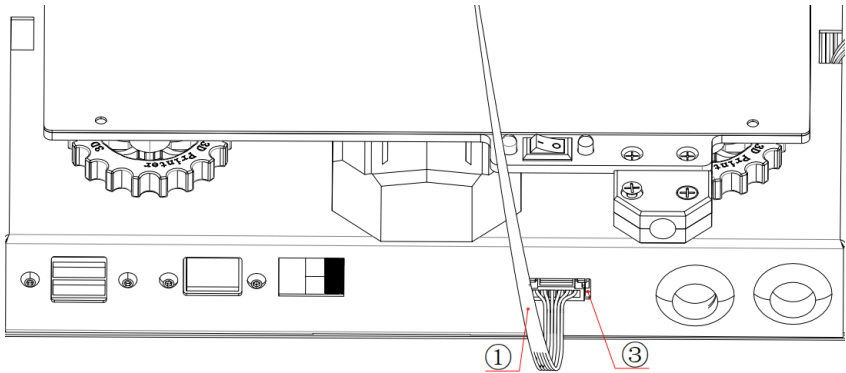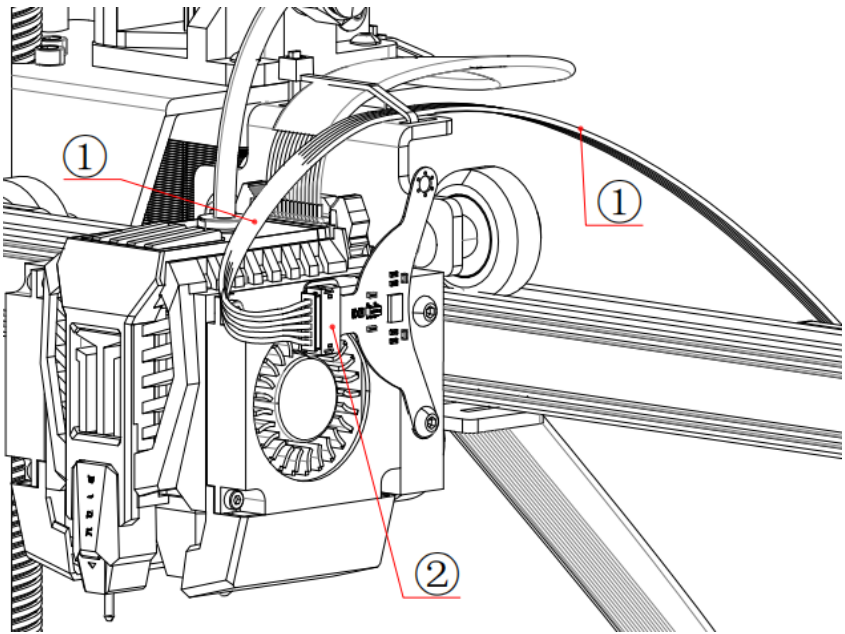
X Axis Calibration

Reference:

https://www.klipper3d.org/Measuring_Resonances.html

Note: The printer needs to be Home before calibration.

Enter the X axis calibration command at the command line:

SHAPER_CALIBRATE AXIS=X

```
>_ Console                         🗑  ?  ▼  ⌄

  SHAPER_CALIBRATE AXIS=X                    ➤

  15:38:16  G28
```

```
>_ Console                         🗑  ?  ▼  ⌄

                                           ➤

  15:39:12  Testing frequency 9 Hz

  15:39:12  Testing frequency 8 Hz

  15:39:12  Testing frequency 7 Hz

  15:39:12  Testing frequency 6 Hz

  15:39:12  Testing frequency 5 Hz

  15:39:11  SHAPER_CALIBRATE AXIS=X

  15:38:16  G28
```
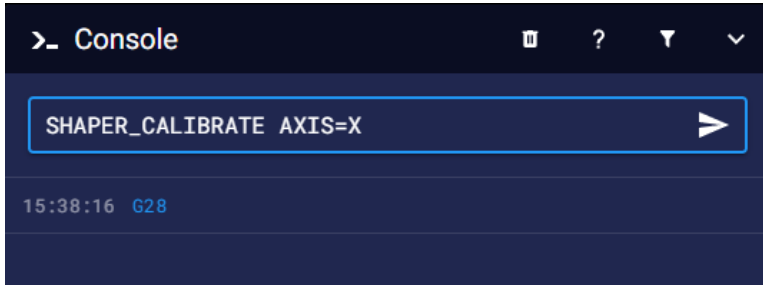
Note: it will vibrate in the X axis at this time. Please observe the printer first to ensure that the vibration is not too strong.

(The test can be aborted in case of emergency).
After calibration, enter the save code: SAVE_CONFIG


```
>_  Console                    🗑   ?   ▼   ⌄

  Send code...                              ➤

15:42:44  Klipper state: Ready

15:42:38  Klipper state: Disconnect

15:42:37  SAVE_CONFIG

15:42:14  The SAVE_CONFIG command will update the printer
          config file
          with these parameters and restart the printer.

15:42:14  Shaper calibration data written to
          /tmp/calibration_data_x_20221007_073911.csv file

15:42:14  Recommended shaper_type_x = 3hump_ei, shaper_freq_x =
```

Then power off the printer and remove the ADXL345 module.

Install on Y Axis Heated Bed

Loosen the screw M3x10 on the left side of the heated bed cable plastic part.
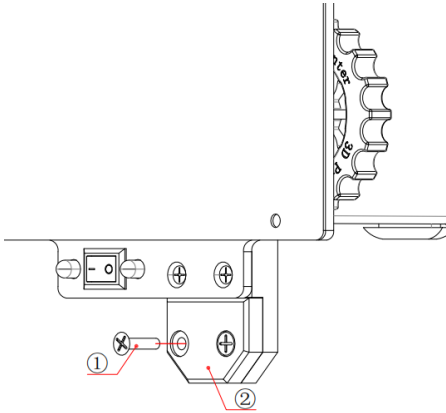
①: Phillips Flat Head Countersunk Screw M3x10 (1Pc)
②: Heated Bed Cable Plastic Part (1Pc)
③: ADXL345 Module (1Pc)
④: Centerline of the Two Fixed Holes of the ADXL345 Module
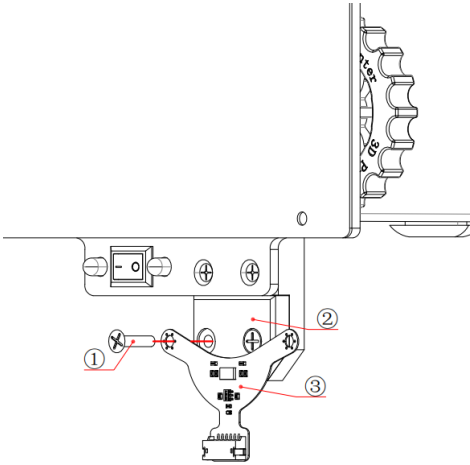
Install the left fixing hole of the ADXL345 module in the position where you just removed the screws.

Note: the centerline of the two fixed holes of the ADXL345 module should be perpendicular to the Y axis.
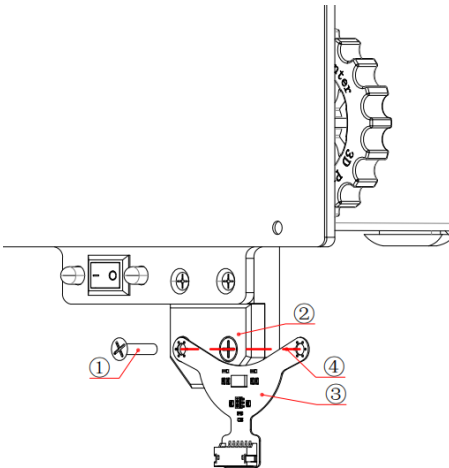
Adjust the position and fix it with M3x10 screws.

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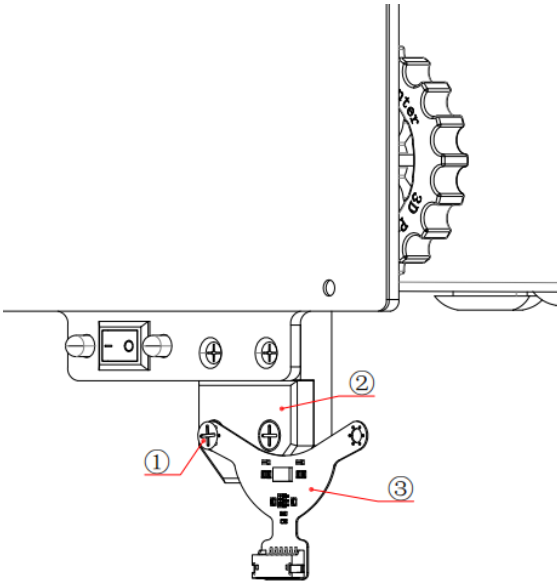
Wiring

①: ADXL345 Cable (1Pc)

②: ADXL345 Interface on Printer

③: ADXL345 Module Interface

Connect the ADXL345 Module with the printer with the ADXL345 Cable.

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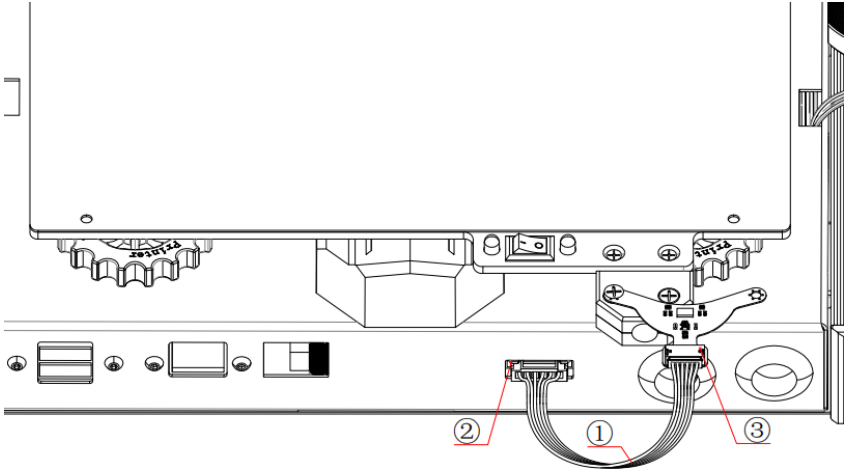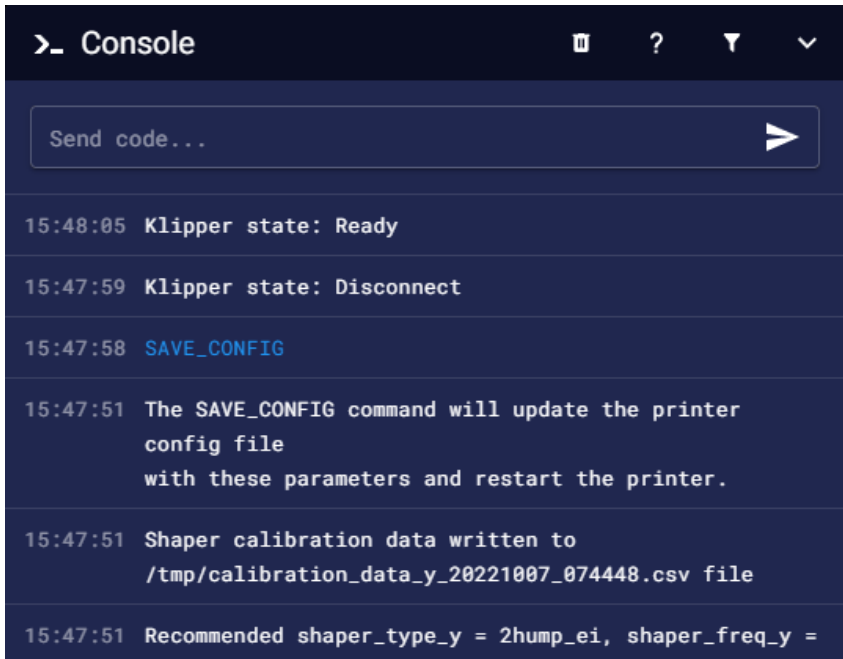
Y Axis Calibration

Note: The printer needs to be Home before calibration.

Enter the Y axis calibration command at the command line:

SHAPER_CALIBRATE AXIS=Y

>_ Console   🗑   ?   ▼   ⌄

```
SHAPER_CALIBRATE AXIS=Y                    ➤
```

15:44:17 G28

>_ Console   🗑   ?   ▼   ⌄

```
|                                          ➤
```

15:44:49 Testing frequency 9 Hz

15:44:49 Testing frequency 8 Hz

15:44:49 Testing frequency 7 Hz

15:44:49 Testing frequency 6 Hz

15:44:49 Testing frequency 5 Hz

15:44:49 Disabled [input_shaper] for resonance testing

15:44:47 SHAPER_CALIBRATE AXIS=Y

15:44:17 G28

WWW.BIQU3D.COM
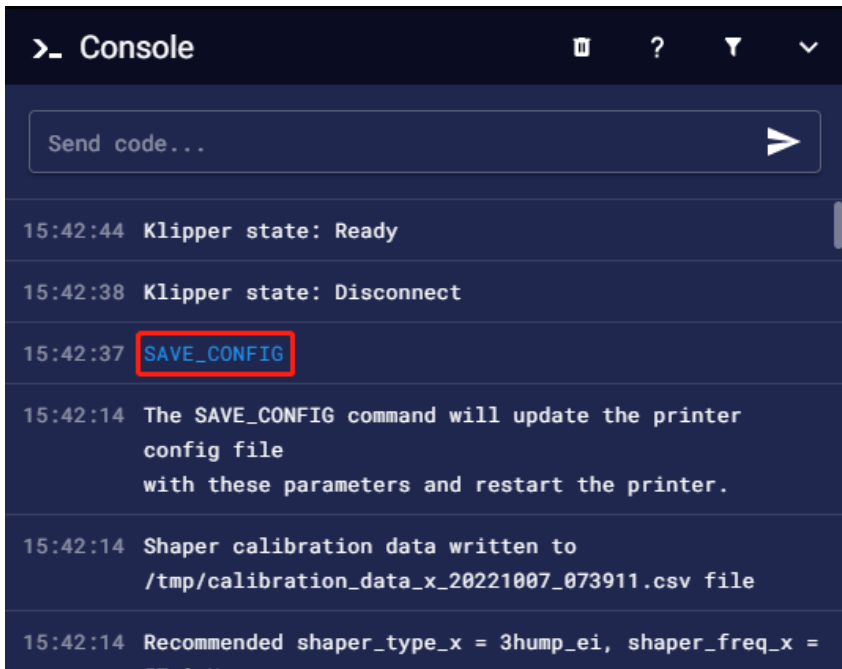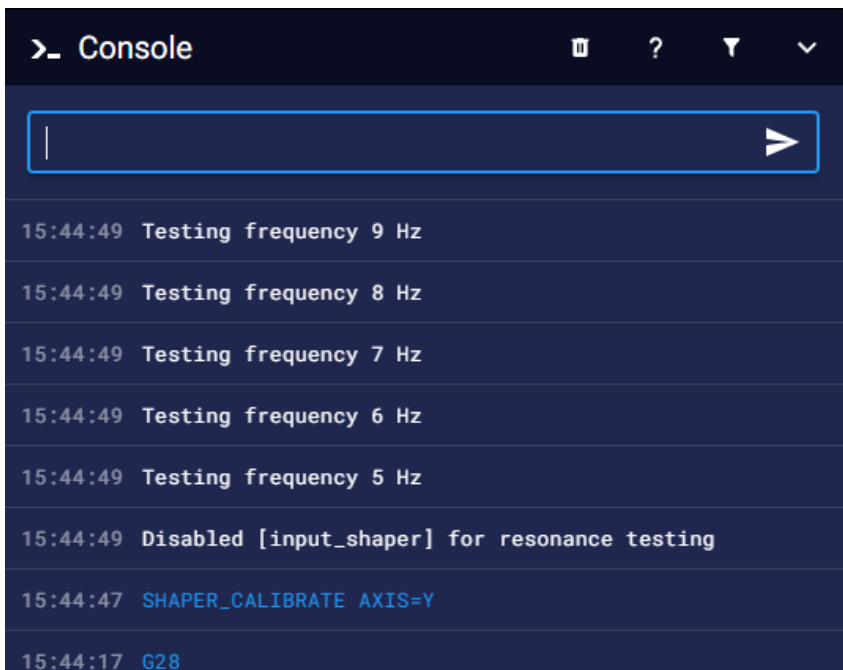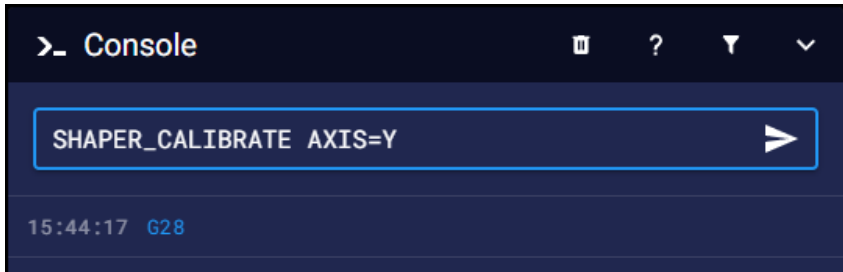
Note: it will vibrate in the Y axis at this time. Please observe the printer first to ensure that the vibration is not too strong. After calibration, enter the save code: SAVE_CONFIG

> Console   🗑   ?   ▼   ⌄

Send code...   ➤

15:48:05 Klipper state: Ready

15:47:59 Klipper state: Disconnect

15:47:58 SAVE_CONFIG

15:47:51 The SAVE_CONFIG command will update the printer
config file
with these parameters and restart the printer.

15:47:51 Shaper calibration data written to
/tmp/calibration_data_y_20221007_074448.csv file

15:47:51 Recommended shaper_type_y = 2hump_ei, shaper_freq_y =

Then turn off the printer, remove the ADXL345 module, and restart the printer to finish debugging.

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.

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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 Cautions

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.

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FCC WARNING

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.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to 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 in accordance with the 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.

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.

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