Solutions to common M1 problems

Version 2021.5.17

Dear Geeetech users,

If your printer does not work properly, please follow the following steps to repair it:

1. If the printer is unable to work, please refer to the corresponding section of this manual to deal with according to the fault phenomenon.
2. If this maintenance manual fails to solve your problem, please contact the after-sales staff and describe the problem in short and precise terms.

Thank you for choosing Geeetech products!

[Important] Please read the manual carefully before using the printer.

Please visit website: https://www.geeetech.com/ for more product information.

Technical support email: https://www.geeetech.com/contactus.html.

Scan the following QR code to join the Facebook Group:

Facebook group

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1. Package damage, machine damage and deformation

When you receive the machine, if the package is damaged, you open the package and find that the printer is loose, out of shape, broken parts or other problems, it may be caused by trampling or heavy falls during loading or transportation. If the problem has affected the use of the product, please contact our customer service personnel directly, and provide the serial number of the machine, so that we can trace and improve our service.

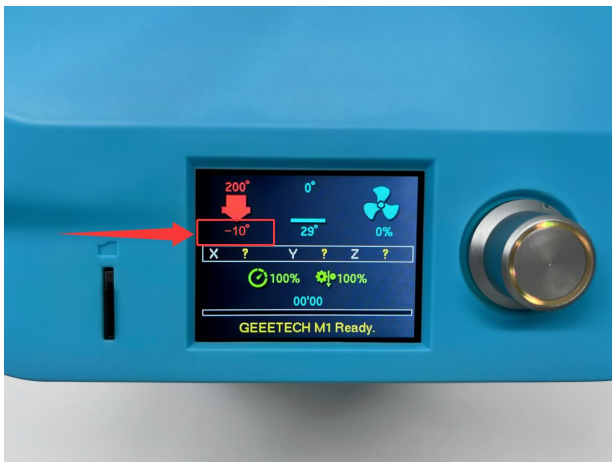
The product serial number is in the position like the picture below:

2. Hotend

The extruder does not heat up and the temperature is wrong. This is usually caused by poor contact of the wire or wire terminal.

2.1 Negative Temperature

If the screen shows the temperature of the extruder as -10 (as shown below), it means that the thermistor is broken. Please check whether the thermistor terminal is loose or detached. If the thermistor wire is in good contact and the problem is still not solved, it is recommended to replace the thermistor.



2.2 Temperature is too high

If the screen shows the temperature of the extruder as high temperature above 300 degrees, it is caused by a thermistor short circuit or a motherboard failure. Please first check whether the thermistor wire is crushed or the two wires are short-circuited, and re-plug the thermistor connection wire. If replacing the thermistor still does not solve the problem, it is recommended that you replace the motherboard.

2.3 Heating failure

If the screen shows "heating failed", please check whether the wiring of the heating tube is loose or detached. If it is found to be loose, please tighten the contact between the cable and the port. If the problem still cannot be solved, it is recommended to replace the heating kit

3. Extruder

3.1 The extruder does not feed filament

3.1.1 First check whether the extruder motor can rotate. If the motor does not rotate, please re-tighten the motor wire and test the machine again. If it still does not rotate, please contact after-sales personnel for resolution
3.1.2 If the motor rotates but the wire feed wheel does not rotate, it means that the top screw of the feed gear is not locked. The top screw of the feed wheel needs to be locked

3. 2 Filament cannot be extruded

3.2.1 Check whether the nozzle temperature setting is too low. The recommended printing temperature for PLA filaments is 200~220 degrees, and the recommended printing temperature for TPU filaments is 225~230 degrees. If the temperature setting is too low, please adjust the temperature to the recommended printing temperature
3.2.2 Pull out the filament, straighten it, and reload it
3.2.3 Check if the nozzle is blocked. If it is blocked, heat the printer to 230 degrees Celsius and use the provided needle to clear the 0.4mm hole at the end of the nozzle, or replace the nozzle. For related methods, please check the video in TF or contact after-sales personnel to solve it

4. Hot bed (printing platform)

4.1 The hot bed temperature is wrong

4.1.1 If the hot bed temperature on the screen shows a low temperature of -14 degrees, it means that the hot bed thermistor is short-circuited or damaged. Please check whether the thermistor is damaged or loose, and re-plug the thermistor connection line. If the thermistor is damaged, please contact after-sales personnel for a solution

4.1.2 If the hot bed temperature on the screen shows a high temperature of more than 300 degrees, it means that the thermistor is short-circuited or the motherboard is faulty. Please contact after-sales personnel for a solution

4.2 Automatic heating

After power-on, when the extruder head temperature or the hot bed temperature automatically heats up without any operation, it is generally caused by a motherboard problem. It is recommended that you replace the motherboard or contact after-sales personnel directly for processing

4.3 Shaking of hot bed

The machine may fall and vibrate during transportation, which will cause damage and shaking to the hot bed. Long-term use of the machine may cause the hot bed to shake. It is recommended that you remove the Mylar sheet first, and then tighten all the fixing screws on the aluminum base plate

5. Stepping motor

5.1 The motor is jammed, with abnormal sound and does not work

5.1.1 When the motor is stuck and making abnormal noises, first check whether the hot bed or printer is stuck by the cable
5.1.2 When the motor is stuck and making abnormal noises, check whether the limit switch is pressed and in the open state
5.1.3 When the motor is not working, first use the replacement method to swap it. Unplug the motor line that works normally and plug it into the motor that does not work to confirm whether it can work normally. If it is normal, it means that there is a problem with the motor line that does not work. Contact after-sales to replace the motor line
5.1.4 If the original motor still does not work after the line is replaced, and it is confirmed that the line is normal, it may be that the motor is damaged. It is recommended to replace the motor and try

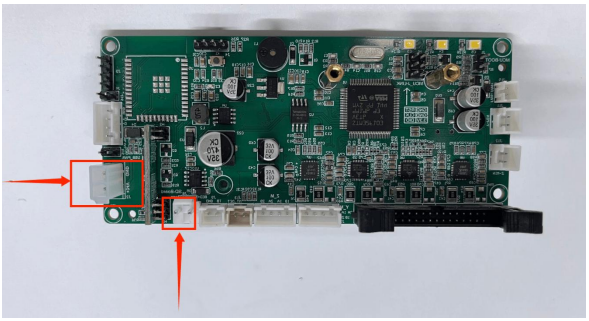
5.2 During the zeroing operation, the print head still moves forward after hitting the limit switch, making a stuck noise

5.2.1 This situation is generally caused by a limit switch failure. Check whether the limit switch is normal and re-plug the limit switch connection line
5.2.2 Use the exchange method to verify whether the limit switch line is normal: unplug the normal limit switch line and plug it into the abnormal limit switch to see if it is normal. If the above method confirms that the limit switch is broken, please contact after-sales personnel directly

6. Screen

6.1 The screen does not show

The LCD display is black, which is related to the power supply, motherboard, and display. This needs to be checked:
After powering on and turning on the power, use a multimeter to measure the voltage of the Power Supply and Hotend in the motherboard in the figure below
6.1.1. Measure the Power Supply voltage to be 24V, which proves that there is no problem with the power supply. If it is 0V, you need to replace the power supply
6.1.2. Measure the Hotend voltage again to see if it is 24V. If it is 24V, it proves that there is no problem with the motherboard. If it is 0V, you need to replace the motherboard or power supply
6.1.3. If the voltage of the Power Supply and Hotend are both 24V and the screen is not bright, just replace the LED display



6.2 Screen crash

6.2.1 Screen crash is generally caused by data transmission delay or external signal interference. Try to press the screen to see if it can be solved.
6.2.2 Check whether the screen wiring is damaged or has bad connection, and confirm whether it can be solved after firmly inserting the wiring again.
6.2.2 Reinstall the firmware and check whether the problem can be solved.
6.2.3 If the above methods cannot solve the problem, it is suggested to inform the after-sales staff to replace the motherboard.

7. Data reading

7.1 The SD card or card reader does not work

7.1.1 Check whether the SD card is faulty or try to change a SD card
7.1.2 Try to format the SD card
7.1.3 Check whether the card slot is loose
7.1.4 If the computer can normally read the SD card, then apply for changing the motherboard

7.2 No response after inserting the SD card, or the file cannot be found

7.2.1 Format SD card
7.2.2 Reload the SD card
7.2.3 Refresh the SD card
7.2.4 Wipe the metal contact with an eraser
7.2.5 If the computer can normally read the SD card, then apply for changing the motherboard

7.3 USB cable cannot work

7.3.1 Try again after uninstalling the driver file of the motherboard. It is suggested that you contact the after-sales staff directly for the specific method
7.3.2 Use the other computers and try again
7.3.3 Replace the USB cable to confirm that the computer and printer can work normally.
7.3.4 If the above methods can not solve the problem, please contact the after-sales staff to replace the motherboard.
Please check the after-sales video on our website or contact after sales staff for the replacement method of the motherboard.

8. Control box (refer to after-sales video or contact after-sales personnel directly for solution)

8.1 There is a problem with the main board

Replace the motherboard: For the method of replacing the motherboard, please check the official after-sales video or contact the after-sales staff

8.2 Cannot turn on the machine

8.2.1 Check whether the power cord is plugged in and whether the power switch is on
8.2.2 Check whether the connection between the motherboard and the power supply is loose. If it is loose, you can tighten the screws and try again

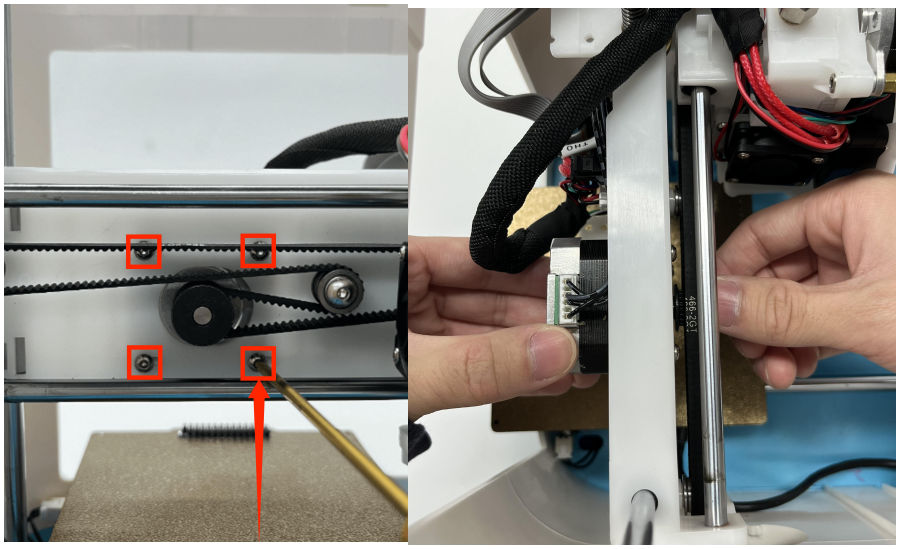
9. Belt problem

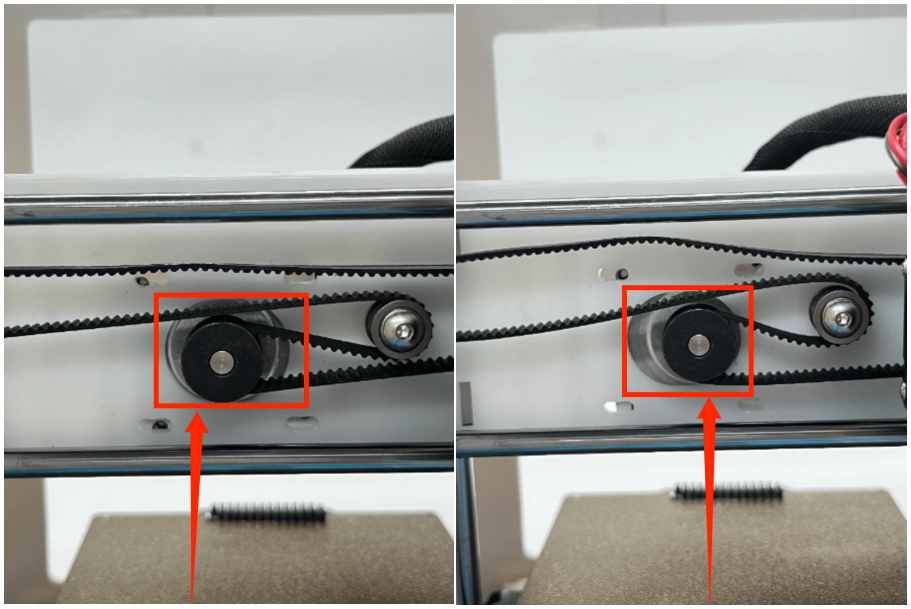
9.1 Belt too loose or too tight

9.1.1 Fix the X-axis motor at the back with your left hand, and remove the 4 screws of the X-axis motor with a 2.0MM screwdriver

9.1.2 Fix the X-axis motor with your left hand, and move the X-axis motor left and right with your right hand to adjust the belt tightness

(Moving the X-axis motor to the left will tighten the belt, and moving the X-axis motor to the right will loosen the belt.)





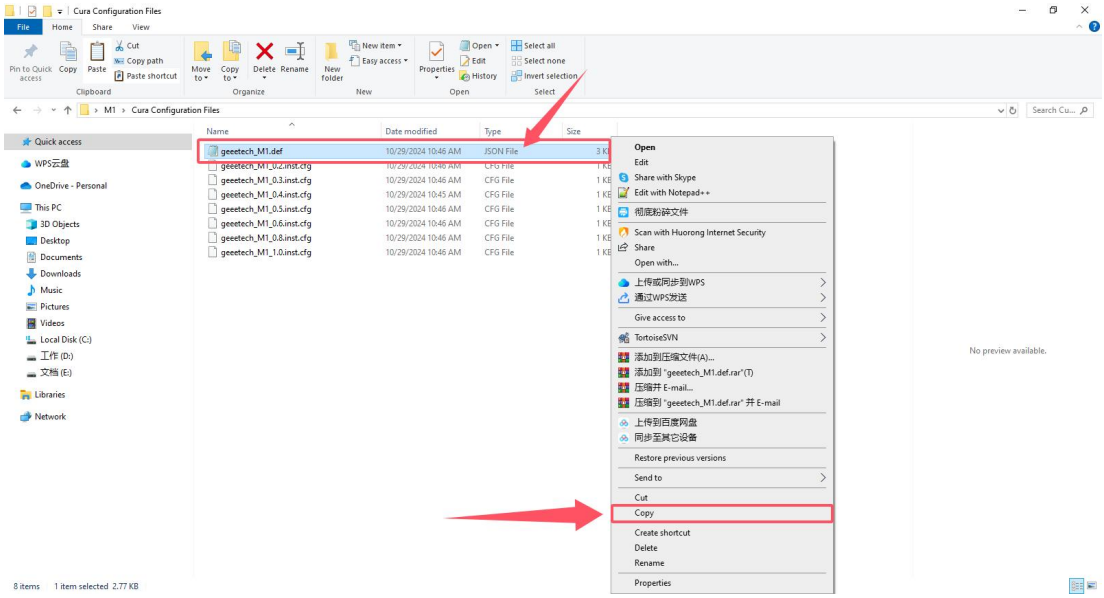
9.2 Belt is worn or broken

For belt replacement, please check the after-sales video on our official website or contact the after-sales staff.

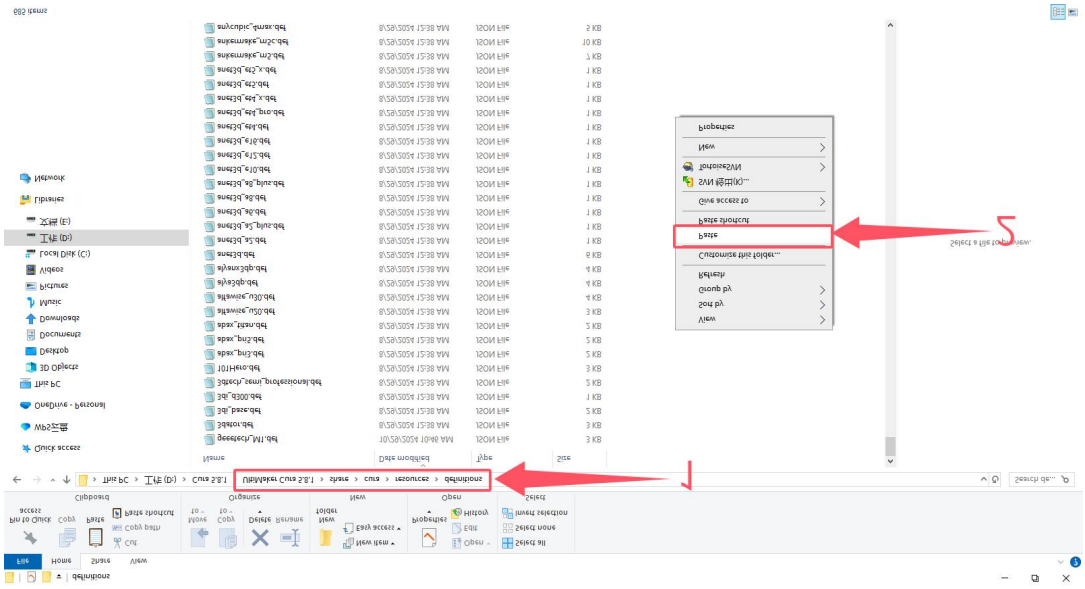
10. How to Import Profiles into Cura

First you need to download the Mozi configuration file, then follow the steps below to import the configured Mozi configuration file:https://www.geeetech.com/download.html

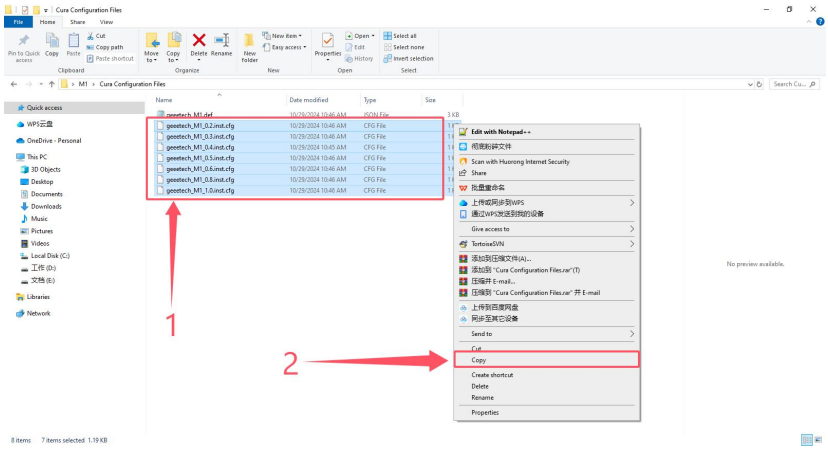
10.1.1 Copy the geeetech M1.def file. Note that you are copying the .Json file. Please do not copy the wrong file.



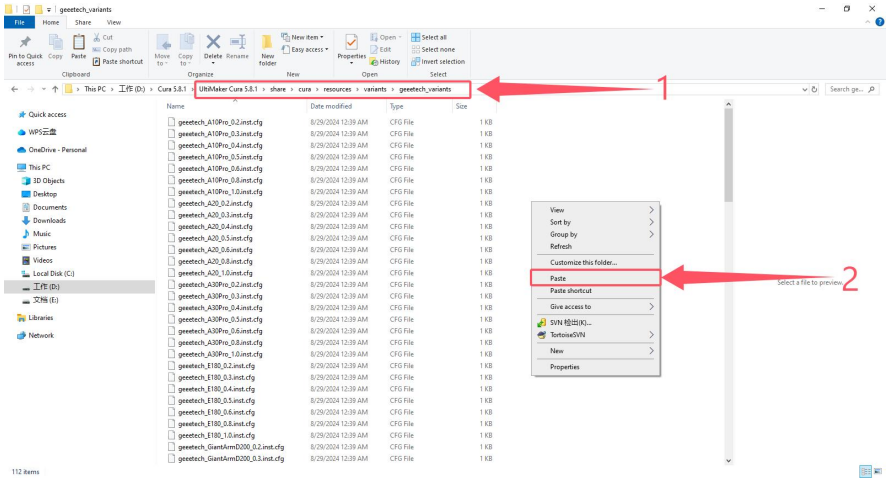
10.2 Open the location of the Cura slicing software and copy the geeetech_M1.def.json file to the target path: \UltiMaker Cura 5.8.1sharecuraresourcesdefinitions0



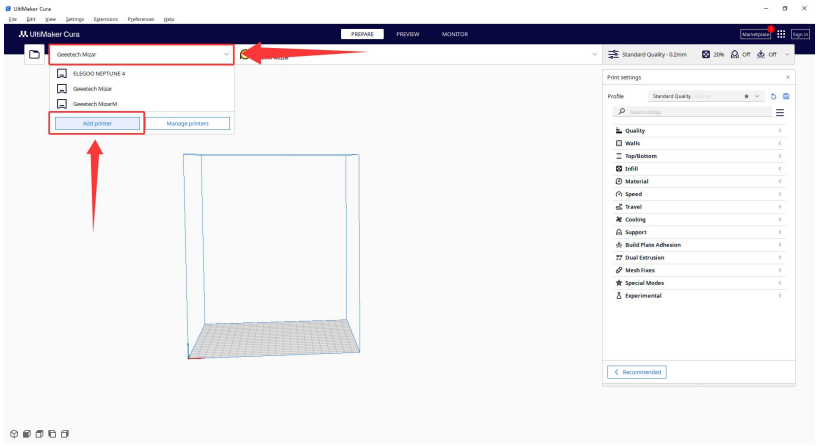
10.3 Copy all the configuration files in the picture

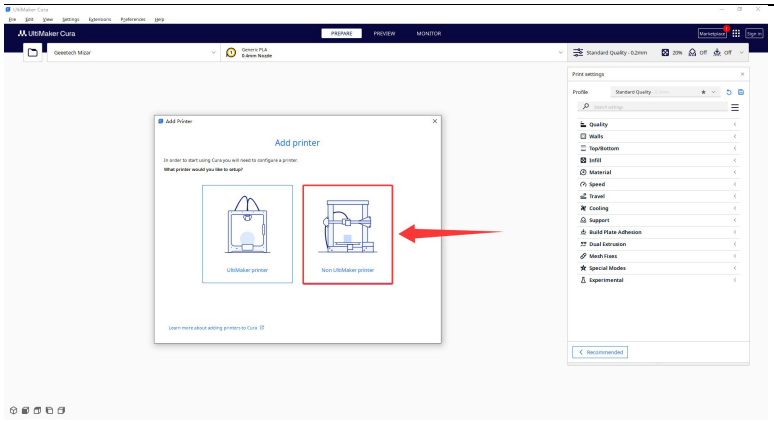


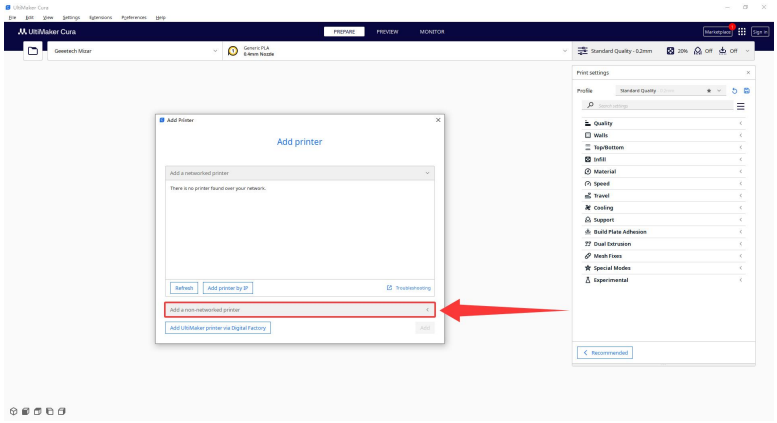
10.4 Open the location of the Cura slicing software and copy all geeetech_M1.inst.cfg files to the target path: \UltiMaker Cura 5.xx\share\cura\resources\variants\geeetech_variants

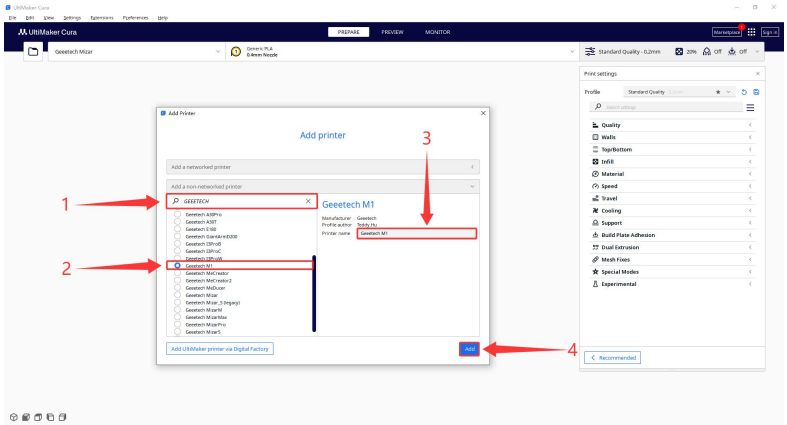


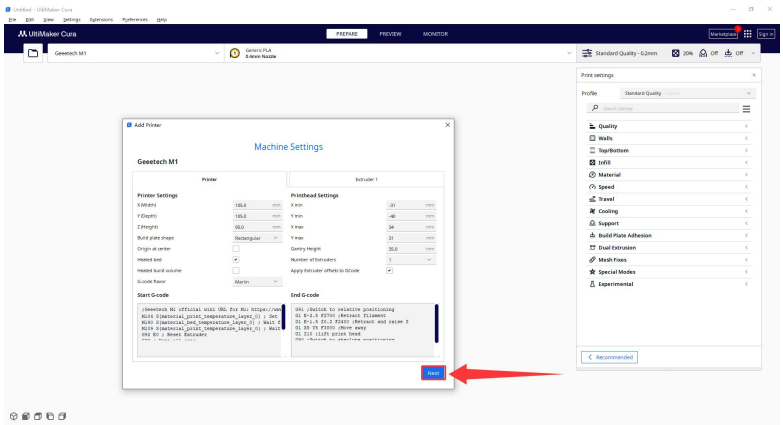
10.5 Open the Cura slicing software and follow the steps below



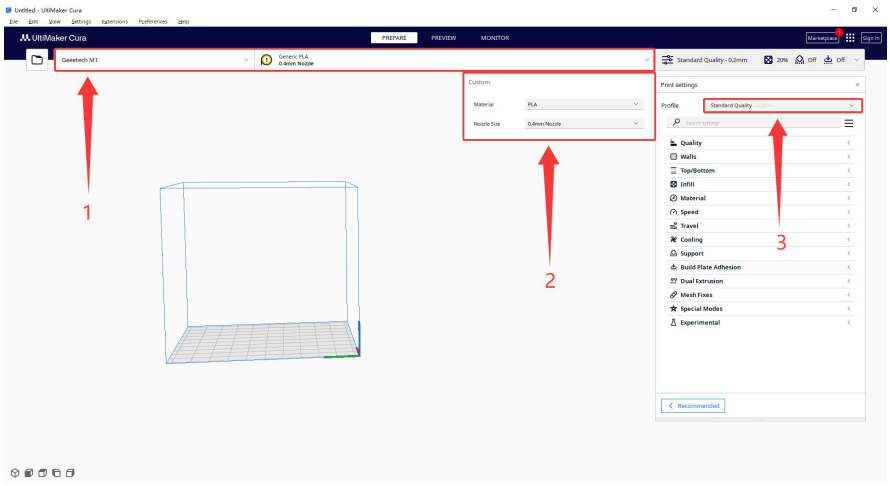

Add Printer
Add printer
UltiMaker printer
Non-UltiMaker printer


Add Printer
Add printer
Add a networked printer
Add a non-networked printer


Add Printer
Add printer
1
2
3
4
GEETECH
Geeetech M1
Add


Add Printer
Machine Settings
Geeetech M1
Next

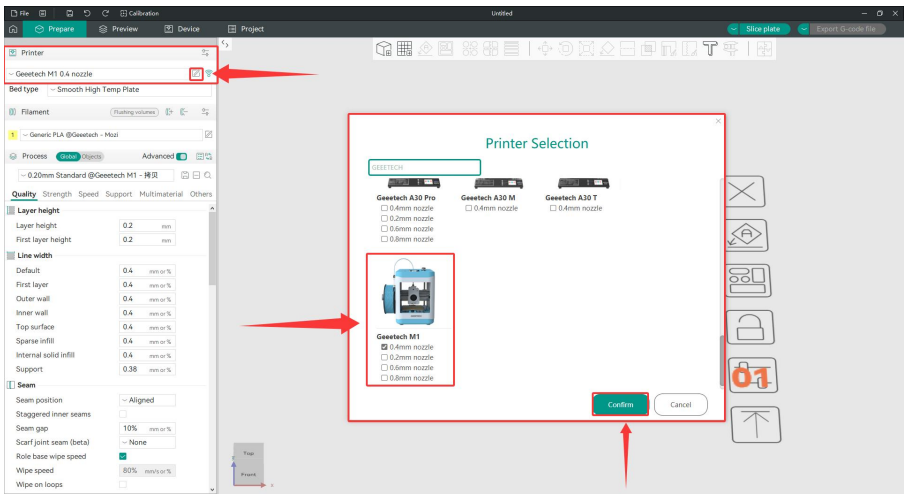
10.6 After the import is successful, select the M1 printer in the printer options and carefully check whether the parameters have been imported successfully.



11. How to import configuration files into Orcaslicer

Special statement:If you update Orcaslicer to V2.2.0, there is a pre-configured M1 printer, which can be directly selected without importing printing parameters.

As shown in the figure below, click Add Printer and search for GEEETECH to find it.

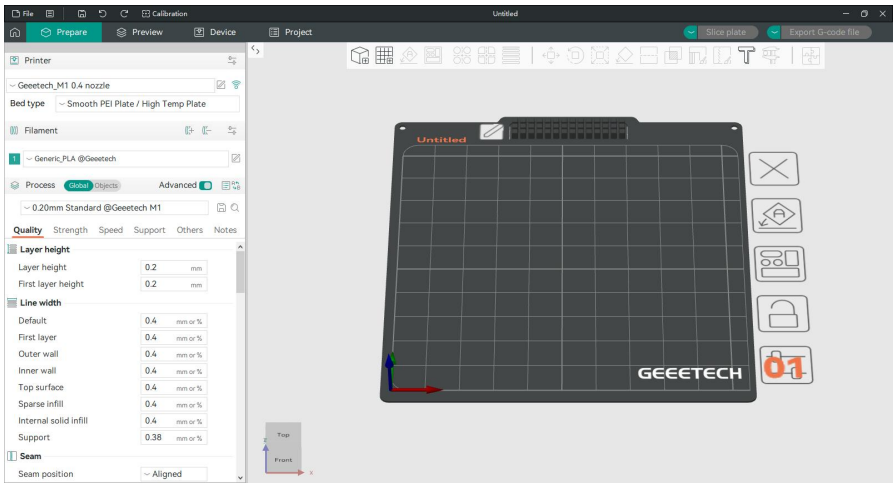


If your Orcaslicer does not have an M1 printer, you need to manually import the slicing parameters. The steps are as follows:

First, you need to download the Mozi configuration file, and then follow the steps below to import the configured Mozi configuration file

https://www.geeetech.com/download.html

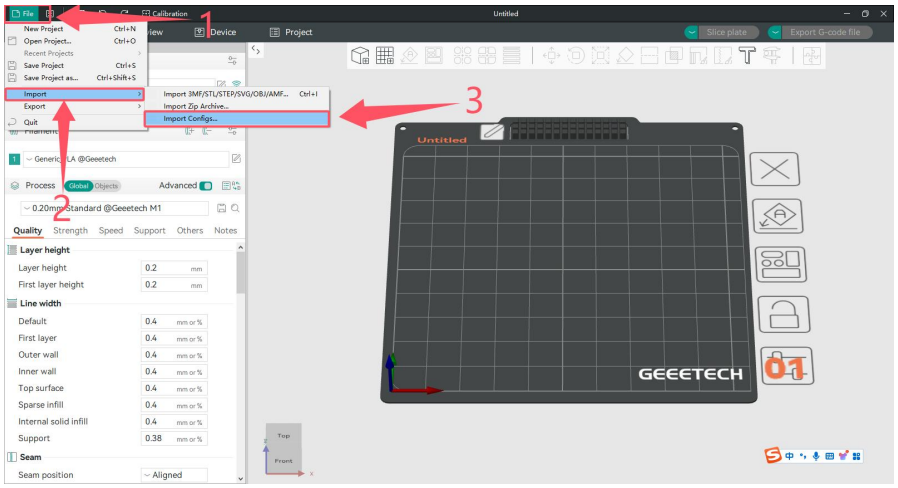
11.1 Open the Orcaslicer slicing software



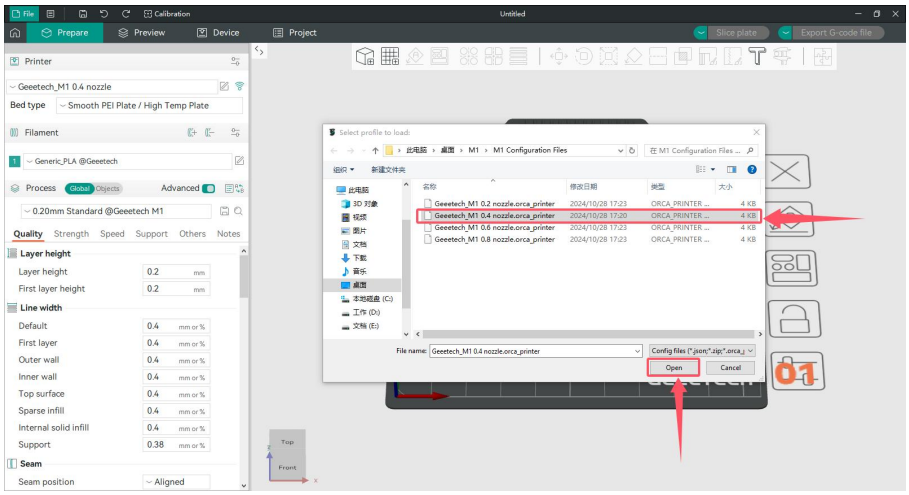
11.2 (1) Click File in the upper left corner

(2) Click Import

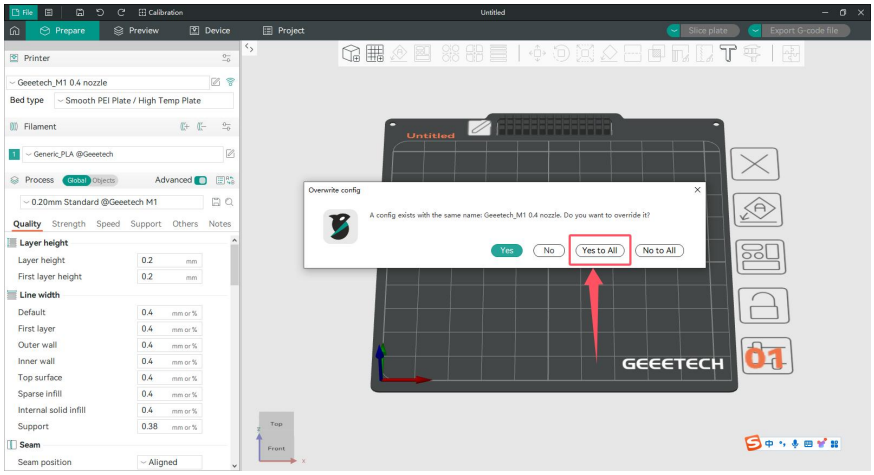
(3) Click Import Configs...



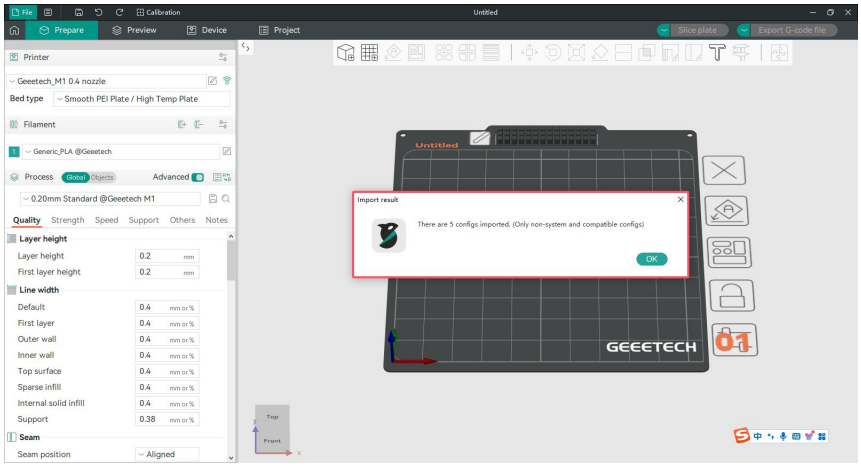
11.3 Select the downloaded Mozi configuration file and click Open



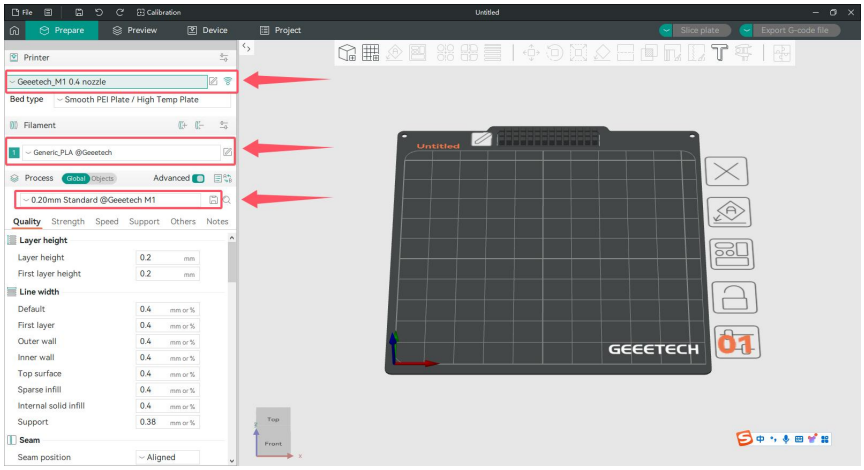
11.4 Click Yes for all



11.5 A pop-up window will show that the Mozi slicing parameters have been successfully imported



11.6 In the printer, select the M1 printer to see if the import is successful



11.7 Note: Orcaslicer can only import one configuration file at a time. If you need to import other nozzle configuration files, just follow the above steps and import them one by one.

12.Model does not stick to the platform

12.1 The nozzle is too far from the platform

Solution:Adjust the Z-axis compensation value through automatic leveling or automatic leveling. The distance from the nozzle to the platform is about the thickness of an A4 paper

12.2 The first layer is printed too fast

Solution:The printing speed can be reduced to ensure that the first layer is well bonded to the platform. You can reduce the printing speed by adjusting the knob on the screen, or set the first layer printing speed in the slicing software, preferably in units of 10%

12.3 Add Birm in the slicing parameters

Solution:Adding inner and outer Brim can increase the contact area of the model, ensure that the model is better attached to the hot bed, and also ensure that the model is not easy to fall off during printing

12.4 There is a problem with the temperature or cooling setting:

Solution:

(1) Temperature setting: PLA sets the nozzle temperature to 190-210 degrees and the hot bed temperature to 50-60 degrees. The temperature of the ABS nozzle is 240 degrees, and the temperature of the hot bed is 70~100.

(2) Fan setting: When using ABS filaments, the fan does not need to be turned on during the entire printing process. When using PLA filaments, the fan needs to be turned on 100%

12.5 Platform surface treatment (tape, glue)

Solution: Replace the Jietai Mylar sheet, apply masking tape or apply solid glue.

If there is damage and it cannot be adhered, please replace the Mylar sheet. At the same time, different filaments have different adhesion to different materials. You can use white masking tape or solid glue. PVP solid glue can be evenly applied on the platform.

13.The filament don't stick to the hot bed

13.1 Nozzle is too close to the hotbed

Even though the extruder is working but no filament is depositing on the hotbed, Check if the nozzle is too close to the hotbed. Adjust the Z-offset value slightly will help.

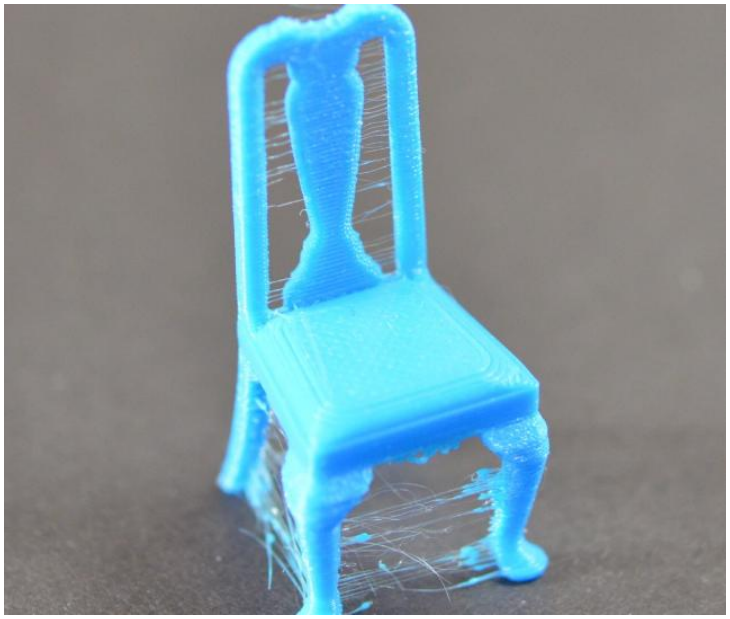
13.2 Print temperature is too low

Some filament needs more higher temperature, manually feed the filament, if it can not be extruded, please try increase the print temperature.

13.3 The extruder is not working

Check if the grub screw on the extruder gear. If the grub screw is loose, the gear will fail to grab the filament when feeding into the hotend. Also check if the extruder motor is connected properly.

14.The print is brushed or leaked



The drawing is the residual linear object left when the extruder crosses the open space. The common measure to solve this problem is to control the "withdrawal" function in the slice software. If the tap is opened in the slice, the consumables will be pulled back in the opposite direction for a distance before the sprinkler head is moved to the next point. When the product moves to the next point, the consumables will be squeezed out again. Although theoretically, it can be avoided, there are several problems in practice:

14.1 Insufficient withdrawal distance

The most important setting in the return is the return distance, which determines how much plastic is drawn from the nozzle during the return. Usually, the more plastic the draw from the nozzle, the less obvious the drawing is.

14.2. The withdrawal speed is too slow

Another important setting in the withdrawal is the speed of the withdrawal, which determines how fast the consumables are withdrawn. If the pump rate is too slow, the melted supplies will still flow out of the nozzle. If the withdrawal is too fast, the separation of the unmelted part and the melted part of the consumables may occur, or the extrusion wheel may bite off a piece of the consumables.

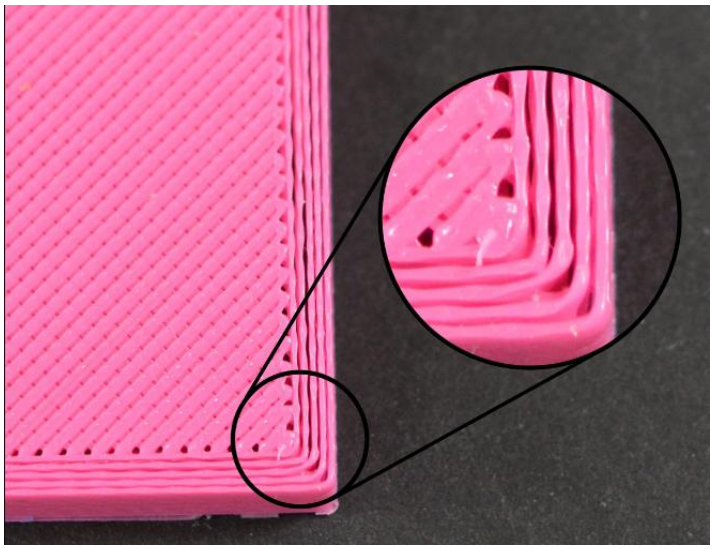
14.3. The temperature is too high

If the temperature of the extrusion head is too high, the consumables in the nozzle will become very sticky, and it is easy to flow out of the nozzle, but if the temperature is too low, the consumables are more difficult to squeeze out. In the determination of the drawing distance and drawing speed are more appropriate, there is still a drawing situation, you can try to reduce the temperature of the extrusion head by 5-10 degrees Celsius.

14.4. the suspended movement distance is too long

The suspended distance will also have a great impact on the drawing. The short distance movement, the melted consumables do not have enough time to flow out of the nozzle, but the long distance movement is very easy to produce the phenomenon of drawing. Some slicing software has relevant Settings, which can avoid the long distance movement.

15.Underextrusion and overextrusion



For most 3D printers, how much material the extruder squee. In the process of printing, due to some problems, the extrusion of the material will be less than expected. This requires the user to carefully look at the printed work to see if there are irregular distances between the textures and, and if so, usually for the following reasons.

15.1.Material diameter

When users buy materials, it is usually recommended to buy formal brand products. When buying inferior products, the diameter of the material may be unequal. For such materials, the diameter can usually be tested with measuring calipers to ensure that the diameter of the material is consistent with the package label.

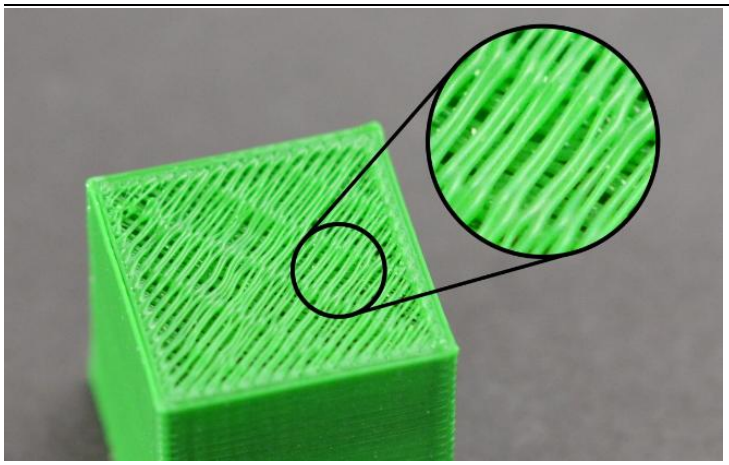
15.2.Increase extrusion multiple

If the material diameter and identification is maintained, but there is a lack of extrusion material, then the extrusion speed needs to be adjusted. This is a very practical setting for the user, who can directly modify the amount of extrusion to squeeze more material. ABS material usually presses 109%, while PLA is 105%.

15.3.Reduce extrusion speed

If the material is normal and the extrusion is too much, the extrusion is reduced to keep the printing at a normal level.

16.The top-level seal is insufficient



In order to save printing materials, most 3D printers will use different filling methods for the internal space, the commonly used ratio is 20% -30%, that is to say, in the closed product interior, only 20% -30% of the material, in this case, the work can still maintain a certain strength. However, in some of the works, users will find that some of the works are not perfect, and even have holes or gaps. If you encounter this problem, here are a few simple Settings, you can adjust and fix it.

16.1. Top layers

When the number of capped layers is insufficient, it is easy to lead to the phenomenon of material falling, and the number of layers can be increased accordingly;

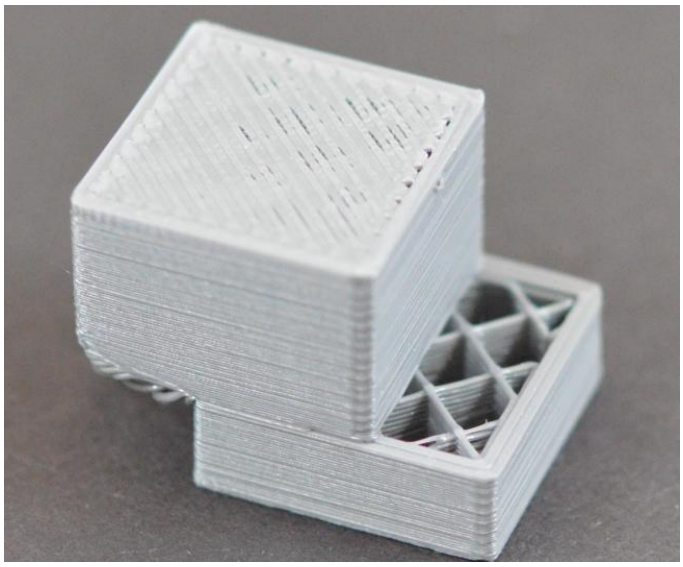
16.2. The filling rate is too low

Too much reduction of the filling material, will make the internal space is too large, resulting in the number of upper layers can not be effectively supported, it is suggested to increase the internal filling ratio;

16.3. Insufficient extruding materials of the extruder

Due to the lack of extrusion material, the nozzle can not meet the expected requirements, which can be adjusted by adjusting the extrusion amount.

17.Print offset



Most printers use a stepper motor to drive the machine in motion, meaning that the printer has no function to detect where the print head is located. However, once the stepper motor receives external force interference, or there is a large resistance, it may lead to the printing head dislocation, and the printer does not detect and correct the measures, so that the printed product produces dislocation \ displacement and other conditions.

17.1. The print head moves too fast

If the printing speed or empty speed exceeds the speed the stepper motor can handle, dislocation will occur. Adjust the low walking speed, and lower the acceleration if necessary.

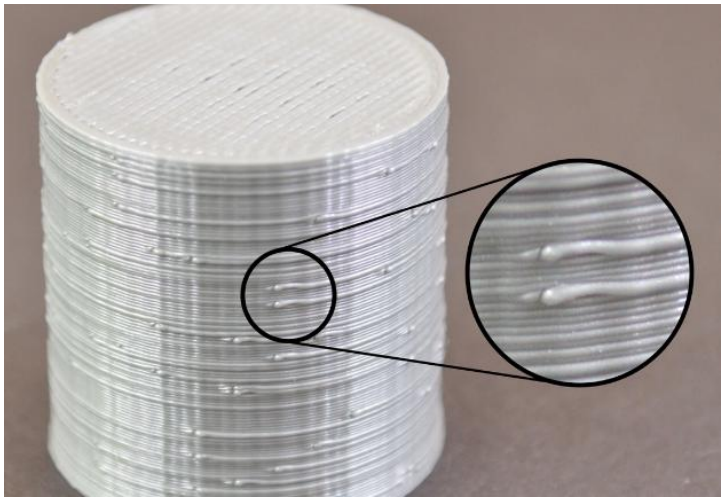
17.2. Mechanical or electronic reasons

If the above does not solve your problem, then you need to check the mechanical and electronic aspects, most machines use belt drive, over time, the belt may lengthen and become loose, thus causing the belt to slip from the pulley. The solution is also relatively simple, the belt drive mechanism will generally have to adjust the tension degree of the belt mechanism, the belt adjustment is more tight some can be solved. However, it should be noted that if the adjustment is too tight, it will form a huge resistance between the rotating shaft and the bearing or may be unable to rotate. So the degree of tightness needs to be moderate.

Another mechanical problem is the machine meter screw (top wire), this small screw is used to fix the pulley on the stepping motor shaft, so that the pulley rotates with the motor shaft, but if the screw is loose, there will be shaft rotation and the wheel will not turn. This situation also causes the problem of layer offset.

The electronic problem may be that the stepper motor power supply current is insufficient, resulting in the stepper motor is not enough force to overcome the resistance. It may also be that the stepper motor drives the chip to overheating, causing the stepper motor to stop turning before the chip is cooled. There are many other points in electronics.

18.Surface spots and stripes problems



In the process of 3D printing, the extruder frequently extracts, most of the extruder can maintain a good extrusion width in the movement, however, in each withdrawal and extrusion process, there will be additional vibration. For example, if you look closely at the outer surface of the printed object, you may be able to see very small traces, the place where the printing begins. 3D printing starts at certain locations on the outer edge, and eventually goes back to the starting place. The trace is usually represented by surface spots or stripes; several ways to improve the problem:

18.1. Return extraction and slide wipe setting

If you find such traces on the surface of the printed piece, you can first observe the printing process at the beginning of each layer? Or do they appear after each layer is printed? If it appears before starting printing, the value of "restart additional extrusion distance" in the slicing software should be modified to be negative; if the withdrawal distance is 1.00mm and the additional extrusion distance is-0.2mm, the withdrawal is 1.00mm, but only 0.8mm. This should improve the problem of developing traces before starting printing. If this appear after the end of each layer, you need to adjust another setting called "taxi wipe", which causes the extruder to stop extrusion near the end, release the pressure, and the taxiway end point. This value was adjusted until the trace disappeared. In general, this value is set to 0.2-0.5mm.

18.2. Avoid unnecessary withdrawal

In general, in the slicing software, there will be the option of "withdrawing only when crossing the open area". After this option is opened, the 3D printer will not turn on the withdrawal when crossing the internal space of the object. This can reduce the occurrence of traces, in addition to the bowden extruder, and the extruder far from the nozzle, close the back may perform better;

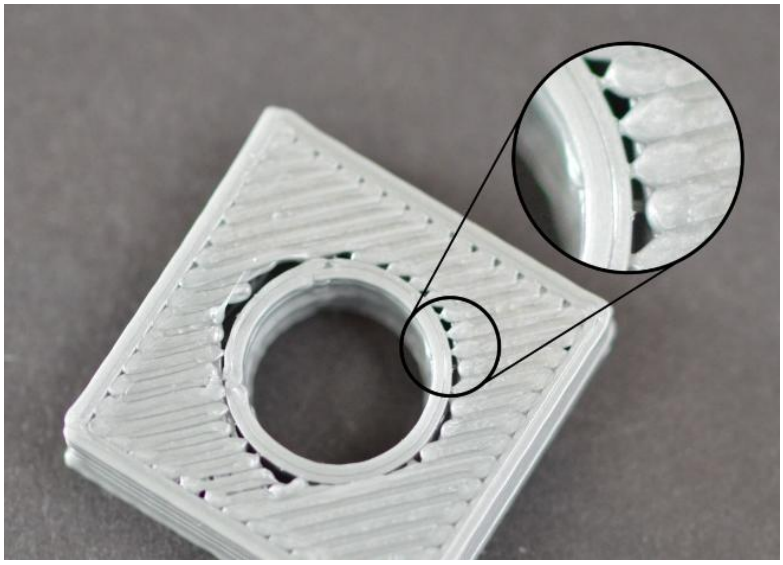
18.3. Non-fixed point backwithdrawal

The conventional withdrawal will pause during the withdrawal, which is not suitable for the extruder with high internal pressure during bowden printing. Some slicing software can set the "wipe nozzle" option, which will cause the printer to continue to move during the withdrawal. In general, the wipe distance is set to 5mm;

18.4. Set the printing start point

All slicing software provides the option to print the starting point, which can start printing at a location specified by the user. For example, in a building, you can set the starting point on the back side of it, so that when printing, these traces will be arranged on the back side of the building, and these points are not visible on the front side.

19.There are gaps between the edge and the filling



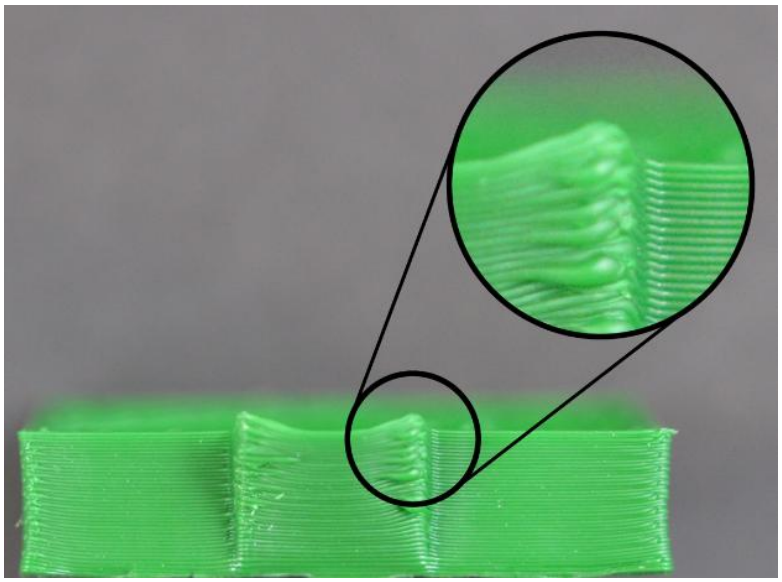
19.1. Insufficient edge overlap (overlap)

Edge overlap refers to how much the fill overlaps with the internal edge. If you have 20%, try to 30% or more

19.22. Printing speed is too fast

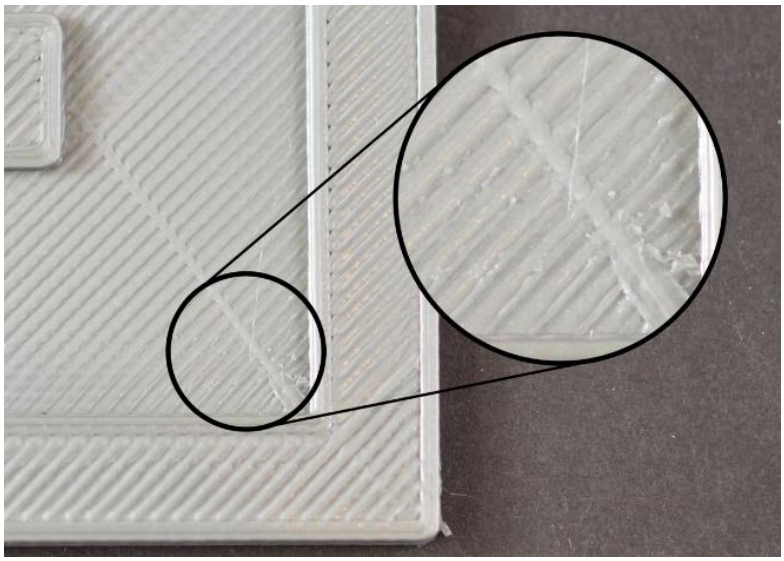
Usually, the fill is much faster than the edges. Too fast filling speed, will let the filling and edge are not enough time to combine. If you change the overlap and the problem isn't solved, try to reduce the printing speed to 50%. If the problem is solved, you can slowly increase the speed until you find the most suitable printing speed for your printer.

20.Rough edges and corners



This problem is mainly caused by the heat dissipation is not fast enough. After the high temperature supplies are extruded from the nozzle, they will change their shape in the process of slow cooling. If this problem occurs in the very beginning of the printing, you can refer to the "first layer off-platform problem" mentioned earlier

21.Top layer surface scratch problem



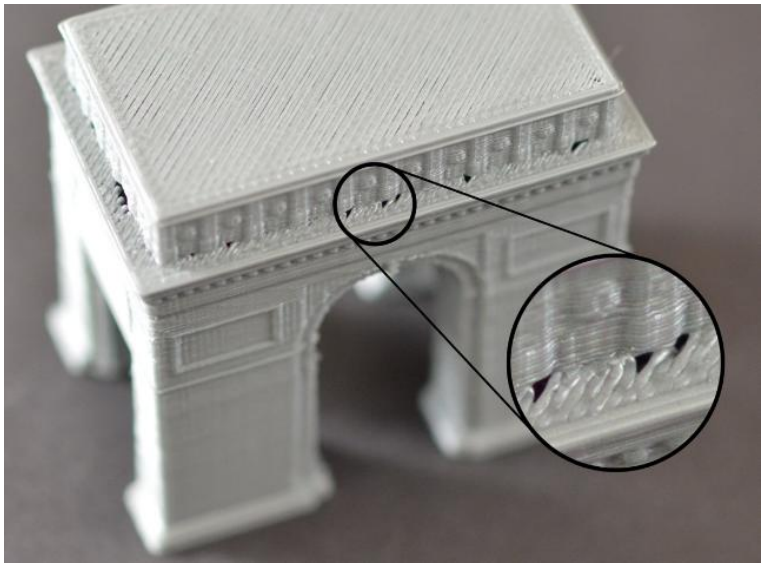
21.1. Too much plastic extrusion

Encounter the problem of scratches, the first thing to check is, is too much consumables extrusion. If the supplies are squeezed out, each layer is thicker than the set size, which means the scratches form when the nozzle moves through. The solution to this problem can refer to the aforementioned "more consumables"

22.2. Vertical lifting

If you are sure your consumables quantity is correct, but still scratch problems, so you can open in slice software "vertical lift" option, this option will make the machine in back, print head up a certain distance, and then move to the next coordinates, then move down back to the original height, continue to print. It's important to note that the print head will be raised vertically only in places where there is a tap. If you want to make sure that each pass has a vertical lift, make sure that the "draw only when crossing open space" and "minimum distance" options are closed.

22.Holare holes in the bottom of the corner linet'''===



This problem often occurs in the situation where the upper level is smaller than the lower level. The following provides several possible causes and solutions to this problem:

22.1. Insufficient number of edges

You can try increasing the number of edges by two;

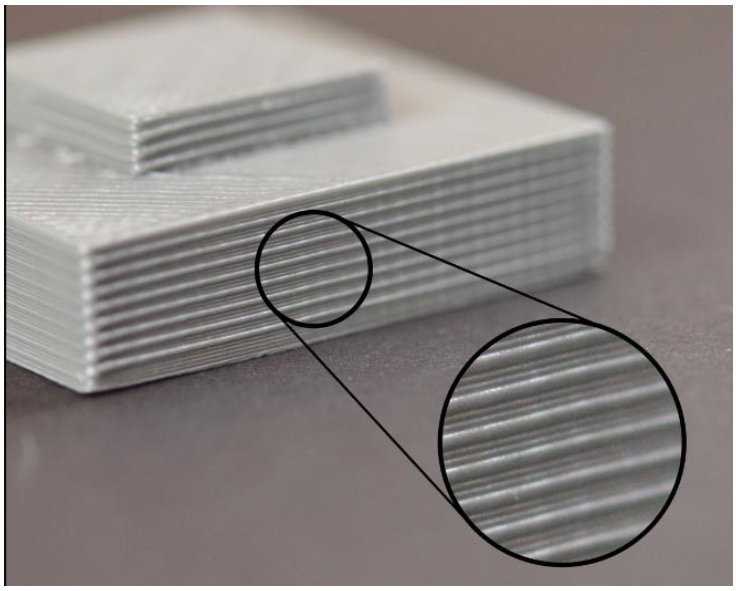
22.2. The number of top layers is insufficient

You can try to add the top layers by two layers;

22.3. The filling ratio is too low

You can try to increase the fill ratio by 20%.

23.The side edges are uneven



The side of a printed piece is like a thousand-layer cake. In all normal cases, the side of the printed object should look like a smooth surface. Instead of showing the obvious edges, the following are several possible causes and suggested solutions:

23.1. The extrusion volume is inconsistent

Usually this reason is because the tolerance control of the mass line diameter of consumables is not strict. If the line diameter change of your consumables is about 5%, then the extrusion volume change of consumables is as much as 0.05mm. Of course, there are some other possibilities for the inconsistent extrusion quantity, which will be explained in detail in the following "inconsistent extrusion quantity"

23.2. Temperature change

Most 3D printers use PID to control the printing temperature. If the PID setting is not good, the printing temperature will fluctuate up and down (when the temperature rises, the liquidity of consumables is better than when the temperature is low), and the printing temperature fluctuation will affect the extrusion volume. Then, the problem of uneven side edge is generated. A fixed PID control can maintain the printing temperature within 2℃ up and down. If this range is exceeded, the PID needs to be rearranged.

23.3. Mechanical reasons

If you can be sure it's not either, it's probably mechanical. For example, when printing, the printing platform shaking and vibration may lead to the position change of the nozzle, which will lead to inconsistent layer thickness, and thus produce the problem of uneven side edges. Another example: mechanical position or motor differential control problem. Even the small offset of the printing platform can affect each layer of the printed object.

24. Parts are damaged, sent wrong or missed

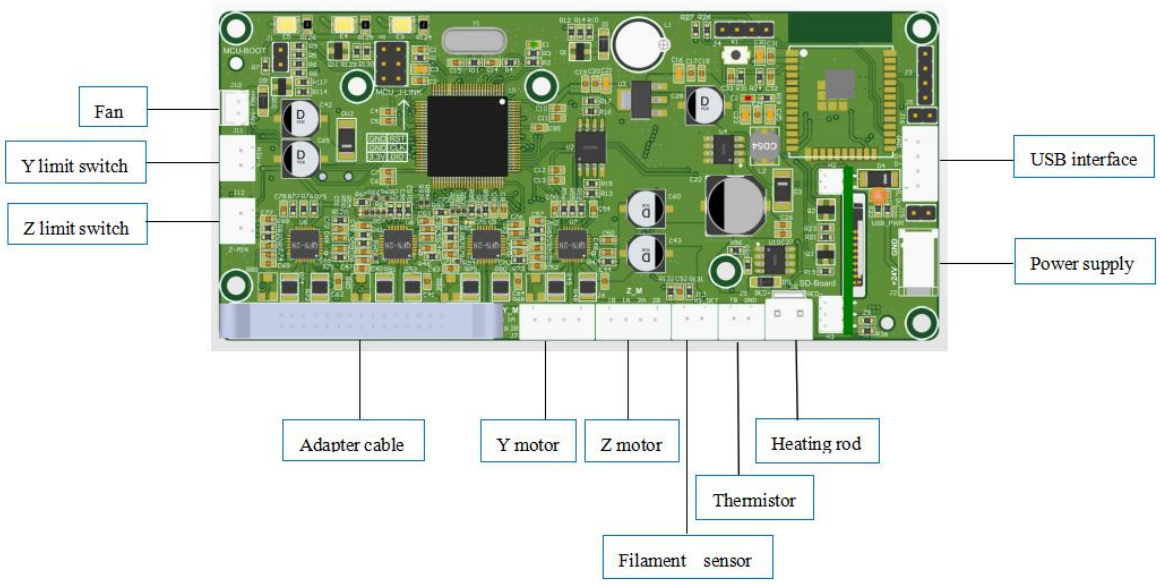
Contact after-sales staff to identify defective parts and request replacement.

Note:

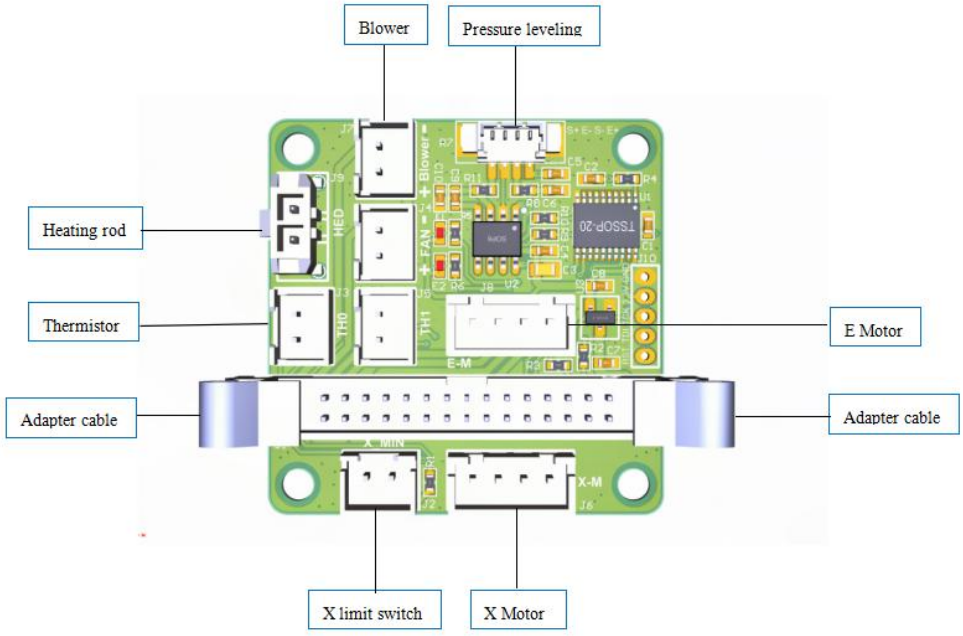
If there are other problems that are not listed, please contact after-sales staff directly for processing

Further information:

1. Wiring diagram of the motherboard:



2. Adapter board wiring diagram



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