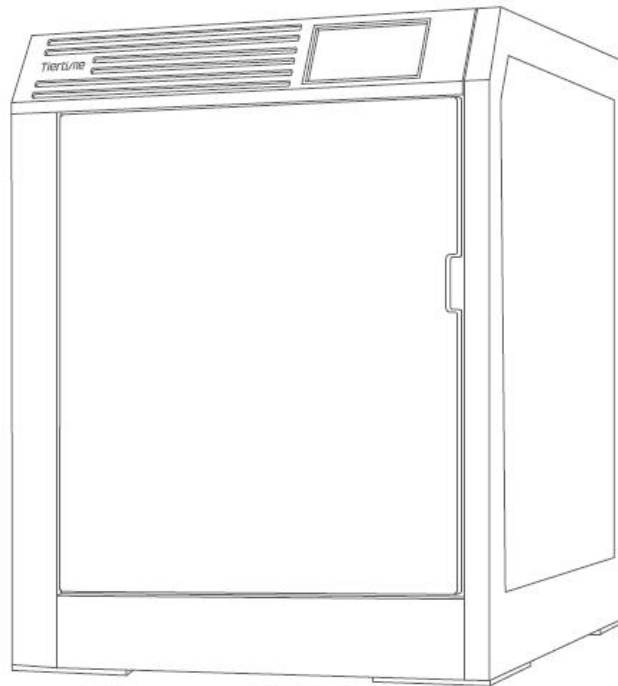


UP mini 3
User Manual
V1



<https://www.tiertime.com>

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1. Safety and Printing Environment

1.1 Safety Precautions

1. The UP mini 3 3D printer requires the power adapter provided by the original manufacturer, otherwise the machine could be damaged or even cause fire. Keep the power adapter away from water and out of high temperature environments.
2. During printing, the temperature of the nozzle of the printer could reach 300°C and the temperature of the print platform could be over 100°C. Do not touch these parts with your bare hands when the printer is in the operation mode, not even with the heat resistant gloves included in the accessories, as the temperature could damage the gloves and injure your hands.
3. During printing, the print head and other mechanical parts move at high speed. Touching these parts while they are moving could cause injuries.
4. Make sure to remove the build plate off the build chamber first before removing the model off the build plate. If you remove the model from the build plate directly, the build plate could be damaged.
5. Wear goggles when removing the supporting material from models or detaching models from the build plates.
6. When printing with plastic filaments, the process could generate slight and, for some people, annoying odor. It is recommended to run the printer in a well ventilated environment. We also suggest keeping the printer in an environment with a stable temperature as unwanted cooling could cause adverse effects to the print quality.
7. After changing the extruder, make sure to conduct a calibration before a printing.
8. Adult Supervision: Adult supervision is required in the presence of children. Small printed parts are a choking hazard, and always keep sharp tools away from children.

1.2 Printing Environment

1. As the slight odor could be generated during printing, keep the printer in a well ventilated environment. The ideal working temperature of the UP mini 3 is between 15°C and 30°C with a relative humidity between 20–70%. Printing at temperatures out of this range could cause adverse effects to the printing process and print quality.
2. It is recommended that you avoid wearing cotton, wool and other materials that are prone to static electricity before using the printer to prevent damage to the precision components of the equipment when the equipment is in operation.

1.3 One Year Warranty

Tiertime and its authorized resellers warrant to the original purchaser that this product is free from defects in material and workmanship. Tiertime or its resellers will for one year, at its option, repair or replace at no charge for parts and labour from the date you purchase the product from Tiertime or its authorized resellers. Print heads, print boards, nozzles and other consumables are warranted for thirty (30) days.

- Tiertime reserves the right to determine the validity of all warranty claims.
- Warranty is voided if the product serial number has been altered or removed.
- Warranty is voided if the product has been misused or damaged or if evidence is present that the product was altered, modified, or serviced by unauthorized service people.

For the detailed Warranty and Service Level Agreement, visit our website

<https://www.tiertime.com>.

1.4 Compliance

The UP mini 3 is compliant to the following quality certification:

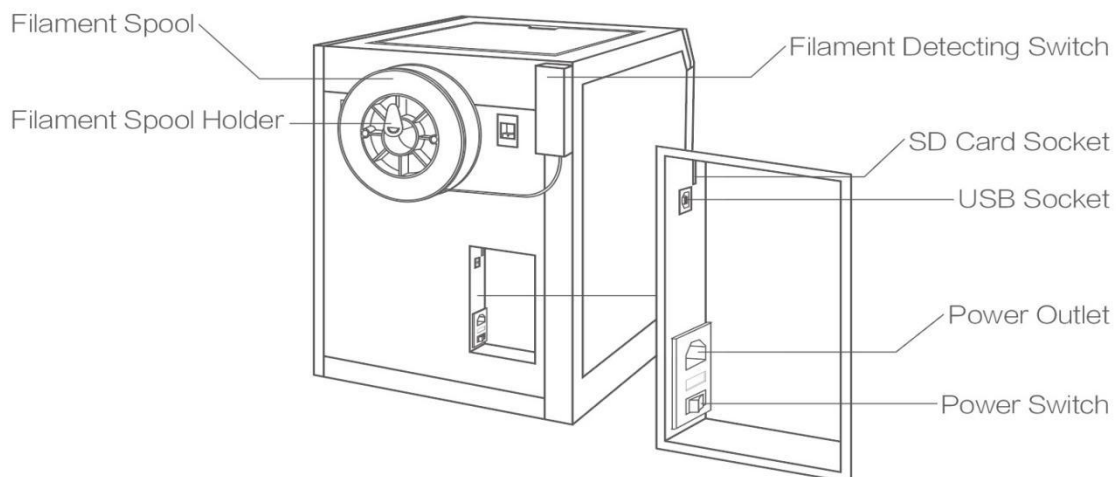
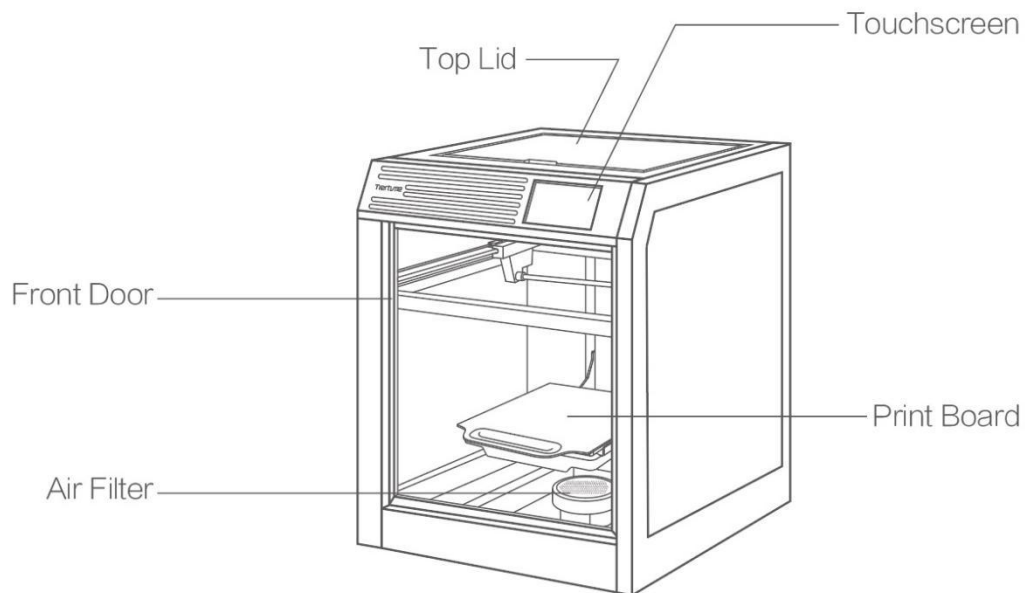


2. Product Introduction

2.1 UP mini 3

UP mini 3 is an entry-level 3D printer launched by Tiertime, which can meet daily work requirements such as high-frequency design verification for schools and research institutes.

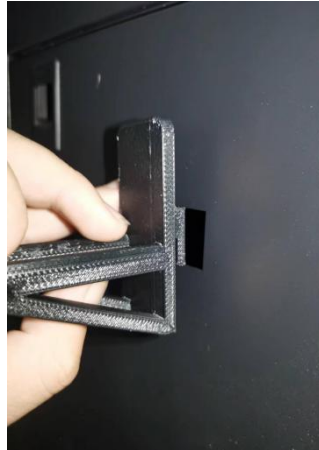
2.2 Main Structure



3 Printer Installation

3.1 Install Filament Spool Holder

Insert the filament spool holder into the slot at the back of the printer.

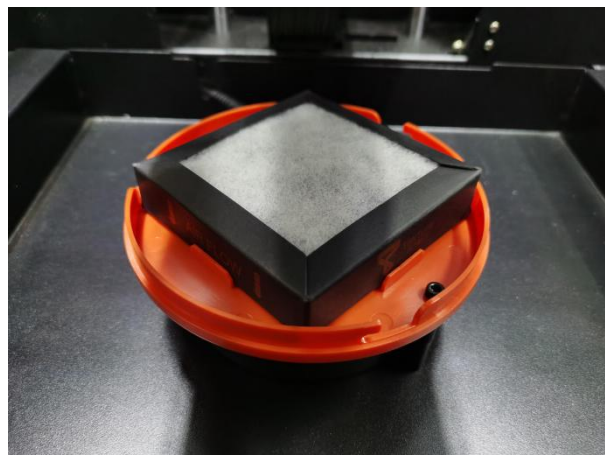


3.2 Install Air Filter

1. Rotate counterclockwise to remove the top cover of the air filter.



2. Put the air filter provided in the packaging box into the base of the air filter system.



3. Turning the upper cover of the air filter clockwise to close it.



Note: Change the air filter every 3 months, or every 300 hours of active printing.

3.3 Install Build Plate

Place the print board in the slots of the platform with the side of the perf board facing up, push the board forward and make sure the board fits in the slot.



If printing with no raft, make sure the glass side of the print board facing upward, and then apply glue or tapes on the surface of the print board.

Note: Print board has two surfaces. One side is perf board and the other side is glass board, both of which can be a print plate. The perf board side is suitable to print with raft, and it can be used to print the materials that are easy to warp, e.g. ABS. If printing with no raft, use the glass side of the board with glue or tapes on the surface.

3.4 Cable Connection

1. Secure the power connector into the power interface at the back of the machine, and plug the other side of the cable in the power outlet. Turn on the power switch at the back of the machine.



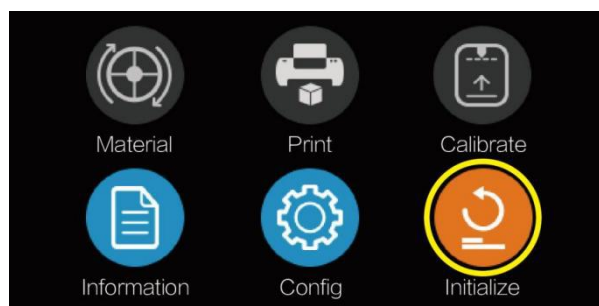
2. Plug in the USB cable (provided in the package) into the USB socket at the back of the machine.



Note: Before switching on the printer for the first time, do not connect the USB cable with a computer, because connecting to a computer may lock the buttons on the touchscreen. After switching on printer for the first time, use the touchscreen to initialize the printer, calibrate it and

3.5 Initialize Printer

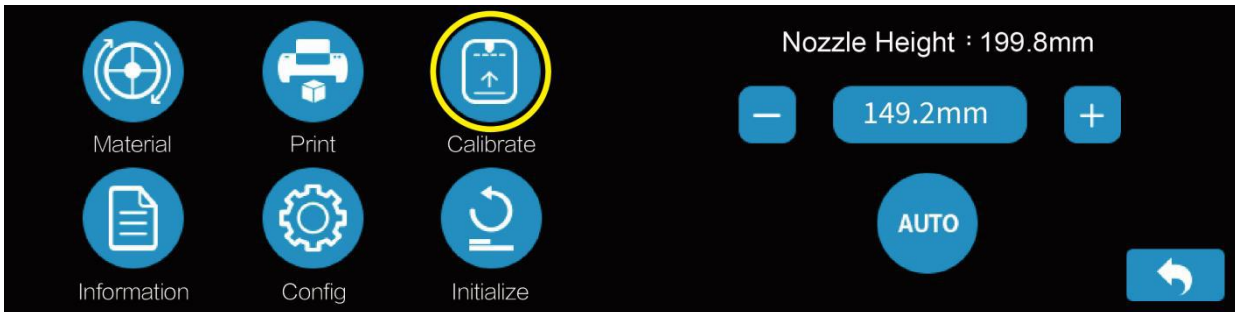
Click the lower right “Initialize” button, and confirm the machine to start the initialization process, which may take several minutes. The printer will get back to the zero position once the process is done.



3.6 Calibrate Printer

All the UP mini 3 3D printers have gone through the calibration process in our factory. However, due to bumpy shipping conditions, we strongly recommend you conduct platform leveling and nozzle height adjustment before your first use of the machine.

Click the “Calibrate” button on the touchscreen, and make sure the nozzle is clear away from the print platform. If the nozzle is very close to the platform, click the “-” button to reduce the nozzle height. Click the “Auto” button to kick start the calibration process. The extruder will start moving and do 9-point matrix leveling and the nozzle height adjustment process.



The whole calibration process can take several minutes. Once the process is finished, click the “Back” button to return to the main menu.

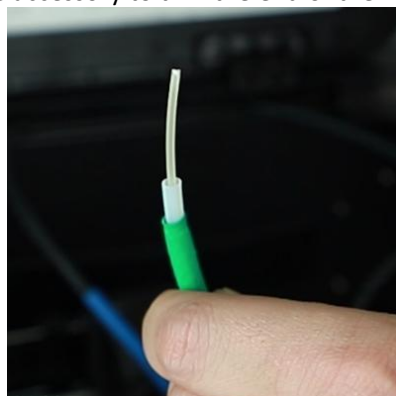
Note: Before the calibration process, make sure the tip of the nozzle is clean without any residue, otherwise, it will introduce extra delta in the nozzle height which could affect the print quality.

3.7 Install Filament

In order to keep the consistency of the print quality, we recommend using Tiertime Fila filaments on Tiertime 3D Printer. Our operational software, UP Studio has the optimized parameter settings built in, which will ensure the best printing experience.

There is a 500-gram UP Fila PLA spool that comes with the printer. Install the filament spool in the following steps:

- 1, Take out the PLA spool from the vacuum bag.
- 2, Use the cutting pliers in the accessory to trim the end of the filament making sure it is flat.



3, Hang the filament spool on the filament holder at the back of the machine.

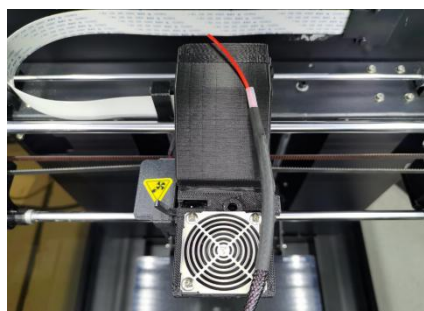


Note: The spool turns counter clockwise. When placing the spool, make sure the filament is tightly coiled around the spool to avoid any filament tangles.

4, Insert the loose end of the filament into the filament feeding device at the top right at the back of the machine. When inserting the filament into the entrance of the filament guiding tube, you should feel the filament triggers the mechanical switch, which is the detector of filament broken device.



5, Continue feeding the filament into the device, until the end of the filament comes out of the other side of the guiding tube. You may open the top lid to observe.



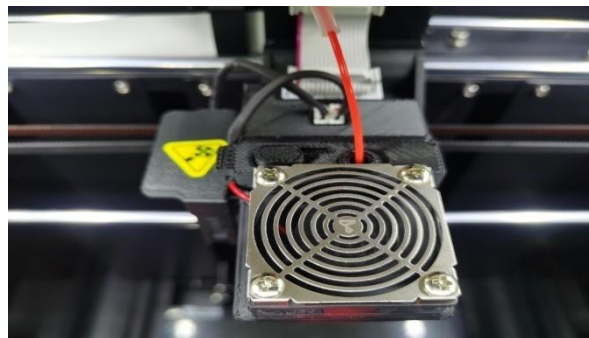
6, Click the “Filament” button on the touchscreen, and click the filament type button until it turns to the “PLA” (The button switches to different filament types when you click it)



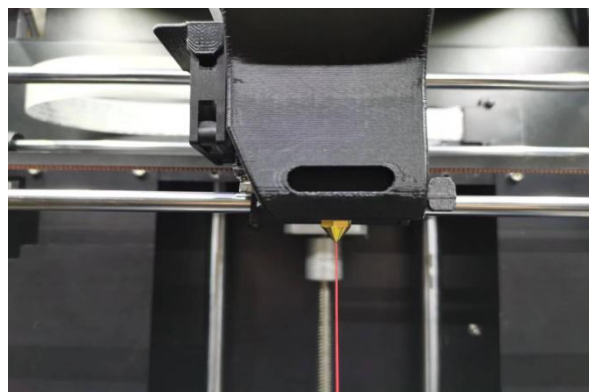
7, Click the “Extrude” button to start the extrusion process. The nozzle will get heated to the preset temperature which will be shown on the screen with 100%.



8, The printer will beep when the nozzle temperature reaches the preset value. Press the loose end of the filament into the filament inlet on the top of the extruder, until the motor inside the extruder grabs the filament and drags it into the extruder.



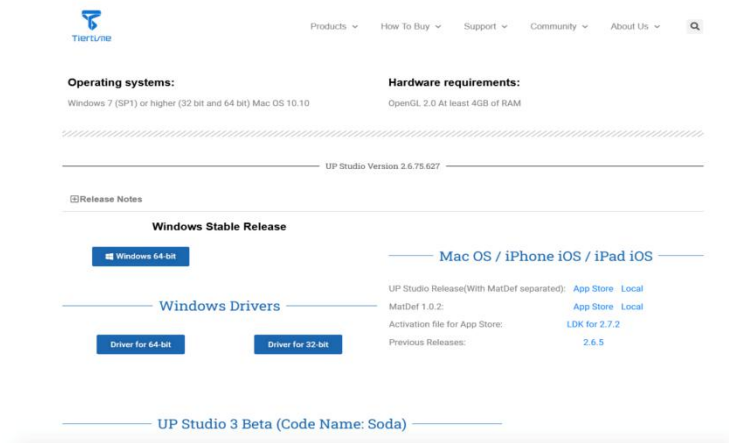
9, The filament should be heated inside the extruder. A clean and straight line of melted filament should be extruded from the tip of the nozzle.



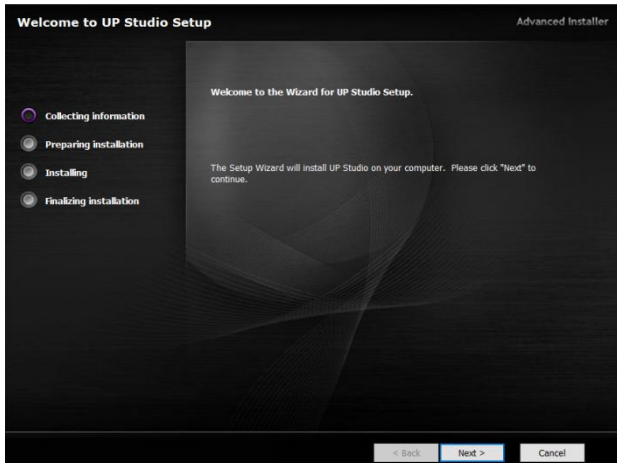
4 Software Installation and Printing

4.1 Download and Install the UP Studio Software

1. You can download the latest UP Studio software and other previous released versions via following URL:
<https://www.tiertime.com/software/>



2. Double click the installation file, and follow the instructions shown in the installation program. After the installation is finished successfully, you can run the program and start printing.



OS System:


Windows 7 (SP1) and over (32bit and 64bit)
 Mac OS 10.10

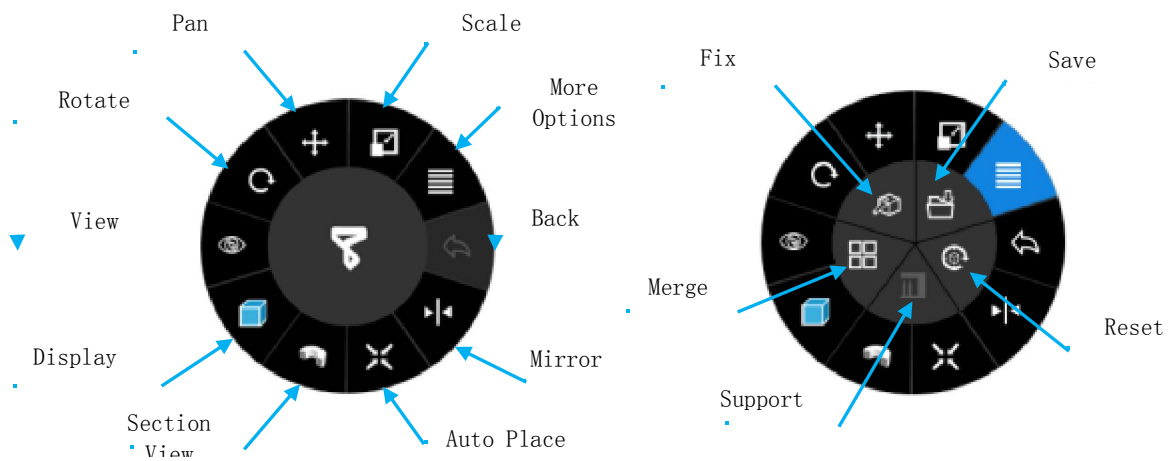
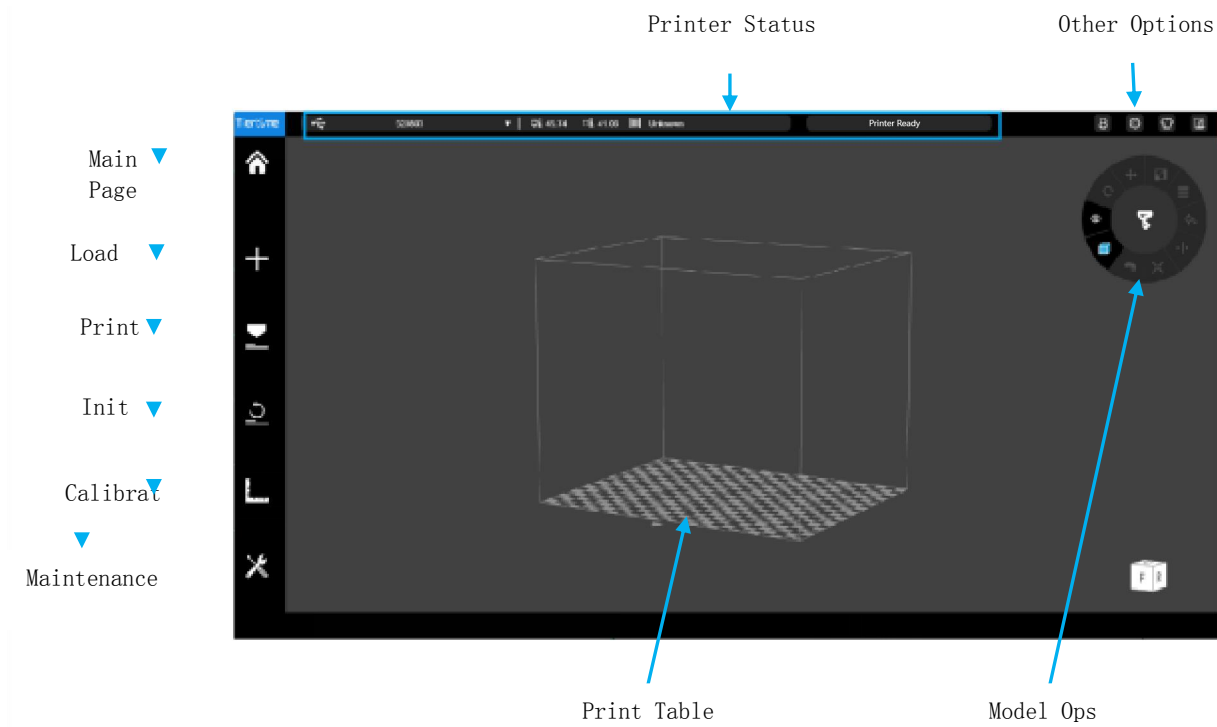
Hardware Requirement:

OpenGL 2.0 with at least 4GB RAM

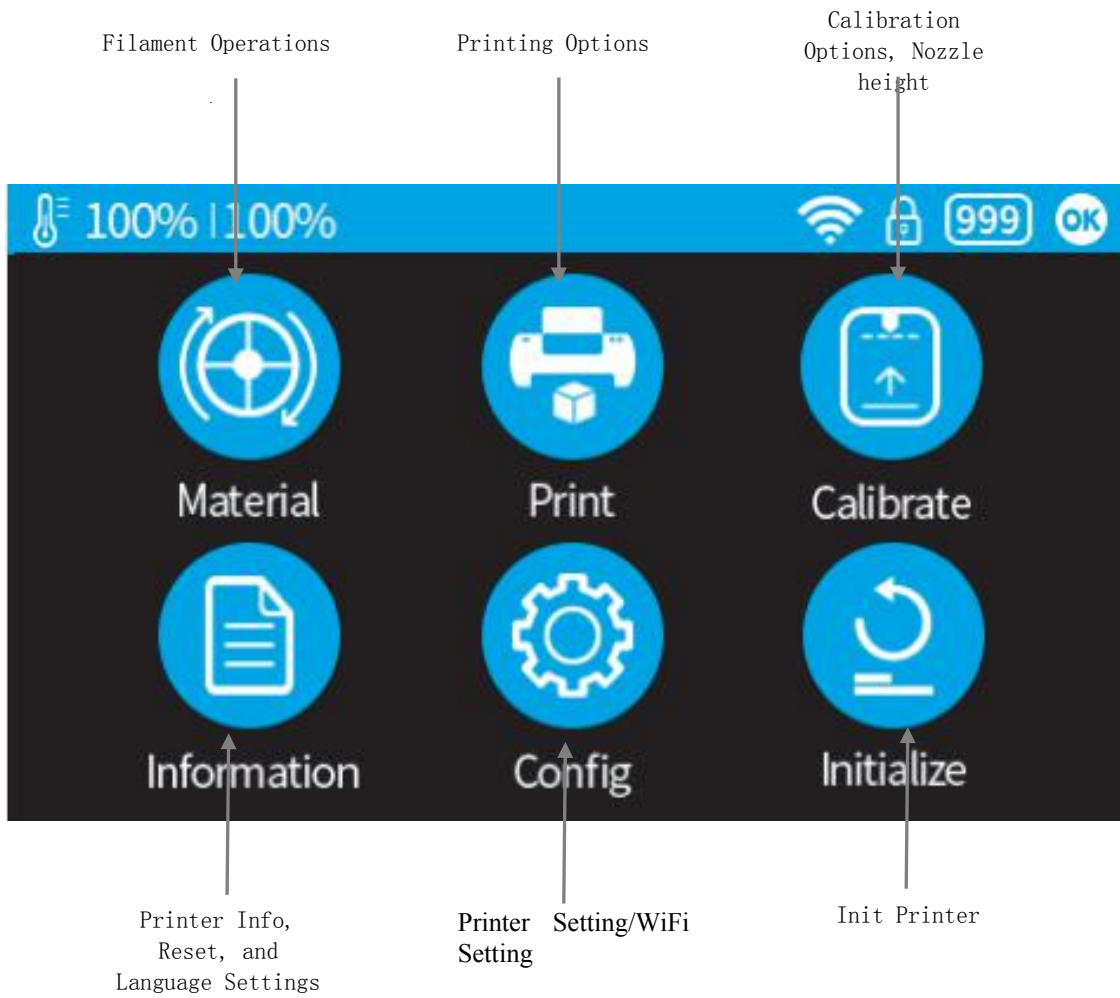
4.2 Software Interface



Connect the printer with a computer via USB cable or WiFi connection. Click the icon  and enter the software interface.



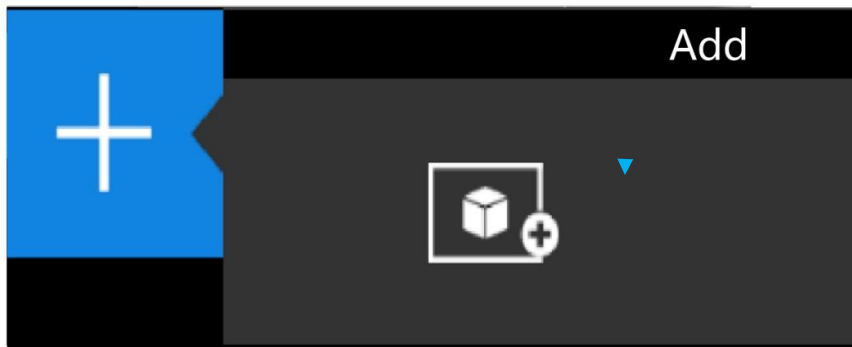
4.3 Touchscreen Interface



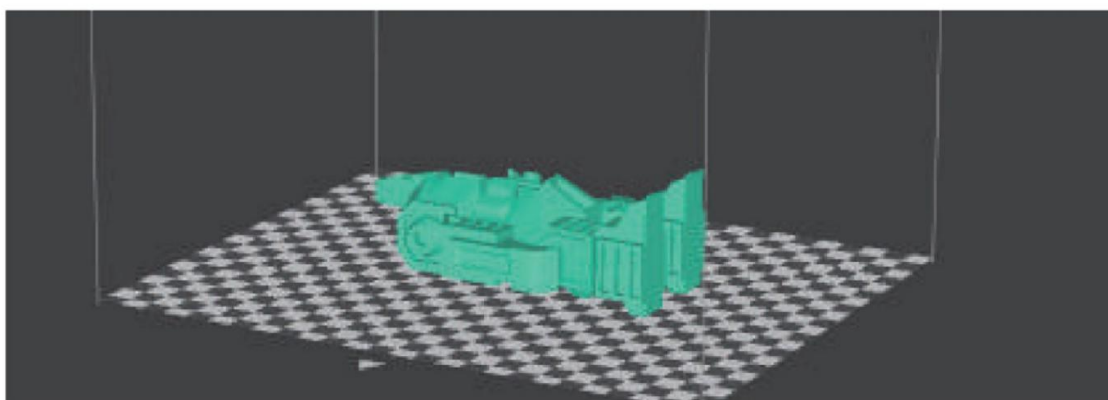
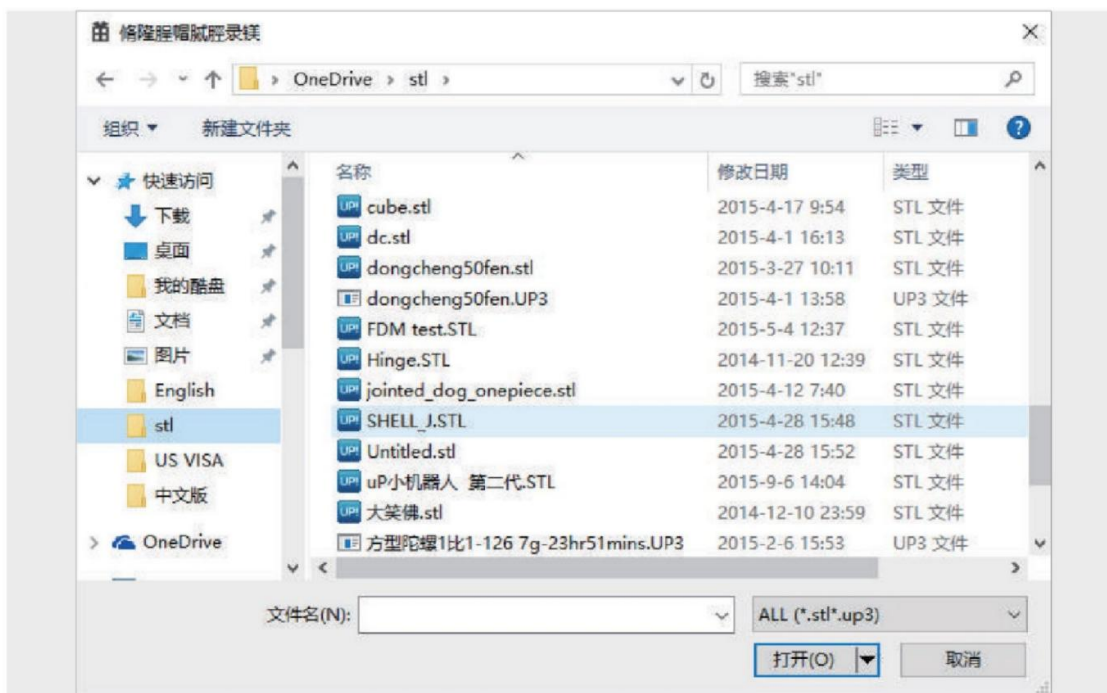
4.4 Load 3D Models



Open UP Studio software, click the UP icon on the left navigation menu, and follow the instructions to load models:

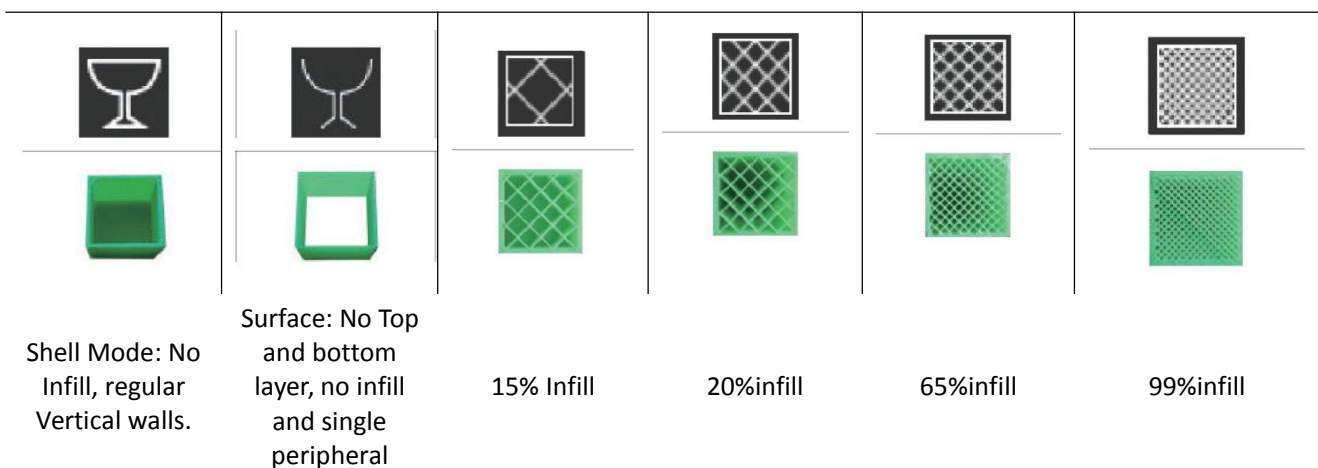
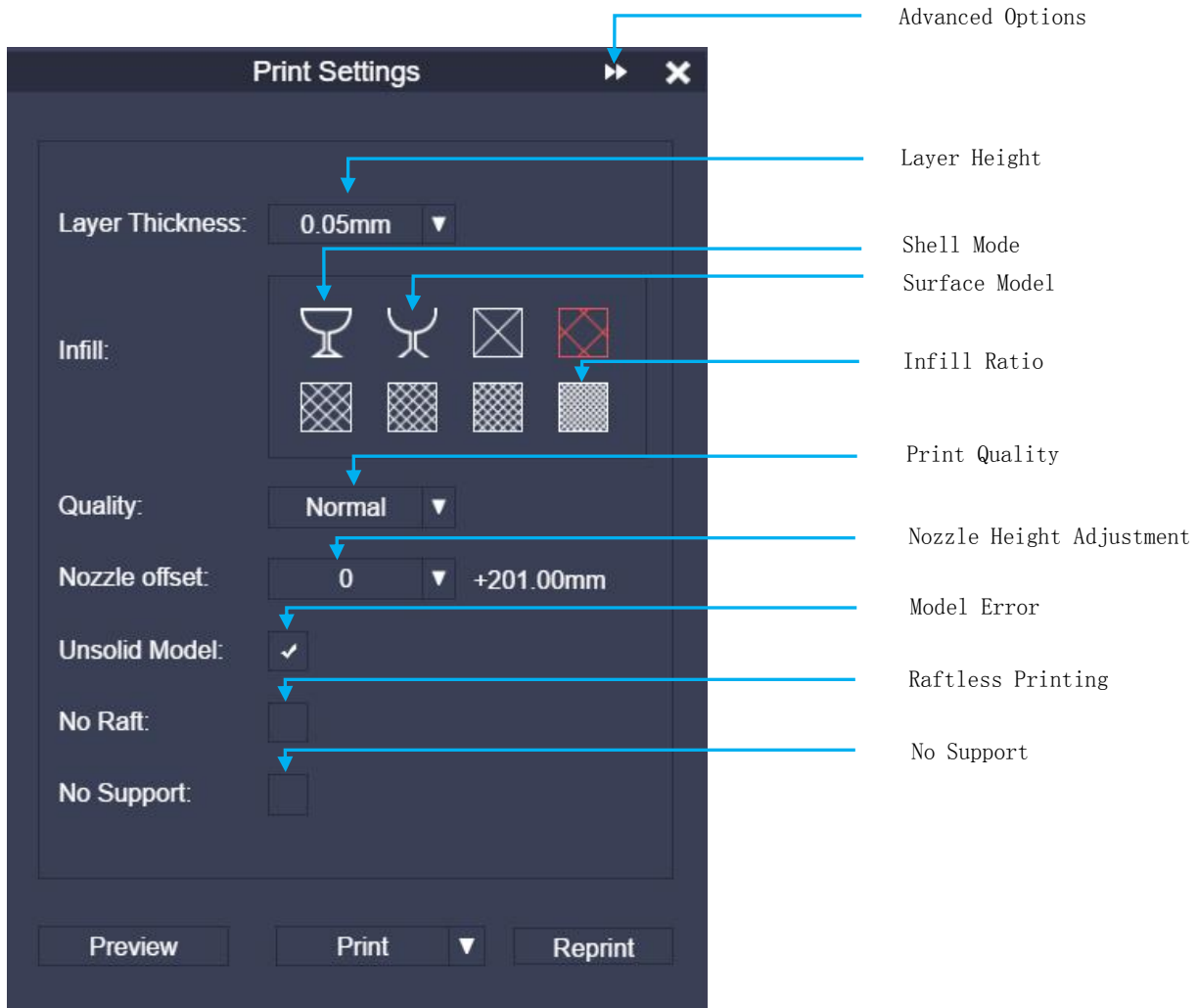


Load Model Button



4.5 Print Models

Make sure the printer is connected via USB or WiFi with your computer, and a model has been loaded into the UP Studio software.

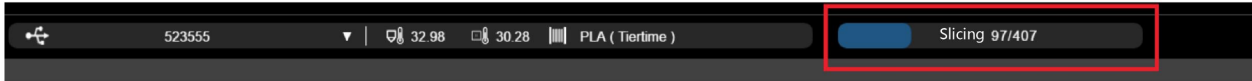


Shell Mode: Suitable to print a model with curves. The internal of the printed model is hollow, so need to consider the risk of surface collapse.

Surface Mode: No top and bottom layer, and no infill, only one go with peripheral wall

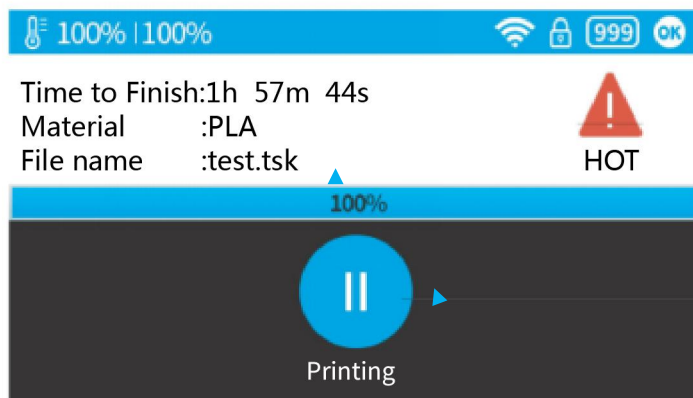
Infill Ratio: The infill ratio can be 13%, 15%, 20%, 65%, 80%, 99%. The larger the value is, the denser the printed model.

After choosing the printing parameter, click the “Print” button. The software will start calculating for slicing, and send the printing data to the printer.



Note: While the software UP Studio is in the process of slicing and sending data to printer, which is showing in the status area in the software, do not unplug the USB cable, or disconnect the WiFi connection, which could cause the data transmission disruption, and print job failure. Once the data transmission is over, the USB cable can be unplugged, and there is no need to have connections between the printer and the computer during the time of printing.

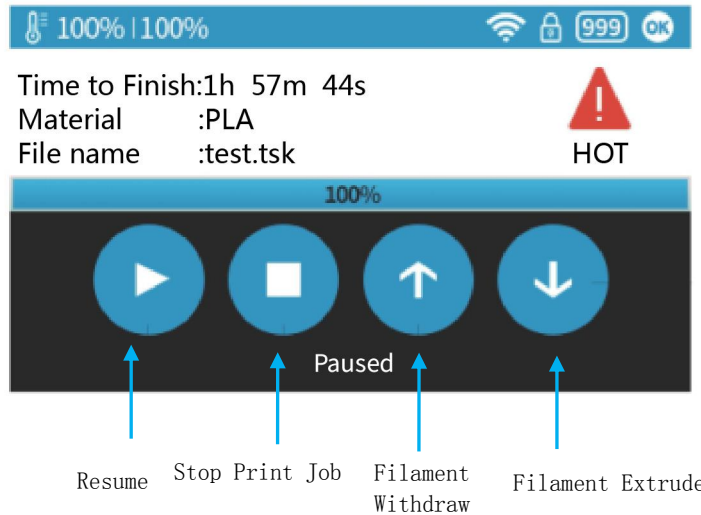
4.6 Print Progress (touchscreen)



Print Job Progress

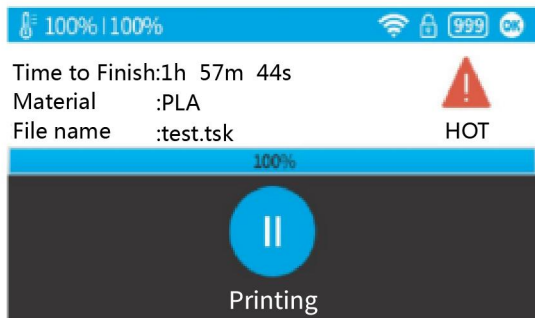
Pause Print Job

After the “Pause” button is pressed, the nozzle will pause extrusion, but the temperature of the nozzle will be maintained. During the period of pausing, the following buttons will be shown. Users can choose resume, stop, and change filaments.



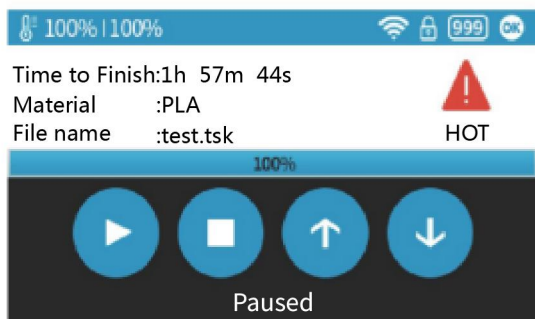
Note: Once the print job is stopped, it can not be resumed. You can only start the print from the beginning.

4.7 Change Filament during Printing



1. Click the "Pause" button during an ongoing print job to pause it

2. Extruder stops moving, and the build table lowers. Click the "Withdraw" button to withdraw the filament.



3. Insert the new filament into the inlet on top of the extruder. Press the "Extrude" button to load the new filament.



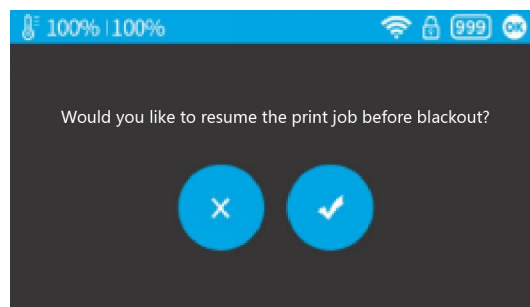
4. Press the "resume" button and resume the print job.





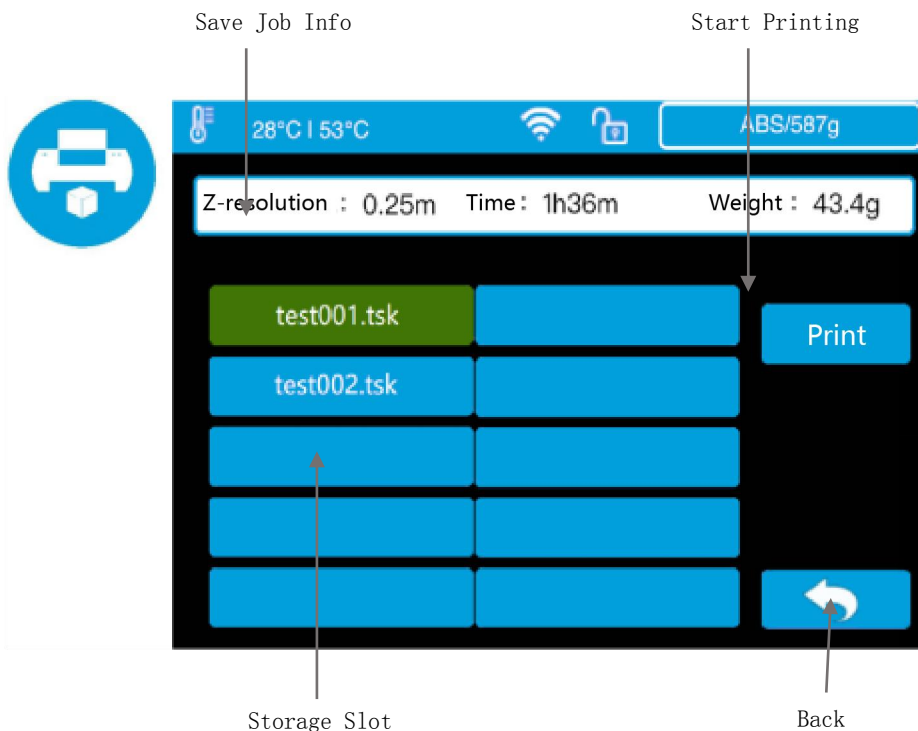
4.8 Resume Printing after Power Outage

If the power was lost during printing, after the power is back, the printer will alert the user whether to resume the current print job. If you want the print job resume printing, do not move the models on the build table. After the printer is powered on, do an initialization, and follow the instructions on the touchscreen or UP Studio software to resume the interrupted print job.



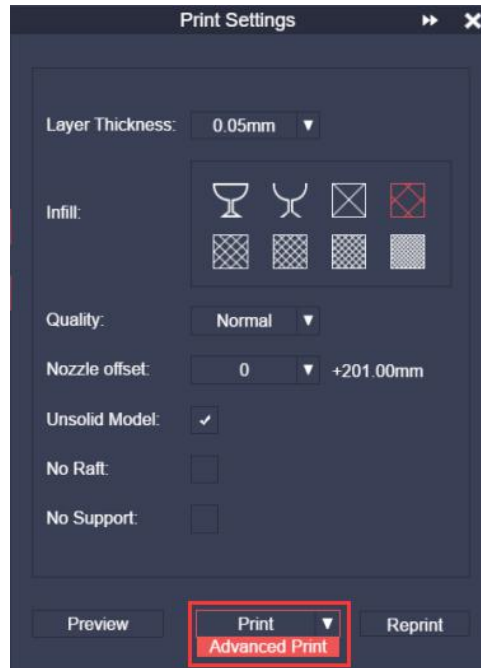
4.9 Repeat Print Jobs / Print Saved Jobs

There are 10 storage slots in the printer. You can choose saved print jobs from those slots from the touchscreen to start a print job right away, without connecting to a computer.

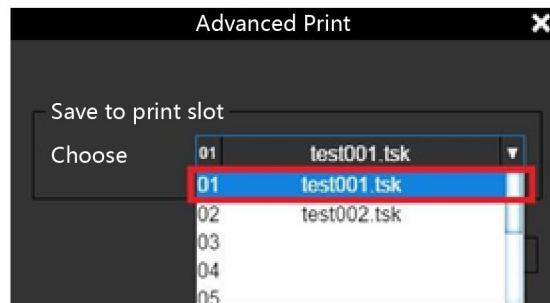


Instructions to save the print job in the storage slots:

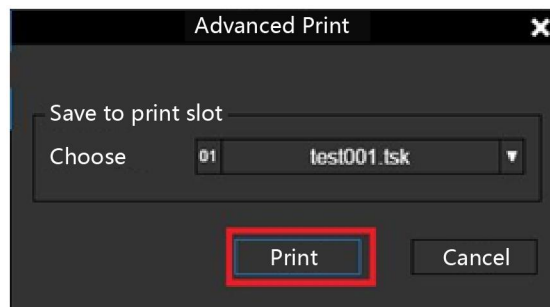
1, After setting up all the printing parameters, click the down arrow on the right of the “Print” button, and click the “Advanced Print”.



2, Choose the slot number for the print job.



3. Click the “Print” button. The data will be sent to the storage slot to which the print job is assigned, and the print job will start. Users can print from the storage slots afterwards directly.



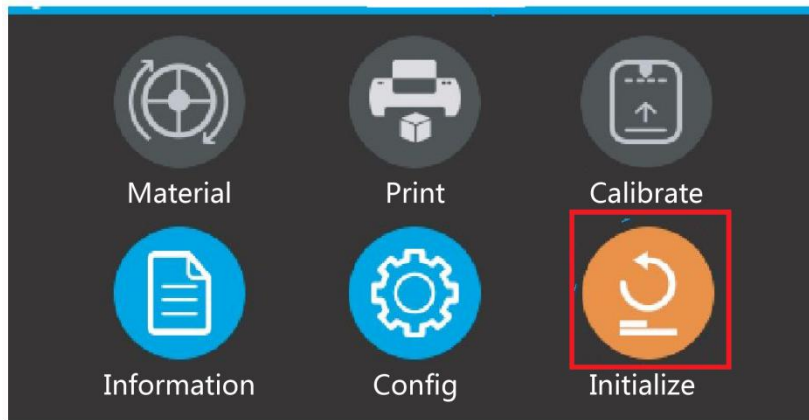
5 Printer Initialization

5.1 Printer Initialization

After a printer is turned on, a manual initialization is required. In the whole initialization process, the extruder and the build table will move slowly, and touch the limit switches on the XYZ axis. This is a very important step for a printer to work properly, because a printer needs to find its zeros. After the initialization process is done, the options in the software will be lit up and the printer is ready to work.

Two Ways to Start the Initialization Process:

1: After a printer is switched on, or being idle, click the “Initialization” button on the touchscreen.

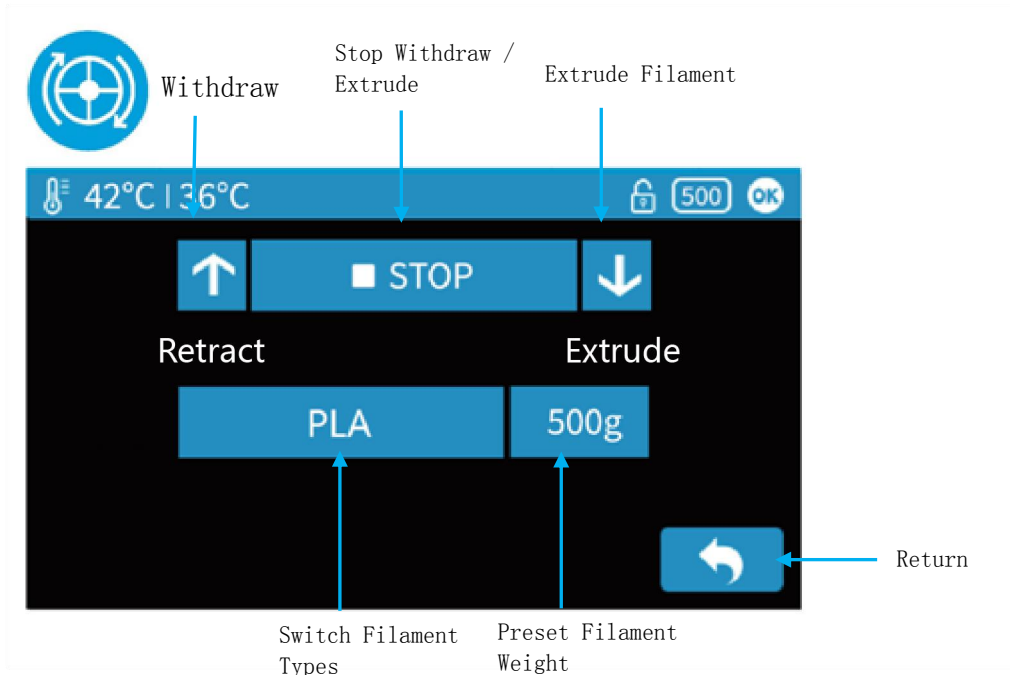


2: In the UP Studio software, click the “Initialization” button on the navigation menu on the left.

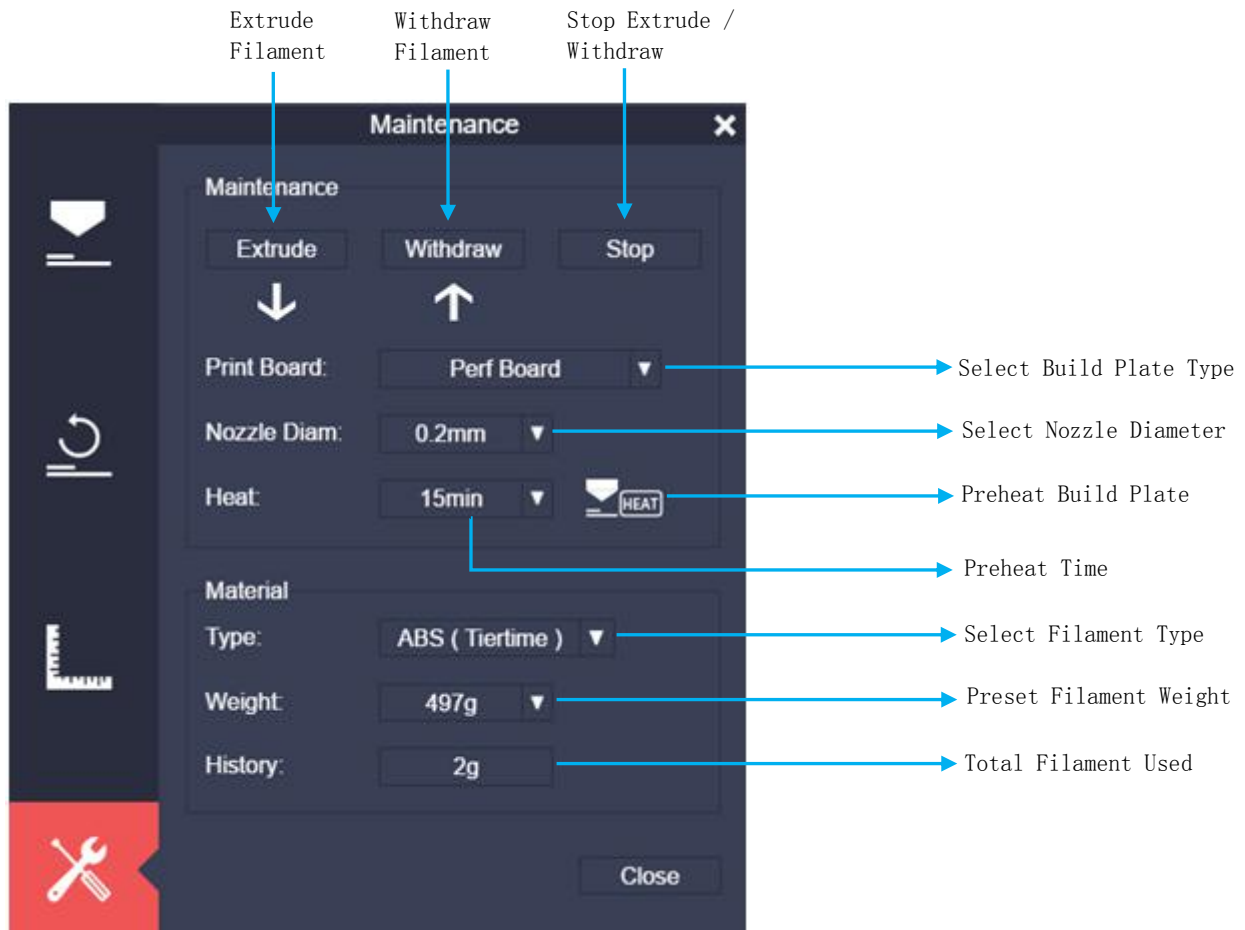


5.2 Filament Settings

Filament Setting Interface on Touchscreen



Filament Interface in UP Studio Software



5.2.1 Filament Install (Touchscreen)

1, Enter filament through the guiding tube, insert the loose end into the inlet on the top of the extruder. Click the “Material” button on the touchscreen.



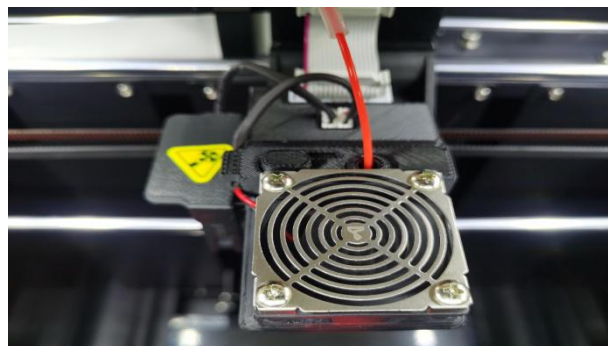
2, Click the “Filament Type” button (it will switch to different filament types) and choose the right filament type, e.g. “ABS”. Click the “Filament Weight” button to choose the right spool weight.



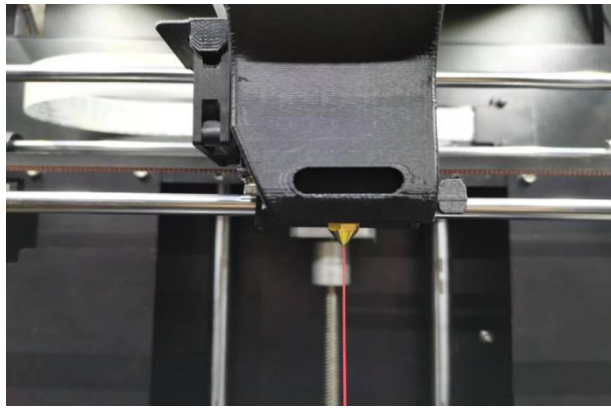
3, Click the “Extrude” button, the nozzle will start heating up until the temperature reaches the preset temperature.



4, Once the nozzle temperature reaches the preset value, the printer will beep. The user can insert the loose end of the filament until the extruder motor grabs the filament and pulls it in.



5, A clean and straight stream of melted filament should be extruded from the tip of the nozzle.

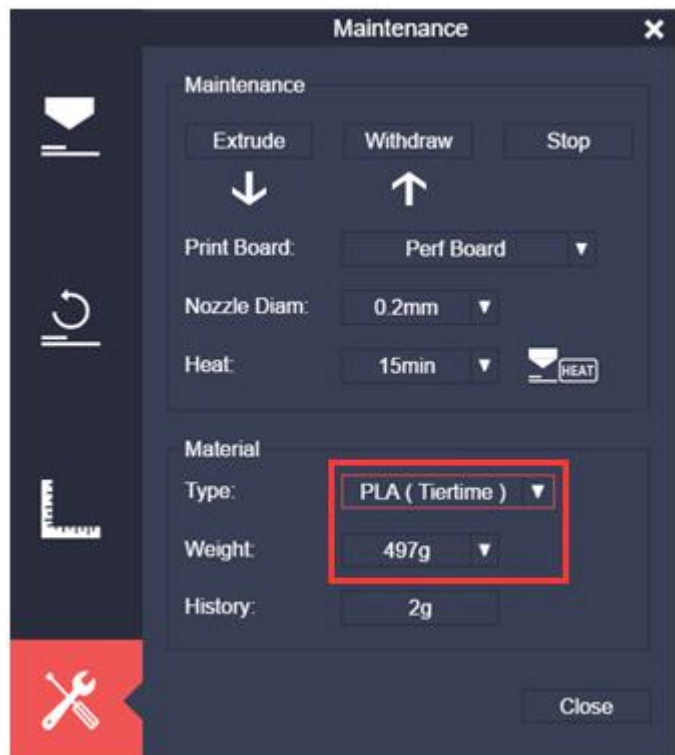


5.2.2 Install Filament (UP Studio software)

Besides installing filament through the touchscreen interface, you can also do it using UP Studio software.

1, Same as the instruction above, insert the filament to the inlet on the top of the extruder.

2, Open the UP Studio software, and click the "Maintenance" button on the left menu. First, choose the filament type, say "PLA (Tiertime)", then enter the filament weight for the system to record the filament usage.



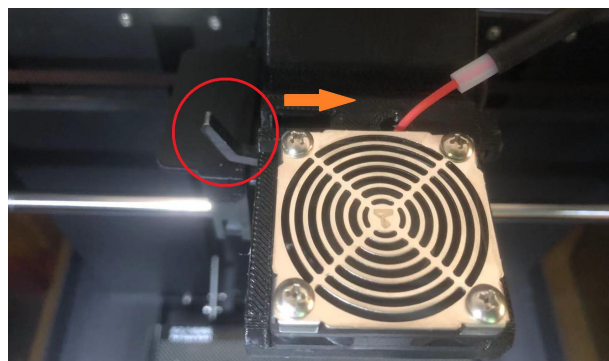
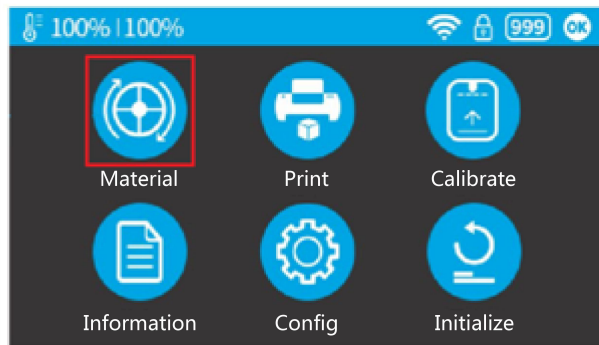
3, Click the "Extrude" button, the nozzle will start heating up. When the temperature reaches the preset value, the print will give off a beep. Insert the filament into the inlet on the top of the extruder. Press the filament, until the extruder motor grabs the filament and pulls it in.



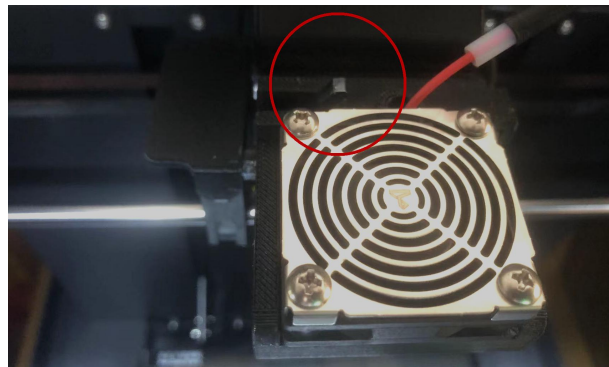
5.2.3 Withdraw Filament (Touchscreen)

In order to avoid extruder clogging, we suggest that, when changing filament, withdraw the filament in use first, and then extrude the replacement filament.

1, Click the “Material” button on the touchscreen.



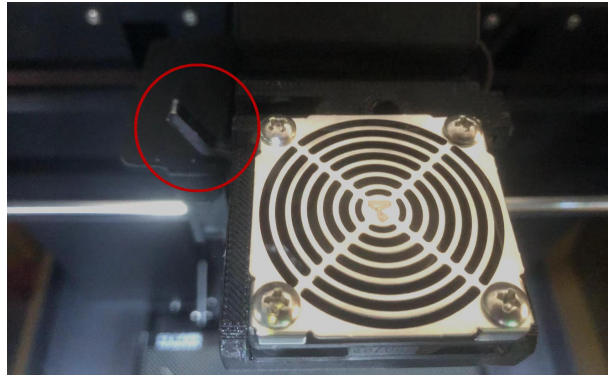
2, Pull the filament lever on the extruder to the perpendicular position.



3, Click the “Withdraw” button. The extruder starts heating up until the preset temperature, and the printer gives off a beep. The extruder motor starts to turn. Users can gently pull the filament out from the filament inlet on the top of the extruder.



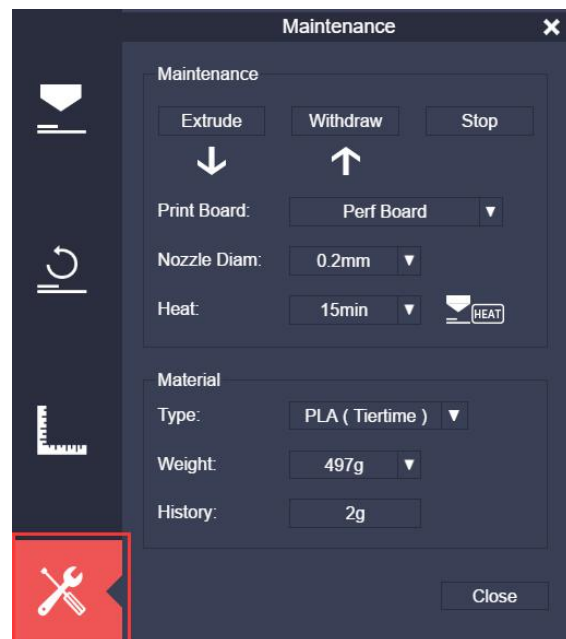
4, Once filament withdrawal is finished, push down the extruder lever back to horizontal position.



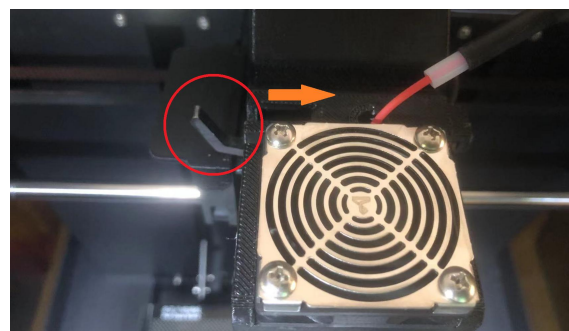
Note: During the time of printing, or filament loading, set the extruder lever at the horizontal position.

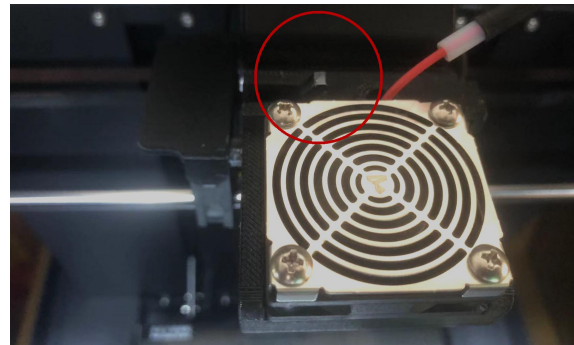
5.2.4 Withdraw Filament (UP Studio)

1, Open the UP Studio Software, and click the "Maintenance" button on the left menu.



2. Pull the filament lever on the extruder to the perpendicular position.

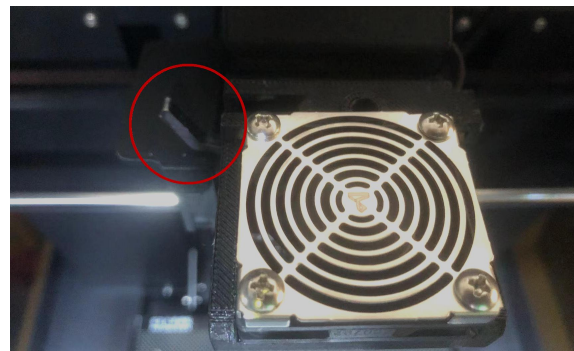




3. Click the “Withdraw” button. The extruder starts heating up until the preset temperature, and the printer gives off a beep. The extruder motor starts to turn. Users can gently pull the filament out from the filament inlet on the top of the extruder.

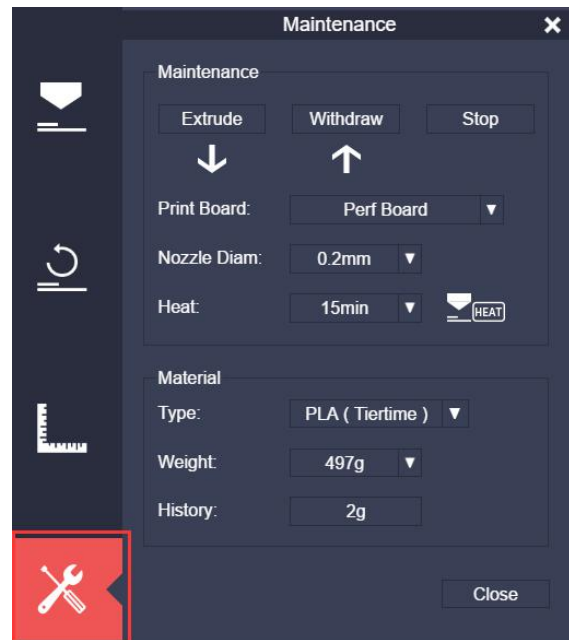


3. Once filament withdrawal is finished, push down the extruder lever back to horizontal position.

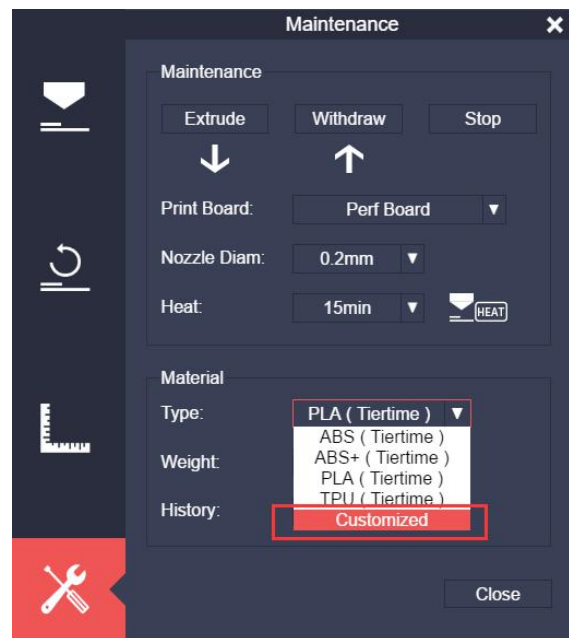


5.2.5 Set the 3rd Party Filament Printing Parameters

1. Open the UP Studio Software, and click the “Maintenance” button on the left menu.

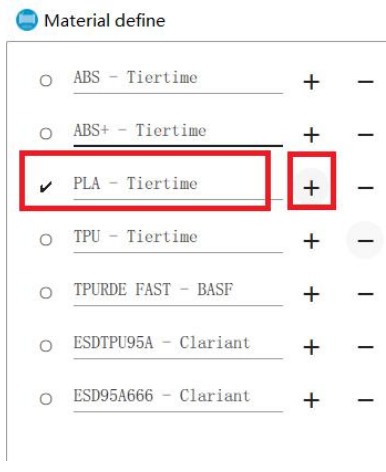


2. In the Filament Type drop down menu, select the “Customized” option.

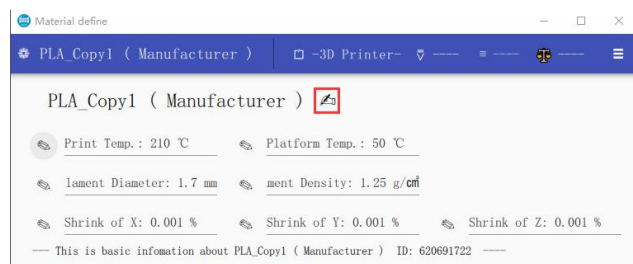
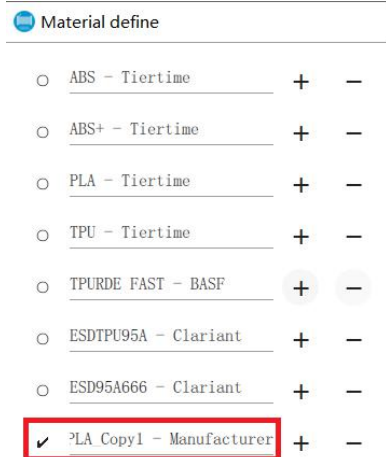


3. In the “Customized Material” dialog, click the “Edit” button, and the Material Profile Editor will pop up.





4, Material Profile Editor allows users to define filament parameters of different factors. Click the Material Name on the top left, and select a similar filament, e.g. “PLA Tiertime”, then click the “+” button to copy the settings to a new filament profile, which will be named as “PLA Copy1-Manufacturer” shown at the bottom of the push down menu.



5, Click the newly added material “PLA Copy1-Manufacturer”. Click the “Edit” button in the red square to start editing. You can change the filament name, company’s name, and password for protection if necessary.

Material
Please enter the material name,
manufacturer, password:

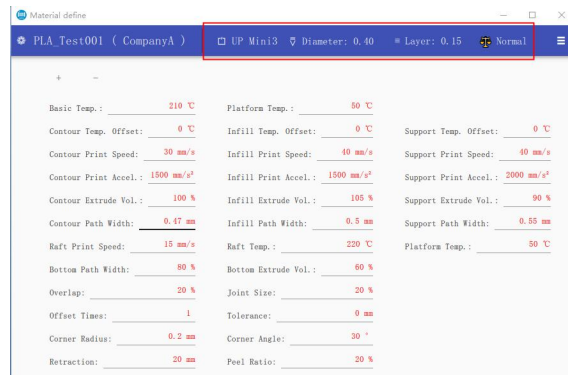
PLA_Test001
Company
Password

CANCEL OK

6, Enter filament's "Print Temp", "Platform Temp", "Filament Diameter", and "Shrink Ratio" on the XYZ axes.



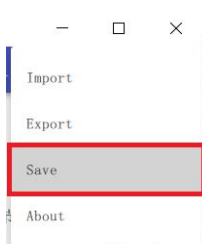
7, Click the Printer Model, Nozzle Diameter, Layer Height, and Print Quality, and choose a combination of values that you want to define detail settings with.



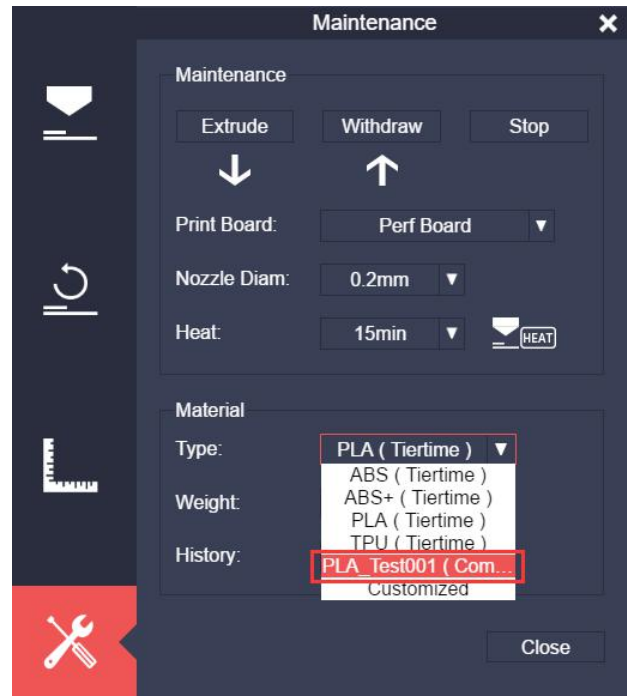
8, For a combination of values of Printer Model, Nozzle Diameter, Layer Height, and Print Quality, there are many parameters you can define. To define a setting of a different combination, you need to repeat step 7 and step 8.



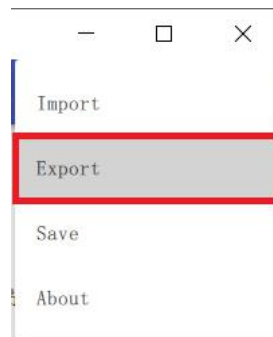
9, After setting up all the values, click the menu on the top right corner, and select the "Save", which will save all the settings in the UP Studio Software.



10, In the UP Studio Software, “Maintenance” then “Filament Type”, and choose “New Filament”.



11, You can also export the filament settings to an “.fmd” file using the “Export” option, and import an “.fmd” file through the “Import” option.

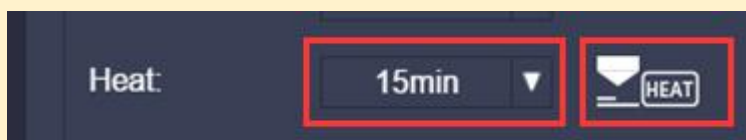


Note:

1, Before changing to a different filament, you need to withdraw the filament in the extruder to avoid possible leftovers inside the nozzle which could cause clogging. Click “Withdraw”, and the nozzle will start heating up to the preset extrusion temperature. Wait until the printer beeps, and then you can slowly pull the filament out from the top of the extruder.



2, Some filaments for industrial uses are easy to warp, so it is recommended to preheat the print plate before the actual printing. Choose the intended preheat period, and then click the “Preheat” button on the right.



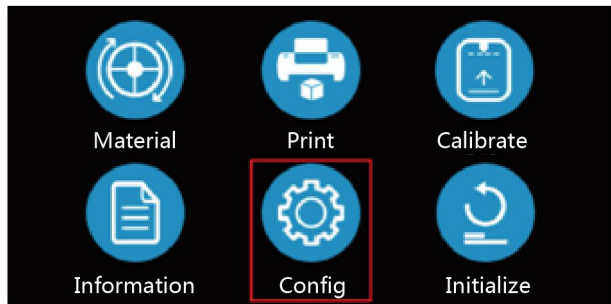
5.3 WiFi Connection

Connecting the UP mini 3 through WiFi needs to set up the wireless network (WLAN). The computer and the printer should connect to the same WLAN (same SSID).

For a stable WiFi connection, we recommend users to choose a WiFi network with large network capacity and strong processing power. Crowded networks could cause interruption of normal communication.

5.3.1 WiFi Settings (Touchscreen)

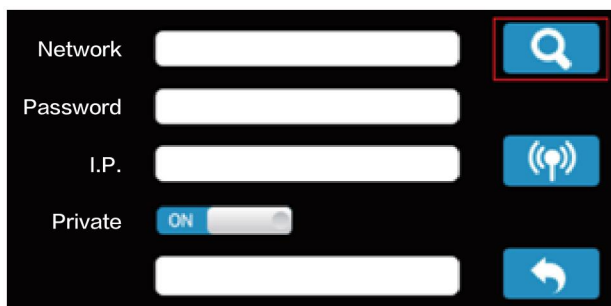
1, Click the "Config" button on the touchscreen.



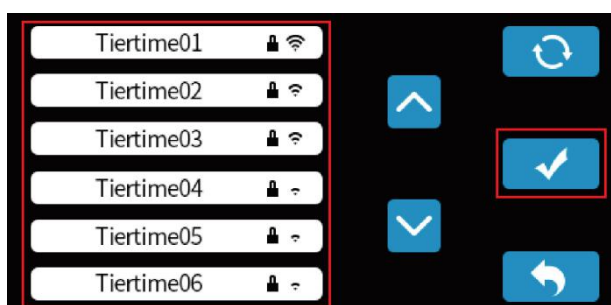
2, Toggle the "Wifi" option ON, and click the WiFi button on the top right corner.



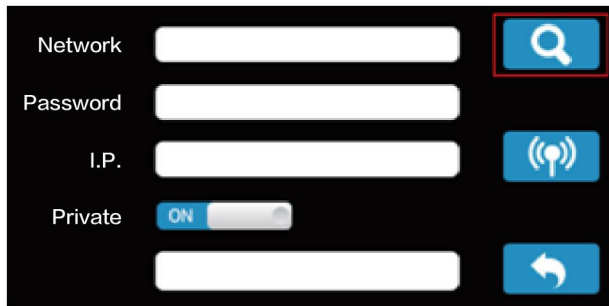
3, Click the "Search" button on the top right corner



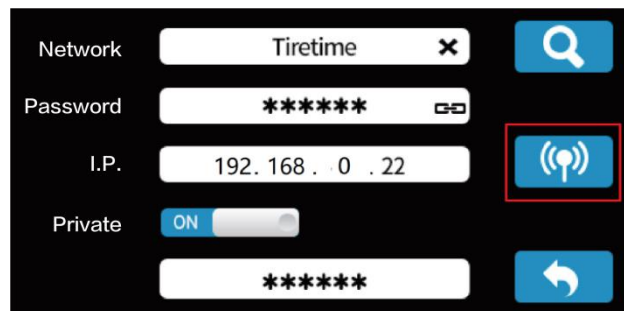
4, The program will show all the available WiFi networks in a list. Choose one network, and click the "OK" button.



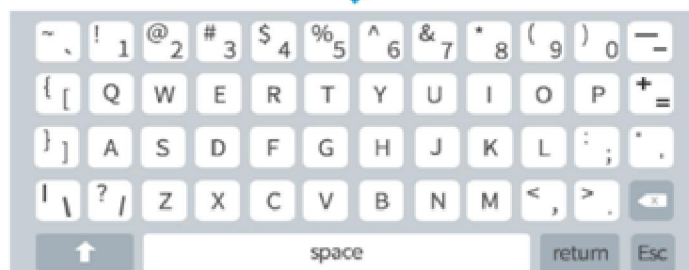
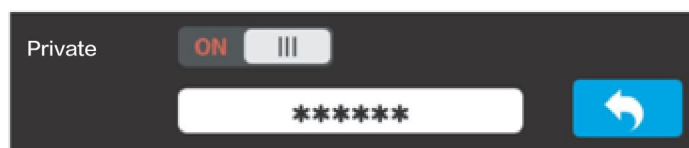
5, Enter an IP address for the printer, and if needed, define a password to create a private access for the printer.



6, Click the “Connect” button on the right to start connecting. If the connection is set up successfully, the status on the top right corner will change to a connected icon.



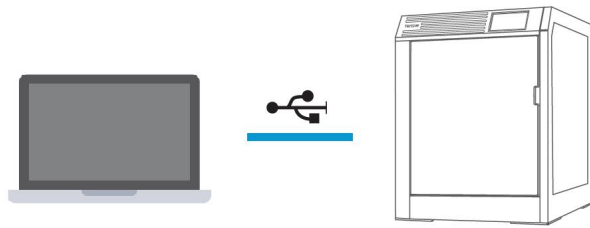
If users choose the “Private” option in the setting dialog, a password confirmation dialog will pop up, asking users to set up the password. Once the password is set, when accessing the printer through WiFi, the software will ask the user to enter the password to avoid unauthorized access to the printer through WiFi.



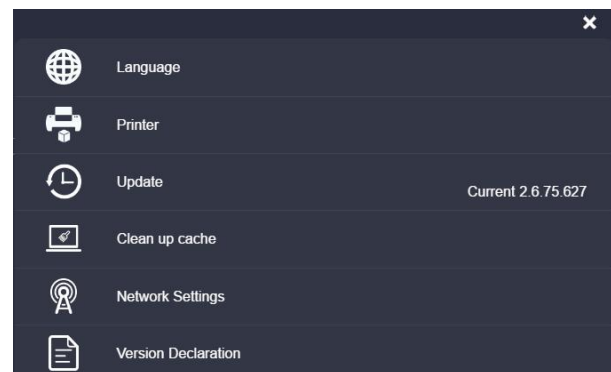
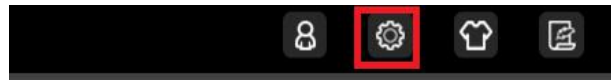
Note: Private password is a weak protection. Anybody who can access the USB connection, or the touchscreen can easily reset the password.

5.3.2 WiFi Settings (UP Studio)

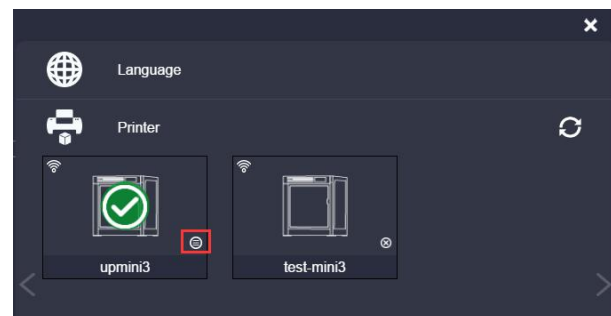
1, Connect the UP mini 3 with a computer using a USB cable, and then open the UP Studio software.



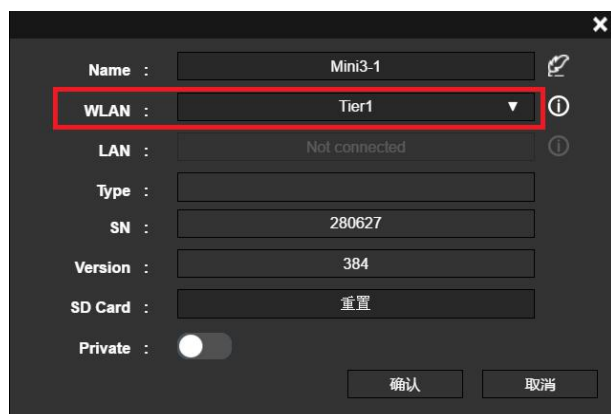
2, Click the “Setting” button on the top right corner, and click the “Printer” option.

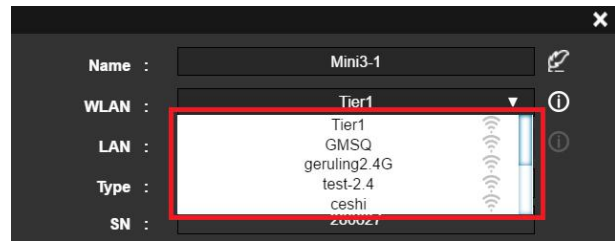


3, A list of printer icons with the name of the printer should show up in the dialog, and click the “Refresh” button on the top right to refresh the printer list. Find the right printer, and click the “Info” icon on the bottom right of the printer icon for detailed information.



4, In the drop down menu of WLAN, choose the WiFi network the printer is assigned to,

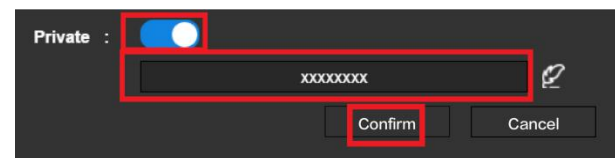




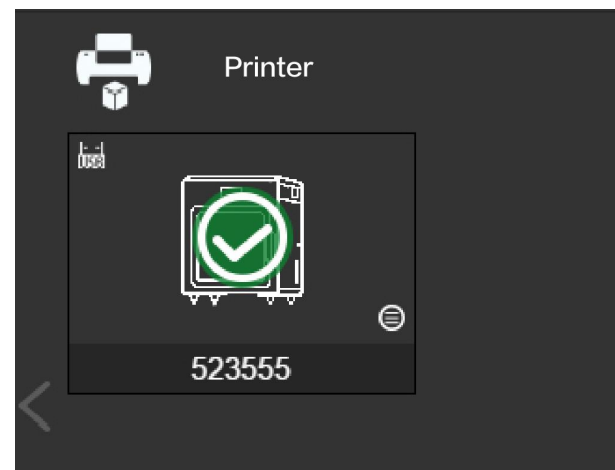
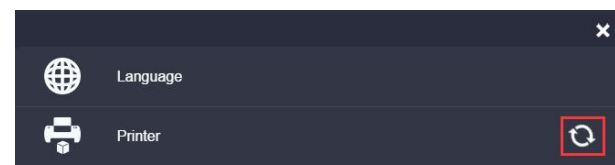
5, Enter the WiFi password, and click “Confirm”.



6, If the printer needs to be set up as a private one, toggle the option “Private” on, and set up the password to restrict the access to the printer through WiFi. Again, this password setting is very weak. The user who can access the USB connection, or the touchscreen can easily reset the password.



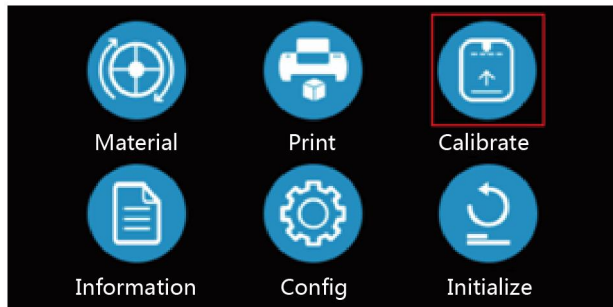
7, In the end, disconnect the USB connection between the printer and the computer. Click the “Refresh” button for the latest printer list. A green tick on the printer icon means the printer’s WiFi connection is good.



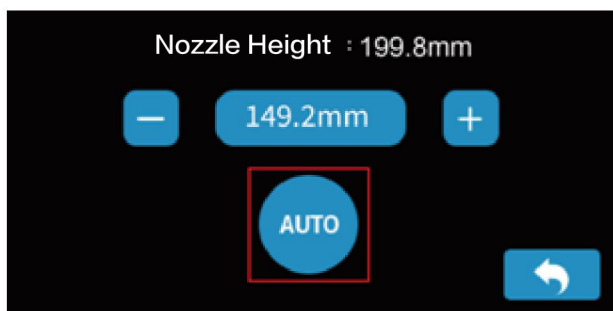
5.4 Printer Calibration

5.4.1 Printer Auto Calibration (Touchscreen)

1, Click the “Calibrate” button to enter the calibration page. Make sure the nozzle is away from the build plate. If they are very close, press the “-” button to lower the build table.



2, Click the “Auto” button, the extruder will start the 9-point calibration process, and nozzle height adjustment.

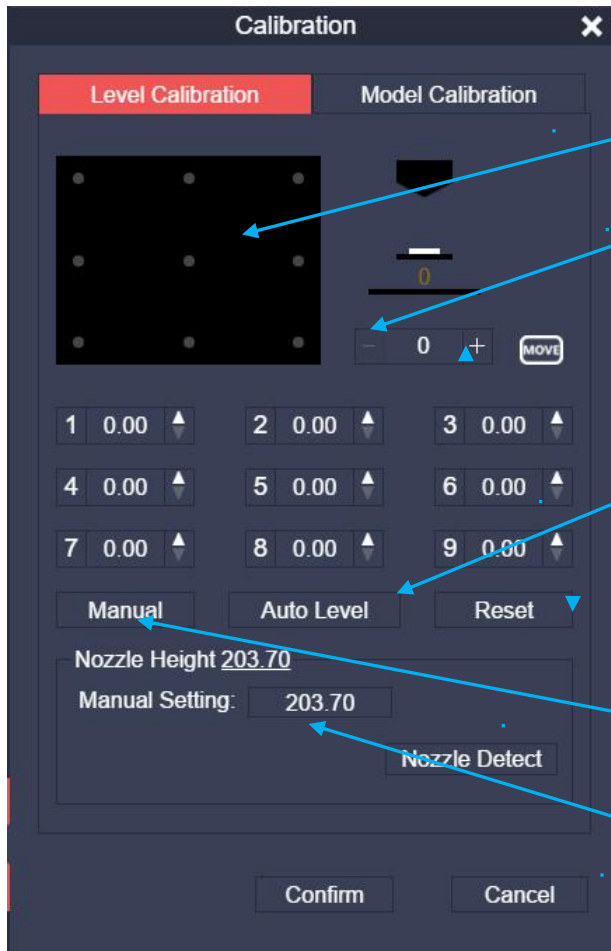


The whole calibration process is automatic, and it will go for several minutes. Please be patient. Once the process is finished, click “OK” to confirm. Click the “Back” button to return back to the main Page.

5.4.2 Auto Calibration (UP Studio)



Click the “Calibration” button in the UP Studio. A Calibration dialog will pop up.



9 Calibration Points on the build plate

Click “+/-” to move the print table UP or Down

Enter a value between “+” and “-” buttons as the height of the print table, and click “MOVE” button, the print table will move to the height specified.

Clicking the “Auto Level” button will trigger auto calibration process and nozzle height adjustment.

Reset all the 9 point values to 0

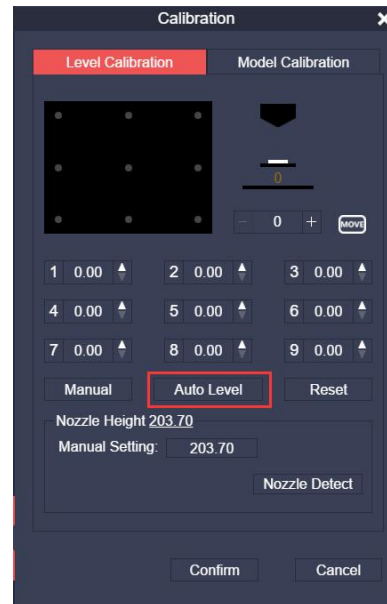
This will trigger manual calibration and nozzle height adjustment process

User can have the nozzle height value entered here, and press Confirm to save

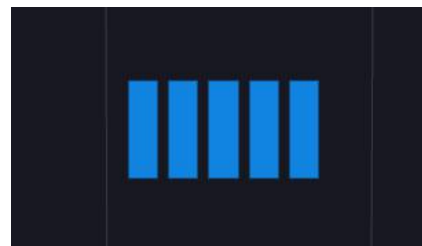


By clicking the buttons with numbers, the extruder will move the point, and the build table will move to the height that equals to “Set nozzle height” + “compensation”

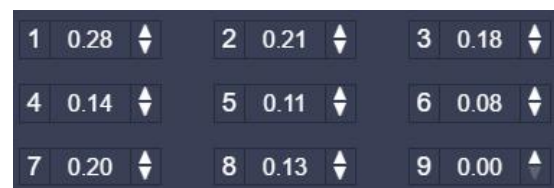
1, In the Calibration Dialog, click “Auto”



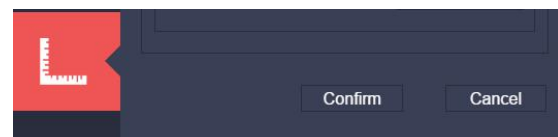
2, The extruder automatically moves from the point 1 to the point 9, stops at each position, tests the height, calculates the compensation value for each point and enters the value in the dialog.



The following shows the compensation values for the 9 points

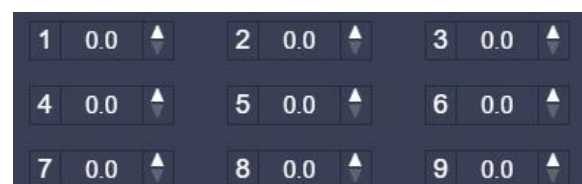


3, After the calibration, UP Studio will automatically calculate the nozzle height. Click the Confirm button to conclude the whole process.



5.4.3 Manual Calibration and Nozzle Height Adjustment

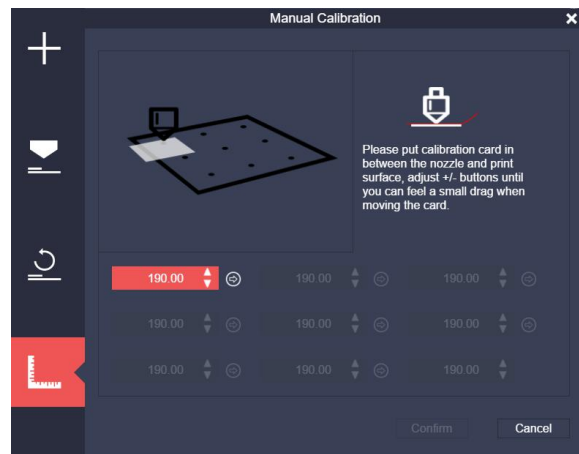
1, Click the “Reset” button to set all the 9 point values to 0, and then click the “Manual” button.



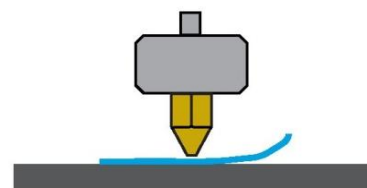
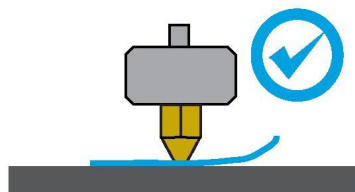
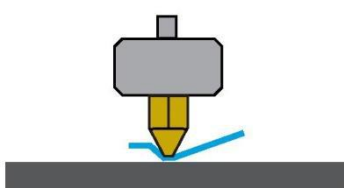
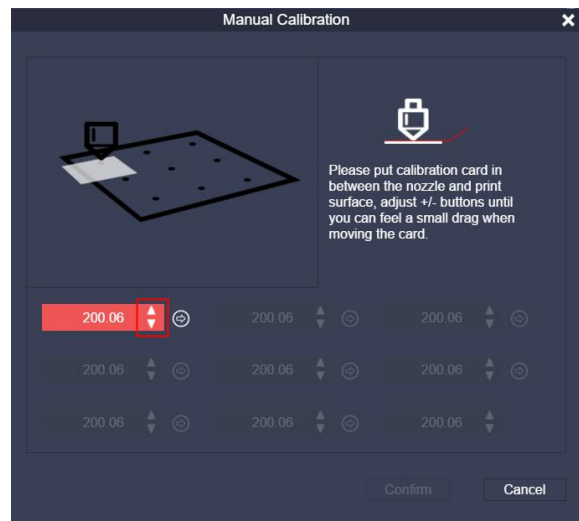
2, Place the calibration card (accessory) on the build table at point 1.



3, Follow the instructions shown in the software, and start the setting process for point 1.



4, Clicking the up and down arrows on the right of the red area to up or lower the extruder, until the nozzle is just about to touch the surface of the calibration card. Move the calibration card between the nozzle and the build table. Lower the extruder more gradually, until moving the card can feel some resistance. Click the right arrow to calibrate the next point.

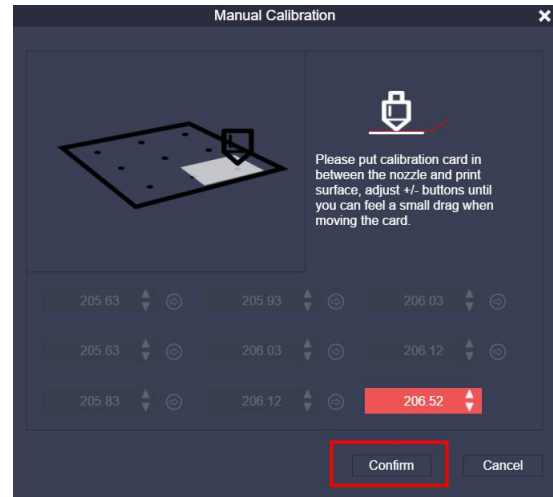


The build table is so high that the nozzle pins the calibration card down to the table. The calibration card can not move freely. Need to lift the nozzle a bit.

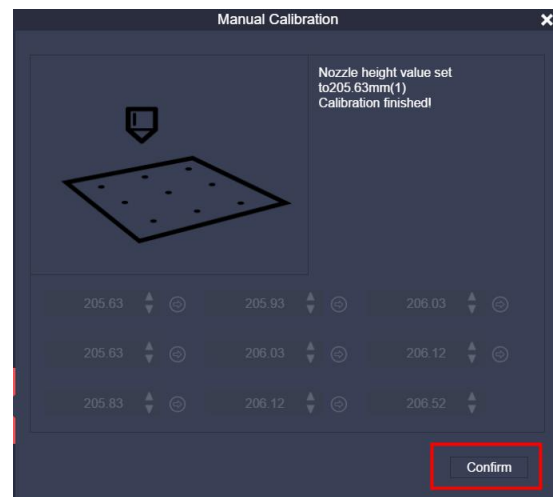
When moving the calibration card feels a little resistant, the nozzle is at the right height.

The build table is too low. Moving the calibration card does not feel resistant. The nozzle needs to be lowered.

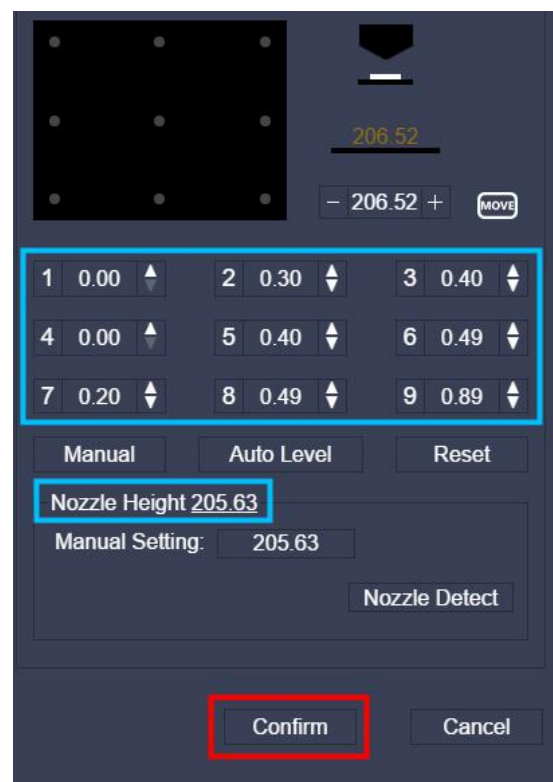
5, Follow the instructions and calibrate the rest of 8 points one by one, and keep the resistance the same when moving the calibration card at all the points. Click the Confirm button.



6, UP Studio calculates the height compensation value for all the 9 points, and the nozzle height. Continue clicking the Confirm button.



7, Click the Confirm in the end to finish the manual calibration process.



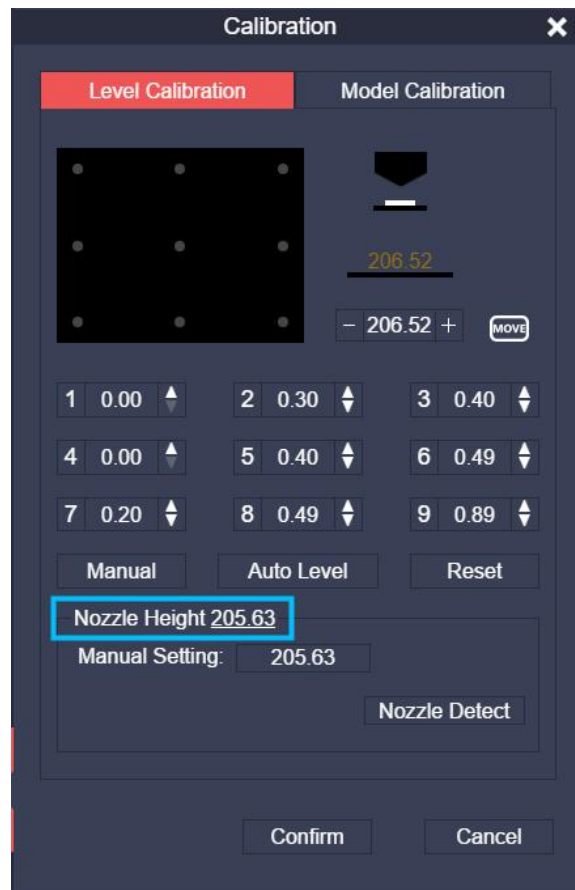
5.4.4 Manual Calibration of Nozzle Height

The nozzle height (the distance between nozzle tip and the print table) is a fundamental setting for a printer. If the value is set too high or too low, it will cause issues for print jobs. If the following incidents happen, it is recommended to adjust the nozzle height:

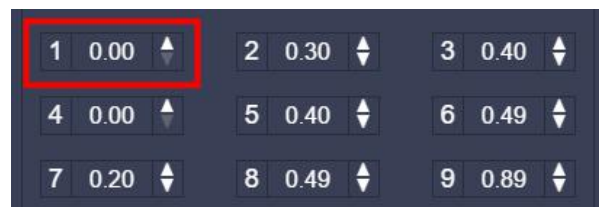
- The filament can not stick to the build plate.
- When printing the first layer of the print (raft or model), the nozzle scratches the build plate, giving off noises or causing the build plate wobble.

Users can choose to either use auto calibration or manual process to adjust the nozzle height.

1, Click the “Calibrate” button to enter the calibration page. The current nozzle height is the value in the blue rectangle.



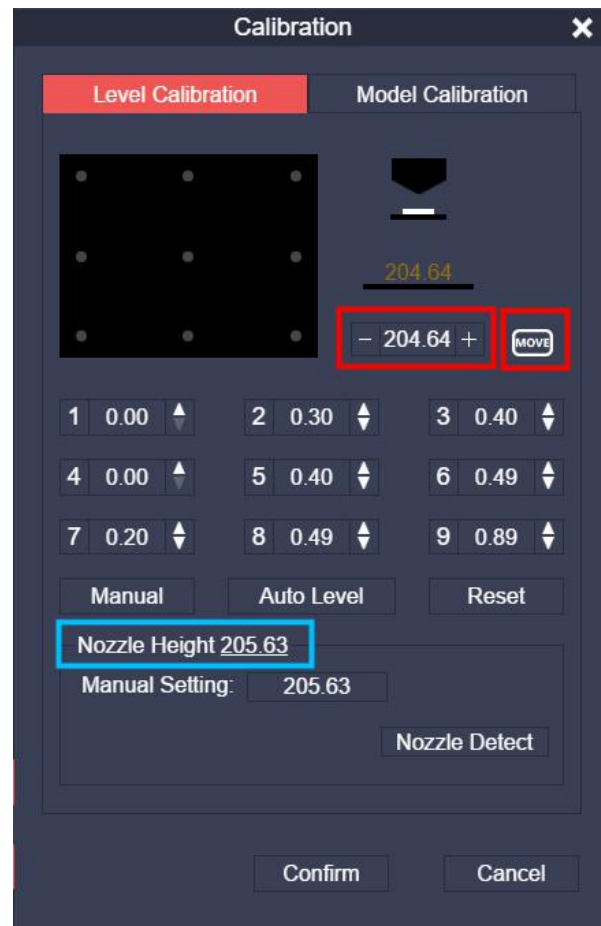
2, Take a look at the 9 values on the right. The red rectangle showing point 1 has the compensation value “0.00”. Clicking the number “1” will move the nozzle to the point 1.



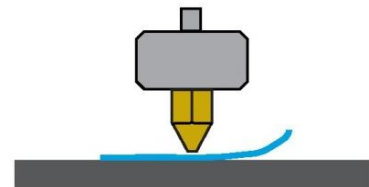
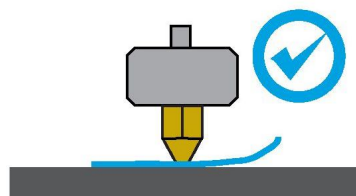
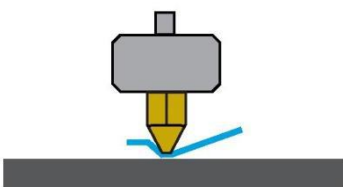
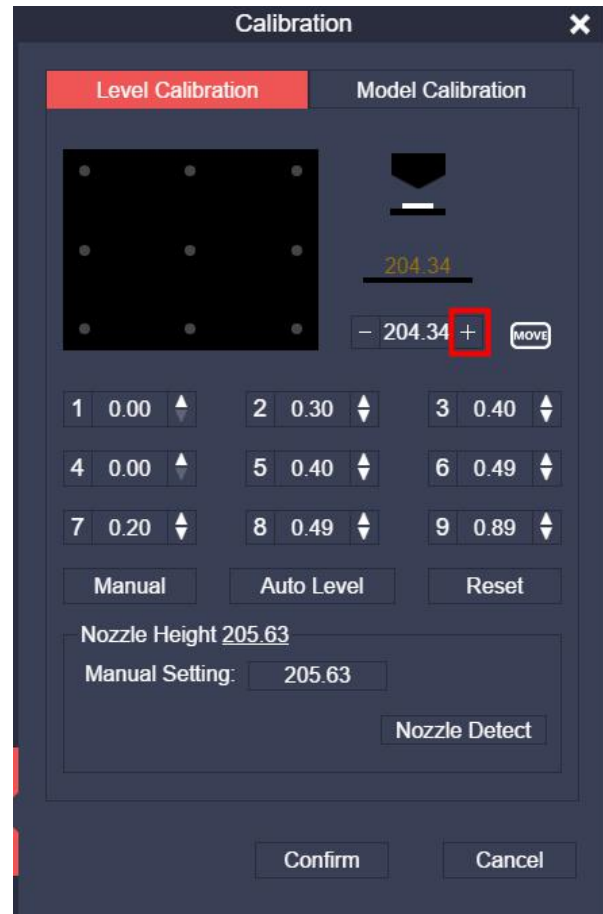
3, Place the calibration card at point 1 on the build table.



4, Move the extruder closer to the build plate. E.g. the right image shows the current nozzle height is "205.63" (blue box). Enter "204.64" in the red box, and click the "Move" button. The nozzle will move to 204.64.



5, Click the “+” button, slowly raise the print table, until the calibration card touches the nozzle. Try to move the calibration card.

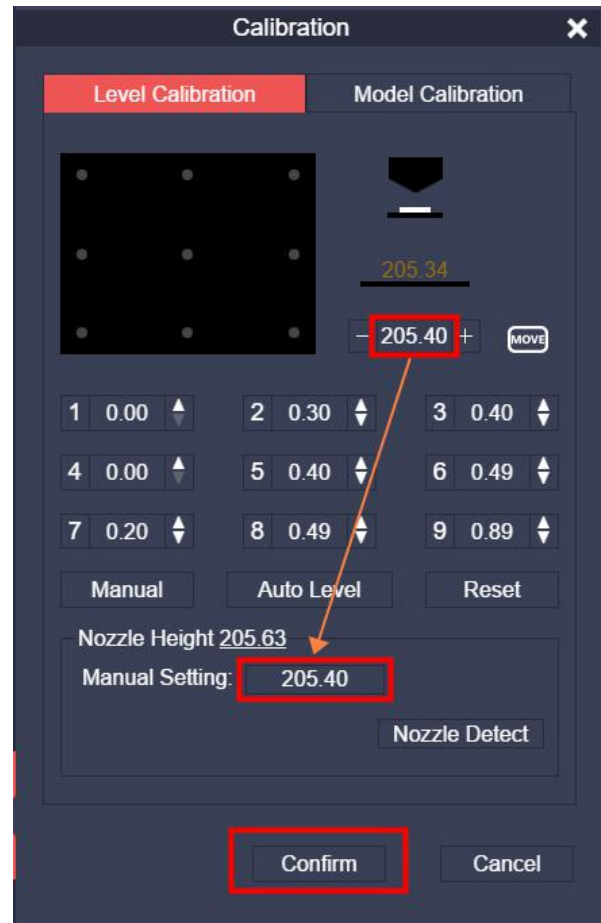


The build table is so high that the nozzle pins the calibration card down to the table. The calibration card can not move freely. Need to lift the nozzle a bit.

When moving the calibration card feels a little resistant, the nozzle is at the right height.

The build table is too low. Moving the calibration card does not feel resistant. The nozzle needs to be lowered.

6, If the calibration card can feel some resistance, it means the nozzle height is proper. Enter the current value in the red box on top to the red box in the middle, for example, now the value is 205.40. Click the “OK” button to finish the process.



Note: The normal gap between the tip of the nozzle and the build plate when printing is 0.2mm, which is the thickness of the calibration card. For the material that is not easy to warp, the gap can be increased a little bit; for the material that is easy to warp (shrink ratio is high), the gap should be decreased accordingly.

In order to avoid going through the nozzle height adjustment process frequently, users can set the “Offset” value to adjust the nozzle height.

5.5 Printer Settings

The screenshot shows the printer's settings menu. At the top, there is a blue gear icon. Below it, the settings are listed: Name (Tiertime), Wifi (ON), The light stays on (OFF), and Preheat (ON). A blue bar at the top of the settings menu displays '100% | 100%' and icons for WiFi, a lock, a battery level of 99%, and an OK button. A blue callout box with a gear icon is positioned above the settings menu. Three blue arrows point from text labels to specific settings: 'Switch for WiFi. If OFF, no WiFi setting button available.' points to the WiFi toggle; 'Internal Light Switch' points to the 'The light stays on' toggle; and 'Preheat Switch. If ON, printer will preheat for 15 minutes before every print job.' points to the Preheat toggle. A 'WiFi Settings' button is visible in the top right corner of the settings menu, and a back arrow button is at the bottom right.

Switch for WiFi. If OFF, no WiFi setting button available.

Internal Light Switch

WiFi Settings

Name Tiertime

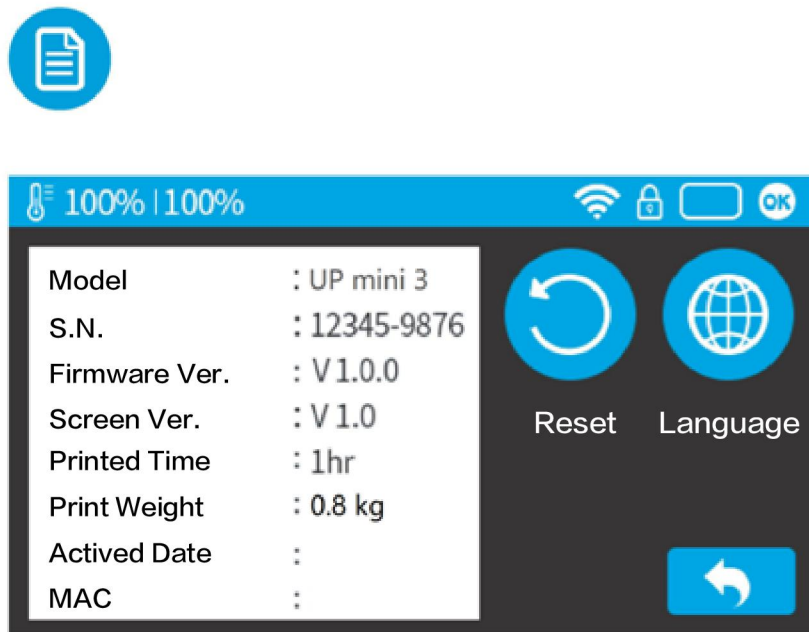
Wifi ON

The light stays on OFF

Preheat ON

Preheat Switch. If ON, printer will preheat for 15 minutes before every print job.

5.6 Language Settings and Factory Settings



Model No.: Printer Model Number

SN: Printer Serial Number

Firmware Ver.: Printer's Firmware Version

Touchscreen Ver: Printer's Touchscreen Program Version

Total Print Time: Total Accumulative Print Time

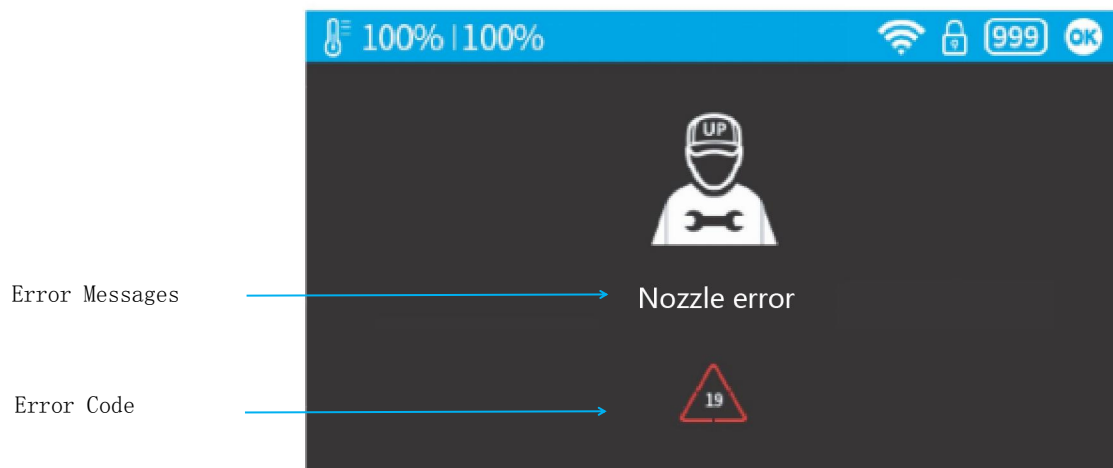
Total Print Weight: Total Accumulative Filament Weight

MAC: Printer's MAC Address

Default Factory Settings: Reset to factory settings. This will set all the values back to the factory default values, including the total print time, and total print weight.

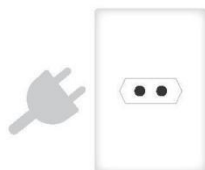
Language: Choose the display language. The current touchscreen program version supports the following languages: English, French, Italian, German, Korean, Simplified Chinese, and Traditional Chinese.

5.7 Error Messages:



Note: Please contact Tiertime Technical Support when error messages appear
Support@tiertime.com

Possible error messages:



Unplug the power plug and restart the printer.

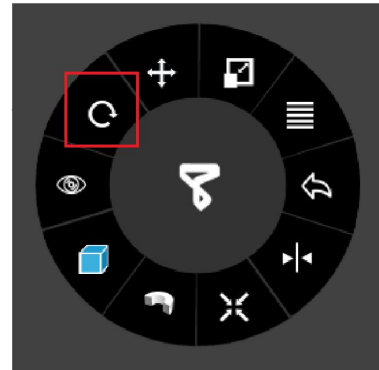


Initialize the printer.

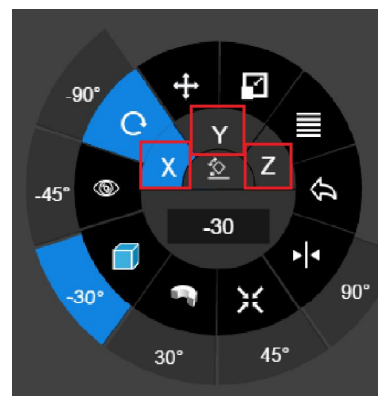
6 UP Studio2.x Software Features

6.1 Rotate

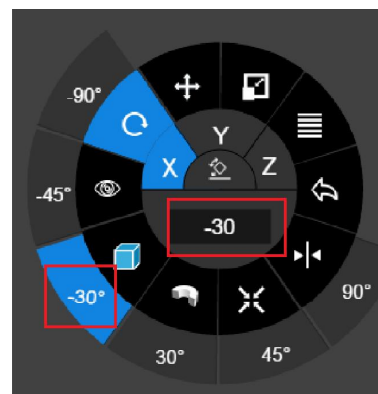
1, Choose a model, and click the “Rotate” button.



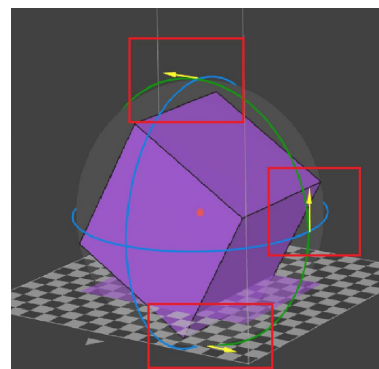
2, Choose the rotating axis.



3, Users can enter a rotating angle, or a preset value.

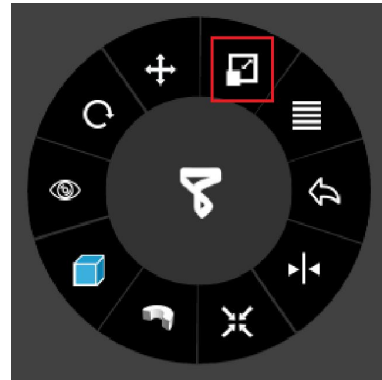


4, Users can also drag the mouse using the symbols on the screen to rotate the model.

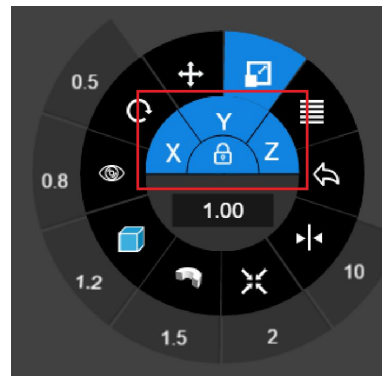


6.2 Scale

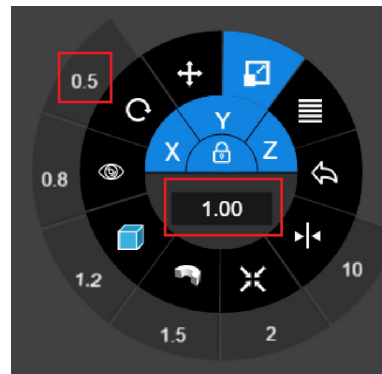
1, Choose a model, and click the “Scale” button



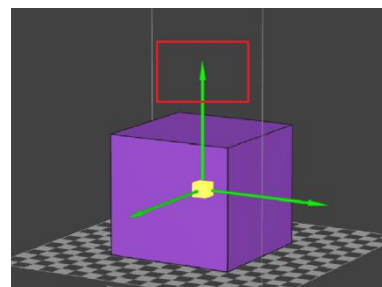
2, In default mode, 3 axes are scaling at the same time. If users choose to scale along one axis, click the “unlock” button in the middle, and then choose an axis.



3, Users can enter a scale value, or use one of the preset values.

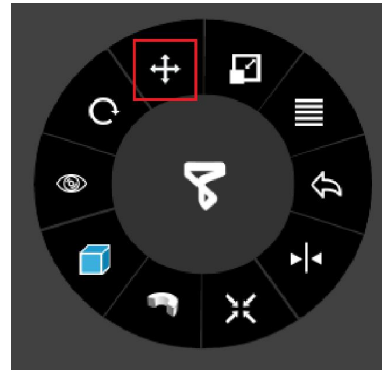


4, Users can also follow the guidance on the model, and use a mouse to drag along a specific axis, or along all three axes to scale the model.

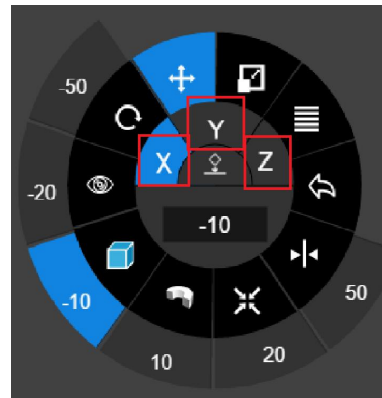


6.3 Move

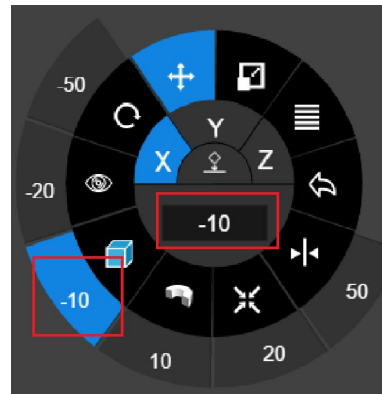
1, Choose a model, and click the “Move” button.



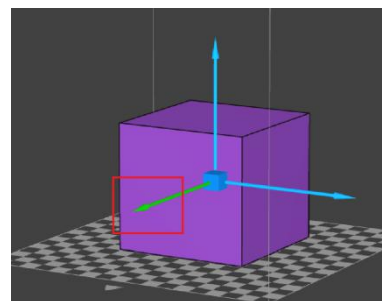
2, Choose an axis to move the model.



3, Users can enter a specific value to pan the model, or choose a preset value.

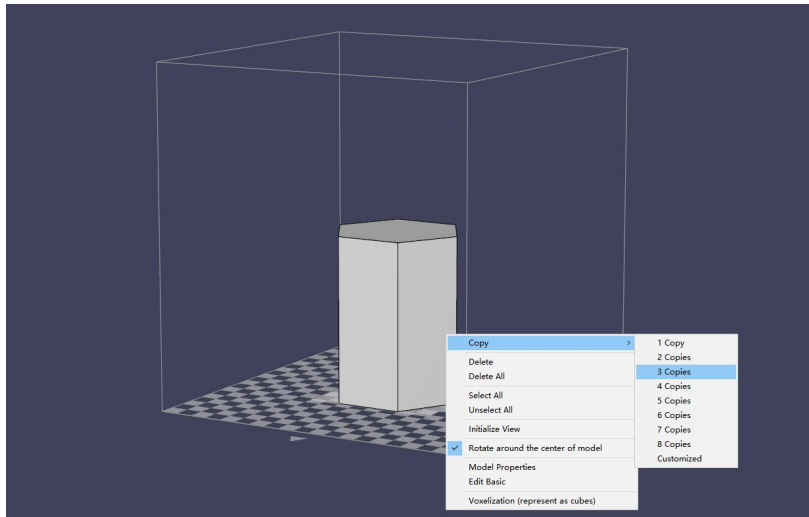


4, Users can also follow the instructions on the model, and use a mouse to drag the model along one axis.



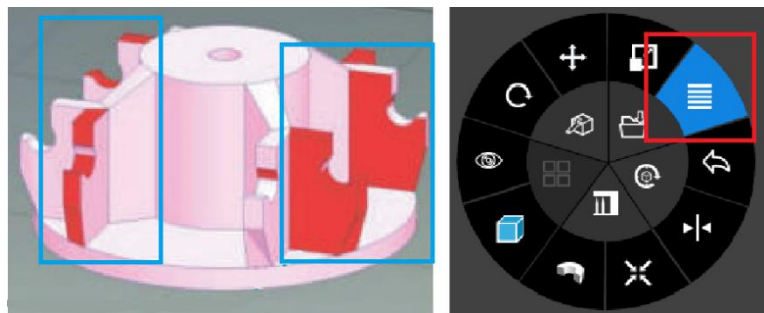
6.4 Copy

Choose a model, and right click the mouse to bring up a menu. Select the “Copy” option and choose the number of copies needed.

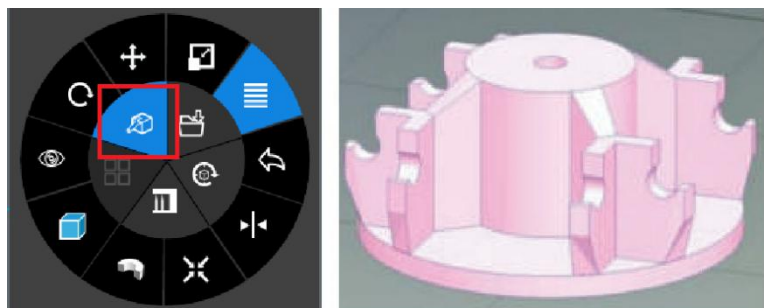


6.5 Fix Errors

1, If a model’s surface has errors, UP Studio software will show the faulty surfaces in red. To fix the errors, click the “More” option.

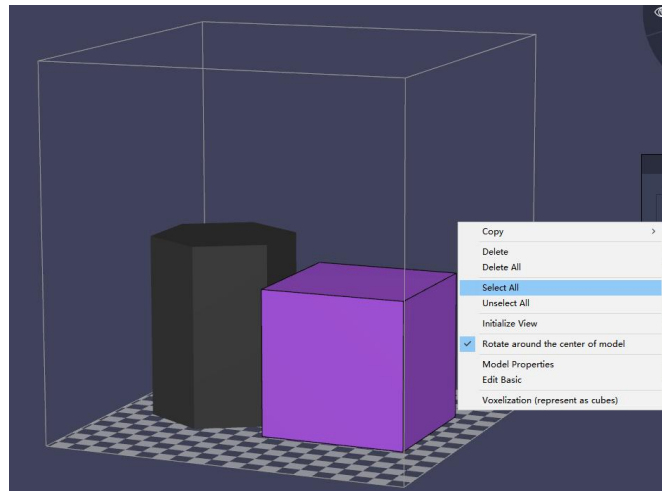


2, Click the “Fix Errors” button, the software can fix some simple errors for surfaces. After the fix, the surfaces will become the regular color.

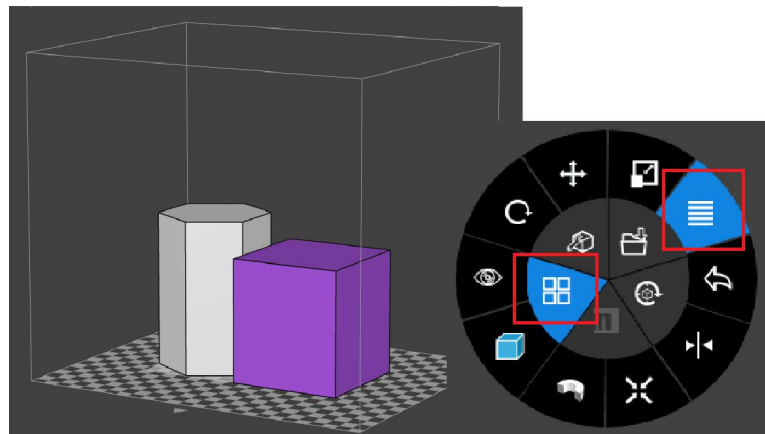


6.6 Merge / Save Models

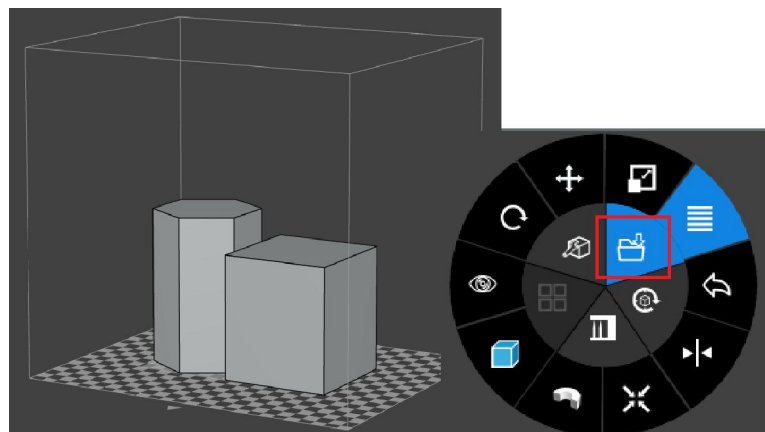
1, Click the right button of a mouse, and select the “Select All” option.



2, Then, click the “More” button, then select the “Merge” option.

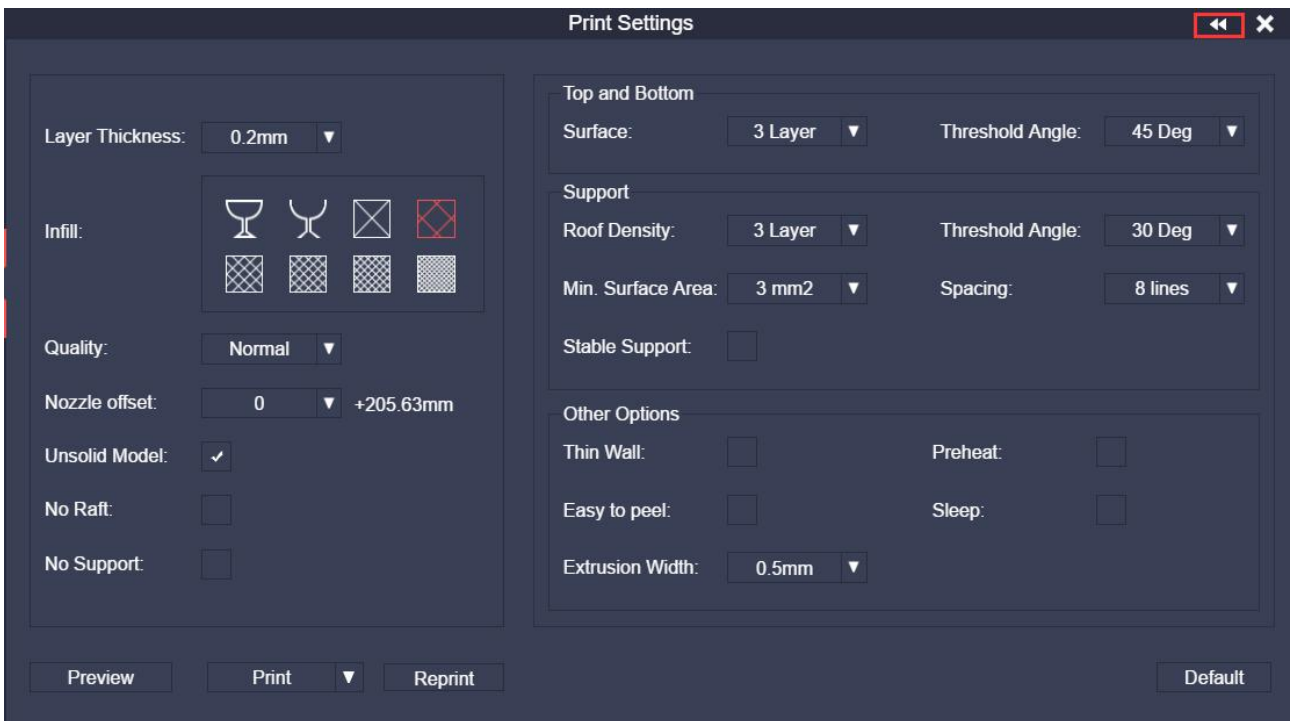
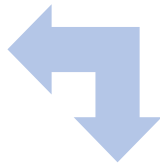
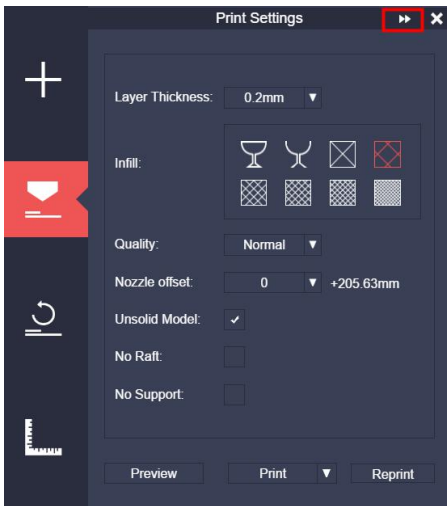


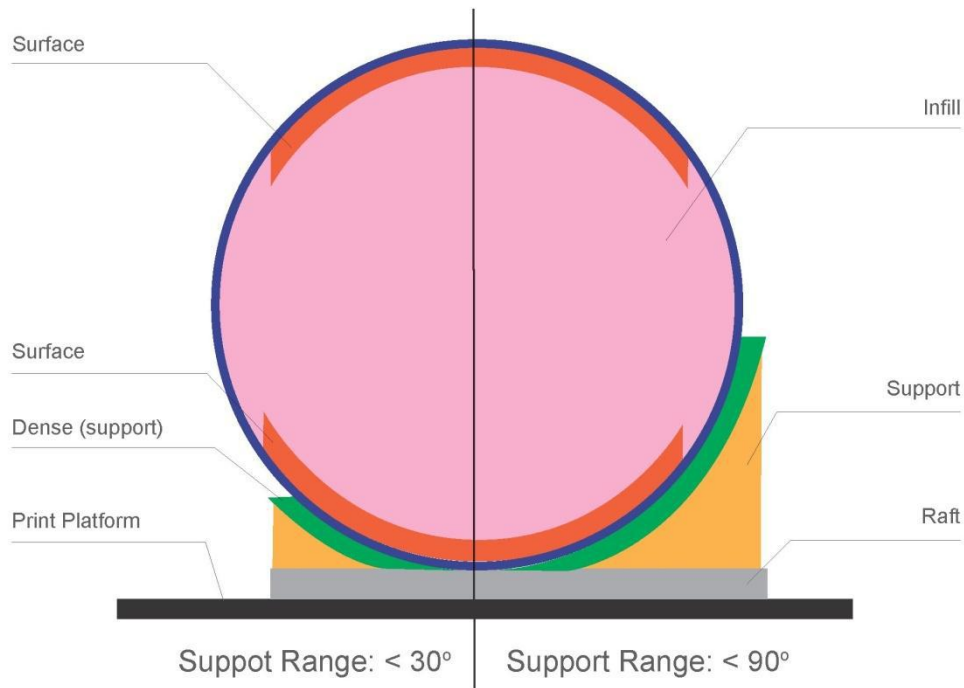
3, When you need to save a file, click the “Save” button, the merged file can be saved on the computer.



6.7 Advanced Printing Options

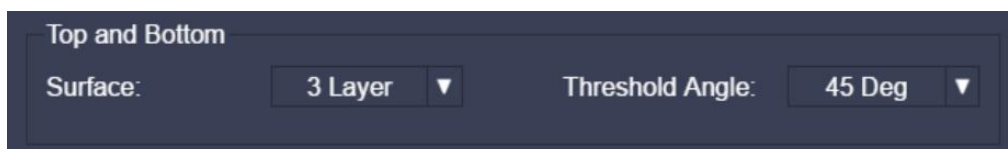
Click the top right arrow in the red box to open the advanced print settings.





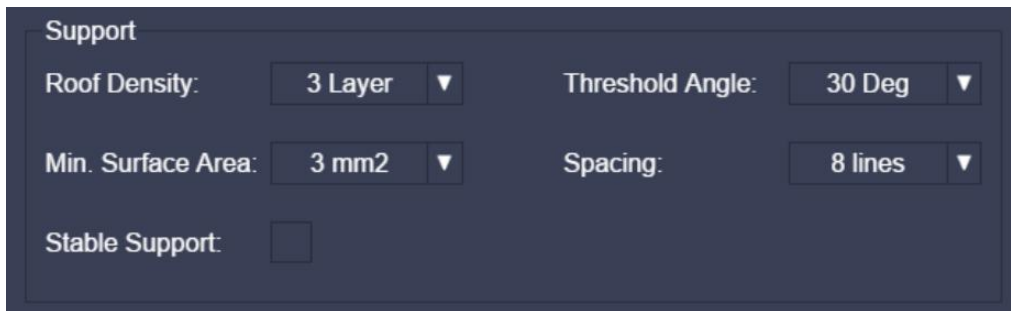
Dense (support):	Support Top Layers are with full infill to keep the surface of the model in shape and smooth.
Support:	Support structures lift the model's overhang structure. Normally, they will be removed after the printing is done.
Support Range:	Support Angle is between the model and the print platform. The setting of the angle determines the size of the support structure.
Infill:	The internal structure of the printed model. The density of the infill can be adjusted by setting.
Raft:	The supporting structure printed on the build plate to help the model stick.
Surface:	The top and bottom of the printed model

Closing Up Settings:



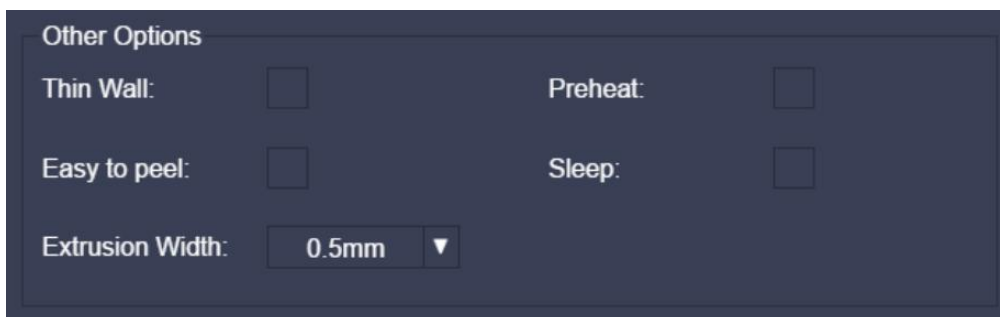
Surface:	The number of layers to print for the surface of the model (top and bottom)
Threshold Angle:	The angle of the printing path for model's surface (top and bottom)

Support Setting:



Roof Density:	The number of layers for the dense support.
Threshold Angle:	The support angle to determine the size of the support structure.
Min. Surface Area:	The minimum area to generate the support structure. Smaller areas than this value will not have support structures.
Spacing:	Determine the density of the support structure. The bigger the value, the lower the density.
Stable Support:	Generate outer contour for support structure for stability.

Other Settings:



Thin Wall:	UP Studio can detect if the wall is too thin to be printable. This option can increase the wall thickness to be printable.
Preheat:	Before a print starts, preheat the build table for 15 mins.
Easy to Peel:	Increase the gap of the model and the support, so it would be easy to peel off.
Sleep:	After a print job finishes, the printer enters sleep mode, in which an initialization is needed next time before printing.
Extrusion Width:	The value of the contour print path




Nozzle Offset: Adjust the nozzle height. Normally, after changing a build plate, the nozzle height might be different. In order to compensate for the height, users can change nozzle offset to easily adjust the nozzle height, avoiding the frequent nozzle height process.

Unsolid Model: UP Studio can automatically fix and print models with errors.

No Raft: Normally, this option can be used when the print plate has a smooth surface, like glass.

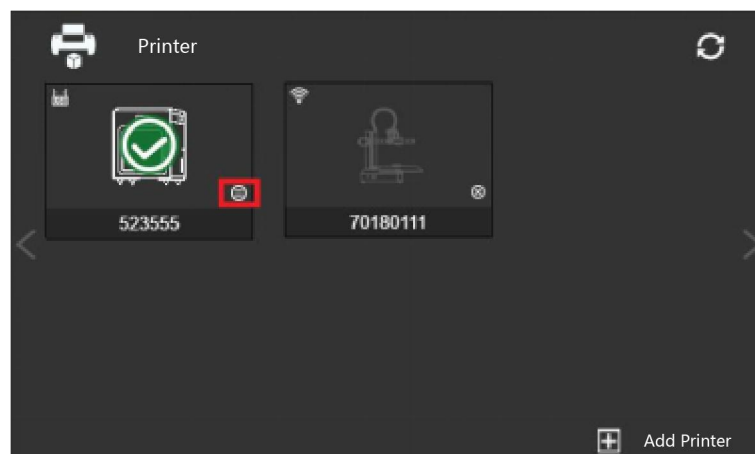
No Support: Printing with no support structure

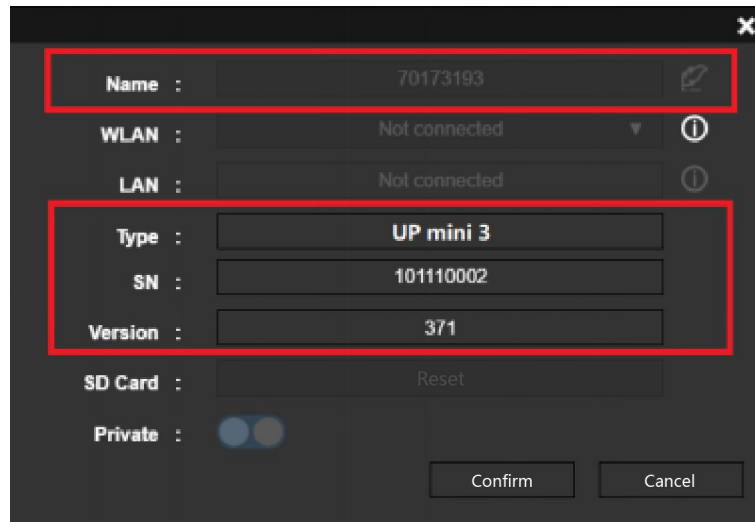
6.8 Printer Information

Click the icon  at the top right corner on UP Studio to open the setting interface.




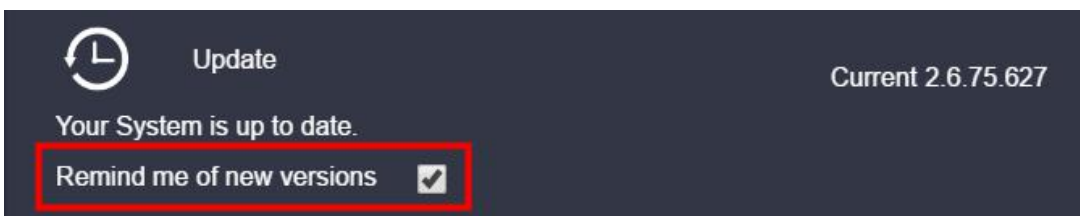
Click the small icon on the bottom right corner of the icon of the connected printer to show the printer information, which includes model name, serial number, firmware version, and etc.. You can set a name for the printer.





6.9 Software Version and Upgrades

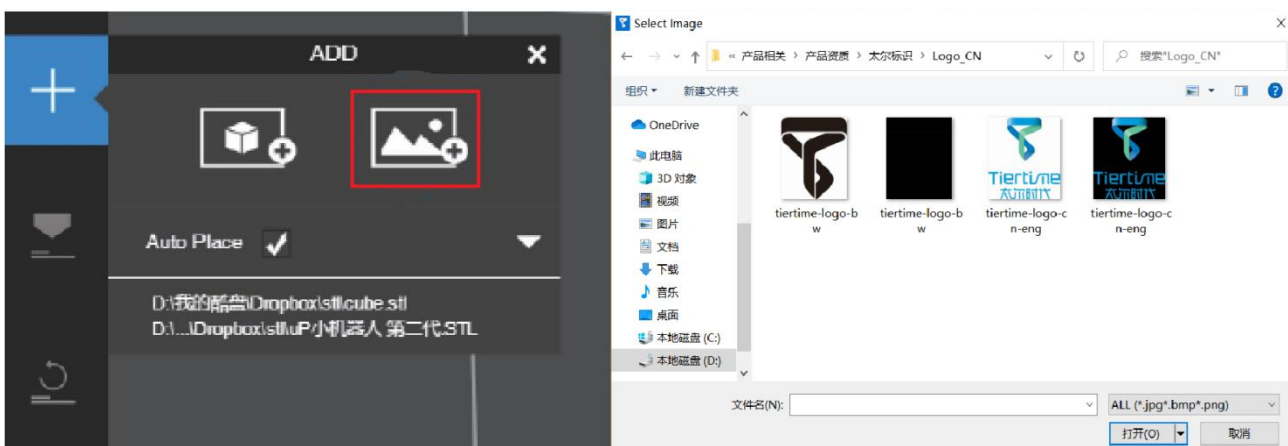
Click the icon  at the top right corner on UP Studio to open the setting interface.

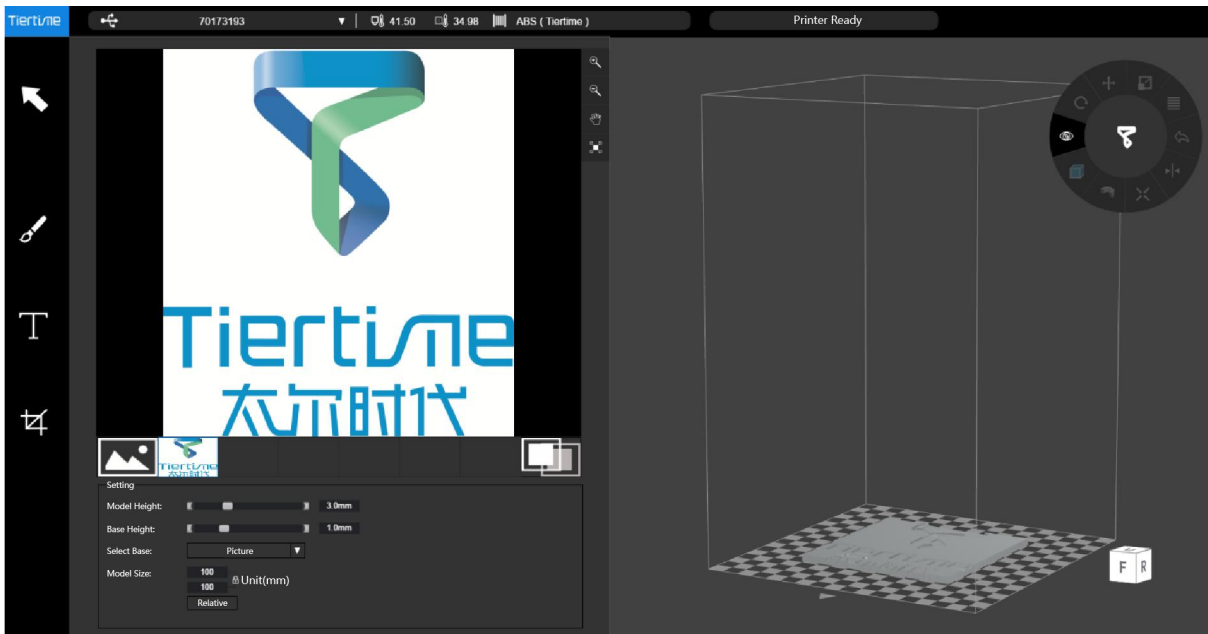


Please check the option “Remind me when a new version is available”. The software will alert the users when a new software release is ready to download.

6.10 Image Conversion

Click the “Add 2D Picture” button and select an image.





Base height determines the height of the image raft.
Model Height determines the bumpiness of the printed model.



Click the “Toggle Color” button will invert the pixel’s brightness, which will invert the raised portions to sunken, and vice versa.



Pen: Use “Pen” to edit the image.



Text: Use “Text” to add texts on the image.



Crop: Use “Crop” to crop the image to different size.

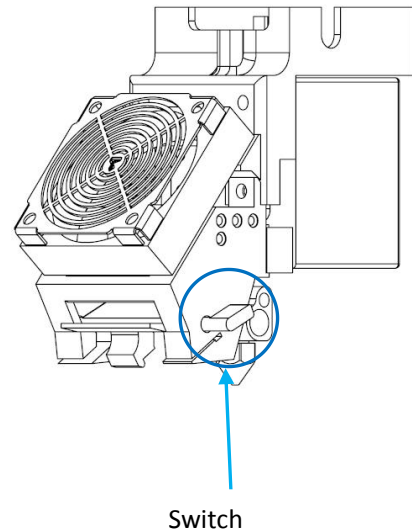


Back: Exit the image editing function and save the image.

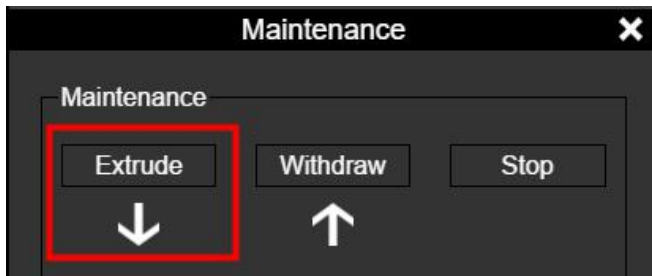
7 Printing Tips and Maintenance

7.1 Printing Tips

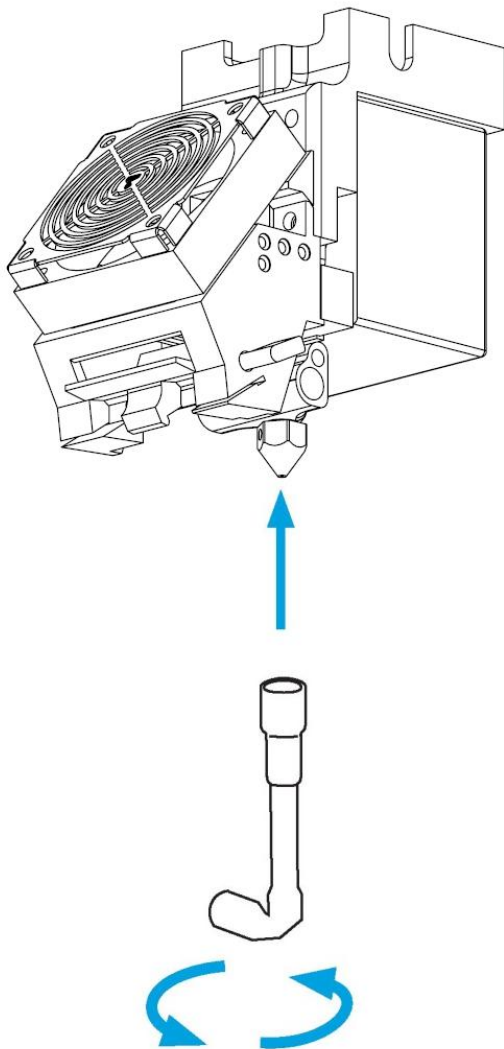
- Make sure the nozzle height is accurate. If the nozzle height is too low, it could cause warpage; if the nozzle height is too high, the nozzle could crash into the build plate and cause damage or clogging. Users can manually adjust the nozzle height following the instructions on the “Calibration” page. Another way to adjust the nozzle height slightly is to use the “Nozzle offset” to adjust the height about 0.1 - 0.2mm.
- Make sure the build table is leveled to avoid possible deformation of printed models.
- “Preheat” is a very useful feature for big model printing avoiding possible warpage.
- The direction of airflow on the extruder is adjustable by a switch on the extruder. If the air blows to the model directly, the model can be cooled off faster, which makes higher print quality and the support and the raft can be removed more easily, but higher possibilities of model cracking and deformation, and easier to warp for sensitive materials like ABS, for example.
Generally speaking, printing with PLA material needs to be cooled off fast, but ABS needs to avoid direct cool-off, and choose slight cool-off, and ABS+ needs 50% cool-off.
- Raftless printing:
It is highly recommended that normal prints should be printed with a raft, which can help the printed model stick to the bed, and help the printed model be leveled on the build plate.
- No Support:
Users can choose to print a model without support structures. By checking this option, users can set up print jobs with no support.



7.2 Printer Nozzle Maintenance



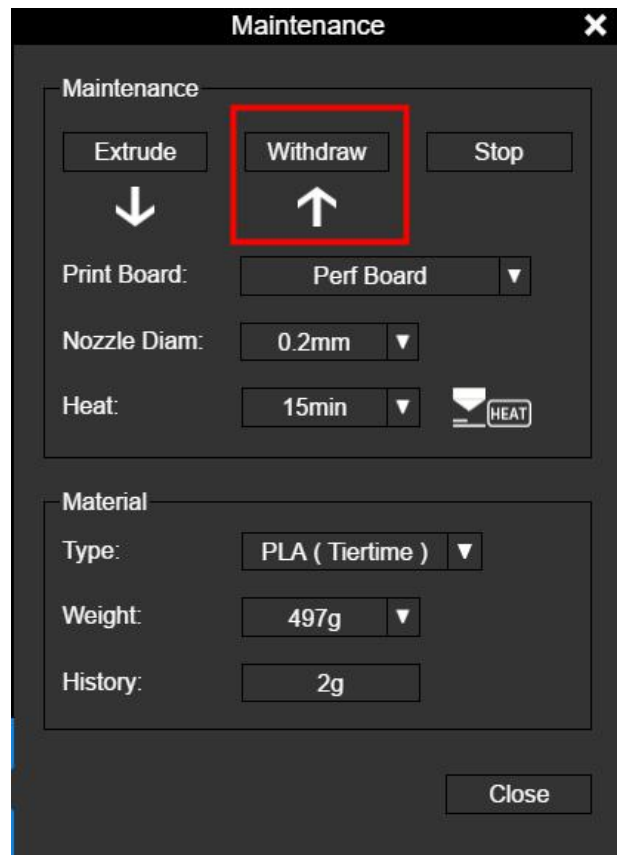
1, In the "Calibrate" Page, click the "Extrude" button, wait the nozzle reach preset print temperature (normally above 200C), then use the nozzle wrench (accessory) to take the nozzle off the extruder. If turning the nozzle without heating up, it could damage the extruder.



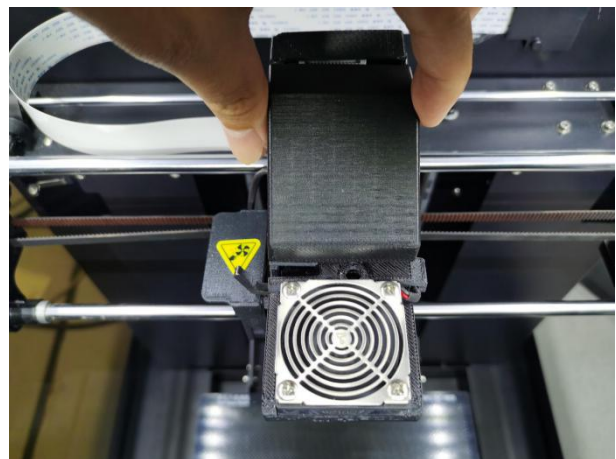
2, When replacing a new nozzle, it is also needed to heat up the nozzle to the preset temperature (normally above 200C) to avoid possible filament leakage.

7.3 Replace Extruder

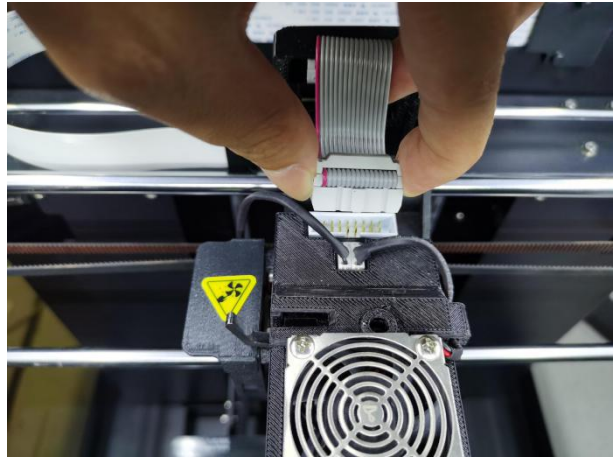
1. "Extrude" filament



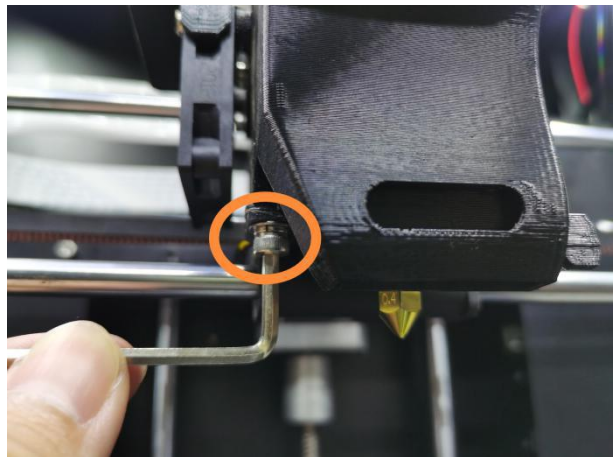
2, Turn off the power of the printer. Take off the extruder's ribbon cable lid.

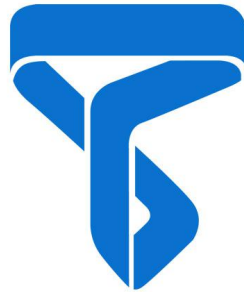


3, Unplug the cable.



4, Use an allen key to loosen the screw at the bottom of the extruder clockwise, then the extruder can be taken off.





Tiertime

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